

Solicitation 12374-906 R2

Bayshore Drive Intracoastal Force Main Crossing - Design Build P12389

Bid Designation: Public



City of Fort Lauderdale

Bid 12374-906 R2**Bayshore Drive Intracoastal Force Main Crossing - Design Build P12389**

Bid Number 12374-906 R2
 Bid Title Bayshore Drive Intracoastal Force Main Crossing - Design Build P12389

Bid Start Date Apr 23, 2020 1:51:17 PM EDT
 Bid End Date May 15, 2020 2:00:00 PM EDT
 Question & Answer End Date Apr 27, 2020 5:00:00 PM EDT

Bid Contact Tanisha Boynton
 Sr. Procurement Specialist
 PW
 954-828-4797
 tboynton@fortlauderdale.gov

Contract Duration 90 days
 Contract Renewal 1 annual renewal
 Prices Good for Not Applicable

Bid Comments Please be advised that effective immediately, and until further notice, all Invitation to Bids, Request For Proposals, Request For Qualifications, and other solicitations let by the City of Fort Lauderdale will be opened electronically via BIDSYNC.COM at the date and time indicated on the solicitation. This notice supersedes any indication on any current unopened solicitation that may give a specific location for the solicitation opening. All openings will be held on the BIDSYNC.COM platform. Once the Procurement Specialist opens the solicitation, the bid tabulations may be viewed immediately on a computer, laptop, cell phone, or any other device with WiFi access. The opening may also be viewed in real time through a "Webex meeting" or similar type platform.
 Anyone requesting assistance or having further inquiry in this matter must contact the Procurement Specialist indicated on the solicitation, via the question and Answer forum on Bidsync.com before the Last Day for Questions indicated in the Solicitation.

The City of Fort Lauderdale, FL ("City") has issued this Request for Proposal (RFP) to solicit competitive bids and proposals from one single entity ("Firm" or "Proposer" or "Design-Build Firm (DBF)") responsible for the design, permitting, construction, testing and startup of Bayshore Drive Intracoastal Force Main Crossing. The work to be accomplished under this contract includes, but is not limited to; Two (2) new dual 14 inch nominal diameter force main crossing of the Atlantic Intracoastal Waterway utilizing high density polyethylene pipe installation via horizontal directional drilling (HDD), new 20 inch nominal diameter force main on Northeast 9th Street, Bayshore Drive and Vistamar street, cut, cap and abandon in place the existing 18 inch DIP force main along NE 9th street, connect all proposed piping to the existing pipping on-shore utilizing HDPE PE 4710 as indicated on the DCP Plans, installation of a 30 inch tidal valve, modification of existing structures and storm water piping, regrading, paving and restoration of the parking lot, driveway and adjacent areas at 888 Intracoastal Boulevard, including all other aspects of the project to fulfill the intent of the Project as described in the Design Criteria Package and all supporting documents. Design-Build Firms who are interested in submitting Statements of Qualification (SOQ) in response to this RFP shall comply with Section IV - Submittal Requirements.

NOTE: Payment on this contract will be made by Visa or Mastercard.

Proposal Bond: A certified check, cashiers check or bank offerors check for five percent (5%) of the Price Proposal, made payable to the City of Fort Lauderdale, Florida or proposal bond in such amount, shall accompany each proposal as evidence of the good faith and responsibility of the proposer.

For information concerning technical specifications, please utilize the question/answer feature provided by BIDS SYNC at www.bidsync.com. Questions of a material nature must be received prior to the cut-off date specified in the solicitation. Material changes, if any, to the scope of services or bidding procedures, will only be transmitted by written addendum. (See addendum section of BIDS SYNC Site). **Contractors please note:** No part of your bid can be submitted via FAX. No variation in price or conditions shall be permitted based upon a claim of ignorance. Submission of a bid will be considered evidence that the Contractor has familiarized himself with the nature and extent of the work, equipment, materials, and labor required. The entire bid response must be submitted in accordance with all specifications contained in this solicitation.

Information on bid results and projects currently out to bid can be obtained on the City's website – <http://www.fortlauderdale.gov/departments/finance/procurement-services>. For general inquiries, please call (954) 828-5933.

Added on Apr 24, 2020:

Addendum No. 8

This Solicitation Replaces 12374-906 due to Covid-19 Bids Responses will be submitted via BidSync.

Bids Due Date Changed: From April 28, 2020 to May 1, 2020 at 2:00PM

Added on Apr 27, 2020:

Addendum No. 9

Bids Due Date Changed: May 7, 2020 at 2:00PM to allow offers more time to submit proposals via BidSync.

Bid Opening will be conducted Via WebEx:

When it's time, join your Webex meeting here.

Meeting number (access code): 626 539 652

Meeting password: rgC677KiiJ8

Join meeting

Join by phone

Tap to call in from a mobile device (attendees only)

+1-510-338-9438 USA Toll

+1-617-315-0704 USA Toll (Boston)

Global call-in numbers

Join from a video system or application

Dial 626539652@cof.my.webex.com

You can also dial 173.243.2.68 and enter your meeting number.

Join using Microsoft Lync or Microsoft Skype for Business

Dial 626539652.cof.my@lync.webex.com

Added on May 6, 2020:

Addendum No. 10

Bids Due Date Changed to May 15, 2020 at 2:00PM.

Added on May 8, 2020:

Addendum No. 10 Revised)

Bids Due Date Change to May 15, 2020 at 2:00PM. Proposal Opening will be conducted via WebEx.

When it's time, join your Webex meeting here:

Meeting number (access code): 626 539 652

Meeting password: rgC677KiiJ8

Join meeting

Join by phone

Tap to call in from a mobile device (attendees only)

+1-510-338-9438 USA Toll

+1-617-315-0704 USA Toll (Boston)

Global call-in numbers

Join from a video system or application

Dial 291386229@cof.my.webex.com

You can also dial 173.243.2.68 and enter your meeting number.

Join using Microsoft Lync or Microsoft Skype for Business

Addendum # 1

New Documents	Addendum No. 8 - Covid 19 Bid Submittals.pdf		
Previous End Date	Apr 28, 2020 2:00:00 PM EDT	New End Date	May 1, 2020 2:00:00 PM EDT

Addendum # 2

New Documents	Addendum No. 9 - Covid 19 Bid Opening.pdf		
Previous End Date	May 1, 2020 2:00:00 PM EDT	New End Date	May 7, 2020 2:00:00 PM EDT
Previous Q & A End Date		New Q & A End Date	Apr 27, 2020 5:00:00 PM EDT

Addendum # 3

Previous End Date	May 7, 2020 2:00:00 PM EDT	New End Date	May 15, 2020 2:00:00 PM EDT
-------------------	----------------------------	--------------	-----------------------------

Addendum # 4

New Documents	Addendum No. 10 - Covid 19 Proposal Opening and Submittal.pdf
---------------	---

Item Response Form

Item	12374-906 R2--01-01 - Bayshore Drive Intracoastal Force Main Crossing - Design Build P12389
Quantity	1 each
Unit Price	<input type="text"/>
Delivery Location	City of Fort Lauderdale
	<u>12 Fire stations and 1 Support Services</u>
	See bid specifications
	Fort Lauderdale FL various
	Qty 1

Description

The City of Fort Lauderdale, FL ("City") has issued this Request for Proposal (RFP) to solicit competitive bids and proposals from one single entity ("Firm" or "Proposer" or "Design-Build Firm (DBF)") responsible for the design, permitting, construction, testing and startup of Bayshore Drive Intracoastal Force Main Crossing. The work to be accomplished under this contract includes, but is not limited to; Two (2) new dual 14 inch nominal diameter force main crossing of the Atlantic Intracoastal Waterway utilizing high density polyethylene pipe installation via horizontal directional drilling (HDD), new 20 inch nominal diameter force main on Northeast 9th Street, Bayshore Drive and Vistamar street, cut, cap and abandon in place the existing 18 inch DIP force main along NE 9th street, connect all proposed piping to the existing pipping on-shore utilizing HDPE PE 4710 as indicated on the DCP Plans, installation of a 30 inch tidal valve, modification of existing structures and storm water piping, regrading, paving and restoration of the parking lot, driveway and adjacent areas at 888 Intracoastal Boulevard, including all other aspects of the project to fulfill the intent of the Project as described in the Design Criteria Package and all supporting documents. Design-Build Firms who are interested in submitting Statements of Qualification (SOQ) in response to this RFP shall comply with Section IV - Submittal Requirements.

NOTE: Payment on this contract will be made by Visa or Mastercard.

Proposal Bond: A certified check, cashiers check or bank offerors check for five percent (5%) of the Price Proposal, made payable to the City of Fort Lauderdale, Florida or proposal bond in such amount, shall accompany each proposal as evidence of the good faith and responsibility of the proposer.

For information concerning technical specifications, please utilize the question/answer feature provided by BIDSUNC at www.bidsync.com. Questions of a material nature must be received prior to the cut-off date specified in the solicitation. Material changes, if any, to the scope of services or bidding procedures, will only be transmitted by written addendum. (See addendum section of BIDSUNC Site). **Contractors please note:** No part of your bid can be submitted via FAX. No variation in price or conditions shall be permitted based upon a claim of ignorance. Submission of a bid will be considered evidence that the Contractor has familiarized himself with the nature and extent of the work, equipment, materials, and labor required. The entire bid response must be submitted in accordance with all specifications contained in this solicitation.

Information on bid results and projects currently out to bid can be obtained on the City's website – <http://www.fortlauderdale.gov/departments/finance/procurement-services>. For general inquiries, please call (954) 828-5933.

Added on Feb 12, 2020:

Addendum No. 1

Pre-Bid Meeting Date Change: From February 18, 2020 to **February 19, 2020.**

Added on Feb 13, 2020:

Addendum No. 2:

Correct Project Solicitation Type, Title, Solicitation No. Information on Addendum No. 1 **ONLY**.

Added on Feb 13, 2020:

NO CHNAGE/NO ADDENDUM: Due to BidSync System Error, documents were not included as a part of the entire bid package. This was required to make applicable documents available with-in the bid package **ONLY**.

Added on Feb 13, 2020:

NO CHNAGE/NO ADDENDUM: Due to BidSync System Error, documents were not included as a part of the entire bid package. This was required to make applicable documents available with-in the bid package **ONLY**.

Added on Feb 19, 2020:

Pre-Bid Meeting Sign-In Sheet 2/19/2020

Added on Mar 3, 2020:

Addendum No. 3:

Revised Exhibit A - Design Criteria, Additional Specifications and CAD Files Uploaded.

Added on Mar 4, 2020:

Addendum No. 4:

Clarification: Property Coverage (Builder's Risk)

Added on Mar 11, 2020:

Addendum No. 5

Bid Due Date / Solicitation End Date Change: From March 13, 2020 at 2:00PM to **March 20, 2020 at 2:00PM.**

Added on Mar 12, 2020:

Addendum No. 6

Technical Specification 02765 Cured-In-Place Pipe Lining is hereby removed from this solicitation.

Added on Mar 17, 2020:

Addendum No. 7

Bid Due Date / Solicitation End Date Change: From March 20, 2020 at 2:00PM to **April 28, 2020 at 2:00PM.**

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

SECTION 1 INTRODUCTION

1.1 Purpose

The City of Fort Lauderdale, FL ("City") has issued this Request for Proposal (RFP) to solicit competitive bids and proposals from one single entity ("Firm" or "Proposer" or "Design-Build Firm (DBF)") responsible for the design, permitting, construction, testing and startup of Bayshore Drive Intracoastal Force Main Crossing. The work to be accomplished under this contract includes, but is not limited to; Two (2) new dual 14 inch nominal diameter force main crossing of the Atlantic Intracoastal Waterway utilizing high density polyethylene pipe installation via horizontal directional drilling (HDD), new 20 inch nominal diameter force main on Northeast 9th Street, Bayshore Drive and Vistamar street, cut, cap and abandon in place the existing 18 inch DIP force main along NE 9th street, connect all proposed piping to the existing piping on-shore utilizing HDPE PE 4710 as indicated on the DCP Plans, installation of a 30 inch tidal valve, modification of existing structures and storm water piping, regrading, paving and restoration of the parking lot, driveway and adjacent areas at 888 Intracoastal Boulevard, including all other aspects of the project to fulfill the intent of the Project as described in the Design Criteria Package and all supporting documents. Design-Build Firms who are interested in submitting Statements of Qualification (SOQ) in response to this RFP shall comply with Section IV - Submittal Requirements.

The City will retain services within the scope of architecture or professional engineering and within the scope of construction contracting. The City will solicit proposals and establish a competitive selection process in accordance with City of Fort Lauderdale [Code of Ordinances Section 2-125.1](#) to procure the services of a qualified DBF.

The Chen Moore and Associates, including their sub-consultants, are not eligible to render design-build services for this solicitation. Pursuant to [Florida Statutes 287.055 \(9\) \(b\)](#), "A design criteria professional who has been selected to prepare the design criteria package is not eligible to render services under a design-build contract executed pursuant to the design criteria package." The City reserves the right to disqualify any proposal from a team which includes any sub-consultant and/or individual who has played a substantial role in the development of the design criteria package or whose involvement with the design-build team would confer upon that team an unfair competitive advantage because of such sub-consultant's or member's prior involvement in the project.

1.2 Submission Deadline

Responses shall be delivered during the City's normal business hours in a sealed envelope. The sealed envelope should be marked on the outside: RFP No. 12374-906, Bayshore Drive Intracoastal Force Main Crossing.

Location: Fort Lauderdale City Hall
Attention: Procurement Services Division
100 N. Andrews Avenue, #619,
Fort Lauderdale, FL 33301

Day/Date: **March 13, 2020**

Time: 2:00 PM EST

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

At this time and place, the responses will be publicly opened, and the names of the firms will be read. After the deadline, responses will not be accepted. Firms are responsible for making certain that their proposal is received at the location specified by the due date and time. The City is not responsible for delays caused by any mail, package or courier service, including the U.S. mail, or caused by any other occurrence or condition. The City's normal business hours are Monday through Friday, 8:00 a.m. through 5:00 p.m. excluding holidays observed by the City.

Please go to <https://www.fortlauderdale.gov/departments/human-resources/recruitment-testing-selection/employment-benefits> for a complete list of all City observed holidays.

1.3 BidSync

The City uses BidSync (www.bidsync.com) to administer the competitive solicitation process, including but not limited to soliciting responses, issuing addenda, posting results and issuing notification of an intended decision. There is no charge to register and download the RFP from BidSync and to participate in the solicitation, nor will any fees be charged to the awarded DBF. Proposers are strongly encouraged to read the various vendor guides and tutorials available in BIDSNYC well in advance of their intention of submitting a response to ensure familiarity with the use of BidSync. The City shall not be responsible for a Proposer's inability to submit a response by the submission deadline date and time for any reason, including issues arising from the use of BidSync.

1.4 Point of Contact

All inquiries concerning this RFP including questions and requests for additional information shall be sent via the BIDSYNC question and answer tool. The City's contact for this RFP is:

Procurement Services Division
Tanisha Boynton, Senior Procurement Specialist
100 N. Andrews Avenue, 6th Floor
Fort Lauderdale, FL 33301
Fax: 954-828-5576
Email: Tboynton@fortlauderdale.gov

1.5 Pre-Proposal Meeting

There will be a pre-proposal conference and site visit scheduled for this Request for Proposal on, **February 19, 2020, at 10:30 A.M. EST**, at City Hall, 100 N. Andrews Avenue, 4th Floor Conference Room, Fort Lauderdale, FL 33301.

It is strongly suggested that all DBFs attend the pre-proposal conference. Attendance is not mandatory.

It is the sole responsibility of the DBF to become familiar with the scope of the City's requirements and systems prior to submitting a proposal. No variation in price or conditions shall be permitted based upon a claim of ignorance.

DBF are requested to bring this solicitation document to the pre-proposal meeting, as additional copies will not be available.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

1.6 Compliance and Legal Conditions

In order to comply fully with the requirements of the City's Code of Ordinances below and Florida Statutes 287.055, the following procedures shall be followed in selecting firms to provide design/build services and in negotiating design/build contracts.

It will be the sole responsibility of the proposer to familiarize themselves with the following ordinances and statutes:

- a) [City of Fort Lauderdale Ordinance Section 2-125.1 – Design/build contracts](#)
- b) [Florida Statutes 287.055](#) – Acquisition of professional architectural, engineering, landscape architectural, or surveying and mapping services; definitions; procedures; contingent fees prohibited; penalties.
- c) [Florida Statutes 287.055 \(9\)](#) Applicability to Design-Build Contracts

1.7 Personal Investigation

Proposers shall satisfy themselves by personal investigation and by such other means as they may think necessary or desirable, as to the conditions affecting the proposed work and the cost. No information derived from maps, plans, specifications, or from the Engineer, City Manager, or their assistants shall relieve the DBF from any risk or from fulfilling all terms of the contract.

1.8 Lobbyist Ordinance

Any consultant submitting a response to this solicitation is responsible for being aware of, and complying with City of Fort Lauderdale Ordinance No. 00-27, Lobbying Activities. A Copy of Ordinance No. C-00-27 may be obtained from the City Clerk's Office on the 7th floor of City Hall, 100 N. Andrews Avenue, Fort Lauderdale, FL, or the ordinance may be viewed on the City's website at: <http://fortlauderdale.gov/home/showdocument?id=6036>

Questions concerning whether you may or may not need to comply with said ordinance, please contact the City of Fort Lauderdale City Clerk's Office at 954-828-5002.

1.9 Debarred or Suspended Bidders or Proposers

The bidder or proposer certifies, by submission of a response to this solicitation, that neither it nor its principals and subcontractors are presently debarred or suspended by any Federal department or agency.

1.10 Scrutinized Companies List

In accordance with Section 287.135 Florida Statutes as amended, any firm, company, principals, or owners listed on the Scrutinized Companies with Activities in Sudan List or listed on the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or engaged in business operations in Cuba or Syria are prohibited from submitting a bid, proposal, or response to a City of Fort Lauderdale solicitation for goods or services in an amount equal to or greater than \$1 million. Therefore, if applicable, each firm submitting a bid, proposal or response to a solicitation must certify to the City that it is not on either list at the time of submitting a bid, proposal or response. The City may terminate this Contract at the City's option if the Consultant is found to have submitted a false certification as provided under subsection (5) of Section 287.135, Florida Statutes (2011), as may be amended or revised, or been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or has engaged in business operations in Cuba or Syria.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

By submitting a bid, proposal, or response, the company, principals, or owners certify that they are not listed on the Scrutinized Companies with Activities in Sudan List or listed on the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or is engaged in business operations in Cuba or Syria.

1.11 Inconsistencies

Any seeming inconsistency between different provisions of the plans, specifications, proposal or contract, or any point requiring explanation must be inquired into by the proposer, in writing up to the *Question & Answer End Date*, as published in the solicitation document. After proposals are opened, the proposers shall abide by the decision of the City as to such interpretation. No modifications to Proposals will be permitted after the date and hour of the Proposal opening.

1.12 Addenda and Interpretations

No interpretations of the meaning of the plans, specifications or other contract documents will be made orally to any proposer. Prospective proposers must request such interpretation in writing as instructed in the RFP. To be considered, such request must be received by the Questions and Answers deadline as indicated in Bidsync.com. Material changes, if any, to the scope of services or bidding procedures are only transmitted by written addendum. It is the proposer's responsibility to verify if addendums have been issued in Bidsync.com. Failure of any proposer to receive any such addenda or interpretation shall not relieve any proposer from any obligation under his RFP as submitted. All addenda so issued shall become a part of the contract document. Proposer shall verify in Bidsync.com that he/she has all addenda before submitting a proposal.

1.13 Forms of Proposals

Each proposal and its accompanying statements must be submitted, in good order with all forms and blanks completed. The proposal must be signed by one duly authorized to do so, and in case signed by a deputy or subordinate, the principal's properly written authority to such deputy or subordinate must accompany the proposal. No proposal will be accepted, for any reason whatsoever, which is not submitted to the City as stated above, within the specified time.

1.14 Bid Firm for Acceptance (120 days)

Proposer warrants, by virtue of bidding, that his proposal and the prices quoted in this proposal will be firm for acceptance by the City for a period of one hundred and twenty (120) days from the date of bid opening unless otherwise stated in the RFP. The City shall award contract within this time period or shall request to the recommended awarded vendor an extension to hold pricing, until products/services have been awarded.

1.15 Additional Items or Services

The City may require additional items or services of a similar nature, but not specifically listed in the contract. The DBF agrees to provide such items or services, and shall provide the City prices on such additional items or services based upon a formula or method, which is the same or similar to that used in establishing the prices in this proposal. If the price(s) offered are not acceptable to the City, and the situation cannot be resolved to the satisfaction of the City, the City reserves the right to procure those items or services from other vendors, or to cancel the contract upon giving the DBF thirty (30) days written notice.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

1.16 Deletion or Modification of Services

The City reserves the right to delete any portion of the Contract at any time without cause, and if such right is exercised by the City, the total fee shall be reduced in the same ratio as the estimated cost of the work deleted, bears to the estimated cost of the work originally planned. If work has already been accomplished on the portion of the Contract to be deleted, the DBF shall be paid for the deleted portion on the basis of the estimated percentage of completion of such portion.

If the DBF and the City agree on modifications or revisions to the task elements, after the City has approved work to begin on a particular task or project, the DBF will submit a request for a Change Order and a revised budget to the City for approval prior to proceeding with the work.

1.17 Rejection of Proposals/Bids

The City reserves the right to reject any proposal if the evidence submitted by the proposer, or if the investigation of such proposer, fails to satisfy the City that such proposer is properly qualified to carry out the obligations and to complete the work contemplated. Any or all proposals will be rejected, if there is reason to believe that collusion exists among submitters. A proposal will be considered irregular and may be rejected, if it shows serious omissions, alterations in form, additions not called for, conditions or unauthorized alternates, or irregularities of any kind. The City reserves the right to reject any or all proposals and to waive such technical errors as may be deemed best for the interests of the City.

1.18 Bid Protest Procedure

Any proposer or bidder who is not recommended for award of a contract and who alleges a failure by the City to follow the City's procurement ordinance or any applicable law may protest to the Procurement Division – Deputy Director of Finance, by delivering a letter of protest within five (5) days after a Notice of Intent to award is posted on the City's website at the following link: <http://fortlauderdale.gov/departments/finance/procurement-services/notices-of-intent-to-award>

The complete protest ordinance may be found on the City's website at the following link: https://www.municode.com/library/fl/fort_lauderdale/codes/code_of_ordinances?nodeId=COOR_CH2AD_ARTVFI_DIV2PU_S2-199.1BIPRPR

1.19 Withdrawals

Any proposer may, without prejudice to him/herself, withdraw his/her proposal at any time prior to the expiration of the time during which proposals may be submitted. Such request for withdrawal must be in writing and signed in the same manner and by the same person who signed the proposal. After expiration of the period for receiving proposals, no proposal can be withdrawn, modified, or explained.

****END OF SECTION 1****

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906**SECTION 2 SPECIAL CONDITIONS****2.1 Definitions**

Award – means the acceptance of a bid, offer or proposal by the proper authorized designee. The City Commission must approve all awards over the authority of the City Manager, with the exception of emergency purchases.

City – the City of Fort Lauderdale or the City Commission, a municipal corporation of the State of Florida.

City Commission – City Commission shall mean the governing and legislative body of the City.

Contract – This Agreement and all addenda, exhibits and amendments thereto between the City and the Design-Build Firm for this Project. Contract shall also mean the same as Agreement.

Design Build – Means a single contract with a Design-Build Firm for the design and construction of a City construction project.

Design Build Firm (DBF) – means a partnership, corporation, or other legal entity that is certified under Florida Statute 489.119 to engage in contracting through a certified or registered general contractor or a certified or registered building contractor as the qualifying agent or is certified under Florida Statute 471.023 to practice or to offer to practice engineering; certified under Florida Statute 481.219 to practice or to offer to practice architecture, or certified under Florida Statute 481.319 to practice or to offer to practice landscape architecture.

Design Criteria Package (DCP) – DCP shall mean those certain conceptual plans and specifications and performance oriented drawings or specifications of the Project, as prepared and sealed by the Design Criteria Professional, and in compliance with the requirements of Section 287.055, Florida Statutes.

Design Criteria Professional – means a firm which holds a current certificate or registration under Chapter 481, Florida Statutes, to practice architecture or landscape architecture or a firm which holds a current certificate as a registered engineer under Chapter 471, Florida Statutes, to practice engineering and who is employed by or under contract by the City to provide professional architect services, landscape architect services, or engineering services in connection with the preparation of the Design Criteria Package.

Guaranteed Maximum Price (GMP) – the mutually agreed upon contract price to be paid to the DBF for the work is reimbursed on a time and materials basis, with the DBF agreeing to complete the work without additional payment, if a fixed price ceiling is reached. The guaranteed maximum price is not subject to increase, except as expressly allowed by the City. Savings below the maximum guaranteed are shared between owner and DBF, whereas the DBF assumes the responsibility for any overrun beyond the guaranteed maximum price.

Negotiate – any form of that word means to conduct legitimate, arm's length discussion and conferences to reach an agreement on a term or price.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

Notice to Proceed – means the written notice given by the City to the Design-Build Firm of the date and time for work to start.

Professional Services – means those services within the scope of the practice of architecture, professional engineering, landscape architect, or registered surveying and mapping, as defined by the laws of the state, or those performed by any architect, professional engineer, landscape architect, or registered surveyor and mapper in connection with his or her professional employment or practice.

Project Manager – an authorized representative of the City assigned to the Project by the City, assigned to make necessary observations of materials furnished by DBF and of the Work performed by DBF as detailed.

Proposal – means the proposal or submission submitted by a Proposer. The terms “Proposal” and “Bid” are used interchangeably and have the same meaning.

Proposer – means one who submits a Proposal in response to a solicitation. The terms “Proposer” and “Bidder” are used interchangeably and have the same meaning.

Substantial Completion – the date(s) certified by the Project Manager that all conditions of the permits and regulatory agencies have been met for the City’s intended use of the Project, and all construction has been performed in accordance with the Contract Documents so City can fully utilize, as opposed to partially utilize, the Project for its intended purpose.

Work – the completed construction required by the Contract Documents, as permitted, including all labor necessary to produce such construction, and all materials and equipment incorporated or to be incorporated in such construction.

2.2 Responsiveness

In order to be considered responsive to the solicitation, the firm’s response shall fully conform in all material respects to the solicitation and all of its requirements, including all form and substance.

2.3 Responsibility

In order to be considered responsible, DBF shall be fully capable of meeting all of the requirements of the solicitation and the subsequent contract; must possess the full capability, including financial and technical capacity, to perform as contractually required; and must fully document the ability to provide good faith performance.

2.4 Sub-Consultants

A Sub-Consultant is an individual or firm contracted by the DBF to assist in the performance of services required under this RFP. A Sub-Consultant shall be paid through DBF and not paid directly by the City. Sub-Consultants are permitted by the City in the performance of the services pursuant to the Agreement. DBF must clearly reflect in its Statement of Qualification (SOQ) the major Sub-Consultant(s) to be utilized in the performance of required services. The City retains the right to accept or reject any Sub-Consultant proposed in the response of successful DBFs or prior to contract execution. Any and all liabilities regarding the use of a Sub-Consultant shall be borne solely by the successful DBF and insurance for each Sub-Consultant must be maintained in good standing and approved by the City throughout the duration of the Contract. Neither successful DBF nor any of its Sub-Consultants are considered to be employees or agents of the City. Failure to list all Sub-Consultants and

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

provide the required information may disqualify any proposed Sub-Consultant from performing work under this RFP.

DBFs shall include in their responses the requested Sub-Consultant information and include all relevant information required of the DBF. In addition, within five (5) working days after the identification of the award to the successful DBF, the DBF shall provide a list confirming the Sub-Consultant(s) that the successful DBF intends to utilize in the Contract, if applicable. The list shall include, at a minimum, the name, and location of the place of business for each Sub-Consultant, the services Sub-Consultant will provide relative to any contract that may result from this RFP, Sub-consultants hourly rates or fees, any applicable licenses, insurance, references, ownership, and other information required of the DBF. No more than 20% of the team members selected for this project can be substituted and any and all team and/or staff substitutions must be approved by the City in advance.

2.5 Contract Term

Time is of the essence for the DBF's performance of the Work.

The City will enter into a Not-To- Exceed (NTE) contract with the successful DBF for a Guaranteed Maximum Price (GMP) for the Work. The terms and conditions of this contract are fixed price and for a fixed period of time. The DBF submitted bid is to be a NTE GMP bid for completing the Scope of Work in the RFP. The DBF will provide a Schedule of Values to the City for their approval. The total of the Schedule of Values will be this NTE GMP contract price for the work.

The DBF shall not assign, transfer or sub-contract any work either in whole or in part, without prior written approval of the City. The submittal responses shall be valid until such time as City Commission awards a contract as a result of this RFP.

City reserves the right, where it may serve the City of Fort Lauderdale's best interest, to request additional information or clarification from Proposers including but not limited to oral interviews as requested by the Evaluation Committee.

The City of Fort Lauderdale reserves the right to waive formalities in any proposal and further reserves the right to take any other action that may be necessary in the best interest of the City.

The City reserves the right to let other contracts in connection with this Project, provided it does not interfere with DBF's work or schedule. By submitting a Proposal each firm is confirming that the firm has not been placed on the convicted vendors list as described in [Florida Statue §287.133 \(2\) \(a\)](#).

2.6 Unauthorized Work

The successful DBF(s) shall not begin work until a Contract and a Notice to Proceed has been issued. DBF(s) agree and understand that a purchase order and/or task order shall be issued and provided to the DBF(s) following City Commission award; however, receipt of a purchase order and/or task order shall not prevent the DBF(s) from commencing the work once the City Commission has awarded the contract and notice to proceed is issued.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

2.7 Proposal Bond

A certified check, cashier's check or bank officer's check, for **five percent (5%)** of the Price Proposal, made payable to the City of Fort Lauderdale, Florida, or proposal bond in such amount, shall accompany each proposal as evidence of the good faith and responsibility of the proposer. The check or bond shall be retained by the City as liquidated damages should the proposer refuse to or fail to enter into a contract for the execution of the work embraced in this proposal, in the event the proposal of the proposer is accepted. Retention of such amount shall not be construed as a penalty or forfeiture.

The above bond or check shall be a guarantee that the proposer will, if necessary, promptly execute a satisfactory contract and furnish good and sufficient bonds. As soon as a satisfactory contract has been executed and the bonds furnished and accepted, the check or bond accompanying the proposal of the successful proposer will be returned to him/her. The certified or other checks or bid bonds of the unsuccessful proposers will be returned to them upon the acceptance of the proposal of the successful proposer. If the successful proposer shall not enter into, execute, and deliver such a contract and furnish the required bonds within fifteen (15) days after receiving notice to do so, the certified or other check or bid bond shall immediately become the property of the City of Fort Lauderdale as liquidated damages.

Additional insurance and bonds may be required for the construction phase of the project.

2.8 Performance and Payment Bond (Surety Bond)

The DBF shall execute and record in the public records of Broward County, Florida, a payment and performance bond in an amount at least equal to the Contract Price with a surety insurer authorized to do business in the State of Florida as surety, ("Bond"), in accordance with [Section 255.05, Florida Statutes](#), as may be amended or revised, as security for the faithful performance and payment of all of the DBF's obligations under the Contract Documents.

The successful bidder shall furnish a performance and payment bond in compliance with Section 255.05, Florida Statutes, written by a Corporate Surety company, holding a Certificate of Authority from the Secretary of the Treasury of the United States as acceptable sureties on federal bonds, in an amount equal to the total amount payable by the terms of the contract, executed and issued by a Resident Agent licensed by and having an office in the State of Florida, representing such Corporate Surety, conditioned for the due and faithful performance of the work, and providing in addition to all other conditions, that if the DBF, or his or its subcontractors, fail to duly pay for any labor, materials, or other supplies used or consumed by such Contractor, or his or its subcontractor or subcontractors, in performance of the work contracted to be done, the Surety will pay the same in the amount not exceeding the sum provided in such bonds, together with interest at the rate of fifteen percent (15%) per annum, and that they shall indemnify and save harmless the City of Fort Lauderdale to the extent of any and all payments in connection with carrying out of the contract, which the City may be required to make under the law.

The DBF is required at all times to have a valid surety bond in force covering the work being performed. A failure to have such bond in force at any time shall constitute a default on the part of the DBF. A bond written by a surety, that becomes disqualified to do business in the State of Florida, shall automatically constitute a failure on the part of the DBF to meet the above requirements.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

Such bond shall continue in effect for one (1) year after completion and acceptance of the work with liability equal to at least twenty-five percent (25%) of contract price, or an additional bond shall be conditioned that the DBF will correct any defective or faulty work or material which appear within one (1) year after completion of the contract, upon notification by the City, except in contracts which are concerned solely with demolition work, in which cases twenty-five percent (25%) liability will not be applicable.

2.9 Insurance Requirements

During the term of this Agreement, Contractor at its sole expense, shall provide insurance of such a type and with such terms and limits as noted below. Providing and maintaining adequate insurance coverage is a material obligation of Contractor. Contractor shall provide the City a certificate of insurance evidencing such coverage. Contractor's insurance coverage shall be primary insurance as respects to the City for all applicable policies. The limits of coverage under each policy maintained by Contractor shall not be interpreted as limiting Contractor's liability and obligations under this Agreement. All insurance policies shall be through insurers authorized or eligible to write policies in Florida and possess an A.M. Best rating of A-, VII or better, subject to the approval of the City's Risk Manager.

The coverages, limits and/or endorsements required herein protect the primary interests of the City, and these coverages, limits and/or endorsements shall in no way be required to be relied upon when assessing the extent or determining appropriate types and limits of coverage to protect the Contractor against any loss exposures, whether as a result of this Agreement or otherwise. The requirements contained herein, as well as the City's review or acknowledgement, is not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by the Contractor under this Agreement.

The following insurance policies/coverages are required:

Commercial General Liability

Coverage must be afforded under a Commercial General Liability policy with limits not less than:

- \$1,000,000 each occurrence and \$2,000,000 project aggregate for Bodily Injury, Property Damage, and Personal and Advertising Injury
- \$1,000,000 each occurrence and \$2,000,000 project aggregate for Products and Completed Operations

Policy must include coverage for Contractual Liability, Independent Contractors, and contain no exclusions for explosion, collapse, or underground.

The City, a political subdivision of the State of Florida, its officials, employees, and volunteers are to be covered as an additional insured with a CG 20 26 04 13 Additional Insured – Designated Person or Organization Endorsement or similar endorsement providing equal or broader Additional Insured Coverage with respect to liability arising out of activities performed by or on behalf of the Contractor. The coverage shall contain no special limitation on the scope of protection afforded to the City, its officials, employees, or volunteers.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

Business Automobile Liability

Coverage must be afforded for all Owned, Hired, Scheduled, and Non-Owned vehicles for Bodily Injury and Property Damage in an amount not less than \$1,000,000 combined single limit each accident.

If the Contractor does not own vehicles, the Contractor shall maintain coverage for Hired and Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Liability policy.

Workers' Compensation and Employer's Liability

Coverage must be afforded per Chapter 440, Florida Statutes. Any firm performing work on behalf of the City must provide Workers' Compensation insurance. Exceptions and exemptions will be allowed by the City's Risk Manager, if they are in accordance with Florida Statute.

The Contractor and its insurance carrier waives all subrogation rights against the City, a political subdivision of the State of Florida, its officials, employees, and volunteers for all losses or damages. The City requires the policy to be endorsed with WC00 03 13 Waiver of our Right to Recover from Others or equivalent.

Contractor must be in compliance with all applicable State and federal workers' compensation laws, including the U.S. Longshore and Harbor Workers' Compensation Act or Jones Act, if applicable.

For any Contractor who has exempt status as an individual, the City requires proof of Workers' Compensation insurance coverage for that Contractor's employees, leased employees, volunteers, and any workers performing work in execution of this Agreement.

If the Contractor has applied for a workers' compensation exemption, the City does not recognize this exemption to extend to the employees of the Contractor. The Contractor is required to provide proof of coverage for their employees, leased employees, volunteers and any workers performing work in execution of this Agreement. This applies to all contractors including but not limited to the construction industry.

Contractors Pollution Liability Coverage

For sudden and gradual occurrences and in an amount not less than \$1,000,000 per claim arising out of this Agreement, including but not limited to, all hazardous materials identified under the Agreement.

Professional Liability and/or Errors and Omissions (if architectural or engineering services are provided)

Coverage must be afforded for Wrongful Acts in an amount not less than \$5,000,000 each claim and \$5,000,000 aggregate.

Contractor must keep insurance in force until the third anniversary of expiration of this Agreement or the third anniversary of acceptance of work by the City.

Property Coverage (Builder's Risk)

Coverage must be afforded in an amount not less than 100% of the total project cost, including soft costs, with a deductible of no more than \$25,000 each claim. Coverage form shall include, but not be limited to:

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

- All Risk Coverage including Flood and Windstorm with no coinsurance clause
- Guaranteed policy extension provision
- Waiver of Occupancy Clause Endorsement, which will enable the City to occupy the facility under construction/renovation during the activity
- Storage and transport of materials, equipment, supplies of any kind whatsoever to be used on or incidental to the project
- Equipment Breakdown for cold testing of all mechanized, pressurized, or electrical equipment

For installation of property and/or equipment, Contractor must provide Builder's Risk Installation insurance to include coverage for materials or equipment stored at the project site, while in transit, or while stored at a temporary location. Coverage limit must be no less than replacement cost.

This policy shall insure the interests of the owner, contractor, and subcontractors in the property against all risk of physical loss and damage, and name the City as a loss payee. This insurance shall remain in effect until the work is completed and the property has been accepted by the City.

Insurance Certificate Requirements

- a. The Contractor shall provide the City with valid Certificates of Insurance (binders are unacceptable) no later than thirty (30) days prior to the start of work contemplated in this Agreement.
- b. The Contractor shall provide a Certificate of Insurance to the City with a thirty (30) day notice of cancellation; ten (10) days' notice if cancellation is for nonpayment of premium.
- c. In the event that the insurer is unable to accommodate the cancellation notice requirement, it shall be the responsibility of the Contractor to provide the proper notice. Such notification will be in writing by registered mail, return receipt requested, and addressed to the certificate holder.
- d. In the event the Agreement term goes beyond the expiration date of the insurance policy, the Contractor shall provide the City with an updated Certificate of Insurance no later than ten (10) days prior to the expiration of the insurance currently in effect. The City reserves the right to suspend the Agreement until this requirement is met.
- e. The certificate shall indicate if coverage is provided under a claims-made or occurrence form. If any coverage is provided on a claims-made form, the certificate will show a retroactive date, which should be the same date of the initial contract or prior.
- f. The City shall be named as an Additional Insured on all liability policies, with the exception of Workers' Compensation.
- g. The City shall be granted a Waiver of Subrogation on the Contractor's Workers' Compensation insurance policy.
- h. The Agreement, Bid/Contract number, event dates, or other identifying reference must be listed on the certificate.

The Certificate Holder should read as follows:

City of Fort Lauderdale
100 N. Andrews Avenue
Fort Lauderdale, FL 33301

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

The Contractor has the sole responsibility for all insurance premiums and shall be fully and solely responsible for any costs or expenses as a result of a coverage deductible, co-insurance penalty, or self-insured retention; including any loss not covered because of the operation of such deductible, co-insurance penalty, self-insured retention, or coverage exclusion or limitation. Any costs for adding the City as an Additional Insured shall be at the Contractor's expense.

If the Contractor's primary insurance policy/policies do not meet the minimum requirements, as set forth in this Agreement, the Contractor may provide an Umbrella/Excess insurance policy to comply with this requirement.

The Contractor's insurance coverage shall be primary insurance as respects to the City, a political subdivision of the State of Florida, its officials, employees, and volunteers. Any insurance or self-insurance maintained by the City, its officials, employees, or volunteers shall be excess of Contractor's insurance and shall be non-contributory.

Any exclusions or provisions in the insurance maintained by the Contractor that excludes coverage for work contemplated in this Agreement shall be deemed unacceptable and shall be considered breach of contract.

All required insurance policies must be maintained until the contract work has been accepted by the City, and/or this Agreement is terminated. Any lapse in coverage shall be considered breach of contract. In addition, Contractor must provide confirmation of coverage renewal via an updated certificate should any policies expire prior to the expiration of this Agreement. The City reserves the right to review, at any time, coverage forms and limits of Contractor's insurance policies.

All notices of any claim/accident (occurrences) associated with this Agreement, shall be provided to the Contractor's insurance company and the City's Risk Management office as soon as practical.

It is the Contractor's responsibility to ensure that all independent and subcontractors comply with these insurance requirements. All coverages for independent and subcontractors shall be subject to all of the requirements stated herein. Any and all deficiencies are the responsibility of the Contractor.

Bond Requirements

This Agreement is required to be bonded pursuant to Section 255.05, Florida Statutes, and the Contractor shall furnish Payment and Performance bonds on the City's standard form covering the full and faithful performance of the Agreement for construction and the payment of obligations arising hereunder.

All bonds must be underwritten by a surety company authorized to issue bonds in the State of Florida. The Contractor shall deliver required bonds to the City no later than thirty (30) days prior to the start of work contemplated in this Agreement.

If the Surety on any bond furnished by the Contractor is declared bankrupt, becomes insolvent, its right to do business is terminated in the State of Florida, or it ceases to meet the requirements of Section 255.05, Florida Statutes, the Contractor shall within five (5) days thereafter substitute Surety, both of which shall be acceptable to the City.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

Loss Control/Safety

Precaution shall be exercised at all times by the Contractor for the protection of all persons, including employees, and property. The Contractor shall comply with all laws, regulations, or ordinances relating to safety and health, and shall make special effort to detect hazardous conditions and shall take prompt action where loss control/safety measures should reasonably be expected.

The City may order work to be stopped if conditions exist that present immediate danger to persons or property. The Contractor acknowledges that such stoppage will not shift responsibility for any loss or damages from the Contractor to the City.

2.10 Invoices/Payment

A payment schedule based upon agreed upon deliverables may be developed with the awarded vendor.

The DBF shall submit a proposed schedule of values, after contract award, in a form acceptable to the City and will be required to be approved by the City before any design Work on this Project can commence. The proposed schedule of values shall be broken into two phases for the design and the construction.

During the design phase, the DBF may submit a request for payment monthly based upon percentage of completion of the final plans and specifications. Payment during the construction phase will be based upon percentage of work/inspections completed for each item in the approved schedule of values. DBF requisition for payment shall show a complete breakdown of the Project components, and the amount due, together with such supporting evidence, as may be required by the Project Manager (PM).

The City agrees that it will pay the DBF per Florida Statutes 218.735. If, at any time during the contract, the City shall not approve or accept the DBF's work product, and an agreement cannot be reached between the City and the DBF to resolve the problem to the City's satisfaction, the City shall negotiate with the DBF on a payment for the work completed and usable to the City. This negotiated payment shall be based on the overall task or project breakdown, relative to the percentage of work completed.

Payment of invoices from the DBF shall be retained by the City per Florida Statute 255.078, until the Project has obtained Final Completion, receipt of as-built, and been accepted by the City.

2.11 Payment Method

The City of Fort Lauderdale has implemented a Procurement Card (P-Card) program which changes how payments are remitted to its vendors. The City has transitioned from traditional paper checks to payment by credit card via MasterCard or Visa. This allows you as a vendor of the City of Fort Lauderdale to receive your payment fast and safely. No more waiting for checks to be printed and mailed. Payments will be made utilizing the City's P-Card (MasterCard or Visa). Accordingly, firms must presently have the ability to accept credit card payment or take whatever steps necessary to implement acceptance of a credit card before the commencement of a contract. See Contract Payment Method form attached.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

2.12 Price Proposal

A total Price Proposal (proposed Contract Price) shall be submitted on the Price Proposal Form. The Price Schedule breakdown shall consist of a Not-To-Exceed, Guaranteed Maximum Price (GMP) amount. The Price Proposal shall be based upon and include any and all costs or expenses to be incurred by the DBF in implementing, fulfilling and completing all aspects of the Design-Build Project. The information must include but is not limited to, the design, plans approval, permitting, construction and activation of the project in accordance with the requirements set forth in the City's Request for Proposals and the requirement of any and all agencies or organizations having jurisdiction for project review, permit approval or the design, construction, occupancy, activation, use or operation of the project, or use of the property on which the project is located.

The Price Proposal, in addition to all direct costs and expenses, shall include all other indirect costs and expenses including but not limited to, such costs as the Design-Builder's general, administrative and overhead costs, project management and supervisory costs, all fees, taxes, labor, direct and indirect payroll costs, insurance and bond costs, cost of equipment, materials, tools, transportation, and service fee (profit).

2.13 Bid Allowance/Reimbursable

Allowance for Permits: Payments will be made to the DBF based on the actual cost of permits upon submission of paid permit receipts. The City shall not pay for other costs related to obtaining or securing permits.

The amount indicated is intended to be sufficient to cover the entire project. If the City Permit fees exceed the allowance indicated, the City will reimburse the contractor the actual amount of City Permit Fees required for project completion.

Other Allowance: Allowance for labor, materials, equipment and services necessary for modification or extra work required to complete the Project because of unforeseeable conditions, unforeseeable conflicts between existing elements of work and the proposed work.

Allowance	\$
Other Allowance	\$50,000.00
Permit Fee Allowance	\$5,000.00
TOTAL	\$55,000.00

2.14 City Project Manager

The Project Manager is hereby designated by the City as, Daniel Fisher, P.M. II. The Project Manager will assume all duties and responsibilities and will have the rights and authorities assigned to the Project Manager in the Contract Documents in connection with completion of the work in accordance with this Agreement.

Any questions during the solicitation processes must be through BidSync or via the Procurement Point of Contact listed in this RFP.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

2.15 Liquidated Damages

LIQUIDATED DAMAGES (See Article 16, Liquidated Damages, of the Contract for details)
Upon failure of the DBF to complete the Work within the time specified for completion, the DBF shall pay to the City the sum of **One Thousand Dollars (\$1,000.00)** for each and every calendar day that the completion of the Work is delayed beyond the time specified in this Agreement for completion, as fixed and agreed liquidated damages and not as a penalty, so long as the delay is caused by the DBF. (See Article 16, Liquidated Damages Clause, of the Contract)

These amounts are not penalties but are liquidated damages to City for its inability to obtain full beneficial use of the Project.

2.16 Public Entity Crimes

Contractor, by submitting a proposal attests she/he/it has not been placed on the convicted vendor list. A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a proposal on a contract to provide any goods or services to a public entity, may not submit a proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit proposals on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for Category Two for a period of 36 months from the date of being placed on the convicted vendor list.

2.17 Work Schedule

Monday – Friday 7:00 am – 6:00 pm.

City Inspector hours are 8:00 a.m. to 4:30 p.m.

Any inspection requested by the DBF outside those hours will be considered overtime to be paid by the DBF.

Inspection Overtime Cost: \$100/hr.

2.18 Contract

The proposer to whom award is made shall execute a written contract to do the work and maintain the same in good repair until final acceptance by the proper authorities, and shall furnish good and sufficient bonds as specified within fifteen (15) days after receiving such contract for execution. If the bidder to whom the first award is made fails to enter into a contract as provided, the award may be annulled and the contract let to the next highest ranked bidder who is reliable, responsible, and responsive in the opinion of the City, and that proposer shall fulfill every stipulation and obligation as if such proposer were the original highest ranked bidder.

****END OF SECTION 2****

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

SECTION 3 SCOPE OF WORK

3.1 Project Objective

The CITY has issued this Request for Proposal (RFP) to solicit competitive proposals from a Design Build Firm (DBF) for the design, permitting, and construction of an 18" Force main Replacement across the N. River from NE 9th Street to North Birch Road.

The CITY owns, maintains and operates 4,420 linear feet of 18-inch diameter wastewater force main which includes approximately 500 feet of subaqueous crossing under the Atlantic Intracoastal Waterway (Atlantic ICW). The force main conveys flow from Pumping Station D-40 and the surrounding area east to the intersection of Middle River Drive and NE 9th Street where it connects to a 48-inch diameter force main. The CITY has access to the subaqueous crossing via 20-foot easements located on private properties with ID's 504201BH0010 and 504201BD0010. The CITY has experienced several pipeline failures over the years and has determined the force main needs to be replaced. It is critical to replace the existing upland force main and to construct a new subaqueous force main across the Atlantic Intracoastal Waterway and place it into service as soon as possible.

3.2 Project Scope

The selected DBF shall perform the complete design, permitting, and construction of all aspects of the PROJECT to fulfill the intent of the PROJECT as described in this Design Criteria Package (DCP) and all supporting documents. Included in the PROJECT is the acquisition of all tools, equipment, materials, and other supplies including but not limited to fuel, power, water, and communication devices required to complete the PROJECT. The work also includes the performance of all labor, work, and other operations required to complete the PROJECT. All work must be complete with all work, materials, and services not directly specified in the Contract Documents but necessary for the completion of the PROJECT to fulfill the intent of the CITY performed and installed by the DBF at no additional cost to the CITY above what is agreed upon in the Contract Documents.

PROJECT shall include:

1. New dual (two) 14-inch nominal diameter force main crossing of the Atlantic Intracoastal Waterway utilizing high density polyethylene pipe installed via horizontal directional drilling (HDD).
2. New 20-inch nominal diameter force main on Northeast 9th Street, Bayshore Drive, and Vistamar Street.
3. Cut, cap and abandon in place the existing 18-inch DIP force main along NE 9th Street.
4. Connect all proposed piping to the existing piping on-shore utilizing HDPE PE 4710 as indicated on the DCP Plans.
5. Installation of a 30-inch tidal valve, modification of existing structures and stormwater piping, regrading, paving and restoration of the parking lot, driveway and adjacent areas at 888 Intracoastal Boulevard.

Additional to the design, permitting, and construction of the PROJECT, the DBF is to perform inspections, construction certification, construction management, public involvement, and all associated work described in the DCP or as determined necessary by the DBF and confirmed by the CITY to fulfill the PROJECT intent. The terms and

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

conditions of the contract shall consist of the RFP documents including the DCP with all exhibits and attachments in addition to the proposal accepted by the CITY.

The DBF will be responsible for the complete design, any additional surveying, permit submittal packages and procurement of all required construction permits that have not been previously acquired by the CITY, construction phasing, dewatering, maintenance of traffic, public involvement, and all other related work/services.

This DCP conveys the minimum requirements of the CITY regarding the design, construction, maintenance of traffic operations, management, and scheduling of the PROJECT including any scheduling and coordination with local, county, and state governments and regulating agencies necessary to obtain permits for construction.

Project Background

Included in the technical specifications are the conceptual layouts of the new sanitary sewer force main which describe the intent of the PROJECT. The Respondent should prepare a response to the CITY's RFP based on this information.

The overall length of the new force main and exact tie-ins are to be determined by the selected DBF as a part of the scope of the PROJECT. Once selected, the DBF will hold complete responsibility for the design, permitting, and construction of all aspects of the PROJECT. Completed construction documents are to be developed by the selected DBF and follow all criteria outlined in this document. Additionally, the selected DBF will carry out all aspects of construction following the requirements set forth in this document and as regulated by all permits for the PROJECT.

Project Location

The project is located along NE 9th Street and is bound by Middle River Drive to the West and Bayshore Drive to the east.

3.3 Project Requirements

The selected DBF must use effective project management practices while working on the PROJECT. Included in project management is clear communication with the CITY and other parties involved in the PROJECT, management of time and resources, and documentation of all services and communication. Contract administration and technical reviews of all work pertaining to the PROJECT will be performed by the CITY.

Design and Construction Criteria

The selected DBF shall take a comprehensive and thorough technical approach to completing the design-build operation outlined for the PROJECT. Submitted technical proposals must convey that the DBF has a complete understanding of the PROJECT, its intent, and CITY objectives. Additionally, the technical proposal shall address the following items:

1. Completion of construction documents for the PROJECT which must have emergency contact information as required by the CITY.
2. Procurement of all required construction permits from local, state, and federal agencies including but not limited to the Florida Department of Transportation, South Florida Water Management District, Broward County Environmental Protection and Growth Management Department, Florida Department of

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

Environmental Protection, and the City of Fort Lauderdale. The DBF must develop permitting strategies and determine possible issues, testing requirements, and timing for the PROJECT.

3. Identification quality control/quality assurance measures to be performed for the PROJECT.
4. Production of signed and sealed record drawings following completion of construction of the PROJECT.

Detailed Description

The technical proposal submitted by the DBF shall demonstrate a comprehension of the following design aspects:

1. Local subsurface conditions and associated geotechnical data.
2. Open cut excavation and backfilling method of installing pipe.
3. HDD method of installing pipe.
4. Subaqueous pipeline crossings.
5. Connection of new pipe to existing, in-service utilities.
6. Landscaping and pavement restoration.
7. Maintenance of traffic operations.
8. Dewatering.

3.4 Governing Regulations

The selected DBF shall provide services in compliance with all regulations and guidelines created by the City of Fort Lauderdale, Broward County Environmental Protection and Growth Management Department, Broward County Health Department, South Florida Water Management District, Florida Department of Environmental Protection, and the Occupational Safety and Health Administration. These regulations and guidelines are to be followed by the selected DBF except where explicitly described in this document. The most recent editions of the following publications must be used for the completion of the PROJECT:

1. Broward County Environmental Protection and Growth Management Department – A Consulting Engineer's Guide for a Wastewater Collection/Transmission System Construction License Application:
<https://www.broward.org/EnvironmentAndGrowth/EnvironmentalProgramsResources/Applications/Documents/GuideWaterCollTransSysConstruction.pdf>
2. Florida Building Code: <https://www.floridabuilding.org/c/Default.aspx>

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

3. South Florida Water Management District – Environmental Resource Permit Information Manual:
https://www.sfwmd.gov/sites/default/files/documents/swerp_applicants_handbook_vol_ii.pdf
4. OSHA Regulations for Construction – Title 29, Part 1926, Construction Safety and Health Regulations, Code of Federal Regulations:
<https://www.osha.gov/laws-regs/regulations/standardnumber/1926>
5. OSHA Standards – Title 29, Part 1910, Occupational Safety and Health Standards, Code of Federal Regulations:
<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/>
6. Federal Highway Administration - Manual on Uniform Traffic Control Devices
<https://mutcd.fhwa.dot.gov/>

3.5 Services and Materials Provided by the City

1. The CITY or its designee will provide the services in the following list:
2. A project manager will represent the CITY as the technical representative of the PROJECT.
3. Review of submitted design for the PROJECT.
4. Construction observations and inspections of the PROJECT at will of the CITY.

3.6 Existing Underground Utility Information

There are existing underground utilities in the PROJECT site. Limited information on the location of these utilities has been provided in Exhibit D and Exhibit E. The CITY does not assume responsibility for the accuracy of the provided existing underground utility documents or liability if the locations of these utilities differ from the documents provided. It is the responsibility of the DBF to confirm actual location of existing underground utilities.

3.7 CADD Standards

All submitted design drawings for the PROJECT shall meet the standards set by the CITY in the “City of Fort Lauderdale Public Works Engineering & Architectural Department CADD Specifications for Project Drawings” (hereinafter referred to as CITY CADD Standards). The selected DBF will comply with the most recent edition of the CITY CADD Standards in place at the time of contract execution. Exhibit J includes a copy of the CITY CADD Standards.

The CITY has submitted permit applications needed for construction of the PROJECT and copies of obtained permits for the PROJECT are included in Exhibit H.

The permits found in Exhibit H may not be the only permits necessary to construct the PROJECT; it is the responsibility of the DBF to apply for and obtain all additional permits as necessary to construct the PROJECT.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

3.8 Topographic and Bathymetric Survey

A combined topographic and bathymetric survey of the limits of the PROJECT was completed by Longitude Surveyors, LLC and is included as Exhibit D. The CITY will provide an electronic copy of the CADD files of this survey to all RFP Respondents. Any additional survey as deemed necessary by the selected DBF will be the responsibility of the selected DBF. The selected DBF shall complete signed and sealed as-built documents and submit them to the CITY.

3.9 Benthic Characterization Survey

A benthic characterization survey of the PROJECT area was completed by APTIM Environmental & Infrastructure, Inc. A copy of this survey is included in Exhibit I. No additional benthic characterization will be required of the selected DBF.

3.10 Provisions for Utilities, Dewatering, Staging and Parking

The selected DBF will be required to pay for all utilities needed for the completion of the PROJECT.

The selected DBF shall only perform dewatering activities after acquiring all applicable permits from regulating agencies with jurisdiction in the PROJECT area. Any dewatering operations performed by the DBF must meet conditions of applicable permits. Any dewatering activities performed by the DBF without proper permits or without meeting permit conditions may result in punitive actions to the DBF by the CITY and Broward County.

The selected DBF will be responsible for the coordination of parking and staging area with the CITY prior to mobilization of equipment and crews into the area. Parking and staging areas must remain free of any form of refuse and the removal of any remaining refuse will be the responsibility of the selected DBF.

3.11 Project Meetings

The CITY shall require meetings throughout the PROJECT which require the participation of the CITY, selected DBF, all subcontractors, all sub consultants, representatives of governmental agencies with jurisdiction in the PROJECT area, and any others as requested by the CITY and/or DBF. All meetings shall be held at a central site that is convenient to all parties.

Following the written Notice to Proceed, the DBF shall coordinate with the CITY to hold a preconstruction meeting. All following meetings shall likewise be organized by the DBF upon instruction from the CITY. The DBF shall prepare meeting minutes.

3.12 Construction Duration / Time Frame

The selected DBF is expected to complete the PROJECT as expeditiously as possible. At minimum, the selected DBF must adhere to the following schedule as set by the CITY:

MILESTONE	CALENDAR DAYS FROM NOTICE TO PROCEED (COMPLETION DATE)
Assumed Notice to Proceed Date	TBD
Substantial Completion of PROJECT	180
Final Completion of PROJECT	220

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

Failure to meet milestones on the above schedule will result in liquidated damages to be paid by the selected DBF as described in the CITY's general conditions.

The selected DBF is responsible for obtaining all permits needed for the PROJECT not already obtained by the CITY. The procurement of permits is critical for the completion of the PROJECT and needs to be in consideration of the selected DBF.

END OF SECTION 3*

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

SECTION 4 SUBMITTAL REQUIREMENTS

Section IV – Submittal Requirements

4.1 Instructions

- 4.1.1** Although proposals are accepted 'hard copy' The City of Fort Lauderdale uses BIDSYNC (www.bidsync.com) to administer the competitive solicitation process, including but not limited to soliciting responses, issuing addenda, posting results and issuing notification of an intended decision. There is no charge to register and download the RFP from BIDSYNC. Offerors are strongly encouraged to read the various vendor Guides and Tutorials available in BIDSNYC well in advance of their intention of submitting a response to ensure familiarity with the use of BIDSYNC. The City shall not be responsible for an Offeror's inability to submit a response by the end date and time for any reason, including issues arising from the use of BIDSYNC.
- 4.1.2** Careful attention must be given to all requested items contained in this RFP. Consultants are invited to submit responses in accordance with the requirements of this RFP. Please read entire solicitation before submitting a proposal. Consultants must provide a response to each requirement of the RFP. Responses should be prepared in a concise manner with an emphasis on completeness and clarity. Consultant's notes, exceptions, and comments may be rendered on an attachment, provided the same format of this RFP text is followed.
- 4.1.3** All information submitted by DBF shall be typewritten or provided as otherwise instructed to in the RFP. DBFs shall use and submit any applicable or required forms provided by the City and attach such to their response. Failure to use the forms may cause the response to be rejected and deemed non-responsive.
- 4.1.4** Responses shall be submitted by an authorized representative of the firm. Responses must be submitted in the business entities name by the President, Partner, Officer or Representative authorized to contractually bind the business entity. Responses shall include an attachment evidencing that the individual submitting the response, does in fact have the required authority stated herein.
- 4.1.5** All responses will become the property of the City. In the event of Contract award, all documentation produced as part of the Contract shall become the exclusive property of the City. All proposals will become the property of the City. The Proposer's response to the RFP is a public record pursuant to Florida law, which is subject to disclosure by the City under the State of Florida Public Records Law, Florida Statutes Chapter 119.07 ("Public Records Law"). The City shall permit public access to all documents, papers, letters or other material submitted in connection with this RFP and the Contract to be executed for this RFP, subject to the provisions of Chapter 119.07 of the Florida Statutes. Any language contained in the Proposer's response to the RFP purporting to require confidentiality of any portion of the Proposer's response to the RFP, except to the extent that certain information is in the City's opinion a Trade Secret pursuant to Florida law, shall be void. If a Proposer submits any documents or other information to the City which the Proposer claims is Trade Secret information and exempt from Florida Statutes Chapter 119.07 ("Public Records Laws"), the Proposer shall clearly designate that

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

it is a Trade Secret and that it is asserting that the document or information is exempt. The Proposer must specifically identify the exemption being claimed under Florida Statutes 119.07. The City shall be the final arbiter of whether any information contained in the Proposer's response to the RFP constitutes a Trade Secret. The city's determination of whether an exemption applies shall be final, and the Proposer agrees to defend, indemnify, and hold harmless the city and the city's officers, employees, and agent, against any loss or damages incurred by any person or entity as a result of the city's treatment of records as public records. In the event of Contract award, all documentation produced as part of the Contract shall become the exclusive property of the City.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT. CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT: (954-828-5002, PRRCONTRACT@FORTLAUDERDALE.GOV, CITY CLERK'S OFFICE, 100 NORTH ANDREWS AVENUE, FORT LAUDERDALE, FLORIDA 33301)

DBF shall:

1. Keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the service.
2. Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes (2018), as may be amended or revised, or as otherwise provided by law.
3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of this contract if the Contractor does not transfer the records to the City.
4. Upon completion of the Contract, transfer, at no cost, to the City all public records in possession of the DBF or keep and maintain public records required by the City to perform the service. If the Contractor transfers all public records to the City upon completion of this Contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of this Contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology systems of the City.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

4.1.6 Number of Copies

Submitters must submit one **(1) original, and one (1) copy, plus four (4) electronic PDF copy on USB drives** in a sealed package delivered to: City of Fort Lauderdale, City Hall, Division of Procurement Services, 100 N. Andrews Avenue, Room 619, Fort Lauderdale, FL 33301. The name and address of the submitter should appear on the outside of the submittals and the package should include the RFP number and title. The submittal copy shall be identical in content. Submitter's cost incurred in responding to this RFP is the submitter's alone and the City does not accept liability for any such cost. The City will not and shall not be required to return any item submitted.

The DBF should concisely follow the format set out herein and provide all the information requested:

Proposer's must ensure that the package marked "Original" contains all documentation necessary to meet the requirements of this solicitation since the City will rely solely on the package marked "Original" to determine whether or not the Proposer has met the responsiveness and responsibility conditions of this solicitation. Failure to include any required documentation in the package marked "Original" will result in the Proposer being deemed nonresponsive and/or non-responsible, as applicable.

It is the sole responsibility of the Proposer to ensure their proposal is received on or before the date and time stated, in the specified number of copies and in the format stated herein.

4.2 Contents of Qualification Statement/Submittals:

The following information and documents are required to be provided with DBF response to this RFP. Failure to do so may deem your Proposal non-responsive or non-responsible. The City deems certain documentation and information important in the determination of responsiveness/responsibility, and for the purpose of evaluating responses. Responses should seek to avoid information in excess of that requested, must be concise, and must specifically address the issues of this RFP. The following checklist is not inclusive of all the information that may be necessary to properly evaluate the response and meet the requirements of the scope of work and/or specifications. Additional documents and information should be provided as deemed appropriate by the Proposer in response to specific requirements stated herein or through the RFP.

Table of Contents**4.2.1 Proposal Contact Person Information**

Indicate which firm/company is the Lead Design-Builder whose signature grants authority to bind submitter to the provisions of this RFP.

Identify the following:

- Legal name of proposer(s)
- Federal employee identification (FEIN) number
- Mailing address City State Zip
- Contact person's name
- Title

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

- Email address
- Phone number
- Fax number

Any firm/company qualifying as a minority entity to this RFP should also be identified in the same manner. If there are multiple firms proposed as one team, each firm must be identified.

4.2.2 Qualifications of the Firm

Business Structure

- Provide a brief introduction narrative letter highlighting the qualifications of the firm in providing the professional services as it relates specifically to the project;
- Corporations, Joint Ventures, LLC or Partnerships – submit a copy indicating when the corporation was organized as a legal entity in the State of Florida, corporation number.
- Any firm(s) involved in a joint venture in this Proposal will be evaluated individually. An executed copy of the joint venture agreement must be submitted with the proposal. Percentages of participation of fees must be clearly stated for each joint venture partner;
- Include copies of all active State of Florida professional licenses, including professional engineers, State of Florida certifications; State of Florida certified general contractors license with unlimited building classification, Review held by the Firm under Florida Law to provide the required services;
- Names of Key Personnel and Role in this project
- Name, title, name of firm, phone number, fax number, and email
- Demonstrate your firm's ability to comply with insurance requirements. Provide a previous certificate or other evidence listing the Insurance Companies names for both Professional Liability, General Liability, Automobile Liability, Worker's Compensation, and Professional Liability and/or Errors and Omissions, evidencing the dollar amounts of the coverage.
- Include proof of a previous performance and payment bond.

Financials

- List total annual billings for each of the past three (3) calendar years;

Firms Past Experience

Firms should submit any information they deem appropriate for evaluation of past performance with projects similar in nature to the one under consideration by the City.

- Title of example project;
- Location of example project;
- Client name/owner's representative name, address, phone number, and email;
- Date project started and completed or is anticipated to be completed; Point of contact name and organization which contracted the service who is very familiar with the project and the firm's performance and phone number and email;
- Brief description of Project relevance to this contract;
 - Original budget vs. Final cost
 - Principal elements and special features of the project.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

- Details of project value engineering; cost savings realized; innovative solutions; project time enhancement; value added efforts; etc.
- Present status of project.

4.2.3 Qualifications of the Team

The DBF must identify all design and construction disciplines and specialty consultants that the DBF intends to employ in the design and construction of this Project.

- Name and title of each proposed team member;
- Years' experience;
- Area of responsibility;
- Firm name and location;
- Education – provide information on the highest relevant academic degree(s) received and areas of specialization;
- Current professional registration; license(s)
- Provide information on any other professional qualifications relating to this contract such as publications, organizational memberships, certifications, training, awards, and foreign language capabilities;

Sub-consultant(s)

Consultant must clearly reflect in its Proposal any Sub-consultant proposed to be utilized along with a summary of their background and qualifications including but not limited to name of the sub-consultant, location of place of business, service(s) the sub-consultant will provide, license (if applicable), two (2) sub-consultant references, ownership, education, and experience. The City retains the right to accept or reject any Sub-consultant proposed.

Project Manager's Experience

Provide a comprehensive summary of the experience and qualifications of the individual(s) who will be selected to serve as the project managers overseeing the design and construction for the City. Individual(s) must have a minimum of five (5) years' experience in required discipline and have served as project manager on similar projects on a minimum of three (3) previous occasions. Include their related work experience and qualification and copies of active licenses and certifications. Include the length of tenure with Firm. All proposed Project Managers must be committed for the duration of the Project and must have the City's approval prior to replacement.

Example Projects

- Illustrate proposed team member's qualifications preferably where multiple team members worked together in the past five (5) years on similar projects including projects that involve design, permitting, and construction including:
 - Title and location of project
 - Year started and completed
 - Project owner, point of contact, point of contact phone number, and email
 - Initial cost of project and actual cost at completion
 - Brief description of project and relevance to this project.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

- Provide organizational chart of proposed team:
 - Indicate names and titles of all team members and the firm they are associated with.
- Resumes of key team members proposed for this project.

4.2.4 Project Methodology & Approach

- Provide a statement of the firms understanding of the project and methodology and approach to managing the project. Include a plan for completing the specified work including ability to meet time and budget requirements;
- Provide a conceptual design for the proposed Project. Include design, construction, planning, coordination, scheduling, maintainability and any other areas that utilize new or time saving techniques to accomplish the work in a timely manner without sacrificing quality. Include the maintainability of the water main and force main;
- Describe approach to minimizing impact to surrounding neighbors, businesses, and travelling public;
- Describe approach for minimizing lane closures, lanes reductions, maintenance of traffic (MOT) plan, and reducing traffic impacts;
- Describe means and methods for expediting project schedule;
- Provide information on your firm's current workload and how this project will fit into your workload;
- Describe available facilities, technological capabilities and other available resources you offer for the project.

4.2.5 References

The DBF shall have previous experience in the design, permitting, construction aspects of the project as describe in this RFP, of wastewater force mains and associated appurtenances, in the State of Florida within the last ten (10) years.

DBF shall have prior subaqueous boring crossing, horizontal directional drilling (HDD) and HDPE experience as the prime designer and contractor. DBF shall have public involvement experience as the prime contractor.

DBF shall submit proof of construction experience for a minimum of three (3) projects or any information they deem appropriate for evaluation of past performance with projects similar in scope and scale (or larger) to the one under consideration; and shall, for each project listed, include but not limited to:

- Client Name, address, contact person telephone, fax numbers, and email addresses.
- Project name and overall scope.
- Dates of construction.
- Description of work that was self-performed.
- Details of project value engineering; cost savings realized; innovative solutions; project time enhancement; value added efforts; etc.
- Total cost of the construction, estimated and actual.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

Note: Do not include City of Fort Lauderdale work or staff references as a demonstration of your capabilities. The Committee is interested in details of work experience and references other than the City of Fort Lauderdale.

Proposer's shall mark any pages of the Submittal it considers proprietary or confidential accordingly. Proposer shall state what proprietary or confidential governing law the Proposer is stating to claim such relief. Information will be treated as such by the City; provided, however, that the City cannot ensure that this information would not be subject to release pursuant to a public disclosure request. If a request for such information is received, the City will promptly notify the Proposer of such request and it shall be the Proposer's sole burden and responsibility to immediately seek and obtain such injunctive or other relief from the Courts and to immediately serve notice of the same upon the party requesting the public records.

4.2.6 Price Proposal Form

Proposer must submit the Price Proposal Form included in this RFP. In addition to submitting the required Price Proposal Form, the Proposer must include a separate Schedule of Values for each phase or task of work. This Schedule of Values and Price Proposal form shall also be submitted in electronic Microsoft Excel format with detailed breakouts of pricing and supporting calculations and organizational structure. The price proposal shall be based upon and include any and all costs or expenses to be incurred by the DBF in implementing, fulfilling and completing all aspects of the design-build project. The price proposal, in addition to all direct costs and expenses, shall include all other indirect costs and expenses including but not limited to, such costs as the design-builder's general, administrative and overhead costs, project management and supervisory costs, all fees, changes and taxes, labor, direct and indirect payroll costs, insurance and bond costs, cost of equipment, materials, tools, transportation, and service fee (profit).

4.2.7 Contract Forms

All contract forms must be completed (with all blanks filled in), and executed.

a. Statement of Qualification Certification

Complete and attach the Statement of Qualification Certification.

b. Non-Collusion Statement

This form is to be completed, if applicable, and inserted in this section.

c. Contract Payment Method

This form must be completed and returned with your proposal. Proposers must presently have the ability to accept these credit cards or take whatever steps necessary to implement acceptance of a card before the start of the contract term, or contract award by the City.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

- d. **Sample Insurance Certificate**
Demonstrate your firm's ability to comply with insurance requirements. Provide a previous certificate or other evidence listing the Insurance Companies names for both Professional Liability and General Liability and the dollar amounts of the coverage.
- e. **Non-Discrimination Certification Form**
- f. **Trench Safety**
- g. **Prime DBF Identification**
- h. **E-Verify Affirmation Statement**
- i. **Acknowledgment of Addenda**
- j. **Proposal Bond**

- 4.3** Before awarding a contract, the City reserves the right to require that a firm submit such evidence of his/her qualifications as the City may deem necessary. Further, the City may consider any evidence of the financial, technical, and other qualifications and abilities of a firm or principals, including previous experiences of same with the City and performance evaluation for services, in making the award in the best interest of the City.

****END OF SECTION 4****

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

SECTION 5 EVALUATION AND SELECTION CRITERIA

5.1 Evaluation Criteria and Scoring (100 Percentage)

Design-Build Team's responses to this RFP will be evaluated and ranked by an RFP Evaluation Committee. Submittals shall be evaluated based upon the information and references contained in the Proposals as submitted.

Qualifications of the Firm & the Team	35 Percent
Project Methodology, Approach & References	35 Percent
Price Proposal	30 Percent

5.2 EVALUATION PROCEDURE

Committee

Evaluation of the submittals will be conducted by an Evaluation Committee, consisting of a minimum of three (3) members of City Staff, or other persons selected by the City Manager or designee. All committee members must be present at scheduled evaluation meetings. Submittals shall be evaluated based upon the information and references contained in the Proposals as submitted. Any firm(s) involved in a joint venture in its Proposal will be evaluated individually, as each firm of the joint venture would have to stand on its own merits.

Scoring and Ranking

The City uses a mathematical formula to determine the scoring for each individual responsive and responsible firm based on the weighted criteria stated herein. Each evaluation committee member will rank each firm by criteria, giving their first ranked firm as number 1, the second ranked firm as number 2, and so on. The lowest final ranking score will determine the recommendation by the evaluation committee to the City Manager.

Clarification

During the evaluation process, the City has the right to require any clarification it needs in order to understand the DBF's view and approach to the project scope of the work. Any clarifications to the Proposal made before executing the contract will become part of the final DBF contract.

Negotiations

The City Manager or designee reserves the right to conduct contract negotiations with the selected responsible, responsive DBF. If successful, the DBF and City will enter into a contract for the work. All proposers are considered fully informed as to the intentions of the City regarding the timeframe to prepare and complete contract negotiations.

If the City is unable to negotiate a satisfactory design-build contract with the design-build firm considered to be the most qualified, negotiations with that design-build firm shall be formally terminated. Upon termination of said negotiations, negotiations shall then be undertaken with the second ranked firm, with this process being repeated until an agreement is reached which is then recommended and formally approved by the City Commission or until the short-list is exhausted in which case a new RFP may be undertaken.

The City may withdraw this RFP, reject qualifications or any portion thereof at any time prior to an award, and is not required to furnish a statement of the reason why a particular qualification was not deemed to be the most advantageous to the City.

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

Consult Design Criteria Professional

The City shall consult with the design criteria professional who prepared the package concerning evaluation of the proposals, approval of detail work and drawings for the project and compliance of project construction with the package.

Award

The City reserves the right to award a contract to that DBF who will best serve the interest of the City. The City reserves the right, based upon its deliberations and in its opinion, to accept or reject any or all submittals. The City also reserves the right to waive minor irregularities or variations of the submittal requirements and RFP process and any informality in any bid and to reject any or all bids. The City reserves the right to reduce or delete any of the bid items.

Upon award of a Contract, in accordance with Florida Statutes, by the City Commission, the City Manager is authorized to execute the Contract on behalf of the City.

At time of award of contract, the City reserves the right to set a guaranteed maximum price limit that may be expended on this project. Contract quantities of any or all items may be increased, reduced, or eliminated to adjust the contract amount to coincide with the amount of work necessary or to bring the contract value to within the established limit.

Exceptions

Any Proposer that objects to any element of the solicitation documents including but not limited to the RFP, DCP, drawings, construction time frame, sample agreement, general terms and conditions, etc. should state those objections in the submittal.

****END OF SECTION 5****

Bayshore Drive Intracoastal Force Main Crossing P-12389
RFP # 12374-906

SECTION 6 APPENDIX ATTACHMENTS

A) Design Criteria Package (DCP)

****END OF SECTION 6****

GENERAL CONDITIONS

Unless otherwise modified in the projects special conditions, the following General Conditions shall be part of the Contract:

GC - 01 - DEFINITIONS - The following words and expressions, or pronouns used in their stead, shall wherever they appear in the Contract and the Contract Documents, be construed as follows:

"Addendum" or "Addenda" - shall mean the additional Contract provisions issued in writing, by the Engineer, prior to the receipt of bids.

"Bid" – shall mean the offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

"Bidder" – shall mean any person, firm, company, corporation or entity submitting a Bid for the Work.

"Bonds" –shall mean Bid, performance and payment bonds and other instruments of security, furnished by Contractor and his surety in accordance with the Contract Documents.

"City" – shall mean the City of Fort Lauderdale, Florida, a Florida municipal corporation. In the event the City exercises its regulatory authority as a government body, the exercise of such regulatory authority and the enforcement of any rules, regulations, codes, laws and ordinances shall be deemed to have occurred pursuant to City's authority as a governmental body and shall not be attributable in any manner to the City as a party to this Contract. For the purpose of this Contract, "City" without modification shall mean the City Commission, and/or City Manager or his/her designee(s) as applicable.

"Construction Manager" - shall mean the Public Works Director or his/her designee.

"Construction Project Manager" - shall mean the Public Works Director or his/her designee.

"Consultant" – shall mean a person, firm, company, corporation or other entity employed by the City to perform the professional services for the project.

"Contract Work" - shall mean everything expressed or implied to be required to be furnished and furnished by the Contractor by any one or more of the parts of the Contract Documents referred to in the Contract hereof except Extra Work as hereinafter defined, it being understood that, in case of any inconsistency in or between any part or parts of this Contract, the Public Works Director shall determine which shall prevail.

"Design Documents" – shall mean the construction plans and specifications included as part of a Bid/Proposal Solicitation prepared either by the City or by the Consultant under a separate Agreement with the City.

"Engineer" - shall mean the Public Works Director or his/her designee.

"Extra Work" - shall mean work other than that required by the Contract.

"Inspector" – shall mean an authorized representative of the City assigned to make necessary inspections of materials furnished by Contractor and of the Work performed by Contractor.

"Notice" - shall mean written notice sent by certified United States Mail, return receipt requested, or sent by commercial express carrier with acknowledgement of delivery, or via fax or email, or by

GC-1

hand delivery with a request for a written receipt of acknowledgment of delivery and shall be served upon the Contractor either personally or to its place of business listed in the Bid.

"Owner" - shall mean the City of Fort Lauderdale.

"Project Manager" - shall mean the Public Works Director or his/her designee.

"Public Works Director" -shall mean the Public Works Director of the City of Fort Lauderdale, Florida or his/her designee(s).

"Site" - shall mean the area upon or in which the Contractor's operations are carried out and such other areas adjacent thereto as may be designated as such by the Public Works Director.

"Subcontractor" - shall mean any person, firm, company, corporation or other entity, other than employees of the Contractor, who or which contracts with the contractor, to furnish, or actually furnishes labor and materials, or labor and equipment, or labor, materials and equipment at the site.

"Surety" - shall mean any corporation or entity that executes, as Surety, the Contractor's performance and payment bond securing the performance of this Contract.

GC - 02 - SITE INVESTIGATION AND REPRESENTATION - The Contractor acknowledges that it has satisfied itself as to the nature and location of the Work under the Contract Documents, the general and local conditions of the Site, particularly those bearing upon availability of transportation, disposal, handling and storage of materials, availability of labor, water, electric power, and roads, the conformation and conditions at the ground based on City provided reports, the type of equipment and facilities needed preliminary to and during the prosecution of the Work and all other matters which can in any way affect the Work or the cost thereof under the Contract Documents.

The Contractor acknowledges that it has conducted extensive tests, examinations and investigations and represents and warrants a thorough familiarization with the nature and extent of the Contract Documents, the Work, locality, soil conditions, moisture conditions and all year-round local weather and climate conditions (past and present), and, in reliance on such tests, examination and investigations conducted by Contractor and the Contractor's experts, has determined that no conditions exist that would in any manner affect the Bid Price and that the project can be completed for the Bid Price submitted.

The Contractor, on its own, has made or caused to be made examinations, investigations, tests and studies of reports and related data in addition to those referred above, as Contractor deemed necessary to perform the Work at the Bid price set by the Contractor, within the contract time and in accordance with the other terms and conditions of the Contract Documents and the Bid made by the Contractor; and no additional examinations, investigations, tests, reports or similar data are, or will be, required by Contractor to assure that the Work can be done at the Bid price set by the Contractor.

The Contractor further acknowledges that it has satisfied itself based on any geotechnical reports the City may provide and inspection of the project Site as to the character, quality, and quantity of surface and subsurface materials to be encountered from inspecting the site and from evaluating information derived from exploratory work that may have been done by the City or included in the

Contract Documents and finds and has further determined that no conditions exist that would in any manner affect the Bid price and that the project can be completed for the Bid price submitted..

Any failure by the Contractor to acquaint itself with all the provided information and information obtained by visiting the project Site will not relieve Contractor from responsibility for properly estimating the difficulty or cost thereof under the Contract Documents. In the event that the actual subsurface conditions vary from the actual City provided reports, the Contractor shall notify the City and the Contract amount may be adjusted depending on the conditions, at the approval of the City.

GC - 03 - SUBSTITUTIONS - If the Contractor desires to use materials and/or products of manufacturer's names different from those specified in the Contract Documents, the Bidder requesting the substitution shall make written application as described herein. The burden of proving the equality of the proposed substitution rests on the Bidder making the request. To be acceptable, the proposed substitution shall meet or exceed all expressed requirements of the Contract Documents and shall be submitted upon the Contractor's letterhead, in addition to the "Contractor's Request for Substitution" form provided by the Public Works Director. The following requirements shall be met in order for the substitution to be considered:

1. Requests for substitution shall reach the Public Works Director no less than ten (10) Working Days prior to the date set for opening of Bids; and
2. Requests for substitution shall be accompanied by such technical data, as the party making the request desires to submit. The Public Works Director will consider reports from reputable independent testing laboratories, verified experience records from previous users and other written information valid in the circumstances; and
3. Requests for substitution shall completely and clearly indicate in what respects the materials and/or products differ from those indicated in the Contract Documents; and
4. Requests for substitution shall be accompanied by the manufacturer's printed recommendations clearly describing the installation, use and care, as applicable, of the proposed substitutions; and
5. Requests for substitution shall be accompanied by a complete schedule of changes in the Contract Documents, if any, which must be made to permit the use of the proposed substitution; and

If a proposed substitution is approved by the Public Works Director, an Addendum will be issued to prospective bidders not less than three (3) working days prior to the date set for opening of Bids. Unless substitutions are received and approved as described above, the successful Bidder shall be responsible for furnishing materials and products in strict accordance with the Contract Documents.

GC - 04 - CONTROL OF THE WORK - The Public Works Director shall have full control and direction of the Work in all respects. The Public Works Director and/or his authorized designee(s) shall, at all times, have the right to inspect the Work and materials. The Contractor shall furnish all reasonable facilities for obtaining such information, as the Public Works Director may desire respecting the quality of the Work and materials and the manner of conducting the Work. Should the Contractor be directed or permitted to perform night Work, or to vary the period which work is ordinarily carried on in the daytime, he shall give ample notice to the Public Works Director so that proper and adequate inspection may be provided. Such Work shall be done only under such regulations as are furnished in writing by the Public Works Director, and no extra compensation shall be allowed to the Contractor therefore. In the event of night work, the Contractor shall furnish such light, satisfactory to the Public Works Director, as will insure proper inspection. Nothing

GC-3

herein contained shall relieve the Contractor from compliance with any and all City ordinances relating to noise or Work during prohibited hours.

The Contractor shall keep the Public Works Director informed, a reasonable time in advance, as to his need for grades and lines in order that the same may be furnished and all necessary measurements made for records and for payment with the minimum of inconvenience to the Public Works Director or of delay to the Contractor. The Contractor shall submit to the Public Works Director or Inspector on the job a written request outlining the streets, etc., for which the Contractor desires lines and grades. It is the intention not to delay the Work for the giving of lines and grades, but when necessary, work operations shall be suspended for such reasonable time as the Public Works Director may require for this purpose. However, such cost increases shall be authorized either by the City Manager and/or designee, or the City Commission based upon the purchasing threshold amounts provided for in Chapter 2 of the City of Fort Lauderdale's Code of Ordinances.

GC - 05 - SUBCONTRACTOR - The Contractor shall not sublet, in whole or any part of the Work without the written consent and approval of the Public Works Director. Within ten (10) days after official notification of starting date, the Contractor must submit in writing, to the Public Works Director, a list of all Subcontractors. No Work shall be done by any Subcontractor until such Subcontractor has been officially approved by the Public Works Director. A subcontractor not appearing on the original list will not be approved without written request submitted to the Public Works Director and approved by the Public Works Director. In all cases, the Contractor shall give his personal attention to the Work of the Subcontractors and the Subcontractor is liable to be discharged by the Contractor, at the direction of the Public Works Director, for neglect of duty, incompetence or misconduct.

Acceptance of any Subcontractor, other person, or organization by the Public Works Director shall not constitute a waiver of any right of Public Works Director to reject defective Work or Work not in conformance with the Contract Documents.

Contractor shall be fully responsible for all acts and omissions of his Subcontractors and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts any of them may be liable to the same extent that he is responsible for the acts and omissions of persons directly employed by him. Nothing in the Contract Documents shall create any contractual relationship between City and any Subcontractor or other person or organization having a direct contract with Contractor, nor shall it create any obligation on the part of City to pay or to see to the payment of any moneys due to any Subcontractor or other person, or organization, except as may otherwise be required by law.

GC - 06 - QUANTITIES - It is mutually agreed that the proposal shows the approximate amounts only along with the Plans and the general location. It is also mutually agreed that no change will be made involving any departure from the general scheme of the Work and that no such change involving a material change in cost, either to the City or Contractor, shall be made, except upon written permission of the City. However, the Public Works Director shall have the right to make minor alternations in the line, grade, plan, form or materials of the Work herein contemplated any time before the completion of the same. That if such alterations shall diminish the quantity of the Work to be done, such alterations shall not constitute a claim for damages or anticipated profits. That if such alterations increase the amount of the Work to be done, such increase shall be paid for according to the quantity actually performed and at the unit price or prices stipulated therefore in the Contract.

The City shall, in all cases of dispute, determine the amount or quantity of the several kinds of Work which are to be paid for under this Contract, and shall decide all questions relative to the execution of the same, and such estimates and decisions shall be final and binding.

Any Work not herein specified, which might be fairly implied as included in the Contract, of which the City shall judge, shall be done by the Contractor without extra charge. However, such cost increases shall be authorized either by the City Manager and/or designee, or the City Commission based upon the purchasing threshold amounts provided for in Chapter 2 of the City of Fort Lauderdale's Code of Ordinances.

GC-07 - NO ORAL CHANGES - Except to the extent expressly set forth in the Contract, no change in or modification, termination or discharge of the Contract in any form whatsoever, shall be valid or enforceable unless it is in writing and signed by the parties charged, therewith or their duly authorized representative.

GC - 08 - PERMITS AND PROTECTION OF PUBLIC – Permits on file with the City and or those permits to be obtained shall be considered directive in nature and will be considered a part of this Contract. A copy of all permits shall be given to the City and become part of the Contract Documents. Terms of permits shall be met prior to acceptance of the Work and release of the final payment.

The Contractor shall be required to observe all the ordinances in relation to obtaining permits for occupying, excavating, or in any way obstructing the streets and alleys. He shall erect and maintain barricades and sufficient safeguards around all excavations, embankments or obstructions; he shall place sufficient warning lights at or near the Work; keep the same burning from sunset to sunrise, employ watchmen, and strictly obey all laws and ordinances controlling or limiting those engaged in similar work.

Where there are telephones, light or power poles, water mains, conduits, pipes or drains or other construction, either public or private, in or on the streets or alleys, the Work shall be so conducted that no interruption or delay will be caused in the operation or use of the same. Proper written notice shall be given, and all the facilities, afforded the owners of such construction encountered or likely to be encountered, as will enable them to preserve the same from injury.

The Contractor shall not be permitted to interfere with public travel and convenience by grading or tearing up streets indiscriminately, but the Work of constructing the various items in this contract shall proceed in an orderly, systematic and progressive manner.

Contractor shall not load nor permit any part of any structure to be loaded with weights that will endanger the structure, nor shall he subject any part of the Work to stresses or pressures that will endanger it.

Where lifting operations involving the use of specialized cranes are required as part of construction, Contractor must make undertake the following investigation and submit the results and documentation to the Engineer prior to commencing any lifting operations: marking a very specific area in the field for the placement of the crane; a drawing showing the limitations of the job operation (i.e. not over adjacent properties or pedestrian and high vehicular traffic areas); underground utility exploration in the vicinity of the crane location, which may include ground penetrating radar to identify voids or old pipe or other subsurface features that could lead to sudden failure; assessment of the underlying soil and roadway materials and a worst case analysis based on entire load being distributed on just one or two outriggers; provision of properly sized pads under the outriggers; loading charts from manufacturer showing allowable configurations/loads; and inspection to make sure crane operation is in accordance with the permit conditions.

GC-5

GC - 09 - DISEASE REGULATIONS - The Contractor shall enforce all sanitary regulations and take all precautions against infectious diseases as the Public Works Director may deem necessary. Should any infectious or contagious diseases occur among his employees, he shall arrange for the immediate removal of the employee from the Site and isolation of all persons connected with the Work.

GC - 10 - CONTRACTOR TO CHECK PLANS, SPECIFICATIONS, AND DATA - The Contractor shall verify all dimensions, quantities, and details shown on the plans, supplementary drawings, schedules, or other data received from the Public Works Director, and shall notify the Public Works Director of all errors, omissions, conflicts and discrepancies found therein within three (3) working days of discovery. Failure to discover or correct errors, conflicts, or discrepancies shall not relieve the Contractor of full responsibility for unsatisfactory Work, faulty construction, or improper operation resulting there from nor from rectifying such condition at his own expense.

GC - 11 - SUPPLEMENTARY DRAWINGS - When, in the opinion of the Public Works Director, it becomes necessary to explain more fully the Work to be done, or to illustrate the work further, or to show any changes which may be required, drawings, known as supplementary drawings, with specifications pertaining thereto, will be prepared by the Public Works Director and copies will be given to the Contractor.

The supplementary drawings shall be binding upon the Contractor with the same force as the original Plans. Where such supplementary drawings require either less or more than the estimated quantities of work, credit to the City or compensations therefore to the Contractor shall be subject to the terms of the Contract.

GC - 12 - MATERIALS AND WORKMANSHIP - All material and workmanship shall, in every respect, be in conformity with approved modern practice and with prevailing standards of performance and quality. In the event of dispute the Public Works Director's decision shall be final. Wherever the Plans, specifications, Contract Documents, or the directions of the Public Works Director are unclear as to what is permissible and/or fail to note the quality of any Work, that interpretation will be made by the Public Works Director, which is in accordance with approved modern practice, to meet the particular requirements of the Contract.

In all cases, new materials shall be used, unless this provision is waived by notice from the City in writing.

GC - 13 - SAFEGUARDING MARKS - The Contractor shall safeguard all points, stakes, grade marks, monuments, and bench marks made or established on the Work, bear the cost of re-establishing same if disturbed, or bear the entire expense of rectifying Work improperly installed due to not maintaining or protecting or for removing without authorization, such established points, stakes and marks. The Contractor shall safeguard all existing and known property corners, monuments and marks not related to the Work and, if required, shall bear the cost of having them re-established by a licensed surveyor if disturbed or destroyed during the course of construction.

GC - 14 - EXISTING UTILITY SERVICE - All existing utility service shall be maintained with a minimum of interruption at the expense of the Contractor.

GC - 15 - JOB DESCRIPTION SIGNS – Contractor, at Contractor's expense, shall furnish, erect, and maintain suitable weatherproof signs on jobs over \$100,000 containing the following information:

1. City Seal (in colors)

GC-6

2. Project or Improvement Number
3. Job Description
4. Estimated Cost
5. Completion Date

Minimum size of sign shall be four feet high, eight feet wide and shall be suitably anchored. The entire sign shall be painted and present a pleasing appearance. Exact location of signs will be determined in the field. Two (2) signs will be required, one at each end of the job. All costs of this work shall be included in other parts of the work.

GC - 16 - FLORIDA EAST COAST RIGHT-OF-WAY - Whenever a City contractor is constructing within the Florida East Coast Railway Company's Right-of-Way, it will be mandatory that the contractor carry separate bodily injury and property damage insurance in the amounts as stated below. This insurance shall be taken out and maintained during the life of the Contract.

Bodily injury insurance in an amount not less than \$500,000.00 for injuries, including wrongful death to any one person, and subject to the same limit for each person, in an amount not less than \$1,000,000.00 on account of any one occurrence, and

Property damage insurance in an amount not less than \$500,000.00 for damages on account of any one occurrence and in an amount not less than \$1,000,000.00 for damages on account of all occurrences.

GC - 17 - ACCIDENTS - The Contractor shall provide such equipment and facilities as are necessary and/or required, in the case of accidents, for first aide services to be provided to a person who may be injured during the project duration. The Contractor shall also comply with the OSHA requirements as defined in the United States Labor Code 29 CFR 1926.50.

In addition, the Contractor must report immediately to the Public Works Director every accident to persons or damage to property, and shall furnish in writing full information, including testimony of witnesses regarding any and all accidents.

GC - 18 - SAFETY PRECAUTIONS - Contractor must adhere to the applicable environmental protection guidelines for the duration of a project. If hazardous waste materials are used, detected or generated at any time, the Project Manager must be immediately notified of each and every occurrence. The Contractor shall comply with all codes, ordinances, rules, orders and other legal requirements of public authorities (including OSHA, EPA, DERM, the City, Broward County, State of Florida, and Florida Building Code), which bear on the performance of the Work.

The Contractor shall take the responsibility to ensure that all Work is performed using adequate safeguards, including but not limited to: proper safe rigging, safety nets, fencing, scaffolding, barricades, chain link fencing, railings, barricades, steel plates, safety lights, and ladders that are necessary for the protection of its employees, as well as the public and City employees. All riggings and scaffolding shall be constructed with good sound materials, of adequate dimensions for their intended use, and substantially braced, tied or secured to ensure absolute safety for those required to use it, as well as those in the vicinity. All riggings, scaffolding, platforms, equipment guards, trenching, shoring, ladders and similar actions or equipment shall be OSHA approved, as applicable, and in accordance with all Federal, State and local regulations.

GC-7

GC - 19 - DUST PREVENTION - The Contractor shall, by means of a water spray, or temporary asphalt pavement, take all necessary precautions to prevent or abate a dust nuisance arising from dry weather or Work in an incomplete stage. All costs of this Work shall be included in cost of other parts of the Work.

Should the Contractor fail to abate a dust nuisance by the above methods, and then he will be required to immediately construct temporary patches per City standards.

GC - 20 - PLACING BARRICADES AND WARNING LIGHTS - The Contractor shall furnish and place, at his own expense, all barricades, warning lights, automatic blinker lights and such devices necessary to properly protect the work and vehicular and pedestrian traffic. Should the Contractor fail to erect or maintain such barricades, warning lights, etc., the Public Works Director may, after 24 hours' notice to the Contractor, proceed to have such barricades and warning lights placed and maintained by City or other forces and all costs incurred thereof charged to the Contractor and may be retained by the City from any monies due, or to become due, to the Contractor.

GC - 21 - TRAFFIC CONTROL - The Contractor shall coordinate all Work and obtain, through the City's Transportation and Mobility Department, Broward County, Florida Department of Transportation, as applicable, any permits required to detour traffic or close any street before starting to work in the road. The following section: Part VI Traffic Controls for Street and Highway Construction and Maintenance Operations, MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, U.S. Department of Transportation Federal Highway Administration, 2009, or current edition, shall be used as a guide for requirement and placement of traffic control devices, signs and barricades. The Public Works Director shall determine requirements for the above. The above publication is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. In the event that a Maintenance of Traffic (MOT) Plan is required, the Plan shall be prepared by an A.A.S.T.A. certified technician.

All traffic control devices, flashing lights, signs and barricades shall be maintained in working condition at all times.

GC - 22 - COORDINATION - The Contractor shall notify all utilities, transportation department, etc., in writing, with a copy to the Public Works Director before construction is started and shall coordinate his Work with them. The Contractor shall cooperate with the owners of any underground or overhead utility lines in their removal, construction and rearrangement operations in order that services rendered by these parties will not be unnecessarily interrupted.

The Contractor shall arrange his Work and dispose of his materials so as to not interfere with the operation of other Contractors engaged upon adjacent work and to join his Work to that of others in a proper manner and to perform his Work in the proper sequence in relation to that of other Contractors all as may be directed by the Public Works Director.

Each Contractor shall be responsible for any damage done by him or his agents to the work performed by another Contractor.

The Contractor shall contact the Broward County Transportation Department and the Florida Department of Transportation, as applicable, to verify and obtain location of any and all traffic conduits, loops, and street light underground services.

GC - 23 - WATER - Bulk water used for construction, flushing pipelines, and testing shall be obtained from fire hydrants. Contractor shall make payment for hydrant meter at Treasury Billing Office, 1st Floor, City Hall, 100 N. Andrews Avenue. With the paid receipt, contractor can pick up hydrant meter at the utility location office. No connection shall be made to a fire hydrant without a meter connected.

GC - 24 - PROHIBITION AGAINST CONTRACTING WITH SCRUTINIZED COMPANIES - Subject to Odebrecht Construction, Inc., v. Prasad, 876 F.Supp.2d 1305 (S.D. Fla. 2012), affirmed, Odebrecht Construction, Inc., v. Secretary, Florida Department of Transportation, 715 F.3d 1268 (11th Cir. 2013), with regard to the "Cuba Amendment," the Contractor certifies that it is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2018), that it is not engaged in a boycott of Israel, and that it does not have business operations in Cuba or Syria, as provided in section 287.135, Florida Statutes (2018), as may be amended or revised. The City may terminate this Agreement at the City's option if the Contractor is found to have submitted a false certification as provided under subsection (5) of section 287.135, Florida Statutes (2018), as may be amended or revised, or been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2018), or is engaged in a boycott of Israel or has been engaged in business operations in Cuba or Syria, as defined in Section 287.135, Florida Statutes (2018), as may be amended or revised.

GC - 25 - LOCATION OF UNDERGROUND FACILITIES - If the Proposer, for the purpose of responding to this solicitation, requests the location of underground facilities through the Sunshine State One-Call of Florida, Inc. notification system or through any person or entity providing a facility locating service, and underground facilities are marked with paint, stakes or other markings within the City pursuant to such a request, then the Proposer shall be deemed non-responsive to this solicitation in accordance with Section 2-184(5) of the City of Fort Lauderdale Code of Ordinances.

GC - 26 - USE OF FLORIDA LUMBER TIMBER AND OTHER FOREST PRODUCTS - In accordance with Florida Statute 255.20 (3), The City specifies that lumber, timber, and other forest products used for this project shall be produced and manufactured in the state of Florida if such products are available and their price, fitness, and quality are equal. This requirement does not apply to plywood specified for monolithic concrete forms, if the structural or service requirements for timber for a particular job cannot be supplied by native species, or if the construction is financed in whole or in part from federal funds with the requirement that there be no restrictions as to species or place of manufacture.

The Bidder affirms by submitting a bid response to this solicitation that they will comply with section 255.20 (3) Florida Statutes.

GC - 27 - PUBLIC RECORDS/TRADE SECRETS/COPYRIGHT: The Proposer's response to the Solicitation is a public record pursuant to Florida law, which is subject to disclosure by the City under the State of Florida Public Records Law, Florida Statutes Chapter 119.07 ("Public Records Law"). The City shall permit public access to all documents, papers, letters or other material submitted in connection with this Solicitation and the Contract to be executed for this Solicitation, subject to the provisions of Chapter 119.07 of the Florida Statutes.

Any language contained in the Proposer's response to the Solicitation purporting to require confidentiality of any portion of the Proposer's response to the Solicitation, except to the extent that certain information is in the City's opinion a Trade Secret pursuant to Florida law, shall be void. If a Proposer submits any documents or other information to the City which the Proposer

claims is Trade Secret information and exempt from Florida Statutes Chapter 119.07 ("Public Records Laws"), the Proposer shall clearly designate that it is a Trade Secret and that it is asserting that the document or information is exempt. The Proposer must specifically identify the exemption being claimed under Florida Statutes 119.07. The City shall be the final arbiter of whether any information contained in the Proposer's response to the Solicitation constitutes a Trade Secret. The City's determination of whether an exemption applies shall be final, and the proposer agrees to defend, indemnify, and hold harmless the City and the City's officers, employees, and agent, against any loss or damages incurred by any person or entity as a result of the City's treatment of records as public records. Proposals purporting to be subject to copyright protection in full or in part will be rejected.

EXCEPT FOR CLEARLY MARKED PORTIONS THAT ARE BONA FIDE TRADE SECRETS PURSUANT TO FLORIDA LAW, DO NOT MARK YOUR RESPONSE TO THE SOLICITATION AS PROPRIETARY OR CONFIDENTIAL. DO NOT MARK YOUR RESPONSE TO THE SOLICITATION OR ANY PART THEREOF AS COPYRIGHTED.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

Telephone Number: (954) 828-5002

Mailing Address: City Clerk's Office
100 N. Andrews Avenue
Fort Lauderdale, FL 33301

E-mail: prcontract@fortlauderdale.gov

Contractor shall:

1. Keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the service.
2. Upon request from the City's custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes (2018), as may be amended or revised, or as otherwise provided by law.
3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of this contract if the Contractor does not transfer the records to the City.
4. Upon completion of the Contract, transfer, at no cost, to the City all public records in possession of the Contractor or keep and maintain public records required by the City to perform the service. If the Contractor transfers all public records to the City upon completion of this Contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure

requirements. If the Contractor keeps and maintains public records upon completion of this Contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology systems of the City.

GC-11

PRICE PROPOSAL FORM
RFP # 12374-906 DESIGN-BUILD SERVICES FOR
Bayshore Drive Intracoastal Force Main Crossing P12389

DESIGN

- | | |
|--------------------------------|-----------------|
| 1. Design Development | \$ _____ |
| 2. Construction Administration | \$ _____ |
| SUB-TOTAL DESIGN COSTS | \$ _____ |

CONSTRUCTION***GENERAL***

- | | |
|--------------------------------|----------|
| 3. Mobilization/Demobilization | \$ _____ |
| 4. Maintenance of Traffic | \$ _____ |
| 5. Restoration | \$ _____ |

FORCEMAIN

- | | |
|--|----------|
| 6. 20-Inch On-Shore Piping – Open Cut | \$ _____ |
| 7. 20-Inch On-Shore Piping – On Shore Directional Drill | \$ _____ |
| 8. 14-Inch HDPE Pipeline – Subaqueous Directional Drill | \$ _____ |
| 9. ALTERANTE - Slip Line Existing 18-inch Forcemain | \$ _____ |
| (Item 9 will replace all work associated with Item 8 in alternate bid) | |
| 10. Abandon Existing 18-inch Forcemain | \$ _____ |

STORMWATER AND DRAINAGE IMPROVEMENTS

- | | |
|--|-----------------|
| 11. Stormwater Improvements | \$ _____ |
| 12. Grading and Paving on Private Property | \$ _____ |
| 13. Parking Lot Modification on Private Property | \$ _____ |
| SUBTOTAL CONSTRUCTION COSTS | \$ _____ |

PERMIT AND ADDITIONAL ALLOWANCES

14. Permit Fee	<u>\$5,0000</u>
15. Additional Labor Allowance	<u>\$25,000.00</u>
16. Additional Material Allowance	<u>\$25,000.00</u>

SUBTOTAL PERMIT AND ADDITIONAL ALLOWANCES \$ 55,000.00

(For both Design and Construction)

TOTAL BID – Design, Construction, and Permit Allowance Costs (proposed “Contract Price”) – DO NOT INCLUDE ITEM NO. 9 IN BID

(IN WORDS)

\$ _____
(FIGURES)

ALTERNATE - TOTAL BID – Design, Construction, and Permit Allowance Costs (proposed “Contract Price”) – DO NOT INCLUDE ITEM NO. 8 IN BID

(IN WORDS)

\$ _____
(FIGURES)

1. The prices listed in the Price Proposal Form shall include the total cost to complete the Work including but not limited to materials, labor, equipment, profit, bonds, insurances, etc., as necessary to ensure proper execution of the design-build services and product requested by the City of Fort Lauderdale. Any pricing, quantities, costs or services that are not listed above, and are known to be required, must be added by the Proposer and listed on a separate sheet and included in the total.
2. I hereby certify that I am authorized to act on behalf of the firm, individual, partnership, corporation or association making this proposal and that all statements made in this document are true and correct to the best of my knowledge. I agree to hold this proposal open for a period of one hundred and eighty (180) days from the deadline for receipt of proposals.
3. I understand and agree to be bound by the conditions contained in the Request for Proposal and shall conform with all requirements of the Request for Proposal.

Name: (Please Print)

Proposer Signature

Title:

Date:

AGREEMENT

between

CITY OF FORT LAUDERDALE

and

for

REQUEST FOR PROPOSAL NO. 12374-906**DESIGN/BUILD SERVICES FOR****BAYSHORE DRIVE INTRACOASTAL FORCE MAIN CROSSING**(Bayshore Drive Intracoastal across the North River from 9th street to North Birch Road)**PROJECT NO. 12389**

This Agreement made and entered into this _____ day of _____, 2020 between the CITY OF FORT LAUDERDALE, a municipal corporation of the State of Florida, hereinafter referred to as "CITY" and _____, a Florida corporation, its successors and assigns, hereinafter referred to as "DESIGN/BUILD FIRM."

WITNESSETH, in consideration of the mutual terms and conditions, promises, covenants and payments hereinafter set forth, CITY and DESIGN/BUILD FIRM agree as follows:

ARTICLE 1 – DEFINITIONS AND IDENTIFICATIONS

For the purposes of this Agreement and the various covenants, conditions, terms and provisions which follow, the definitions set forth below are assumed to be true and correct and are agreed upon by the parties.

Agreement - This document, inclusive and including all exhibits and documents that are expressly incorporated by reference.

Applicable Laws - All federal, state, county, and local statutes, codes, laws, rules, regulations, ordinances, orders and standards applicable to the Project and any other such law hereafter enacted, and any rules adopted pursuant thereto, as all such laws may be amended from time to time to perform the Work.

Change Order - A written document ordering a change in the Not to Exceed Price or Contract Time or a material change in the Work.

CITY - The CITY (or Owner) shall mean the City of Fort Lauderdale, a Florida municipal corporation, having its principal offices at 100 North Andrews Avenue, Fort Lauderdale, Florida 33301, which is a party hereto and/or for which this Agreement is to be performed. In all respects hereunder, CITY's performance is pursuant to CITY's position as the owner of a construction project. In the event CITY exercises its regulatory authority as a governmental body, the exercise of such regulatory authority and the enforcement of any rules, regulations, laws and ordinances shall be deemed to have occurred pursuant to the CITY's regulatory authority as a governmental body and shall not be attributable in any manner to CITY as a party to this Agreement.

City Commission - City Commission shall mean the governing and legislative body of the CITY.

City Manager - City Manager shall mean the Chief Administrative Officer of the CITY.

Construction Documents Phase - The phase in which DESIGN/BUILD FIRM will consult with Project Manager and prepare the Construction Documents for the Project, based upon the information provided in the Emergency Procurement Proposal (RFP), for review and approval of the CITY (including, without limitation, any and all applicable CITY departments) and any applicable regulatory agencies.

Construction Manager - The Construction Manager is the authorized individual or firm which is the representative of the DESIGN/BUILD FIRM, who/which will administer/manage the construction effort on behalf of the DESIGN/BUILD FIRM.

Construction Phase - The phase which constitutes DESIGN/BUILD FIRM's administration of the construction of the Project and all activities necessary for the completion of the Project.

Consultant - The person or entity who is a registered architect, professional engineer, professional land surveyor, and/or registered landscape architect having a contract with DESIGN/BUILD FIRM to provide professional services for the design of the Project, and who is licensed by the State of Florida to provide said services.

Contract Documents - This Agreement, as approved by the Mayor and City Commission and its exhibits, attachments and forms, any addenda, performance bond and payment bond, plans and specifications (as approved and permitted) as prepared by the DESIGN/BUILD FIRM in accordance with the information provided in the RFP, Notice of Award, Notice(s) to Proceed, and any and all agreed upon contract and/or design modifications, including but not limited to change orders; Project schedule; a schedule of values, and any additional documents the submission of which is required by this Agreement. When reference is made in the Contract Documents to publications, standards or codes issued by associations or societies, the intent shall be to specify

the current or adopted edition of such publication or standard including revision in effect on the date of the application of all applicable permits.

Contract Time - The time between the Project Initiation Date specified in the Notice to Proceed and final completion, including any milestone dates thereof, established in the Agreement, as may be amended by Change Order.

Contract Price - The Not to Exceed Price agreed to between DESIGN/BUILD FIRM and the CITY. The Contract Price is not subject to increase, except as expressly allowed within the Contract Documents.

Design/Build Firm - **Murphy Pipeline Contractors, Inc.**, its successors and assigns, is the DESIGN/BUILD FIRM selected to perform the Work pursuant to this Agreement, and is the person, firm or corporation liable for the acceptable performance of, and payment of, all legal debts pertaining to the Project. All references in the Contract Documents to third parties under contract or control of DESIGN/BUILD FIRM shall be deemed to be a reference to DESIGN/BUILD FIRM. The DESIGN/BUILD FIRM will be responsible for the provision, installation, and performance of all equipment, materials, services and Work. The DESIGN/BUILD FIRM is in no way relieved of the responsibility for the performance of all equipment furnished.

RFP – Emergency Procurement Proposal responded to on December 30, 2019.

Field Order or Supplemental Instruction - A written order for minor changes or interpretations of the Contract Documents but which does not involve a change in the Not to Exceed or Contract Time.

Final Completion - The date certified by the Project Manager that all conditions of the permits and regulatory agencies have been met; all construction, including corrective and punch list work, has been performed and accepted by the CITY; all administrative requirements of the Contract Documents have been completed; and CITY has received from DESIGN/BUILD FIRM all necessary documentation, as deemed required by the CITY including, but not limited to, the following: all final releases of liens, consent of surety, release of claims by DESIGN/BUILD FIRM, correct as-built drawings, a final bill of materials, executed final adjusted Change Orders, final invoice, copies of pertinent test results, correspondence, warranties, guarantees, operational manuals, spare parts, service contracts and tools.

NOT TO EXCEED PRICE (NTE) - THE MUTUALLY AGREED UPON CONTRACT PRICE TO BE PAID OF \$ [REDACTED] TO THE DESIGN/BUILD FIRM, AND THAT THE DESIGN/BUILD FIRM GUARANTEES NOT TO EXCEED, FOR ALL LABOR, EQUIPMENT, AND MATERIALS TO DESIGN, PERMITS (AS REQUIRED BY THE CONTRACT DOCUMENTS), ADMINISTER, COORDINATE, INSPECT, CONSTRUCT AND INSTALL THE PROJECT WITHIN THE CONTRACT TIME. THE DOLLAR AMOUNT SHALL INCLUDE, BUT NOT BE LIMITED TO ALL PROFIT, OVERHEAD, ON-SITE AND OFF-SITE CONDITIONS (KNOWN AND UNKNOWN) AND ADMINISTRATIVE COSTS. THE NOT TO EXCEED PRICE IS NOT SUBJECT TO INCREASE EXCEPT AS EXPRESSLY ALLOWED.

Holidays - Those designated non-work days as established by the City Commission of the City of Fort Lauderdale.

Notice to Proceed - One or more written notice(s) to DESIGN/BUILD FIRM issued by the Project Manager authorizing the commencement of specified Work.

Owners Representative – Hazen and Sawyer - The individual or entity who/which holds a current certificate as a registered engineer under Chapter 471 to practice engineering and who/which is employed by or retained by the CITY to provide professional services in compliance with the requirements of Section 287.055, Florida Statutes, and who/which shall review and provide recommendations regarding the Construction Documents prepared by the DESIGN/BUILD FIRM for the Project, and evaluate compliance of Project construction with the requirements of this Agreement.

Plans and Specifications - The official graphic representations of the Project as prepared, signed and sealed by Architect/Engineer and which, upon written approval of CITY, shall become a part of the Contract Documents.

Project - The design/construction project described in the Contract Documents.

Project Manager/Contract Administrator - The employee of the CITY, or other designated individual who is herein referred to as the Project Manager, will assume all duties and responsibilities and will have the rights and authorities assigned to the Project Manager in the Contract Documents in connection with completion of the Work in accordance with this Agreement. The Project Manager, or designee, shall be the authorized agent for the CITY unless otherwise specified. The Term Project Manager and Contract Administrator are used interchangeably.

Punch List - The CITY's list of Work yet to be done or be corrected by the DESIGN/BUILD FIRM before the final completion date can be determined by the CITY.

Shop Drawings - Drawings, diagrams and schedules, and other data specially prepared by the DESIGN/BUILD FIRM or its Subcontractors, sub-Subcontractors, manufacturer, supplier or distributor to illustrate some portion of the Work.

Substantial Completion - The date, as certified by the Project Manager that all conditions of the permits and regulatory agencies have been met for the CITY's stated use of the Project, and all construction has been performed therein in accordance with the Contract Documents so CITY can beneficially enjoy, use or occupy and can operate it in all respects for its intended purpose.

Surety - The surety company or individual which is bound by the performance bond and payment bond with and for DESIGN/BUILD FIRM, who is primarily liable, and which surety company or individual is responsible for DESIGN/BUILD FIRM's acceptable performance of the Work under the Agreement and for the payment of all debts pertaining thereto in accordance with Section 255.05, Florida Statutes.

Work - The totality of the obligations, including design, permitting, governmental entitlements, site plan approvals and construction and all other services required by the Contract Documents, whether completed or partially completed, including all labor, materials, equipment and services provided to or to be provided by DESIGN/BUILD FIRM to fulfill its obligations.

ARTICLE 2 – GENERAL PROVISIONS

- 2.1 DESIGN/BUILD FIRM hereby agrees to furnish all of the labor, materials, equipment, Work, services and incidentals necessary to complete the Project, in accordance with the Contract Documents, within the Contract Time and for the Not to Exceed Price.
- 2.2 Relationship of CITY and DESIGN/BUILD FIRM: The DESIGN/BUILD FIRM accepts the relationship of trust and confidence established between it and the CITY by this Agreement. The DESIGN/BUILD FIRM warrants and represents to CITY that it will furnish its best skill and judgment in performing the Work and shall always act to further the interest of the CITY in the expeditious completion of the Project at the lowest cost to the CITY, and in strict accordance with the Contract Documents and prudent and customary construction practices.
- 2.3 By signing this Agreement, the DESIGN/BUILD FIRM accepts a fiduciary duty with the CITY and warrants and represents to the CITY that the DESIGN/BUILD FIRM: (a) has all licenses and certifications required by applicable laws; (b) is experienced in all aspects of pre-construction and construction planning for projects similar to the Project; (c) will act in the CITY's highest and best interests in performing the Work; and (d) that no employees or affiliates of the DESIGN/BUILD FIRM, including all Consultants, any sub-consultants, Subcontractors, and suppliers, at any tier, have been convicted of a public entity crime, fraud, theft, and/or a property damage crime within the preceding thirty-six (36) months from the time this Agreement is executed, as required pursuant to Section 287.133, Florida Statutes.
- 2.4 Intention of Contract Documents: It is the intent of the Contract Documents to describe a functionally complete Project to be designed and constructed in accordance with the Contract Documents. Any Work, design, construction, other professional services, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied by the DESIGN/BUILD FIRM, whether or not specifically called for by the Contract Documents. When words, which have a well-known technical or trade meaning, are used to describe Work, such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals, or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference is specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect at the time of permit issuance. CITY shall have no duties other than those duties and obligations expressly set forth within the Contract Documents.
- 2.5 DESIGN/BUILD FIRM shall plan, record, and update, at least monthly, the design and construction schedule of the Project. The Project Schedule shall indicate the dates for the commencement and completion of the various stages of design and construction and shall be revised at least monthly and as required by the conditions of the Work. The Project Schedule shall encompass all of the work of all professions and trades necessary for the construction of the Project and shall be sufficiently complete and comprehensive to enable progress to be monitored on a weekly basis. DESIGN/BUILD FIRM shall be responsible to have available to it all materials, supplies, and appropriate personnel, trades, etc., necessary to complete the Work in accordance with the Project Schedule.

ARTICLE 3 – PROJECT MANAGER

- 3.1 The Project Manager is hereby designated by the CITY as Daniel Fischer, Project Manager II, whose address is 100 N. Andrews Avenue, 4th Floor, Fort Lauderdale, Florida 33301. The Project Manager will assume all duties and responsibilities and will have the rights and authority assigned to the Project Manager in the Contract Documents in connection with completion of the Work in accordance with this Agreement.

ARTICLE 4 – CONTRACT DOCUMENTS

- 4.1 The Contract Documents shall be followed as to Work, Materials and dimensions except with the Project Manager may authorize, in his/her sole discretion, and in writing, an exception.
- 4.2 Dimensions given in figures are to hold preference over scaled measurements from the drawings; however, all discrepancies shall be decided upon by the Consultant, with concurrent written notice to Project Manager/Project Manager. DESIGN/BUILD FIRM shall not proceed when in doubt as to any dimension or measurement but shall seek clarification from the Consultant, with concurrent written notice to Project Manager.
- 4.3 DESIGN/BUILD FIRM shall maintain two (2) copies of the Contract Documents, one of which shall be preserved and always kept accessible at the site for the Project Manager, and/or authorized representatives.
- 4.4 The Contract Documents shall have the following order of precedence, beginning with the most important:
- A. This Agreement (Contract) and all exhibits, addendums, and amendments thereto;
 - B. Change Orders (to the extent permitted under this Agreement);
 - C. The Specifications, as approved and permitted;
 - D. The Plans, as approved and permitted;
 - E. All other information provided in the Emergency Procurement Proposal
 - F. CPM Project Schedule and Schedule of values; and
 - G. Design-Build Firm's response to the CITY's request.
 - H. The Warranty Bond (Begins after initial one-year warranty period)

ARTICLE 5 – SCOPE OF WORK

- 5.1 DESIGN/BUILD FIRM agrees to complete this all-inclusive Turn Key Project generally described as PREQUEST FOR PROPOSAL (RFP) NO. 12374-906, Bayshore Drive Intracoastal Force Main Crossing, submitted by the DESIGN-BUILD FIRM, responsible

for the design, permitting, construction, testing and startup Bayshore Drive and North East 8th Street, of Two (2) new dual 14 inch nominal diameter force main crossing of the Atlantic Intracoastal Waterway utilizing high density polyethylene pipe installation via horizontal directional drilling (HDD), new 20 inch nominal diameter force main on Northeast 9th Street, Bayshore Drive and Vistamar street, cut, cap and abandon in place the existing 18 inch DIP force main along NE 9th street, connect all proposed piping to the existing pipping on-shore utilizing HDPE PE 4710 as indicated on the DCP Plans, installation of a 30 inch tidal valve, modification of existing structures and storm water piping, regrading, paving and restoration of the parking lot, driveway and adjacent areas at 888 Intracoastal Boulevard, and other services necessary to perform all of the Work described in the Contract Documents, to be prepared by the DESIGN/BUILD FIRM, for the design and construction of the Project; the Project shall be construed in accordance with the requirements and provisions of said Contract Documents and for the Not to Exceed Price.

5.1.1 Legal Description and Street Address:

Bayshore Drive Intracoastal Drive to North River from North East 9th Street to North Birch Road.

5.1.2 Work Breakdown: Two (2) new dual 14 inch nominal diameter force main crossing of the Atlantic Intracoastal Waterway utilizing high density polyethylene pipe installation via horizontal directional drilling (HDD), new 20 inch nominal diameter force main on North East 9th Street, Bayshore Drive and Vistamar street, cut, cap and abandon in place the existing 18 inch DIP force main along NE 9th street, connect all proposed piping to the existing pipping on-shore utilizing HDPE PE 4710 as indicated on the DCP Plans, installation of a 30 inch tidal valve, modification of existing structures and storm water piping, regrading, paving and restoration of the parking lot, driveway and adjacent areas at 888 Intracoastal Boulevard.

- 5.2 DESIGN/BUILD FIRM agrees to meet with the Project Manager or his/her respective designees at reasonable times and with reasonable notice.
- 5.3 Prior to the Final Completion of construction services under this Agreement, and as a condition precedent to final payment, there shall be established a record set of plans on reproducible vellum and a record set of Specifications, both of which shall bear the written approvals of the DESIGN/BUILD FIRM and the CITY's Project Manager. Such approval shall be indicated by the written signature of both parties. In addition, there shall be established electronic copies on USB drives of the record set plans, non-compressed, formatted in the latest version of AutoCAD and of the record set of Specifications.
- 5.4 DESIGN/BUILD FIRM herein represents that Construction Manager, at a minimum, will provide the following services:
- 5.4.1 At least five (5) days prior to the commencement of the construction phase of the Project, the DESIGN/BUILD FIRM will identify and provide the qualifications of

a suitably qualified and experienced Construction Manager, approved by the CITY, who will be on site full time at the Project. No more than twenty percent (20%) of the proposed team can be changed and such change will require CITY approval.

- 5.4.2 DESIGN/BUILD FIRM will use reasonable efforts to have the same Construction Manager on the Project, full time, to its conclusion, and any new representative will first be approved in writing by Project Manager before permanent assignment. Approval shall not be unreasonably withheld.
- 5.4.3 The Construction Manager will conduct weekly meetings with the DESIGN/BUILD FIRM and its Subcontractors at regular times, as previously agreed upon and approved by the Project Manager and shall issue weekly reports on the progress of the Work and the minutes of the previous meeting.
- 5.4.4 The Construction Manager will administer the DESIGN/BUILD FIRM's Work.
- 5.4.5 The Construction Manager shall coordinate the processing of shop drawings and material submittals.
- 5.4.6 The Construction Manager will achieve satisfactory performance by DESIGN/BUILD FIRM and, if required, will require corrections to DESIGN/BUILD FIRM's Work including, but not limited to, maintaining punch lists and observing testing.
- 5.4.7 The Construction Manager will monitor the cost of the Project, including payment applications and the preparation thereof.
- 5.4.8 The Construction Manager will assist in the preparation of record drawings, and shall transmit to the Consultant requests for additional information concerning the design. In addition, the Project Manager shall be copied on these requests for monitoring purposes.
- 5.4.9 The Construction Manager will observe testing and start-up activities of Machinery and utilities.
- 5.4.10 The Construction Manager will secure all equipment brochures and warranties from the DESIGN/BUILD FIRM.
- 5.4.11 The Construction Manager will coordinate the correction and completion of the Work including that required by the punch list.
- 5.5 DESIGN/BUILD FIRM herein represents that Consultant, at a minimum, will provide the following services:
 - 5.5.1 Consultant shall perform all of the architectural and engineering services necessary to describe, detail and design the Project in accordance with the Contract Documents.
 - 5.5.2 Consultant shall design the Project so as to comply with Applicable Laws.

- 5.5.3 Consultant shall prepare the Plans and Specifications, as well as obtain all required and necessary reviews and approvals (or take other appropriate action upon) for same, and/or other submittals including, but not limited to, shop drawings, product data, and samples.
- 5.5.4 Consultant shall also submit the Plans and Specifications to the Owners Representative, with a copy to Project Manager, for his/her review and written approval. Owners Representative shall expeditiously review and approve the Plans and Specifications in accordance with the accepted Project Schedule. Owners Representative's approval of the Plans and Specifications shall not constitute acceptance of any design work which does not comply with Applicable Laws, information provided in the RFP, and/or with the terms of this Contract. Except as provided herein, and to the extent limited by, the preceding sentence, the approval of the Plans and Specifications by the Owners Representative shall constitute a representation by the Owners Representative that the Project, if constructed as required by the Contract Documents, will be sufficient for its purposes. The Plans and Specifications shall include technical drawings, schedules, diagrams, and specifications setting forth in detail the requirements for construction of the Project; provide information necessary for the use of DESIGN/BUILD FIRM Subcontractors and those in the building trade; and include documents necessary for regulatory agencies and other governmental approvals.
- 5.5.5 Consultant shall prepare construction change directives, if necessary, at no additional cost to the CITY, and authorize minor changes in the Work, as provided in the Contract Documents.
- 5.5.6 Consultant shall receive and review for compliance with the Contract Documents all written warranties and related documents required hereby to be assembled upon Substantial Completion and issue Applications for Payment performed in compliance with the requirements of the Contract Documents.
- 5.6 The approved and permitted Plans and Specifications shall constitute a representation by Consultant to CITY that the Project, if construed as required by the Contract Documents, will be sufficient for its purposes. The Plans and Specifications include technical drawings, schedules, diagrams, and specifications setting forth in detail the requirements for construction of the Project; provide information necessary for the use of DESIGN/BUILD FIRM, Subcontractors, and those in the building trade; and include documents necessary for regulatory agencies and other governmental approvals.
- 5.7 Project Manager will provide the following services:
- 5.7.1 The Project Manager shall review Applications for Payment and coordinate the processing thereof with the CITY.
- 5.7.2 The Project Manager shall monitor the schedule(s).
- 5.7.3 The Project Manager shall track, log and review all required Project related documents and subsequently address any and all concerns with DESIGN/BUILD FIRM.

- 5.7.4 The Project Manager shall review and observe the Work and testing thereof for conformance and compliance with the requirements of the Contract Documents.
- 5.7.5 The Project Manager shall attend all required meetings and maintain and distribute meeting minutes.
- 5.7.6 At all times, the Project Manager will act as liaison between the parties to this Agreement, and the CITY's Project Manager.

ARTICLE 6 – CONTRACT TIME AND COMPLETION DATE

- 6.1 Time is of the essence for the DESIGN/BUILD FIRM's performance of the Work pursuant to this Contract. The DESIGN/BUILD FIRM agrees to complete the Work in accordance with the approved and accepted Project Schedule and to achieve Substantial Completion of the Work, in accordance with this Contract, and within the Contract Time. DESIGN/BUILD FIRM acknowledges that failure to achieve Substantial Completion will result in substantial damages to the CITY, such as loss of beneficial use and/or occupancy of the Project.
- 6.2 DESIGN/BUILD FIRM shall be instructed to execute the Contract immediately. DESIGN/BUILD FIRM shall immediately commence scheduling activities, permit applications and other preconstruction work after the Notice to Proceed.
- 6.3 The DESIGN/BUILD FIRM shall complete the Construction Documents Phase.
- 6.4 The DESIGN/BUILD FIRM shall meet the following milestones:

Milestones	Calendar Days from Notice to Proceed (Completion Date)
Notice to Proceed Date	TBD
Substantial Completion of Project	180 Calendar Days (129 Working Days)
Final completion for Project shall be within 220 calendar days of Notice to Proceed.	220 Calendar Days (157 Working Days)

ARTICLE 7 – LIQUIDATED DAMAGES

- 7.1 Failure of the DESIGN/BUILD FIRM to timely complete the Project in accordance with Section 6.4 above, or meet any of the milestones as indicated in Sections 6.4 above, DESIGN/BUILD FIRM shall pay to the CITY the sum of one thousand dollars (\$1,000.00) for each calendar day after the time specified in Section 6.4 (plus any approved time extensions at the sole discretion of the CITY) that DESIGN/BUILD FIRM fails to meet any of the milestones. The time frame for liquidated damages shall not commence and thus shall not be tolled until the Project Manager submits the punch list to the DESIGN/BUILD FIRM. DESIGN/BUILD FIRM and CITY HEREBY MUTUALLY AGREE AND ACKNOWLEDGE THAT THE LIQUIDATED DAMAGES AMOUNT SET FORTH HEREIN are not penalties but are liquidated damages to CITY for its inability to obtain full beneficial occupancy and/or use of the Project. Liquidated damages are hereby fixed and agreed upon between the Parties, recognizing the impossibility of

precisely ascertaining the amount of damages that will be sustained by the CITY as a consequence of such delay, and both parties desiring to obviate any question of dispute concerning the amount of said damages and the cost and effect of the failure of DESIGN/BUILD FIRM to complete the Contract on time. Liquidated damages shall apply separately to each portion of the Work for which a time of completion is given. The CITY shall have the right to deduct from or retain any compensation which may be due or which may become due and payable to the DESIGN/BUILD FIRM the amount of liquidated damages, and if the amount retained by the CITY is insufficient to pay in full such liquidated damages, the DESIGN/BUILD FIRM shall pay all liquidated damages in full. The DESIGN/BUILD FIRM shall be responsible for reimbursing the CITY, in addition to liquidated damages or other damages for delay, for all costs of engineering fees and inspection and other costs incurred in administering the construction of the Project beyond the completion date specified or beyond an approved extension of time granted to the DESIGN/BUILD FIRM whichever is later.

- 7.2 CITY is authorized to deduct liquidated damages from monies withheld due to DESIGN/BUILD FIRM for the Work under this Contract or as much thereof as CITY may, in its sole discretion, deem just and reasonable.

ARTICLE 8 – CHANGE OF THE CONTRACT TIME

- 8.1 The Contract Time may only be changed by a Change Order. Any claim for an extension in the Contract Time shall be based on written notice delivered to the Project Manager within five (5) days of the occurrence of the event giving rise to the claim. Any change in the Contract Time resulting from any such claim shall be incorporated in a Change Order.
- 8.2 The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of the DESIGN/BUILD FIRM if a claim is made there for as provided in paragraph 8.1. Such delays shall include but not be limited to, acts or neglect by the CITY, or to fires, floods, labor disputes, abnormal weather conditions, or acts of God.
- 8.3 All time limits stated in the Contract Documents are of the essence. The provisions of this Article shall not exclude recovery for damages for delay by the DESIGN/BUILD FIRM.
- 8.4 Delays caused by or resulting from entities, contractors or subcontractors who are not affiliated with DESIGN/BUILD FIRM shall not give rise to a claim by the DESIGN/BUILD FIRM for damages for increases in material and/or labor costs.

ARTICLE 9 - CONTRACT PRICE (NOT TO EXCEED PRICE) AND METHOD OF PAYMENT

- 9.1 The Contract Price is the Not to Exceed Price agreed to by the DESIGN/BUILD FIRM and the CITY under this Agreement, payable to complete the Work in accordance with the Agreement, and, to the extent permitted by this Agreement, as may be increased or decreased by Change Order.
- 9.2 The Contract Price for the Project, which is also the Not to Exceed Price is \$. This includes bonds, allowances and material change with the

exception of permit fees. The CITY will reimburse actual cost of permit(s) upon submission of paid permit receipts.

- 9.3 In the event that the DESIGN/BUILD FIRM's total approved expenditures for the Project exceed the Not to Exceed Price, the DESIGN/BUILD FIRM shall pay such excess from its own funds. CITY shall not be required to pay any amount that exceeds the Not to Exceed Price and the DESIGN/BUILD FIRM shall have no claim against the CITY on account thereof.

9.4 METHOD OF BILLING AND PAYMENT

- 9.4.1 During the Construction Documents Phase, DESIGN/BUILD FIRM may submit a request for payment monthly based upon percentage of completion of the (final construction) Plans and Specifications. During the Construction Phase, DESIGN/BUILD FIRM may submit a request for payment thirty (30) calendar days after beginning field operations, subject to the Notice to Proceed, and every thirty (30) calendar days thereafter. Payment during the Construction Phase will be based upon percentage of work completed for each item in the approved Schedule of Values. DESIGN/BUILD FIRM's requisition for payment shall show a complete breakdown of the Project components, and the amount due, together with such supporting evidence, as may be required by the Project Manager.

At a minimum, the requisition for payment shall be accompanied by a completed certification of Work; consent of surety in the applicable amount; list of Subcontractors that performed Work during the payment application period being submitted; releases of liens from the DESIGN/BUILD FIRM for the previous period being billed; releases of liens from Subcontractors that have performed Work during the previous billing period unless payment for the previous period has not been received by the DESIGN/BUILD FIRM; aerials and photographs of the areas of Work for the applicable billing period; an accepted, updated Project Schedule (as approved); and back up for all items being billed. The certification of Work will mean compliance by DESIGN/BUILD FIRM with the approved Project Schedule; that as-built drawings of Improvements are current for the prior period; and applicable laws are being met and complied with. Each requisition for payment shall be submitted to the Project Manager for approval. Payment for Work performed will be made in accordance with the Florida Prompt Payment Act, Sections 255.0705 – 255.078, Florida Statutes, but not more frequently than once a month. The Project Manager shall verify completion of the various phases, as noted, and authorize payment accordingly. Should the Project fall behind schedule, as indicated in the Project Schedule, DESIGN/BUILD FIRM shall include a written plan demonstrating how the Final Completion date shall be maintained.

Material Purchases can be invoiced to the CITY, upon receipt of invoice and documentation of order placement must be accompanied by a bill of sale from the manufacturer or supplier. The CITY will endeavor to pay material invoices earlier, albeit not later than 30 days of receipt of a valid invoice. Any invoices that are not considered valid will be returned immediately for correction or additional

documentation. No more than 8% contractor's mark-up will be allowed for materials.

- 9.4.2 CITY agrees that it will pay DESIGN/BUILD FIRM within thirty (30) calendar days of receipt of DESIGN/BUILD FIRM's proper requisition for payment, as provided above.
- 9.4.3 The DESIGN/BUILD FIRM shall use the sums advanced to it solely for the performance of the Work and the construction, furnishing and equipping of the Work in accordance with the Contract Documents and payment of bills incurred by the DESIGN/BUILD FIRM in performance of the Work.
- 9.4.4 DESIGN/BUILD FIRM shall remain liable for Subcontractors' Work and for any unpaid laborers, material suppliers of Subcontractors in the event it is later discovered that said Work is deficient or that any Subcontractors, laborers, or material suppliers did not receive payments due to them on the Project.
- 9.4.5 Undisputed amounts remaining unpaid thirty (30) calendar days after CITY's request of DESIGN/BUILD FIRM's proper requisition for payment for conforming Work shall bear interest at the rate set forth in Section 218.74(4), Florida Statutes. This section shall not apply if the CITY has a right to withhold any portion of the payment under this Agreement.
- 9.4.6 Ten percent (10%) of all monies earned by DESIGN/BUILD FIRM shall be retained by CITY until the Project has obtained Final Completion and been accepted by the CITY, except upon completion of the Construction Documents Phase and approval of the CITY of the Work performed under such phase, the Project Manager may release the entire amount of the retainage pertaining to the Consultant fees associated with the Construction Documents Phase. After fifty percent (50%) of the Construction Phase of the Project has been completed, the Project Manager, upon written request of the DESIGN/BUILD FIRM and written Consent of Surety in support of said request, may reduce the retainage to five percent (5%) of all monies earned subsequent to the Construction Documents Phase. Any interest earned on retainage shall accrue to the benefit of the CITY.
- 95 If, after the Project has been substantially completed, full completion thereof is delayed through no fault of DESIGN/BUILD FIRM, or by issuance of Change Orders affecting final completion, and the Project Manager so certifies, the CITY shall, upon certification by the Project Manager, and without terminating the Contract, make payment of the balance due for that portion of the Project fully completed and accepted. Such payment shall be made as required by law under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims
- 96 Upon receipt of written notice from DESIGN/BUILD FIRM that the Project site is restored and Project is ready for final inspection and acceptance, the Project Manager shall, within seven (7) calendar days, make an inspection thereof. If the Project Manager finds the Project acceptable under the Contract Documents and the Project fully performed, a Final Certificate of Payment shall be issued by the Project

Manager over his/her own signature, stating that the Work required by this Agreement has been completed and is accepted under the terms and conditions thereof.

- 97 Before issuance of the Final Certificate for Payment, DESIGN/BUILD FIRM shall deliver to the Project Manager a complete release of all liens arising out of this Agreement, or receipts in full in lieu thereof, and an affidavit certifying that all suppliers, Consultant, Subcontractors, and Subconsultants have been paid in full, and that all other indebtedness connected with the Project has been paid, and a consent of the surety to final payment. All as-builts, warranties, extended warranties, guarantees, operational manuals, and instructions in operation must be delivered to CITY at this time. The warranties provided after the initial warranty period of year one will be covered under the warranty bond attached as an Exhibit to this contract. DESIGN/BUILD FIRM shall submit a completed as-built drawings package signed and sealed by a land surveyor registered in the State of Florida and as approved by the CITY's Public Works Department, and proof that all permits have been closed, which shall be delivered prior to requesting final payment. A Certificate of Occupancy, and/or Certificate of Completion (CC) will be obtained prior to final payment being made, if required.
- 98 CITY may withhold final payment or any progress payment to such extent as may be necessary on account of:
- A. Defective Work not remedied.
 - B. Claims filed or written notices of nonpayment indicating probable filing of claims as may be prescribed by law by other parties against DESIGN/BUILD FIRM.
 - C. Failure of DESIGN/BUILD FIRM to make payments properly to Consultant, Subcontractors or Subconsultants, or for material or labor.
 - D. Damage to another Subcontractor, Sub-consultant, supplier, material, person, as provided for in Florida Statute Chapter 713, party or person not remedied which are attributable to DESIGN/BUILD FIRM, its agents, servants, employees, DESIGN/BUILD FIRM, Consultant, Subconsultants, Subcontractors, sub-Subcontractors, sub-Subconsultants, material person and suppliers.
 - E. Liquidated damages pursuant to Article 7 herein.
 - F. As-built drawings not being in a current and acceptable state.
- 99 When the above grounds are removed or resolved, or DESIGN/BUILD FIRM provides a surety bond or a consent of surety satisfactory to CITY which will protect CITY in the amount withheld, payment may be made in whole or in part, as applicable.

- 9.10 If the Project Manager, in his/her reasonable judgment, determines that the portion of the Not To Exceed Price then remaining unpaid will not be sufficient to complete the Work in accordance with the Contract Documents, no additional payments will be due to the DESIGN/BUILD FIRM hereunder unless and until the DESIGN/BUILD FIRM, at its sole cost, performs a sufficient portion of the Work so that such portion of the Not To Exceed Price then remaining unpaid is determined by the Project Manager to be sufficient to so complete the Work.
- 9.11 The making and acceptance of the final payment shall constitute a waiver of all claims by CITY, other than those arising from faulty or defective Work, failure of the Project to comply with requirements of the Contract Documents, or terms of any warranties required by the Contract Documents. It shall also constitute a waiver of all claims by DESIGN/BUILD FIRM, except those previously made in writing and identified by DESIGN/BUILD FIRM as unsettled at the time of the final application for payment.
- 9.12 The DESIGN/BUILD FIRM warrants to the CITY that all materials and equipment furnished under this Agreement will be new unless otherwise specified, and that all Work will be of good quality and in conformance with the Contract Documents. Any warranties that are extended to the CITY beyond the standard warranty are to be in writing with the servicing firm information attached as an Exhibit. All Work not conforming to these requirements, including substitutions not properly approved and authorized by Project Manager, may be considered defective. If required by the CITY, the DESIGN/BUILD FIRM shall furnish satisfactory evidence as to the origin, nature and quality of materials and equipment used for the Project. DESIGN/BUILD FIRM shall properly store and protect all construction materials. Materials which become defective through improper storage shall be replaced with new materials at no additional costs. THE DESIGN/BUILD FIRM's warranty excludes reedy for damage or defect caused by abuse, modifications not executed by the DESIGN/BUILD FIRM, improper or insufficient maintenance, improper operation, or normal wear and tear under normal usage.

ARTICLE 10 - ADDITIONAL SERVICES AND CHANGES IN SCOPE OF WORK

- 10.1 Without invalidating the Agreement and without notice to any surety, CITY reserves and shall have the right to make such changes from time to time in the character and quantity of the WORK as may be considered necessary or desirable to complete fully and acceptably the Project in a satisfactory manner. The CITY may order additions, deletions or revisions in the Work using agreed upon rates to be included in the contract documents and/or schedule of values. Upon receipt of a Change Order, the DESIGN/BUILD FIRM shall proceed with the Work involved. All Work shall be executed under the applicable conditions of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made on the basis of a claim made by either party.

- 10.2 The Project Manager may authorize minor changes in the Work not involving an adjustment in the Contract Price or the Contract Time, which are consistent with the overall intent of the Contract Documents. Such changes must be in writing and signed by the CITY and DESIGN/BUILD FIRM.

ARTICLE 11 - DESIGN/BUILD FIRM'S RESPONSIBILITIES

- 11.1 The parties acknowledge and agree that the DESIGN/BUILD FIRM will be responsible for the design, construction and construction management of the Project according to the information provided in the RFP.
- 11.2 The DESIGN/BUILD FIRM will be responsible for securing, with full cooperation of the CITY, all permits for the Project, including without limitation, South Florida Water Management District ("SFWMD"), Broward County, Army Corp of Engineers and Florida Department of Environmental Protection ("FDEP"). Except as provided in the preceding sentences the DESIGN/BUILD FIRM shall be fully responsible for any and all other permits and approvals from all governmental authorities having jurisdiction over the Project. All permits and licenses required by federal, state or local laws, rules, and regulations necessary for the prosecution of the Project by DESIGN/BUILD FIRM pursuant to this Agreement shall be secured by the DESIGN/BUILD FIRM and paid for by the CITY. It is the DESIGN/BUILD FIRM's responsibility to have and maintain appropriate certificate(s) of competency, valid for the Work to be performed, and for all persons working on the Project for whom a certificate of competency is required.
- 11.3 DESIGN/BUILD FIRM shall be fully responsible for the actions of all its agents, servants, employees, including, but not limited to, the contractor, Consultant, Subcontractors, sub-consultants, sub-subcontractors, Materials persons (pursuant to Chapter 713, Florida Statutes), and any and all other persons working for it in conjunction with the design and construction of the Project.
- 11.4 DESIGN/BUILD FIRM shall be fully responsible for all acts or omissions of its contractor, Consultant, Subcontractors, sub-consultants, sub-subcontractors, sub-sub-consultants, Materials persons, and any and all other persons working for DESIGN/BUILD FIRM in conjunction with the design and construction of the Project; any and all persons working for contractor, Consultant, subcontractors or sub-consultant; and any and all persons for whose acts any of the aforesaid may be liable, to the same extent DESIGN/BUILD FIRM is responsible for the acts and omissions of persons directly employed by DESIGN/BUILD FIRM. Nothing in this Agreement shall create any contractual relationship between CITY and Consultant, or CITY and any Subcontractor, sub-consultant, sub-Subcontractor, sub-sub-consultant, or any other person working either for DESIGN/BUILD FIRM or for any of the aforesaid parties in conjunction with the design and construction of the Project, including, without limitation, any obligation on the part of the CITY to pay or to see the payment of any monies due to any of the afore-stated parties pursuant to this section.
- 11.5 DESIGN/BUILD FIRM agrees to bind its Consultant, Subcontractors, and sub-consultants to the applicable terms and conditions of this Agreement for the benefit of the CITY.
- 11.6 Unless otherwise provided herein, DESIGN/BUILD FIRM shall provide and pay for all architecture, engineering, landscape architecture, land surveying services, materials,

construction and other labor, water, tools, equipment, light, power, transportation, and other facilities and services necessary for the proper execution and completion of the design and construction of the Project, whether temporary or permanent, and whether or not incorporated or to be incorporated in the Project.

- 11.7 DESIGN/BUILD FIRM shall at all times enforce strict discipline and good order among its employees, Consultants, Subcontractors and sub-consultants at the Project site, and shall not employ on the Project any unfit person or anyone not skilled in the work and/or services assigned to him or her.
- 11.8 DESIGN/BUILD FIRM shall keep itself fully informed of, and shall take into account and comply with any and all Applicable Laws affecting those engaged or employed in the Project; or the Materials used or employed in the design and construction of the Project; or in any way affecting the conduct of the Project, including, without limitation, all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same and of all provisions required by law to be made a part of this Agreement, all of which provisions are hereby incorporated by reference and made a part hereof. If any specification or contract for this Project is in violation of any such Applicable Laws, DESIGN/BUILD FIRM shall forthwith report the same to the Project Manager in writing. DESIGN/BUILD FIRM shall cause all its employees, agents, Consultant, Subcontractors, Subconsultants, sub-Subconsultants and sub-Subcontractors to observe and comply with all Applicable Laws.
- 11.9 DESIGN/BUILD FIRM shall pay all applicable sales, consumer, use and other taxes required by law. DESIGN/BUILD FIRM is responsible for reviewing the pertinent State statutes involving State taxes and complying with all requirements.
- 11.10 If DESIGN/BUILD FIRM has knowledge that the Contract Documents do not comply with Applicable Laws, in any respect, the DESIGN/BUILD FIRM shall promptly notify the Project Manager, in writing, and any necessary changes shall be adjusted by appropriate revisions. If the DESIGN/BUILD FIRM performs any Work not in accordance with Applicable Laws, and without such notice to the Project Manager, the DESIGN/BUILD FIRM shall assume full responsibility therefore and shall bear all costs attributable thereto. DESIGN/BUILD FIRM warrants to CITY that it has thoroughly reviewed and studied the information provided in the RFP and has determined that it is in conformance with Applicable Laws and is complete and sufficiently coordinated to perform the Work for the Not to Exceed Price and the Contract Time. DESIGN/BUILD FIRM warrants to CITY that the information provided in the RFP is consistent, practical, feasible and constructible. DESIGN/BUILD FIRM further warrants to CITY that the Work described in the information provided in the RFP is constructible for the Not to Exceed Price and the Contract Time.

THE CITY DISCLAIMS ANY WARRANTY THAT THE INFORMATION PROVIDED IN THE RFP FOR THE PROJECT IS ACCURATE, PRACTICAL, CONSISTENT, AND/OR CONSTRUCTIBLE.

- 11.11 DESIGN/BUILD FIRM accepts the Project site in its observable and/or documented condition existing at the time of this Agreement, or conditions ordinarily encountered and

generally recognized as inherent to the character of the Work to be provided for in this Project. By signing this Contract, the DESIGN/BUILD FIRM represents to the CITY that it has: (a) visited the Project site to become familiar with the conditions under which the Work is to be performed; (b) become familiar with all information provided (without warranty) by the CITY pertaining to the Project site; and (c) correlated its observations with the information furnished by the CITY (without warranty), and the Contract Documents. The DESIGN/BUILD FIRM hereby waives additional time or compensation for additional work made necessary by observable and/or documented conditions existing at the Project site, or conditions ordinarily encountered and generally recognized as inherent to the character of the Work to be provided for in this Project.

- 11.12 The DESIGN/BUILD FIRM agrees specifically that no Change Orders shall be required by the DESIGN/BUILD FIRM or considered by the CITY for reasons involving conflicts in the Contract Documents; questions of clarity with regard to the Contract Documents; and incompatibility or conflicts between the Contract Documents and the existing Project site conditions excluding, without limitation, utilities and unforeseen underground conditions at the discretion of the CITY and will not be unreasonably withheld. The DESIGN/BUILD FIRM acknowledges that it has ascertained all correct locations for points of connection for all utilities required for this Project.
- 11.13 The DESIGN/BUILD FIRM shall comply with all conditions of any permits issued by government authorities.
- 11.14 All material and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. Suppliers shall be selected and paid by the DESIGN/BUILD FIRM; the CITY reserves the right to approve all suppliers and materials.
- 11.15 The DESIGN/BUILD FIRM shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work, or any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. The DESIGN/BUILD FIRM hereby expressly binds itself to indemnify and save harmless the CITY from all such claims and fees and from any and all suits and actions of every name and description that may be brought against CITY on account of any such claims, fees, royalties, or costs for any such invention or patent, and from any and all suits or actions that may be brought against said CITY for the infringement of any and all patents or patent rights claimed by any person, firm, corporation or other entity.
- 11.16 Except in connection with the safety or protection of persons, or the Work, or property at the site or adjacent thereto, and except as otherwise indicated in the Supplementary Conditions, all work at the site shall be performed during regular working hours between 7:00 am to 6:00 pm, Monday through Friday. The DESIGN/BUILD FIRM will not permit overtime work or the performance of work on Saturday, Sunday or any legal holiday (designated by the City of Fort Lauderdale) without the Project Manager's written consent at least seventy-two (72) hours in advance of starting such work. If the Project Manager permits overtime work, the DESIGN/BUILD FIRM shall pay for the additional charges to the CITY with respect to such overtime work. Such additional charges shall be a subsidiary obligation of the DESIGN/BUILD FIRM and no extra payment shall be made to the

DESIGN/BUILD FIRM for overtime work. The cost to the DESIGN/BUILD FIRM to reimburse the CITY for overtime inspections is established at direct-labor and overtime costs for each person or inspector required. Incidental overtime costs for engineering, testing and other related services will also be charged to the DESIGN/BUILD FIRM at the actual rate accrued.

City Inspector Hours: 8:00am to 4:30pm

Overtime: 5:01pm to 7:59am

Inspection Overtime Cost: \$100/hr.

11.17 DESIGN/BUILD FIRM'S requests to work during other than regular hours that conform to the standard hours listed in the CITY Noise Ordinance Section 17-8 (1) must be submitted to the CITY Project Manager within six (6) business days in advance of scheduled work. Request shall include the following information:

- Cover page with DESIGN/BUILD FIRM name, project name, and location
- Description of work to be performed outside of normal work hours
- Site plan and location map
- Legal description
- Justification for work and why extended work hours are being requested
- Commencement date and duration of work
- List of DESIGN/BUILD FIRM contacts, including those on site
- Details on type of equipment to be used during extended work hours
- Details on noise levels that may be produced by range of decibels, including current ambient levels at site and levels predicted from proposed construction impacts
- Details on vibratory control measures to be implemented
- Details on how neighbors in vicinity of work area will be notified
- Details on how complaints will be resolved and/or mitigated
- MOT (define) plans approved by CITY's Transportation and Mobility Department (TAM) and any other agencies (if applicable).

11.17.1 If no lane closure or traffic impacts are necessary, the DESIGN/BUILD FIRM request must be submitted seven (7) business days in advance of scheduled work. If the work requires lane closures, request should be submitted at least ten (10) business days in advance, along with MOT plans approved by CITY's Transportation and Mobility Department, and any other agencies if necessary, to allow time for City Manager consideration and approval, CITY's MOT permit issuance, and notification to the public.

- 11.17.2 The DESIGN/BUILD FIRM will not be permitted overtime work or the performance of work on Saturday, Sunday or any legal holiday (designated by the City of Fort Lauderdale) without the City Manager's written consent at least seventy-two (72) hours in advance of the period proposed for such overtime work. Hours of work shall conform to the requirements of the CITY's Noise Ordinance.
- 11.17.3 If the Design-Build Firm requests to work outside regular hours that require a special exemption from the provisions of CITY Noise Ordinance Section 17-7.4, it shall follow the City's Department of Sustainable Development's process for "Requesting Exemption from the Noise Ordinance", located at <https://www.fortlauderdale.gov/departments/sustainable-development/building-services/building-permit-general-info>.
- 11.18 In the event of an emergency affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, DESIGN/BUILD FIRM, without special instruction or authorization from the CITY is obligated to act to prevent threatened damage, injury or loss. DESIGN/BUILD FIRM shall give the Project Manager prompt written notice of any significant changes in the Work or deviations from the Contract Documents caused thereby.
- 11.19 Upon issuance of a Hurricane Watch by the National Weather Service, DESIGN/BUILD FIRM shall submit to the CITY a plan to secure the work area in the event a Hurricane Warning is issued. The plan shall detail how the DESIGN/BUILD FIRM will secure the premises, equipment and materials in a manner as to prevent damage to the Work and prevent materials and equipment from becoming a hazard to persons and property on and around the premises. The plan shall include a time schedule required to accomplish the hurricane preparations and a list of emergency contacts that will be available and in the CITY before, during and immediately after the storm.
- Upon issuance of a Hurricane Warning by the National Weather Service, if the DESIGN/BUILD FIRM has not already done so, the DESIGN/BUILD FIRM shall implement its hurricane preparedness plan. Cost of development and implementation of the hurricane preparedness plan shall be considered as incidental to construction. Cost of any clean up and rework required after the storm will be considered normal construction risk within Florida and shall not entitle the DESIGN/BUILD FIRM to any additional compensation. DESIGN/BUILD FIRM shall be entitled to request an extension of time for completion of the Work, in accordance with the provision of Article 8 of this Agreement, equal to the time it is shut down for implementation of the preparedness plan, the duration of the storm and a reasonable period to restore the Premises.
- 11.20 Force Majeure: No Party shall hold the other responsible for damages or for delays in performance caused by force majeure, acts of God, or other acts or circumstances beyond the control of the other party or that could not have been reasonably foreseen and prevented. For these purposes, such acts or circumstances shall include, but not be limited to, weather conditions affecting performance, floods, epidemics, war, riots, strikes, lockouts, or other industrial disturbances, or protest demonstrations. Should such acts or circumstances occur, the parties shall use their best efforts to overcome the difficulties arising therefrom and to resume the Work as soon as reasonably possible with the normal pursuit of the Work.

Inclement weather, continuous rain for less than three (3) days or the acts or omissions of subcontractors, third-party contractors, materialmen, suppliers, or their subcontractors, shall not be considered acts of force majeure.

No Party shall be liable for its failure to carry out its respective obligations under the Agreement during a period when such Party is rendered unable by force majeure to carry out its obligation, but the obligation of the Party or Parties relying on such force majeure shall be suspended only during the continuance of the inability and for no longer period than the unexpected or uncontrollable event.

The DESIGN/BUILD FIRM further agrees and stipulates, that its right to excuse its failure to perform by reason of force majeure shall be conditioned upon giving written notice of its assertion that a force majeure delay has commenced within 96 hours after such an occurrence. The DESIGN/BUILD FIRM shall use its reasonable efforts to minimize such delays. The DESIGN/BUILD FIRM shall promptly provide an estimate of the anticipated additional time required to complete the Project.

ARTICLE 12 - CITY'S RESPONSIBILITIES

- 12.1 CITY shall assist DESIGN/BUILD FIRM by placing at its disposal any available information pertinent to the Project including previous reports, laboratory tests and inspections of samples, materials and equipment; property, boundary, easement, rights-of-way, topographic and utility surveys; property descriptions; and known zoning, deed and other land use restrictions.
- 12.2 CITY shall arrange for access to and make all provisions for DESIGN/BUILD FIRM to enter upon public property as required for DESIGN/BUILD FIRM to perform its services.
- 12.3 CITY shall render decisions under this Agreement in a timely manner.

ARTICLE 13 - SUPERINTENDENCE AND SUPERVISION

- 13.1 The orders of the CITY are to be given through the Project Manager, whose instructions are to be strictly and promptly followed in every case, provided that they are in accordance with this Contract and the other Contract Documents. Construction Manager shall keep on the Project during its progress, a full-time, competent, English speaking supervisor, who shall be the Construction Manager Representative and who shall serve as the superintendent, and any necessary assistants, all satisfactory to the Project Manager.
- 13.2 Construction Manager or Construction Manager Representative shall prepare, on a daily basis, and keep on the Project site, a bound log setting forth at a minimum, for each day: the weather conditions and how any weather conditions affected progress of the Work; time of commencement of Work for the day; the Work performed; materials, labor, personnel, equipment and Subcontractors used for the Work; any idle equipment and reasons for idleness; visitors to the Project site; any special or unusual conditions or occurrences encountered; any materials delivered to the Project site; and the time of termination of Work for the day. The daily bound log shall be available for inspection by the CITY, or its authorized designee, at all times during the Project, without previous notice.

- 13.3 If DESIGN/BUILD FIRM, in the course of the Project, finds any discrepancy between the Contract Documents and the physical conditions of the site, or any errors or omissions in the Contract Documents including, but not limited to, the Plans and Specifications, it shall be DESIGN/BUILD FIRM's sole obligation and duty to immediately inform the Project Manager, in writing, and the Project Manager will promptly verify same. Any Work done prior to or after such discovery will be done at DESIGN/BUILD FIRM's sole risk. **NOTWITHSTANDING THE PRECEDING, OR ANY OTHER TERM OR CONDITION OF THIS AGREEMENT, DESIGN/BUILD FIRM HEREBY ACKNOWLEDGES AND AGREES THAT THIS IS A DESIGN/BUILD PROJECT AND, ACCORDINGLY, ANY ERRORS OR OMISSIONS SHALL BE CORRECTED AT THE SOLE COST AND EXPENSE OF DESIGN/BUILD FIRM AND WITHOUT A CLAIM FOR ADJUSTMENT IN THE CONTRACT TIME OR CONTRACT PRICE.**
- 13.4 DESIGN/BUILD FIRM shall coordinate, supervise and direct the Project competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform and complete the Project in accordance with the Contract Documents. DESIGN/BUILD FIRM shall be solely responsible for the design, preparation of Construction Documents, means, methods, techniques, safety, sequences and procedures of construction. DESIGN/BUILD FIRM shall give efficient supervision to the Work, using DESIGN/BUILD FIRM's best skill, attention and judgment.

ARTICLE 14 - RESOLUTION OF DISPUTES

- 14.1 Questions, claims, difficulties and disputes of whatever nature which may arise relative to the technical interpretation of the Contract Documents and fulfillment of this Agreement as to the character, quality, amount and value of any work done and materials furnished, or proposed to be done or furnished under or, by reason of, the Contract Documents which cannot be resolved by mutual agreement of CITY Project Manager and DESIGN/BUILD FIRM Project Manager shall be submitted to the City Manager or his designee and DESIGN/BUILD FIRM's representative for resolution. When either party has determined that a disputed question, claim, difficulty or dispute is at an impasse, that party shall notify the other party in writing and submit the question, claim, difficulty or dispute to the next level of the parties' respective management levels for resolution. Each party may determine in such party's reasonable discretion as to who the "next level of management" is for purposes of resolving disputes.
- 14.2 All non-technical administrative disputes (such as billing and payment) shall be determined by the Project Manager.
- 14.3 During the pendency of any dispute and after a determination thereof, DESIGN/BUILD FIRM, and CITY shall act in good faith to mitigate any potential damages including using construction schedule changes and alternate means of construction. During the pendency of any dispute arising under this Agreement, other than termination herein, DESIGN/BUILD FIRM shall proceed diligently with performance of this Agreement and CITY shall continue to make payments for undisputed amounts in accordance with the Contract Documents.

- 14.4 In the event a resolution of a dispute under this section cannot be resolved, the issue shall be submitted by the DESIGN/BUILD FIRM to the City Manager or designee, in writing within ten (10) days of the impasse. The notice must state the basis of the dispute and the DESIGN/BUILD FIRM's proposed resolution. The notice given by the DESIGN/BUILD FIRM must include a written notarized certification that any Not To Exceed (NTE) adjustment claimed is the entire adjustment to which the DESIGN/BUILD FIRM has reason to believe it is entitled to as a result of the question, claim, difficulty or dispute. Resolution of such dispute shall be made by the City Manager or designee. The City Manager's decision shall be final and binding on the parties, subject to mediation and judicial review.
- 14.5 Prior to any litigation being commenced, for any disputes which remain unresolved, within sixty (60) days after Final Completion of the Work, the parties shall participate in mediation to address all unresolved disputes to a mediator mutually agreed upon by the parties. Should any objection not be resolved in mediation, the parties retain all their legal rights and remedies provided under the laws of Florida. Failure by a party to comply in strict accordance with the requirements of this Article, then said party specifically waives all of its rights provided hereunder, including its rights and remedies under the laws of Florida.

ARTICLE 15 - CITY'S RIGHT TO TERMINATE AGREEMENT

- 15.1 If DESIGN/BUILD FIRM fails to begin the design and construction of the Project within the time specified, or fails to perform the Project with sufficient workers and equipment or with sufficient materials to insure the prompt completion of the Project, in accordance with the Contract Documents and schedules, or shall perform the Work unsuitably, or cause it to be rejected as defective and unsuitable; or shall discontinue the prosecution of the Project, except for excused delays in accordance with this Agreement; or if DESIGN/BUILD FIRM shall become insolvent or be declared bankrupt, or commit any act of bankruptcy or insolvency, or shall make an assignment for the benefit of creditors; or shall not carry on the Project in accordance with the Contract Documents, then the CITY shall give notice, in writing, to DESIGN/BUILD FIRM and its surety of such delay, neglect or default, specifying the same. If DESIGN/BUILD FIRM within a period of ten (10) calendar days after such notice, shall not proceed in accordance therewith, then CITY may, upon written notice from the Project Manager of the fact of such delay, neglect or default and DESIGN/BUILD FIRM's failure to comply with such notice, terminate the services of DESIGN/BUILD FIRM, exclude DESIGN/BUILD FIRM from the Project site, and take the prosecution of the Project out of the hands of DESIGN/BUILD FIRM, as appropriate, or use any or all materials and equipment on the Project site as may be suitable and acceptable, in the CITY's reasonable discretion. In such case, DESIGN/BUILD FIRM shall not be entitled to receive any further payment until the Project is finished. In addition, CITY may enter into an Agreement for the completion of the Project according to the terms and provisions of the Contract Documents or use such other methods as in its opinion shall be required for the completion of the Project in an acceptable manner. All damages, costs and charges incurred by CITY shall be deducted from any monies due or which may become due to said DESIGN/BUILD FIRM. Actions will be instituted to recover on the posted bonds. In case the damages and expense so incurred by CITY shall be less than the sum which would have been payable under this Agreement, if it had been completed by

said DESIGN/BUILD FIRM, then DESIGN/BUILD FIRM shall be entitled to receive the difference. If such damages and costs exceed the unpaid balance, then DESIGN/BUILD FIRM shall be liable and shall pay to CITY the amount of said excess.

- 15.2 If, after Notice of Termination of DESIGN/BUILD FIRM's right to proceed, it is determined for any reason that DESIGN/BUILD FIRM was not in default, the rights and obligations of CITY and DESIGN/BUILD FIRM shall be the same as if the notice of termination had been issued pursuant to the Termination for Convenience clause, as set forth in Section 15.3 below.
- 15.3 Notwithstanding any other provision in this Agreement, the performance of work under this Agreement may be terminated in writing by CITY, for convenience and without cause, upon ten (10) business days from the date of DESIGN/BUILD FIRM's receipt of the written notice to DESIGN/BUILD FIRM of intent to terminate and the date on which such termination becomes effective. In such case, DESIGN/BUILD FIRM shall be paid for all work and reimbursables executed, and expenses incurred, such as materials stored, cost of severance of leases/contracts directly associated with the Project, and demobilization prior to termination. PAYMENT SHALL INCLUDE REASONABLE PROFIT FOR SERVICES ACTUALLY PERFORMED IN FULL PRIOR TO TERMINATION DATE, BUT SHALL EXCLUDE ALL LOSS OF PROFITS, INDIRECT, CONSEQUENTIAL, SPECIAL OR OTHER DAMAGES.
- 15.4 Upon receipt of Notice of Termination pursuant to Sections 15.1 and 15.2 above, DESIGN/BUILD FIRM shall, at its sole cost and expense (other than demobilization as a result of the Notice of Termination pursuant to Section 15.3, which shall be paid for by the CITY) and as a condition precedent to any further payment obligation by the CITY, promptly discontinue all affected work, unless the Notice of Termination directs otherwise, and deliver to CITY within seven (7) calendar days of termination, all data, drawings, specifications, reports, estimates, summaries and such other information as may have been required by the Contract Documents, whether completed or in process. Compensation shall be withheld until all documents are produced to CITY pursuant to this Article.

ARTICLE 16 - DESIGN/BUILD FIRM'S RIGHT TO STOP WORK OR TERMINATE CONTRACT

- 16.1 If the Project should be stopped under any order of any court or other public authority for a period of more than ninety (90) calendar days, through no act or fault of DESIGN/BUILD FIRM or of anyone employed by DESIGN/BUILD FIRM, or if the Project Manager should fail to review and approve or state in writing reasons for non-approval of any requisition for payment within twenty (20) business days after it is presented; or if CITY fails to pay DESIGN/BUILD FIRM within thirty (30) calendar days after submittal of a proper requisition for payment, as approved by the Project Manager, then DESIGN/BUILD FIRM may give written notice to CITY, of such delay, neglect or default, specifying same. If CITY, within a period of ten (10) business days after such written notice, shall not remedy the delay, neglect, or default upon which notice is based, then DESIGN/BUILD FIRM may stop work until payment is made, or terminate this Agreement and recover from CITY

payment for all Work executed and reasonable expenses sustained, but excluding any claim for payments for lost profits, indirect, special, consequential or other damages.

ARTICLE 17 - NOTICES

- 17.1 Whenever either party desires to give notice to the other, such notice must be in writing with proof of delivery or receipt. The notice shall be address to the party for whom it is intended at the place last specified; and the place for giving of notice shall remain until it shall have been changed by written notice in compliance with the provisions of this paragraph. For the present, the parties designate the following as the respective places for giving notice:

<p>FOR THE CITY: City Manager City of Fort Lauderdale 100 North Andrews Avenue Fort Lauderdale, FL 33301</p>	<p>FOR THE DESIGN/BUILD FIRM: FIRM NAME: ATTN: Address: Telephone:</p>
<p>with copies to: Project Manager and City Attorney City of Fort Lauderdale 100 North Andrews Avenue Fort Lauderdale, FL 33301</p>	

ARTICLE 18 – BONDS AND INSURANCE

- 18.1 DESIGN/BUILD FIRM shall furnish, or cause to be furnished, on or before seven (7) days after execution of this Agreement, the following:

Performance Bond and Payment Bond (Surety)

- 18.2 THE DESIGN/BUILD FIRM shall execute and record in the public records of Broward County, Florida, a payment and performance bond in an amount at least equal to the Contract Price guaranteeing to CITY the completion and performance of the Project covered in this Agreement as well as full payment of all suppliers, material persons, laborers, or Subcontractors employment pursuant to the Project. The Payment and Performance bond shall be with a surety insurer authorized to do business in the state of Florida as surety, (“Bond”), in accordance with Sec. 255.05, Fla. Stat., as may be amended or revised, as security for the faithful performance and payment of all of the DESIGN/BUILD FIRM’s obligations under the Contract Documents. The performance and payment bond shall remain in full force and effect during the Project and 60 days beyond the contract term for close out.
- 18.3 THE DESIGN/BUILD FIRM shall furnish to the CITY, Certificate(s) of Insurance which indicate that insurance coverage has been obtained which meets the requirements as outlined below and in the solicitation:

COMMERCIAL GENERAL LIABILITY

Coverage must be afforded under a Commercial General Liability policy with limits not less than:

- \$1,000,000 each occurrence and \$2,000,000 project aggregate for Bodily Injury, Property Damage, and Personal and Advertising Injury
- \$1,000,000 each occurrence and \$2,000,000 project aggregate for Products and Completed Operations

Policy must include coverage for Contractual Liability and Independent DESIGN/BUILD FIRMS, independent contractors, and contain no exclusions for explosion, collapse, or underground.

The CITY, a political subdivision of the State of Florida, its officials, employees, and volunteers are to be covered as additional insureds with a CG 20 26 04 13 Additional Insured – Designated Person or Organization Endorsement or similar endorsement providing equal or broader Additional Insured Coverage with respect to liability arising out of activities performed by or on behalf of the DESIGN/BUILD FIRM. The coverage shall contain no special limitation on the scope of protection afforded to the CITY or the CITY's officers, employees, and volunteers.

BUSINESS AUTOMOBILE LIABILITY

Coverage must be afforded for all Owned, Hired, Scheduled, and Non-Owned vehicles for Bodily Injury and Property Damage in an amount not less than \$1,000,000 combined single limit each accident.

If the DESIGN/BUILD FIRM does not own vehicles, the DESIGN/BUILD FIRM shall maintain coverage for Hired and Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Liability policy.

WORKER'S COMPENSATION and EMPLOYER'S LIABILITY

Coverage must be afforded per Chapter 440, Florida Statutes. Any person or entity performing work for or on behalf of the CITY must provide Workers' Compensation insurance. Exceptions and exemptions will be allowed by the CITY's Risk Manager, if they are in accordance with Florida Statute.

The DESIGN/BUILD FIRM waives, and the DESIGN/BUILD FIRM shall ensure that the DESIGN/BUILD FIRM insurance carrier waives, all subrogation rights against the CITY and the CITY's officers, employees, and volunteers for all losses or damages. The CITY requires the policy to be endorsed with WC 00 03 13 Waiver of our Right to Recover from Others or equivalent.

The DESIGN/BUILD FIRM must be in compliance with all applicable State and Federal workers' compensation laws, including the U.S. Longshore Harbor Workers' Act and the Jones Act, if applicable.

DESIGN/BUILD FIRM who has exempt status as an individual, the CITY requires proof of Workers' Compensation insurance coverage for that DESIGN/BUILD FIRM employees, leased employees, volunteers, and any workers performing work in execution of this Agreement.

CITY does not recognize workers' compensation exemption to extend to the employees of the DESIGN/BUILD FIRM. The DESIGN BUILD FIRM is required to provide proof of coverage for their employees, leased employees, volunteers and any workers performing work in execution of this Agreement. This applies to all subconsultants/subcontractors including but not limited to the construction industry.

PROFESSIONAL LIABILITY AND/OR ERRORS AND OMISSIONS

Coverage must be afforded for Wrongful Acts in an amount not less than \$5,000,000 each claim and \$5,000,000 aggregate. DESIGN/BUILD FIRM must keep insurance in force until the third anniversary of expiration of this Agreement or the third anniversary of acceptance of work by the CITY.

PROPERTY COVERAGE (BUILDER'S RISK)

Coverage must be afforded in an amount not less than 100% of the total project cost, including soft costs, with a deductible of no more than \$25,000 each claim. Coverage form shall include, but not be limited to:

- All Risk Coverage including Flood and Windstorm with no coinsurance clause
- Guaranteed policy extension provision
- Waiver of Occupancy Clause Endorsement, which will enable the CITY to occupy the facility under construction/renovation during the activity.
- Storage and transport of materials, equipment, supplies of any kind whatsoever to be used on or incidental to the project.
- Equipment Breakdown for cold testing of all mechanized, pressurized, or electrical equipment.

For installation of property and/or equipment, DESIGN/BUILD FIRM must provide Builder's Risk Installation insurance to include coverage for materials or equipment stored at the project site, while in transit, or while stored at a temporary location. Coverage limit must be no less than replacement cost.

This policy shall insure the interests of the owner, DESIGN/BUILD FIRM, and subcontractors in the property against all risk of physical loss and damage, and name the CITY as a loss payee. This insurance shall remain in effect until the work is completed and the property has been accepted by the CITY.

Insurance Certificate Requirements

- a. The DESIGN/BUILD FIRM shall provide the CITY with valid Certificates of Insurance (binders are unacceptable) no later than thirty (30) days prior to the start of work contemplated in this Agreement.
- b. The DESIGN/BUILD FIRM shall provide a Certificate of Insurance to the City with a thirty (30) day notice of cancellation; ten (10) days' notice if cancellation is for nonpayment of premium.
- c. In the event that the insurer is unable to accommodate the cancellation notice requirement, it shall be the responsibility of the DESIGN/BUILD FIRM to provide the proper notice. Such notification will be in writing by registered mail, return receipt requested, and addressed to the certificate holder.
- d. In the event the Agreement term goes beyond the expiration date of the insurance policy, the DESIGN/BUILD FIRM shall provide the CITY with an updated Certificate of Insurance no later than ten (10) days prior to the expiration of the insurance currently in effect. The CITY reserves the right to suspend the Agreement until this requirement is met.
- e. The certificate shall indicate if coverage is provided under a claims-made or occurrence form. If any coverage is provided on a claims-made form, the certificate will show a retroactive date, which should be the same date of the initial contract or prior.
- f. The CITY shall be named as an Additional Insured on all general liability policies, with the exception of Workers' Compensation.
- g. The CITY shall be granted a Waiver of Subrogation on the DESIGN/BUILD FIRM's Workers' Compensation insurance policy.
- h. The Agreement, Proposal contract number, event dates, or other identifying reference must be listed on the certificate.

The Certificate Holder should read as follows:

City of Fort Lauderdale
100 N. Andrews Avenue
Fort Lauderdale, FL 33301

The DESIGN/BUILD FIRM has the sole responsibility for all insurance premiums and shall be fully and solely responsible for any costs or expenses as a result of a coverage deductible, co-insurance penalty, or self-insured retention; including any loss not covered because of the operation of such deductible, co-insurance penalty, self-insured retention, or coverage exclusion or limitation. Any costs for adding the CITY as an Additional Insured shall be at the DESIGN/BUILD FIRM's expense.

If the DESIGN/BUILD FIRM's primary insurance policy/policies do not meet the minimum requirements, as set forth in this Agreement, the DESIGN/BUILD FIRM may provide an Umbrella/Excess insurance policy to comply with this requirement.

The DESIGN/BUILD FIRM's insurance coverage shall be primary insurance as respects to the CITY, a political subdivision of the State of Florida, its officials, employees, and volunteers. Any insurance or self-insurance maintained by the CITY, its officials, employees, or volunteers shall be excess of DESIGN/BUILD FIRM's insurance and shall be non-contributory.

Any exclusions or provisions in the insurance maintained by the DESIGN/BUILD FIRM that excludes coverage for work contemplated in this Agreement shall be deemed unacceptable and shall be considered breach of contract.

All required insurance policies must be maintained until the contract work has been accepted by the CITY, and/or this Agreement is terminated. Any lapse in coverage shall be considered breach of contract. In addition, DESIGN/BUILD FIRM must provide confirmation of coverage renewal via an updated certificate should any policies expire prior to the expiration of this Agreement. The CITY reserves the right to review, at any time, coverage forms and limits of DESIGN/BUILD FIRM's insurance policies.

All notices of any claim/accident (occurrences) associated with this Agreement, shall be provided to the Contractor's insurance company and the CITY's Risk Management office as soon as practical.

It is the DESIGN/BUILD FIRMS's responsibility to ensure that all independent and subcontractors comply with these insurance requirements. All coverages for independent and subcontractors shall be subject to all of the requirements stated herein. Any and all deficiencies are the responsibility of the DESIGN/BUILD FIRM.

DESIGN/BUILD FIRM must keep insurance in force during the term of the assigned project, and except for professional liability/errors and omissions insurance which must be in effect for at least five (5) years after project completion.

- 18.4 All deductibles for insurance required in this Agreement are the responsibility of the DESIGN/BUILD FIRM. Certificates will indicate no modification or change in insurance shall be made without thirty (30) days in advance notice to the certificate holder. Certificate holder must read: CITY OF FORT LAUDERDALE, 100 N. Andrews Avenue, Fort Lauderdale, Florida 33301. Compliance with the foregoing requirements shall not relieve the DESIGN/BUILD FIRM of its liability and obligation under this section or under any other section of this Agreement.
- 18.5 The DESIGN/BUILD FIRM shall be responsible for assuring that the insurance certificates required in conjunction with this Section remain in force for the duration of the Project. If insurance certificates are scheduled to expire during the contractual period, the DESIGN/BUILD FIRM shall be responsible for submitted new or renewed insurance certificates to the CITY at a minimum of thirty (30) calendar days in advance of such expiration. In the event that expired certificates are not replaced with new or renewed certificates that cover the contractual period, the CITY shall:
- A. Suspend the Agreement until such time as the new or renewed certificates are received by the CITY;

- B. The CITY may, at its sole discretion, terminate the Agreement for cause and seek damages from the DESIGN/BUILD FIRM in conjunction with the violation of the terms and conditions of the Agreement.

ARTICLE 19 - SUBSTANTIAL COMPLETION

- 19.1 When DESIGN/BUILD FIRM considers that the Project, or a designated portion thereof, which is acceptable to CITY, in the event CITY chooses to accept same pursuant to the sole authority and discretion, is substantially complete, DESIGN/BUILD FIRM shall so notify the Project Manager, in writing, and shall prepare for submission to the Project Manager a thorough list of items to be completed or corrected, together with a schedule for completion of all items. The failure to include any items on such list does not alter the responsibility of DESIGN/BUILD FIRM to complete all Work in accordance with the Contract Documents. The Project Manager, and such other persons as they may deem necessary, shall conduct a joint inspection to determine that the Project (or designated portion thereof) is substantially complete. The Project Manager will then instruct DESIGN/BUILD FIRM to prepare and deliver to the Project Manager a Certificate of Substantial Completion which shall establish the date of Substantial Completion for the Project (or that portion of the Project). After review of the certificate by the Project Manager, CITY shall either accept or reject the certificate. Acceptance of Substantial Completion by CITY shall be based upon compliance with the Contract Documents and Applicable Laws. DESIGN/BUILD FIRM shall have thirty (30) days to complete the items listed therein. Warranties required by the Contract Documents and submitted in appropriate form to the Project Manager along with the request for Substantial Completion shall commence on the date of Substantial Completion of the Project (or for that portion of the Project). The Certificate of Substantial Completion shall be submitted to CITY through the Project Manager and DESIGN/BUILD FIRM for its written acceptance of the responsibilities assigned to it in such Certificate.

ARTICLE 20 - SHOP DRAWINGS AND SCHEDULE OF VALUES

- 20.1 DESIGN/BUILD FIRM shall submit Shop Drawings for all equipment, apparatus, machinery, fixtures, piping, wiring, fabricated structures and manufactured articles. The purpose of a Shop Drawing is to show the suitability, efficiency, technique of manufacture, installation requirements, details of the item and evidence of its compliance or noncompliance with the Contract Documents.
- 20.2 DESIGN/BUILD FIRM shall thoroughly review and check the Shop Drawings and each and every copy shall show DESIGN/BUILD FIRM's approval thereon.
- 20.3 If the Shop Drawings show or indicate departures from the Contract requirements, DESIGN/BUILD FIRM shall make specific mention thereof in its shop drawing submittal and a separate letter. Failure to point out such departures shall not relieve DESIGN/BUILD FIRM from its responsibility to comply with the Contract Documents. Project Manager shall determine acceptability of change and, in considering said change, may require data, technical comparisons, cost comparisons, quality comparisons and/or calculations to determine the equality of deviations. Project Manager is not obligated to accept deviations.

- 20.4 No acceptance will be given to partial submittal of Shop Drawings for items which interconnect and/or are interdependent. It is DESIGN/BUILD FIRM's responsibility to assemble the Shop Drawings for all such interconnecting and/or independent items, check them, and then make one (1) submittal to the Project Manager, along with DESIGN/BUILD FIRM's comments as to compliance, noncompliance, or features requiring special attention.
- 20.5 If catalog sheets or prints of manufacturers' standard drawings are submitted as Shop Drawings, any additional information or changes on such drawings shall be typewritten or lettered in ink. Catalog sheet with multiple options shall be highlighted to depict specific pertinent data including options.
- 20.6 DESIGN/BUILD FIRM shall submit to Project Manager five (5) copies. Re-submissions of Shop Drawings shall be made in the same quantity until final acceptance is obtained.
- 20.7 Project Manager's acceptance of the Shop Drawings, as approved by DESIGN/BUILD FIRM, will be for general compliance with the Plans and Specifications, and shall not relieve DESIGN/BUILD FIRM of responsibility for the accuracy of such Drawings, nor for the proper fittings and construction of the Work, nor for the furnishing of the Materials or Work required by the Contract and not indicated on the Drawings.
- 20.8 DESIGN/BUILD FIRM shall keep one (1) set of Shop Drawings, marked with the Project Manager's acceptance, as the Project site at all times.
- 20.9 The DESIGN/BUILD FIRM shall submit a Schedule of Values to the Project Manager as specified in the Technical Specifications. DESIGN/BUILD FIRM shall submit to the Project Manager a separate Schedule of Values for demolition, abatement, and site work ten (10) calendar days prior to commencing such portion of the Work. The schedule will be typed on 8 1/2" x 11" white paper listing: title of Project, location, Project number, Consultant, DESIGN/BUILD FIRM, Contract designation and date of submission. The schedule shall list the installed value of the component parts of the Work in sufficient detail to serve as a basis for computing values for progress payments during the construction. The table of contents of the specifications shall establish the format for listing the component items. Each line item will be identified by the number and title of the respective major section of the specifications. For each line item, DESIGN/BUILD FIRM shall list the sub-values of major products or operations under the item. Each item shall include the proportion of DESIGN/BUILD FIRM's overhead and profit. For any items for which progress payments will be requested for stored materials, the value will be broken down with:
- A. Schedule must include the following but is not limited to:
 - B. Separate identifiable activity on the critical path, an activity labeled "Other Conditions Allowance". This activity duration shall be thirty (30) calendar days and inserted at the end of the schedule prior to Substantial Completion. This allowance may or may not be used at the discretion of the CITY. Use of this activity shall be subject to the review and approval of the CITY and the Owners Representative. The duration of the "Other Conditions Allowance" activity shall be reduced as other conditions are experienced and inserted in the schedule.

- C. The cost of materials delivered, unloaded, properly stored and safeguarded, with taxes paid; and
- D. The total installed value review.

ARTICLE 21 - FIELD ENGINEERING

21.1 The DESIGN/BUILD FIRM shall provide and pay for field engineering services required for the Project. This work shall include the following elements:

- A. Survey work required in execution of the Project;
- B. Civil, structural or other professional engineering, architectural, landscape architectural, or land surveying services specified, or required to execute the survey completed by DESIGN/BUILD FIRM will identify the qualified engineer or registered land surveyor, acceptable to the CITY, and he or she shall be retained by the DESIGN/BUILD FIRM at the outset of this Project;
- C. The survey completed by DESIGN/BUILD FIRM will identify the qualified engineer or registered land surveyor, acceptable to the CITY, and he or she shall be retained by the DESIGN/BUILD FIRM at the outset of this Project;
- D. The survey will locate and protect control points prior to starting site work, and will preserve all permanent reference points during construction;
- E. No changes or relocations will be made without prior written notice to the Project Manager;
- F. A written report shall be made to the Project Manager when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations;
- G. The surveyor shall be required to replace Project control points which may be lost or destroyed. The surveyor shall be duly registered as a surveyor or mapper, as required by state law;
- H. Replacement shall be established based upon original survey control.

21.2 The survey completed by DESIGN/BUILD FIRM will identify the qualified engineer or registered land surveyor, acceptable to the CITY, and he or she shall be retained by the DESIGN/BUILD FIRM at the outset of this Project.

21.2.1 The survey will locate and protect control points prior to starting site work, and will preserve all permanent reference points during construction.

21.2.2 No changes or relocations will be made without prior written notice to the Project Manager.

21.2.3 A written report shall be made to the Project Manager when any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations.

21.2.4 The surveyor shall be required to replace Project control points which may be lost or destroyed. The surveyor shall be duly registered as a surveyor or mapper, as required by state law.

21.2.5 Replacements shall be established based upon original survey control.

ARTICLE 22 - FIELD LAYOUT FOR THE WORK AND RECORD DRAWINGS

- 22.1 The entire responsibility for establishing and maintaining a line and grade in the field lies with DESIGN/BUILD FIRM. DESIGN/BUILD FIRM shall maintain an accurate and precise horizontal and vertical record of the existing pavement conditions; final pavement conditions; and all pipe lines, conduits, structures, underground utility access portals, handholes, fittings, etc. encountered or installed during construction. DESIGN/BUILD FIRM shall deliver these records in good order to the Project Manager as the work is completed. These records shall serve as a basis for "as-built" drawings. The cost of all such field layout and recording work is included in the Contract Price.
- 22.2 DESIGN/BUILD FIRM shall maintain in a safe place at the site, one (1) record copy of the Plans and Specifications, addenda, written amendments, Change Orders and written interpretations and clarifications, in good order and annotated to show all changes made during construction. These record documents, together with all approved samples and a counterpart of all approved Shop Drawings, will be available to Project Manager for reference. Upon completion of the Project, these record documents, samples and Shop Drawings shall be delivered to the Project Manager.
- 22.3 At the completion of the Project, the DESIGN/BUILD FIRM shall turn over to the CITY a set of reproducible drawings and a complete set of all drawings in the latest version of AutoCAD on Compact Disk, not compressed, which accurately reflect the "as-built" conditions of the new facilities. All changes made to the Construction Documents, either as clarifications or as changes, will be reflected in the plans. The changes shall be submitted at least monthly to the Project Manager. These "as-built" drawings are to be AutoCad version and to CITY Standard Details and CADD Standards. Format media must be delivered and found to be acceptable prior to final payments.

ARTICLE 23 - NO DAMAGES FOR DELAY

- 23.1 NO CLAIM FOR DAMAGES OR ANY CLAIM OTHER THAN FOR AN EXTENSION OF TIME SHALL BE MADE OR ASSERTED AGAINST CITY BY REASON OF ANY DELAYS. DESIGN/BUILD FIRM shall not be entitled to an increase in the Contract Price or payment or compensation of any kind from CITY for direct, indirect, consequential, impact, or other costs, expenses or damages including, but not limited to, costs of acceleration or inefficiency arising because of delay, disruption, interference or hindrance from any cause whatsoever, whether such delay, disruption, interference, or hindrance be reasonable or unreasonable, foreseeable or unforeseeable, or avoidable or unavoidable; provided, DESIGN/BUILD FIRM hindrances or delays are not due solely to fraud, bad

faith or active interference by the CITY, DESIGN/BUILD FIRM shall be entitled only to extensions of the Contract Time as the sole and exclusive remedy for such resulting delays, in accordance with and to the extent specifically provided above. The specific application of this Article to other provisions of this Agreement shall not be construed as a limitation of any sort upon the further application of this Article. Ten dollars (\$10.00) of DESIGN/BUILD FIRM's fee is acknowledged as separate and independent consideration for the covenants contained in this Article.

ARTICLE 24 - LIMITATION OF LIABILITY

- 24.1 The CITY desires to enter into this Agreement only if in so doing the CITY can place a limit on the CITY's liability for any cause of action arising out of this Agreement, so that the CITY's liability for any breach never exceeds the sum of one thousand dollars (\$1,000.00). For other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the DESIGN/BUILD FIRM hereby expresses its willingness to enter into this Agreement with the knowledge that the DESIGN/BUILD FIRM's recovery from the CITY to any action or claim arising from the Agreement is limited to a maximum amount of one thousand dollars (\$1,000.00), which amount shall be reduced by the amount actually paid by the CITY to the DESIGN/BUILD FIRM pursuant to this Agreement, for any action or claim arising out of this Agreement. Nothing contained in this paragraph or elsewhere in this Agreement is in any way intended either to be a waiver of the limitation placed upon the CITY's liability beyond the limits established in Fla. Stat. Sec. 768.28; and no claim or award against the CITY shall include attorney's fees, investigative costs, expert fees, suit costs or pre-judgment interest.

ARTICLE 25 - GOVERNING LAW

- 25.1 This Agreement shall be interpreted and construed in accordance with and governed by the laws of the State of Florida. Any controversies or legal problems arising out of this Agreement and any action involving the enforcement or interpretation of any rights hereunder shall be submitted to the exclusive jurisdiction of the State courts of the Seventeenth Judicial Circuit of Broward County, Florida, the venue sites, and shall be governed by the laws of the State of Florida. To encourage prompt and equitable resolution of any litigation that may arise hereunder, EACH PARTY HEREBY WAIVES ANY RIGHTS IT MAY HAVE TO A TRIAL BY JURY OF ANY SUCH LITIGATION. DESIGN/BUILD FIRM SHALL SPECIFICALLY BIND ITS PROJECT TEAM MEMBERS AND ANY AND ALL SUBCONTRACTORS TO THE PROVISIONS OF THE CONTRACT.

ARTICLE 26 - MISCELLANEOUS PROVISIONS

- 26.1 OWNERSHIP OF DOCUMENTS: All finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs, specifications, plans and reports prepared or provided by DESIGN/BUILD FIRM in connection with this Agreement shall become the property of CITY, whether the Project for which they are made is completed or not, shall become the property of CITY and shall be delivered by DESIGN/BUILD FIRM to Project Manager within fifteen (15) days of the receipt of the written notice of termination or upon completion of the Project. If applicable, CITY may withhold payments then due

to DESIGN/BUILD FIRM until DESIGN/BUILD FIRM complies with the provisions of this section.

- 26.2 AUDIT RIGHT AND RETENTION OF RECORDS: CITY shall have the right to audit the books, records, and accounts of DESIGN/BUILD FIRM that are related to this Project. DESIGN/BUILD FIRM shall keep such books, records, and accounts as may be necessary in order to record complete and correct entries related to the Project. DESIGN/BUILD FIRM shall preserve and make available, at reasonable times for examination and audit by CITY, all financial records, supporting documents, statistical records, and any other documents pertinent to this Agreement for the required retention period of the Florida Public Records Act, Chapter 119, Florida Statutes, or, if the Florida Public Records Act is not applicable, for a minimum period of three (3) years after termination of this Agreement. If any audit has been initiated and audit findings have not been resolved at the end of the retention period or three (3) years, whichever is longer, the books, records, and accounts shall be retained until resolution of the audit findings. If the Florida Public Records Act is determined by CITY to be applicable to DESIGN/BUILD FIRM's records, DESIGN/BUILD FIRM shall comply with all requirements thereof; however, no confidentiality or non-disclosure requirement of either federal or state law shall be violated by DESIGN-BUILD FIRM. Any incomplete or incorrect entry in such books, records, and accounts shall be a basis for CITY's disallowance and recovery of any payment upon such entry.
- 26.3 ARCHITECT/ENGINEER: DESIGN/BUILD FIRM shall use the architect/engineer, including subconsultants, identified in the proposal that were a material part of the selection of the DESIGN/BUILD FIRM to provide the services for this Project. DESIGN/BUILD FIRM shall obtain written approval of CITY's Public Works Director prior to changing or modifying the list of subconsultants submitted by the DESIGN/BUILD FIRM. SEE APPENDICES, attached hereto and made a part hereof.
- 26.4 ASSIGNMENT AND PERFORMANCE: Neither this Agreement nor any interest herein shall be assigned, transferred, or encumbered without the prior written consent of the other party.
- 26.5 ONE ORIGINAL AGREEMENT: This Agreement will be executed in one original.
- 26.6 ALL PRIOR AGREEMENTS SUPERSEDED: This Agreement incorporates and includes all prior negotiations, correspondence, conversations, agreements or understandings applicable to the matters contained herein; and the parties agree that there are no commitments, agreements or understandings concerning the subject matter of this Agreement that are not contained in this Agreement. Accordingly, the parties agree that no deviation from the terms hereof shall be predicated upon any prior representations or agreements whether oral or written.
- 26.7 AMENDMENTS: No modification, amendment, or alteration in the terms or conditions contained herein shall be effective unless contained in a written document executed by both parties with the same formality and of equal dignity herewith.
- 26.8 INDEPENDENT CONTRACTOR: DESIGN/BUILD FIRM is an independent contractor under this Agreement. Services provided by DESIGN/BUILD FIRM shall be subject to

the supervision of DESIGN/BUILD FIRM. In providing the services, DESIGN/BUILD FIRM or its agents shall not be acting and shall not be deemed as acting as officers, employees, or agents of the CITY. No partnership, joint venture, or other joint relationship is created hereby. CITY does not extend to DESIGN/BUILD FIRM or its agents any authority of any kind to bind CITY in any respect whatsoever.

- 26.9 THIRD PARTY BENEFICIARIES: Neither DESIGN/BUILD FIRM or CITY intends to directly or substantially benefit a third party by this Agreement. The parties expressly acknowledge that it is not their intent to create any rights or obligations in any third person or entity under this Agreement. Therefore, the parties agree that there are no third party beneficiaries to this Agreement and that no third party shall be entitled to assert a claim against either of them based upon this Agreement.
- 26.10 WAIVER OF BREACH AND MATERIALITY: Failure by the CITY or DESIGN/BUILD FIRM to enforce any provision of this Agreement shall not be deemed a waiver of such provision or modification of this Agreement.
- 26.11 MATERIAL TERM: CITY and DESIGN/BUILD FIRM agree that each requirement, duty, and obligation set forth herein is substantial and important to the formation of this Agreement, and therefore, is a material term hereof.
- 26.12 COMPLIANCE WITH LAWS: DESIGN/BUILD FIRM shall comply with all federal, state, and local laws, codes, ordinances, rules and regulations in performing its duties, responsibilities, and obligations related to this Agreement.
- 26.13 NONDISCRIMINATION, EQUAL EMPLOYMENT OPPORTUNITY, AND AMERICANS WITH DISABILITIES ACT: DESIGN/BUILD FIRM shall not unlawfully discriminate against any person in its operations and activities in its use or expenditure of the funds or any portion of the funds provided by this Agreement and shall affirmatively comply with all applicable provisions of the Americans with Disabilities Act in the course of providing any services funded in whole or in part by CITY, including Titles 1 and 11 of the Act, and all applicable regulations, guidelines and standards.

DESIGN/BUILD FIRM's decisions regarding the delivery of work and services under this Agreement shall be made without regard to or consideration of 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 or appropriately used as a basis for service delivery.

DESIGN/BUILD FIRM shall comply with Title 1 of the Americans with Disabilities Act regarding nondiscrimination on the basis of disability in employment and further shall not discriminate against any employee or applicant for employment because of race, age, religion, color, gender, sexual orientation, national origin, marital status, political affiliation, or physical or mental disability. In addition, DESIGN/BUILD FIRM shall take affirmative steps to ensure nondiscrimination in employment against disabled persons. Such actions shall include, but not be limited to, the following: employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff, termination, rates of pay, other forms of compensation, terms and conditions of employment, training (including apprenticeship) and accessibility.

DESIGN/BUILD FIRM shall take affirmative action to ensure that applicants are employed and employees are treated without regard to race, age, religion, color, gender, sexual orientation, national origin, marital status, political affiliation, or physical or mental disability during employment. Such actions shall include, but not be limited to, the following: employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff, termination, rates of pay, other forms of compensation, terms and conditions of employment, training (including apprenticeship) and accessibility.

- 26.14 PUBLIC ENTITY CRIMES ACT: In accordance with the Public Entity Crimes Act, Sec. 287.133, Florida Statutes, a person or affiliate who is a contractor, consultant or other provider, who has been placed on the convicted vendor list following a conviction for a Public Entity Crime, may not submit a bid on a contract to provide any goods or services to the CITY, may not submit a bid on a contract with the CITY for the construction or repair of a public building or public work, may not submit bids on leases of real property to the CITY, may not be awarded or perform work as a contractor supplier, Subcontractor or consultant under a contract with the CITY and may not transact any business with the CITY in excess of the threshold amount provided in Section 287.017, Florida Statutes, as amended, for category two purchases for a period of thirty-six (36) months from the date of being placed on the convicted vendor list. Violation of this section shall result in cancellation of the CITY purchase and may result in debarment.
- 26.15 SEVERENCE: In the event a portion of this Agreement is found by a court of competent jurisdiction to be invalid, the remaining provisions shall continue to be effective unless CITY elects to terminate this Agreement. The election to terminate this Agreement based upon this provision shall be made within seven (7) days after the finding by the court becomes final.
- 26.16 JOINT PREPARATION: Preparation of this Agreement has been a joint effort of the CITY and DESIGN/BUILD FIRM and the resulting document shall not, solely as a matter of judicial construction, be construed more severely against one of the parties than any other.
- 26.17 PRIORITY OF PROVISIONS: If there is a conflict or inconsistency between any term, statement, requirement, or provision of any exhibit attached hereto, any document or events referred to herein, or any document incorporated into this Agreement by reference and a term, statement, requirement, or provision of this Agreement, the term, statement, requirement, or provision contained in Articles 1 through 26 shall prevail and be given effect.
- In the event of a conflict among the Contract Documents, the most stringent requirement shall control.
- 26.18 TAXES: DESIGN/BUILD FIRM shall pay all applicable sales, consumer, use and other taxes as required by law. DESIGN/BUILD FIRM is responsible for reviewing the pertinent state statutes involving state taxes and complying with all requirements. All such taxes that are required as of the time of Agreement execution shall be included in the Not to Exceed Price.

26.19 **SCRUTINIZED COMPANIES:** Subject to *Odebrecht Construction, Inc., v. Prasad*, 876 F.Supp.2d 1305 (S.D. Fla. 2012), affirmed, *Odebrecht Construction, Inc., v. Secretary, Florida Department of Transportation*, 715 F.3d 1268 (11th Cir. 2013), with regard to the “Cuba Amendment,” the DESIGN/BUILD FIRM certifies that it is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2019), as may be amended or revised, and that it is not engaged in a boycott of Israel, and that it does not have business operations in Cuba or Syria, as provided in section 287.135, Florida Statutes (2019), as may be amended or revised. The City may terminate this Agreement at the City’s option if the DESIGN/BUILD FIRM is found to have submitted a false certification as provided under subsection (5) of section 287.135, Florida Statutes (2019), as may be amended or revised, or been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or the Scrutinized Companies that Boycott Israel List created pursuant to Section 215.4725, Florida Statutes (2019), as may be amended or revised, or is engaged in a boycott of Israel or has been engaged in business operations in Cuba or Syria, as defined in Section 287.135, Florida Statutes (2019), as may be amended or revised.

26.20 **PUBLIC RECORDS:**

IF THE DESIGN/BUILD FIRM HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE DESIGN/BUILD FIRM’S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT CITY CLERK’S OFFICE, 100 N. ANDREWS AVENUE, FORT LAUDERDALE, FLORIDA, 33301, EMAIL: dsoloman@fortlauderdale.gov, PHONE: 954-828- 5002.

DESIGN/BUILD FIRM shall:

1. Keep and maintain public records required by the CITY in order to perform the service. Upon request from the CITY’s custodian of public records, provide the CITY with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes (2019), as may be amended or revised, or as otherwise provided by law.
2. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of this contract if the DESIGN/BUILD FIRM does not transfer the records to the CITY.
3. Upon completion of the Contract, transfer, at no cost, to the CITY all public records in possession of the DESIGN/BUILD FIRM or keep and maintain public records required by the CITY to perform the service. If the DESIGN/BUILD FIRM transfers all public records to the CITY upon completion of this Contract, the DESIGN/BUILD FIRM shall destroy any duplicate public records that are exempt

or confidential and exempt from public records disclosure requirements.

4. If the DESIGN/BUILD FIRM keeps and maintains public records upon completion of this Contract, the DESIGN/BUILD FIRM shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the CITY, upon request from the CITY's custodian of public records, in a format that is compatible with the information technology systems of the CITY.

SAMPLE AGREEMENT

Exhibit “A”

Bayshore Drive Intracoastal Force Main Crossing
(18” Force Maine Replacement across the North River from Northeast 9th Street to North Birch Rd.)
PROJECT NO. 12389

TABLE OF CONTENTS

Exhibit A	Project Scope
Exhibit B	Technical Specifications
Exhibit C	Conceptual Layouts
Exhibit D	Project Area Topographic Survey
Exhibit E	Existing Underground Utility Information
Exhibit F	CADD Standards
Exhibit G	Permit Applications
Exhibit H	Permits
Exhibit I	Benthic Characterization Survey
Exhibit J	Geotechnical Report
Exhibit K	Preapproved Manufacturers List

EXHIBIT "A"
Design Criteria Package

BAYSHORE DRIVE INTRACOASTAL FORCE MAIN CROSSING
(18" FORCE MAIN REPLACEMENT ACROSS THE
N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.)
CITY OF FORT LAUDERDALE PROJECT NO. 12389

I. PROJECT OBJECTIVE

The CITY owns, maintains and operates 4,420 linear feet of 18-inch diameter wastewater force main which includes approximately 500 feet of subaqueous crossing under the Atlantic Intracoastal Waterway (Atlantic ICW). The force main conveys flow from Pumping Station D-40 and the surrounding area east to the intersection of Middle River Drive and NE 9th Street where it connects to a 48-inch diameter force main. The CITY has access to the subaqueous crossing via 20-foot easements located on private properties with ID's 504201BH0010 and 504201BD0010. The CITY has experienced several pipeline failures over the years and has determined the force main needs to be replaced. It is critical to replace the existing upland force main and to construct a new subaqueous force main across the Atlantic Intracoastal Waterway and place it into service as soon as possible.

The City of Fort Lauderdale (CITY) has issued this Request for Proposal (RFP) to solicit competitive proposals for the design, permitting, and construction of the Bayshore Drive Intracoastal Crossing Force main Project.

II. SCOPE OF WORK

The Project includes the design, permitting, construction, start up and testing of the force main and related work.

1. New dual (two) 14-inch nominal diameter force main crossing of the Atlantic Intracoastal Waterway utilizing high density polyethylene pipe installed via horizontal directional drilling (HDD).
2. New 20-inch nominal diameter force main on Northeast 9th Street, Bayshore Drive, and Vistamar Street.
3. Cut, cap and abandon in place the existing 18-inch DIP force main along NE 9th Street.
4. Connect all proposed piping to the existing piping on-shore utilizing HDPE PE 4710 as indicated on the DCP Plans.
5. Installation of a 30-inch tidal valve, modification of existing structures and stormwater piping, regrading, paving and restoration of the parking lot, driveway and adjacent areas at 888 Intracoastal Boulevard.

Included in the scope of work are design, permitting, construction, construction management services, as well as inspection, testing, construction certification, public involvement and all associated work delineated herein or determined by the Design Build Firm (DBF) as required to meet the Project intent. The RFP Documents, including the Design Criteria Package (DCP), Technical Specifications, all exhibits and attachments, and the successful proposal, shall form the terms and conditions of the Contract.

Exhibit A
Design Criteria Package

A-1

The DBF shall be responsible for design, any additional surveying, geotechnical investigations, borings, environmental investigation, compliance, preparation of completed permit submittal packages, and procurement of all required permits for construction (for all permits not acquired by the CITY), construction phasing, maintenance of traffic and all other related work or services.

This Design Criteria Package sets forth minimum requirements regarding design, construction, and maintenance of traffic during construction, including requirements relative to project management, scheduling and coordination with other agencies and entities such as the state, county and local government environmental permitting agencies and the public.

DBF Procurement

CITY will procure the services of a DBF to implement the scope of work described herein. CITY will solicit proposals and establish selection criteria in accordance with City of Fort Lauderdale Code of Ordinances Section C-17-26 to procure the services of a qualified DBF.

III. PROJECT REQUIREMENTS

The DBF shall demonstrate good project management practices while working on this Project. These include communication with the (CITY) and others as necessary, management of time and resources, and documentation. The CITY will provide contract administration and technical reviews of all work associated with this Project. The successful Design Build firm shall be able to address the following information.

Design and Construction Criteria

The DBF shall provide a complete and thorough technical approach to conducting a design-build pipeline installation operation. The technical proposal should demonstrate a complete understanding of the Project and CITY objectives as well as include how the DBF intends to address the following items:

1. Completion of engineering design plans for construction. Final plans must include emergency contact information as required by the CITY.
2. The procurement of all permits required for construction and the placement of the pipelines in service from local, state and federal agencies, including the Army Corps of Engineers, the Florida Department of Environmental Protection, the South Florida Water Management District, Broward County Environmental Protection and Growth Management Department, and the City of Fort Lauderdale. The DBF shall develop primary issues, possible testing requirements and timing.
3. The DBF shall include detailed description of any necessary phasing of the project, potential service disruptions, access to residents and businesses, and a project schedule.
4. Include potential pitfalls and emergencies and provide contingency plan to address unforeseen conditions.
5. Appropriate Quality Control/Quality Assurance procedures.
6. The development of final record drawings.

Detailed Description

Exhibit B includes technical specifications that describe the material quality standards and performance criteria for this Project. Exhibit C includes conceptual layouts that illustrate the project intent. These conceptual layouts are provided to convey sufficient information to allow the Respondent to prepare a response to the CITY's RFP.

It is recognized that the proposed work has the potential to adversely impact the aquatic environment of the Atlantic ICW, as well as to adversely impact the properties bordering the project area. Use of the horizontal directional drilling (HDD) method of pipe installation is proposed to avoid such impacts. However, it is also recognized that the existing utilities and site constraints of the Project present limitations for HDD installation and that certain precautionary measures during Open Cut (Trench) construction may be implemented which are fully protective of the environment and of the residential properties. Therefore, the CITY is requiring prospective DBFs to provide qualifications and price proposals for both HDD and open cut construction.

The installation of valves on existing force main being replaced by the Project shall be included as necessary to allow for their isolation from service pressure. The overall length of the Atlantic ICW crossings, connections with existing utilities and the exact tie-in locations shall be determined as part of the scope of this design-build project. The selected DBF will be required to retain full responsibility for design, permitting, and construction of all aspects of the project. The DBF shall develop a detailed project design based on the criteria set forth in this document and construct the work in accordance with the requirements set forth in this document and applicable permits procured for the project by the DBF.

The technical proposal should demonstrate an understanding of the following design issues:

1. Familiarity with local subsurface conditions and interpretation of geotechnical data.
2. Horizontal directional drilling for pipe installation
3. Open cut excavation and backfill for pipe installation
4. Sub-aqueous pipeline crossings
5. Maintenance of traffic
6. Installation of proposed utilities
7. Landscaping, irrigation, and restoration
8. Response to Residents' Complaints

Governing Regulations

The services provided by the DBF shall be in compliance with all applicable City of Fort Lauderdale, OSHA Guidelines, Florida Department of Transportation Manuals and Guidelines, South Florida Water Management District Manuals and Guidelines, as well as State of Florida Department of Environmental Protection, the U.S. Army Corps of Engineers, Broward County Environmental Protection and Growth Management Department and Broward County Health Department regulations and guidelines, as applicable, except as explicitly noted within this

Exhibit A
Design Criteria Package

A-3

document. In general, the most recent editions of the following documents shall be utilized for this Project:

1. Florida Department of Transportation Utility Accommodation Manual
2. Florida Department of Environmental Protection – Environmental Resource Permit Applicants Handbook Volumes I & II.
3. Broward County Environmental Protection Department – A Consulting Engineer's Guide for a Wastewater Collection/Transmission System Construction License Application
4. OSHA Regulations for Construction – Title 29, Part 1926, Construction Safety and Health Regulations, Code of Federal Regulations (OSHA)
5. OSHA Standards – Title 29, Part 1910, Occupational Safety and Health Standards, Code of Federal Regulations (OSHA).
6. Florida Building Code

IV. SERVICES AND MATERIALS PROVIDED BY THE CITY

The CITY or its designee will provide the services set forth below:

1. A Project Manager shall be the technical representative of the CITY for the Project
2. Design review
3. Construction observation and inspection of the Project as deemed appropriate by the City

V. EXISTING UNDERGROUND UTILITY INFORMATION

Limited information on existing underground utilities within the vicinity of the project area is available. Available information on CITY owned underground utilities is included as Exhibit D.

VI. CADD STANDARDS

All design drawings prepared under this project shall comply with the latest CITY document titled "City of Fort Lauderdale Public Works Engineering & Architectural Department CADD Specifications for Project Drawings" (hereinafter CADD Standards) in effect at the time of contract execution. A copy of the CITY CADD Standards is included in Exhibit E.

VII. EASEMENT

The CITY has applied for a 20-foot wide Submerged Land easement with the State of Florida. The DBF should design the HDD within the easement. If the pipeline is designed outside the Submerged Land easement, the Contractor will be required to submit a modification of the easement. A copy of the easement sketch and legal document is included in Exhibit F. A copy of the executed easement will be provided by the CITY upon request.

VIII. PERMITS OBTAINED BY THE CITY

Copies of the permit applications submitted by the CITY are included in Exhibit G. Copies of the permits obtained by the CITY are included in Exhibit H.

Exhibit A
Design Criteria Package

A-4

IX. TOPOGRAPHIC SURVEY

A topographic survey was prepared as part of the development of the DCP for the City Project. The topographic survey for CITY covers the majority of the project area. However, additional surveys may be required by the DBF for establishing pipeline alignment based upon the DBF's design. The CITY will provide the CADD files for the topographic survey.

X. BENTHIC CHARACTERIZATION SURVEY

A benthic characterization survey was prepared by the Design Criteria Engineer's sub-consultant. A copy of the benthic characterization survey is included in Exhibit I. Additional benthic characterization by the DBF is not required.

XI. PROVISIONS FOR UTILITIES, STAGING AND PARKING

The DBF shall pay for all utilities needed for the performance of the Project. Contractor shall be responsible for coordinating with the CITY for parking and staging arrangements within CITY properties and ensure that the area remains free of garbage, trash, and litter.

XII. CONSTRUCTION DURATION / TIME FRAME

The CITY expects this Project to be completed as expeditiously as possible. Below is the estimated schedule:

Milestone	Calendar Days from Notice to Proceed
Assumed Notice to Proceed Date	TBD
New Force Main Substantial Completion	180 Calendar Days
Final Completion of Project	220 Calendar Days

Failure to achieve the milestones will result in liquidated damages as described in the CITY's conditions.

The DBF shall be responsible to obtain all permits not already acquired by the CITY. The procurement of permits is a critical item on the schedule for this Project. The DBF shall expedite the procurement of the permits not already obtained by the CITY.

EXHIBIT "B"
TECHNICAL SPECIFICATIONS

<u>SECTION</u>	<u>TECHNICAL SPECIFICATIONS (Volume I)</u>	<u>PAGES</u>
DIVISION 1 - GENERAL REQUIREMENTS		
01005	Technical Provisions	01005-1 - 01005-7
01010	Summary of Work	01010-1 - 01010-11
01025	Measurement and Payment	01025-1 - 01025-10
01031	Alteration Project Procedures	01031-1 - 01031-3
01045	Cutting and Patching	01045-1 - 01045-3
01060	Regulatory Requirements & Permits	01060-1 - 01060-2
01070	Abbreviations of Institutions	01070-1 - 01070-3
01090	Reference Standards	01090-1 - 01090-2
01340	Shop Drawings, Product Data and Samples	01340-1 - 01340-4
01400	Quality Control	01400-1 - 01400-2
01505	Mobilization	01505-1
01510	Temporary Utilities	01510-1 - 01510-3
01520	Construction Aids	01520-1 - 01520-2
01530	Protection of Existing Facilities	01530-1 - 01530-5
01550	Site Access and Storage	01550-1 - 01550-3
01560	Temporary Controls	01560-1 - 01560-3
01570	Traffic Regulations	01570-1 - 01570-2
01580	Project Identification and Signs	01580-1 - 01580-3
01600	Material and Equipment	01600-1 - 01600-6
01700	Contract Closeout	01700-1 - 01700-3
01710	Cleaning	01710-1 - 01710-2
01720	Project record Drawings	01720-1 - 01720-4
DIVISION 2 - SITEWORK		
02010	Sub-Surface Investigation	02010-1
02050	Demolition	02050-1 - 02050-5
02110	Clearing	02110-1 - 02110-2
02140	Dewatering	02140-1 - 02140-3
02200	Earthwork	02200-1 - 02200-18
02212	Milling of Existing Asphalt Pavement	02212-1 - 02212-3
02221	Excavation and Backfilling for Utilities	02221-1 - 02221-3
02400	Storm Drainage Facilities	02400-1 - 02400-5
02410	Installation of Pipe by Directional Drill Technique	02410-1 - 02410-9
02510	Concrete Sidewalk	02510-1 - 02510-2
02513	Asphaltic Concrete Paving - General	02513-1 - 02513-13
02577	Pavement Marking and Car Stops	02577-1 - 02577-2
02601	Subterranean Structures	02601-1 - 02601-4
02610	Piping, General	02610-1 - 02610-16
02641	Valves, General	02641-1 - 02641-12
02900	Landscape Work	02900-1 - 02900-9
02910	Sodding	02910-1 - 02910-7
02990	Slip Lining	02990-1 - 02990-2
DIVISION 3 - CONCRETE		
03010	Concrete	03010-1 - 03010-5
03100	Concrete Form work	03100-1 - 03100-4
03300	Cast-In-Place Concrete	03300-1 - 03300-10

EXHIBITS "ATTACHMENT-A" - Project and Community Coordination Requirements... A1 – A6

TOC-1

SECTION 01005 TECHNICAL PROVISIONS

PART 1 - GENERAL

1.01 SCOPE

Work under this contract includes furnishing materials, labor, tools, equipment, supervision and incidentals necessary to construct infrastructure improvements.

1.02 GENERAL

- A. The provisions of this Section shall amplify the general requirements of the City of Fort Lauderdale Public Works Department, Broward County Water and Wastewater Services (WWS) "Minimum Design and Construction Standards" and the Broward County Highway Construction and Engineering Division "Minimum Standards", latest revisions and shall have full force and effect as if contained in these documents.
 - B. TECHNICAL SPECIFICATIONS Latest Revision consists of this section, Section 01005, described as TECHNICAL PROVISIONS, pages 01005-1 to 01005-8 and the applicable sections, City of Fort Lauderdale Public Works Department Standard Details, latest revision, Broward County Water and Wastewater Services (WWS) "Minimum Design and Construction Standards" and the Highway Construction & Engineering Division "Minimum Standards", latest revision and the Florida Department of Transportation (FDOT) latest revision.
 - C. In case of a conflict between the City of Fort Lauderdale Standards, Broward County Water and Wastewater Services (WWS) "Minimum Design and Construction Standards", Highway Construction & Engineering Division "Minimum Standards", and the project drawings, the most conservative of these will govern.
 - D. The City of Fort Lauderdale Engineering Standard Details are not attached to the TECHNICAL SPECIFICATIONS but can be obtained from the City and/or online at the DESIGN-BUILD FIRM'S expense. City of Fort Lauderdale Engineering Standard Details can be obtained at: <https://www.fortlauderdale.gov/departments/sustainable-development/building-services/engineering-forms-and-info>
 - E. The Broward County Water and Wastewater Services (WWS) "Minimum Design and Construction Standards" are not attached to the TECHNICAL SPECIFICATIONS but can be obtained from the County and/or online at the DESIGN-BUILD FIRM's expense. Broward County Water and Wastewater Services (WWS) Construction Standards can be obtained at <http://www.broward.org/WaterServices/Engineering/Pages/MinimumDesignandConstructionStandards.aspx>
 - D. The Broward County Highway Construction & Engineering Division "Minimum Standards" are not attached to the TECHNICAL SPECIFICATIONS but can be obtained from Broward County Highway Construction & Engineering Division, per the following link. https://library.municode.com/fl/broward_county/codes/administrative_code?nodeId=CH25OPPOPUWO_EXHIBIT_25.AMISTAPPURI-WUNBRCOJU_TIIN#TOPTITLE
 - E. DBF refers to DESIGN-BUILD FIRM.
- #### 1.03 ITEMS SPECIFIED ON DRAWINGS
- A. Items of material, equipment, machinery and the like may be specified on the Drawings and not in the Technical Specifications. The DESIGN-BUILD FIRM (DBF) shall provide such items in accordance with the General Notes on the Drawings.

Exhibit B
Technical Specifications

01005- 1

**SECTION 01005
TECHNICAL PROVISIONS****1.04 FIELD LAYOUT OF THE WORK AND RECORD DRAWINGS**

- A. After completion of construction, the DBF shall provide signed and sealed PDF documents, CADD drawings, and two sets of As-Built Drawings with all the As-Built information; all locations, coordinates, dimensions and elevations of the constructed facilities, certified, signed and sealed thereon by a Professional Surveyor and Mapper per Florida Statute 472.001-472.037. All elevations shall refer to N.A.V.D. 88 (North American Vertical Datum of 1988) and all state plane coordinates shall be NAD 83 (with 1990 adjustment). The cost of such field layout and recording work shall be the responsibility of the DBF. The As-Built utility information shall meet the requirements of the City of Fort Lauderdale.

1.05 SALVAGE

- A. Any existing equipment or material, including but not limited to valves, pipes, fittings, couplings, etc., which is removed as a result of construction under this project may be designated as salvage by the CITY, and if so, shall be delivered clean to the CITY at a location directed by the CONTRACT ADMINISTRATOR. Any equipment or material not worthy of salvaging shall be disposed of by the DBF at a suitable location in accordance with all applicable regulations, ordinances and laws at no additional cost to the CITY.

1.06 POWER

- A. The DBF shall furnish and pay for all electrical power and noise attenuation required for the construction, testing and trial operation, prior to final acceptance by the CITY.

1.07 WATER SUPPLY

- A. All water required for testing, flushing, and construction shall be furnished by the CITY and paid for by the DBF. The purchase price shall be the prevailing rate as published by the CITY. The quantity of water used shall be determined by reading the meter at the start and at the finish of construction. The DBF shall make all arrangements and incur all expense involved in having the CITY furnish and install the necessary water meters. Each water service line shall be provided with a vacuum relief or backflow preventer which shall meet the requirements of ASA A40.6, latest revision, and the local administrative authority.

1.08 MAINTENANCE

- A. The DBF shall fully cooperate at all times with the CITY in order to maintain the operation of the existing water and/or sewer system with the least amount of interference and interruption possible. The schedule plans and work of the DBF shall at all times be subject to alteration and revision if necessary, for public health and safety considerations. The creation of a public nuisance will not be permitted.
- B. It may be necessary to interrupt the operation of the existing water and/or sewer system. In all cases where the DBF must cause an interruption, DBF shall prepare and submit to the CITY four (4) working days prior to commencing the work, a complete description of the proposed procedure and a time schedule, which DBF will be required to guarantee. At least forty-eight (48) hours prior to the time proposed for starting the work, the CITY will notify the DBF whether or not the work will be permitted as proposed.
1. The CITY reserves the right to require the DBF to work 24 hours per day in all cases where, in CITY'S opinion, interference with operation of the system may result in dangerous health hazards or offensive conditions.

Exhibit B
Technical Specifications

01005- 2

**SECTION 01005
TECHNICAL PROVISIONS**

2. In no case will the DBF be permitted to interfere with the existing system until all materials, supplies, equipment, tools and incidentals necessary to complete the work are on the site. Backup equipment on key equipment items shall be required on work necessitating interference with the existing system.

1.09 SITE RESTORATION

- A. The DBF shall remove all excess material and shall clean up and restore the site to its original condition or better. All damage, as a result of work under this Contract, done to existing structures, pavement, driveways, paved areas, curbs and gutters, sidewalks, shrubbery, grass, trees, utility poles, utility pipe lines, conduits, drains, catch basins, flagstones, rocked, graveled, or stabilized areas of driveways, and including all obstructions not specifically named herein, shall be repaired, or replaced, as determined by the CITY. Site restoration shall be done in a timely manner as the work progresses. Site restoration work shall be completed on private property within 30 days after being disturbed.

1.10 SANITARY FACILITIES

- A. The DBF shall provide temporary facilities at the site as directed by the CITY.

1.11 STANDARDS

- A. Wherever in these TECHNICAL SPECIFICATIONS or in the drawings name and/or number refer to certain standards or regulations, the applicable publication shall be the latest revision thereof. Reference by abbreviation is made in accordance with the Section 01070, "Abbreviations of Institutions."

1.12 QUALITY OF ITEMS

- A. All material furnished for this project shall be new and unused. Any material, which has become excessively weathered or damaged since manufacture, shall not be considered as new. CITY shall be the sole judge as to what constitutes excessive weathering or damage.

1.13 TESTING

- A. The City of Fort Lauderdale may require that materials and equipment supplied meet given standards, and testing may be required to demonstrate conformance to the standards. The cost of these tests shall be the obligation of the DBF, and no extra charge shall be made to the CITY on account of such testing.
- B. The CITY will select a recognized, independent testing laboratory to perform tests on concrete, reinforcing steel, soils and other materials for the construction phase, to determine conformity with the TECHNICAL SPECIFICATIONS. The DBF shall supply the necessary samples for this testing without cost to the CITY. The costs for actual testing shall be paid by the CITY except for tests which fail to meet the minimum specified tolerances set forth in the drawings and the TECHNICAL SPECIFICATIONS. The cost of the tests that fail will be charged to the DBF by deducting the cost from the Contract price or will be paid directly to the testing laboratory by the DBF.
- C. Construction in areas where installation and restoration must satisfy the additional requirements of a local, state or federal authority may require testing to demonstrate conformance. The DBF shall ascertain the extent of testing required by regulatory agencies within these areas. The DBF is responsible for performing such tests, including but not limited to, tests of compaction, and all

Exhibit B
Technical Specifications

01005- 3

**SECTION 01005
TECHNICAL PROVISIONS**

costs for these tests shall be the obligation of the DBF and no extra charge shall be made to the CITY on account of such testing.

1.14 UTILITY CROSSINGS

- A. It is intended that wherever existing utilities must be crossed that the pipe may be deflected up to 75% of the manufacturer's recommended limits but shall not exceed the allowable limits of the CITY. Adequate cover shall be used to adequately clear the obstruction. However, when in the opinion of the CITY, this procedure is not feasible CITY may direct the use of fittings to clear a utility crossing as detailed on the Drawings. The cost of such crossing including joint restraints shall be on the basis of the schedule of pay items applied.
- B. Deflections and adjustments of the proposed water and/or sewer mains to avoid all other existing utilities shall be verified/determined in the field during construction.

1.15 BASIS OF MEASUREMENT

- A. Where mains are to be paid for on a unit price per linear foot basis, the number of linear feet will be determined by measurement along the centerline of the pipe in place, including fittings. Square yardage will be determined by the actual number of square yards installed.

1.16 ADJUSTMENT AND RELOCATION OF EXISTING LINES

- A. See Paragraph 1.14 of this Section. This does not apply to connections to existing system, which is described in Paragraph 1.17, this Section.

1.17 CONNECTION TO EXISTING SYSTEM

- A. The DBF shall perform all work necessary to locate, excavate and prepare for connection to the existing mains as shown on the Drawings. The cost of this work and for the actual connection to the existing main shall be based upon the unit prices for installing the pipe and appurtenances and shall not result in any additional cost to the CITY. The cost of ductile iron sleeves shall be included in the fittings unit price.
- B. Additional valves used for the DBF's convenience shall not be considered as an extra cost payable by the CITY for the tie-in to the existing system.
- C. During all phases of the work, (i.e. installation, testing and restoration), the DBF shall ensure at all times the safe operation of the existing water and/or sewage systems. Service to the customers shall be maintained with the least amount of interference and interruption as possible.

1.18 RELOCATIONS

- A. The DBF shall be responsible for the coordination and/or performance of relocated structures that are shown on the drawings, including, but not limited to, light poles, signs, fences, piping, conduits and drains that interfere with the proposed positioning of the water/sewer mains. The cost of all such relocations shall be included in the prices bid for the appropriate items.

1.19 UTILITIES

- A. Existing utilities are shown on the Drawings insofar as information is reasonably available; however, it will be the responsibility of the DBF to preserve all existing utilities whether shown on the Drawings or not. DBF is directed to pothole ahead of utility installation to avoid conflict and/or

Exhibit B
Technical Specifications

01005- 4

**SECTION 01005
TECHNICAL PROVISIONS**

damage to existing facilities. If utility conflicts are encountered by the DBF during construction, DBF shall give sufficient notice to their owners so that they may make the necessary adjustments. Damage to any utility, which in the opinion of the CITY is caused by carelessness on the part of the DBF shall be repaired at the expense of the DBF.

1.20 GUARANTEE

- A. The DBF shall guarantee the equipment, material and labor performed under the Contract against any and all failures in proper use and operation for a period of one (1) year from date of written acceptance by the CITY.
- B. The DBF shall also obtain warranties from manufacturers for each piece of equipment furnished so that the manufacturer's warranty fully covers the equipment for a period of one (1) year from the date of written acceptance by the CITY.

1.21 PERFORMANCE OF WORK

- A. The DBF shall provide all personnel and equipment required to complete all work specified herein and on the Drawings.
- B. DBF shall provide forty-eight (48) hours advance written notice to the CITY for approval of DBF'S intention to work overtime on weekdays or to work on the weekends. .

1.22 BARRICADING (SAFETY)

- A. The DBF shall be responsible for the furnishing and maintaining of all required barricades, either the lighted or the reflector type, to ensure the public's safety during open trench work or for any other potentially unsafe or hazardous construction activities. Barricades shall be located and displayed in conformance with the most stringent regulations required by the governing agencies. All costs for barricading, including any permits, shall be the responsibility of the DBF.
- C. All work in public rights-of-way and on private property shall be done in strict compliance with these specifications. City of Fort Lauderdale. Failure to comply will result in cessation of operations and the removal of project related obstructions from the right-of-way until compliance is achieved.

1.23 EMERGENCY ACCESS AND SECURITY

- A. In order to provide protection to the workers and residents, the DBF shall always maintain emergency access to all adjacent properties during construction. If a road is required to be closed to vehicular traffic and the distance of the closure exceeds 150 feet between stabilized surfaces or prevents access to properties for a distance that exceeds 150 feet, the DBF shall provide a 10-foot-wide stabilized access way on one side of the trench capable of supporting a Fire Truck. The DBF shall also provide stabilized access ways across the trench or unstabilized area a minimum of 6 feet in width at a spacing not to exceed 100 feet capable of supporting foot traffic. These access ways shall be protected and delineated with lighted barricades or other such devices as approved by the regulatory agency. Both ends of the emergency access way shall be blocked in accordance with the MOT permit approved by the CITY with signage indicating that this access way is to be used by emergency vehicles only.
- B. No trenches or holes shall be left open after working hours. In the event a trench must be left open after hours, it shall be done so only with the express written permission from the CITY, and it shall be the DBF'S responsibility to provide proper protection of the open trench or hole as

Exhibit B
Technical Specifications

01005- 5

**SECTION 01005
TECHNICAL PROVISIONS**

required by the regulatory agency. In addition, the DBF shall provide a security guard at the site whenever the DBF'S personnel are not present, 24 hours per day/ 7 days per week. It shall be the Security Guard's responsibility to protect the open trench or hole from trespassers and to direct emergency personnel on site. The Security Guard shall not have any other responsibilities such as operating pumps or equipment but shall be dedicated to protecting the trench or open hole. The Security Guard shall be equipped with a wireless telephone capable of calling 911 to report an emergency and shall keep that telephone on their person at all times. In addition to this provision the DBF shall maintain trench safety and comply with current OSHA regulations and the Trench Safety Act. The DBF shall maintain and keep all safety barricades, signage, flashers, and detours, in operating condition. A copy of the approved MOT plans, and details, shall be on site at all times.

- C. Measurement and payment for security guard services shall be included in the utility pipe installation unit price.
- D. All roads are to be maintained during the described construction as to always allow Emergency Access. This item will be paid for under the bid item for Mobilization as named in the Bid Schedule.

1.24 DEWATERING

- A. The DBF shall be aware that there may be contaminated sites, per Broward County Environmental Protection and Growth Management Department (EPD) Pollution Prevention and Remediation Division, located within a one-quarter (1/4) mile radius of the proposed work. Please see Section 02140 Dewatering and dewatering permit requirements. The DBF will be responsible for all costs associated with the means and methods of dewatering which are set forth by EPD dewatering permit including costs for cleaning existing drainage facilities if used for discharge, installation of injection or monitoring wells and groundwater monitoring testing costs. The CITY has paid for dewatering permit fees as required.

1.25 VIBRATORY COMPACTION

- A. The use of vibratory compaction equipment shall be limited to a total gross weight of three (3) tons. The use of vibratory equipment shall be limited to compacting backfill of utility trenches and subgrade of roadways only. If approved in writing by the CITY, larger vibratory compaction equipment may be allowed if operated in a static mode only.

1.26 REPORTING OF DAMAGE CLAIMS

- A. The DBF shall keep the CITY informed of any damage claims made against the DBF during the construction period. All claims for automobile damage, property damage/bodily injury will be reported within 24 hours of receipt of notice. DBF will conduct a timely investigation of the claim and determine if they will honor the claim and/or report to their insurance carrier. DBF will advise the CITY in writing of their decision/referral to carrier. The project is a sewer force main replacement project. As such, the DBF will have close contact with the community. The DBF shall notify the CITY of any and all community concerns or claims arising from the DBF's operations. The claims referenced herein are exclusive of damages or property claims as outlined.

PART 2 - PRODUCTS (Not Applicable)**PART 3 - EXECUTION (Not Applicable)**

Exhibit B
Technical Specifications

01005- 6

SECTION 01005
TECHNICAL PROVISIONS

END OF SECTION 01005

Exhibit B
Technical Specifications

01005- 7

5/8/2020 1:34 PM

p. 104

**SECTION 01010
SUMMARY OF WORK****PART 1 - GENERAL****1.01 SCOPE**

- A. The WORK to be performed under this Contract shall consist of furnishing and installing all tools, equipment, materials, supplies, and manufactured articles and furnishing all labor, transportation, and services, including fuel, power, water, and essential communications, and performing all work, or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The WORK shall be complete, and all work, materials, and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete and proper construction of the WORK in good faith shall be provided by the DBF as though originally so indicated, at no increase in cost to the OWNER.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

- A. The work of this Contract comprises the construction of the infrastructure site work. The work will include but not be limited to site preparation, earthwork, sanitary sewer system installation, water systems installation, roadway and walkway restoration and construction, landscape restoration, restoring existing irrigation systems, pavement marking restoration and site furnishings.
- B. The general location of the Bayshore Drive Intracoastal Crossing Project begins at the intersection of Middle River Drive and NE 9th Street, continues along NE 9th Street through the Intracoastal Waterway and through Vistamar Street, ending at the intersection of N Birch Road.

1.03 NOTICE TO BIDDERS

- A. The successful bidder, in order to be considered responsive, must possess the appropriate License as described in Volume I of this document.
- C. DBF shall have past experience with large scale utility projects in the right of way of existing residential communities.

1.04 STANDARD SPECIFICATION

- A. All materials and labor shall meet the requirements of "The Minimum Standards Applicable to Public Rights-of-Way under City of Fort Lauderdale Jurisdiction", (to be referred to as "Minimum Standards") and the Florida Department of Transportation "Roadway and Traffic Design Standards" latest revision, and "Structures Standard Drawings," latest revisions
1. These Special Provisions are supplemental to the above Specifications and Standards.

1.05 SITE INVESTIGATION

- A. The DBF, by virtue of signing the Contract, acknowledges that DBF and all subcontractors have satisfied themselves to the nature and location of the work, the general and local conditions including, but not restricted to: those bearing upon transportation; demolition, disposal, handling and storage of materials; access roads to the site; the conformation and conditions of the work area; and the character of equipment and facilities needed preliminary to and during the performance of the work. Failure on the part of the DBF to completely or properly evaluate the site conditions shall not be grounds for additional compensation.

Exhibit B
Technical Specifications

01010- 1

**SECTION 01010
SUMMARY OF WORK**

- B. Only the soil boring information included in these contract documents will be provided to the DBF for reference. The DBF, by virtue of signing the Contract, acknowledges that DBF and subcontractors are responsible for investigating and satisfying themselves as to the nature and extent of soil and (underground) water conditions on the project site. No additional payment will be made to the DBF because of differences between actual conditions and those shown by the boring logs. Boring logs are attached as Exhibit C.

1.06 WORK BY OTHERS

- A. Concurrent Work by Other CONTRACTORS. The DBF'S attention is directed to the fact that other CONTRACTORS may conduct work at the site during the performance of the WORK under this Contract. The DBF shall conduct its operations so as to cause little or no delay to WORK of such other CONTRACTORS and shall cooperate fully with such CONTRACTORS to provide continued safe access to their respective portions of the site, as required to perform work under their respective contracts.
- B. Interference with Work On Utilities. The DBF shall cooperate fully with all utility forces of the OWNER or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the WORK, and shall schedule the WORK so as to minimize interference with said relocation, altering, or other rearranging of facilities.

1.07 WORK SEQUENCE

- A. The DBF shall schedule and perform the work in such a manner as to result in the least possible disruption to the public's use of roadways, driveways, and utilities. Utilities shall include but not be limited to water, sewerage, drainage structures and pipe, ditches and canals, gas, electric, television and telephone. Prior to commencing with the WORK, DBF shall perform a location investigation of existing underground utilities and facilities in accordance with Section 01530 entitled "Protection of Existing Facilities" and shall have obtained all required permits and permissions, DBF shall also deliver written notice to the CITY and property occupants (private and public) of all planned disruption to roadway, driveways, temporary displacement of fences, mailboxes, street signs and traffic signs, and utilities 72 hours in advance of disruption.
- B. Because other projects will be connected to portions of work constructed as part of this project, it will be necessary to sequence portions of this project. The DBF shall be responsible to coordinate construction activities with DBF of adjacent phases and sections.

1.08 WORK SCHEDULE

- A. Time is of the essence in completing this project. Because time is of the essence the DBF shall commit the necessary resources to this project to complete it in a timely manner. Those resources may include multiple working crews, working overtime, etc. Because time is of the essence, the DBF'S construction progress will be monitored closely on a weekly basis. The Construction progress will be measured with the construction schedule submitted by the DBF. If the CITY determines that the DBF does not meet the construction schedule, the DBF will be required to commit those resources necessary to ensure the completion of the project in a timely manner including working overtime, adding other work crews, etc. All costs incurred to implement measure to complete the work in timely manner will be borne by the DBF at no additional cost to the OWNER.

Exhibit B
Technical Specifications

01010- 2

**SECTION 01010
SUMMARY OF WORK****B. SCHEDULE**

1. DBF shall submit updated schedules at a minimum of every two weeks or as requested by the City
2. No separate payment shall be made for preparation and/or revision of the schedule.

1.09 COMPUTATION OF CONTRACT TIME

- A. It is the DBF'S responsibility to provide clear and convincing documentation to the CITY as to the effect additional work will have with respect to additional contract time extension that may be justified. If additional quantities of work can be carried out concurrent with other existing construction activities without disrupting the critical path of the project, then no contract time extension will be granted. The DBF is obligated to provide documentation to the CITY if additional elements of work affect the critical path of the project. If work set forth in the original scope of the project is deleted, the contract time may be reduced. This contract is a calendar day contract. While the DBF may be granted time to suspend work operations for vacations or holidays, contract time will not be suspended. During suspensions, the DBF shall be responsible for all maintenance of traffic and liability without additional compensation from the CITY.

1.10 CONTRACTOR USE OF PREMISES

- A. The DBF's use of the project site shall be limited to its construction operations. The DBF will arrange for storage of materials, outside of the right of way. A copy of an agreement for use of other property shall be furnished to the CITY prior to its use. The DBF shall request a permit from the Department of Sustainable Development if the use of private property will be designated as staging area.

1.11 PRE-CONSTRUCTION CONFERENCE

- A. After the award of Contract, a Pre-construction Work Conference will be held between the DBF, the CITY, other interested Agencies, representatives of Utility Companies and others affected by the work. The CITY will set the time and place of this conference. The DBF shall bring to the conference a copy of the proposed work schedule for the approval by the CITY of the proposed methods and manner of executing the work including sequences of operation and time schedule. The work shall be performed in accordance with such schedule or approved amendments thereto.

1.12 UTILITY LOCATIONS

- A. As far as possible, all existing utility lines in the project area have been shown on the plans. However, the City of Fort Lauderdale does not guarantee that all lines are shown, or that said lines are in their true location and the depicted size. It shall be the DBF'S responsibility to identify and locate all underground or overhead utility lines or equipment affected by the project. No additional payment will be made to the DBF because of discrepancies in actual and plan location of utilities and damages suffered as a result thereof.
- B. The DBF shall notify each utility company involved at least thirty (30) days prior to the start of construction to arrange for positive underground location, relocation or support of its utility where that utility may be in conflict with or endangered by the proposed construction. The DBF shall pay for relocation of water mains or other utilities for the convenience of the DBF. The DBF shall pay for all charges by utility companies for temporary support of its utilities. All costs of

Exhibit B
Technical Specifications

01010- 3

SECTION 01010 SUMMARY OF WORK

permanent utility relocations to avoid conflict shall be the responsibility of the DBF and the utility company involved.

- C. The DBF shall schedule and coordinate their work in such a manner that they are not delayed by the utility companies relocating or supporting their utilities. No compensation will be paid to the DBF for any loss of time or delay.
- D. All overhead, surface, and underground structures and/or utilities encountered are to be carefully protected from damage or displacement. All damage to said structures and/or utilities is to be completely repaired within a reasonable time; needless delay will not be tolerated. The CITY reserves the right to remedy any damage by ordering outside parties to make repairs at the expense of the DBF. All repairs made by the DBF are to be made to the satisfaction of the utility owner and shall be inspected by a representative of the utility owner and the CITY.
- E. The DBF should be aware of the Sunshine State One Call Center, which has a free locating service for CONTRACTORS and excavators. Within forty-eight hours before excavating, dial toll free 1-800-432-4770, and a locator will be dispatched to the work location. DBF shall reasonably notify other utility companies not notified by Sunshine State One Call Center.
- F. The permits listed below must be obtained by the DBF prior to beginning construction. Some permits have been acquired by the CITY or applied for by the CITY as shown in Exhibits H and I. The DBF is responsible for compliance with any and all permit conditions. In the event that the additional permits are required for the construction of the PROJECT, the DBF shall not have any claim for damages arising from any delay caused the necessity to procure said permits.
 - 1. Broward County Environmental Protection and Growth Management Department
 - Dewatering Permit*
 - Environmental Resource License
 - Wastewater System/ Transmission Construction Permit
 - 2. Florida Department of Environmental Protection
 - Wastewater Collection/Transmission System Construction Permit
 - 3. South Florida Water Management District
 - Dewatering Permit*
 - Environmental Resource Permit
 - 4. National Oceanic and Atmospheric Administration
- G. The DBF shall obtain construction permit and applicable building and other permits from each City jurisdictions within the project area, if required.

1.13 LINE AND GRADE

- A. DBF shall develop and make all detailed surveys needed for construction and shall establish all working points, lines and elevations necessary to perform the work. A Professional Surveyor and Mapper per Florida Statute 472.001-472.037 shall supervise this surveying work.

1.14 PROTECTION AND RESTORATION OF SURVEY MONUMENTS

- A. The DBF shall carefully protect from disturbance all survey monuments, stakes and bench marks, whether or not established by DBF, and shall not remove or destroy any surveying point until it has been properly witnessed by the CITY. All major survey monuments that have been damaged by the DBF such as section corners, 1/4 section corners, property corners or block control points shall be replaced at the DBF'S expense with markers of a size and type approved

Exhibit B
Technical Specifications

01010- 4

**SECTION 01010
SUMMARY OF WORK**

by the CITY. The replacement shall be under the supervision of a Professional Surveyor and Mapper per Florida Statute 472.001-472.037, where directed by the CITY.

1.15 EQUIPMENT

- A. All equipment necessary and required for the proper construction of all facilities shall be on the construction site, in first-class working condition.

1.16 STORAGE SITES

- A. The DBF shall furnish, at DBF's expense, properly zoned areas suitable for field office, material storage and equipment service and storage. No material may be stored in the public right of way without prior authorization by the agency having jurisdiction. The DBF shall keep these areas in a clean and orderly condition so as not to cause a nuisance or sight obstruction to motorists or pedestrians.

1.17 OWNERSHIP OF EXISTING MATERIALS

- A. All materials removed or excavated from the job site shall remain the property of the City of Fort Lauderdale until released by the CITY, at which time it shall become the property of the DBF, who shall dispose of it in a manner satisfactory to the CITY.

1.18 EXCESS MATERIAL

- A. Upon direction of the CITY, all vegetation, debris, concrete or other unsuitable materials shall be disposed of in areas provided by the DBF and approved by the CITY. Any excess material desired to be retained by the CITY shall be delivered by the DBF to a designated area within a 5-mile radius of the project, at no extra cost to the CITY.

1.19 AUDIO-VISUAL PRECONSTRUCTION RECORD

- A. General:

1. The DBF shall engage the services of a professional electrographer. A responsible commercial firm known to be skilled and regularly engaged in the business of preconstruction color audio-video documentation shall prepare the color audio-video DVD's. The electrographer shall furnish to the CITY a list of all equipment to be used for the audio-video recording i.e., manufacturer's name, model number, specifications and other pertinent information. Additional information to be furnished by the electrographer are the names and addresses of two references that the electrographer has performed color audio-video recording for on projects of a similar nature within the last 12 months.
2. Prior to beginning the work, the DBF shall have a continuous color audio-video recording taken along the entire length of the project to serve as a record of preconstruction conditions. No construction shall begin prior to review and approval of the video covering the construction area by the CITY. The CITY shall have the authority to reject all or any portion of the videos not conforming to the specifications and order that it be redone at no additional charge. The DBF shall reschedule unacceptable coverage within five days after being notified. The CITY shall designate those areas, if any, to be omitted from or added to the audio-video coverage.

Exhibit B
Technical Specifications

01010- 5

**SECTION 01010
SUMMARY OF WORK****B. Digital Video Disk (DVD):**

1. DVD's shall be new. Reprocessed DVD's will not be acceptable. They shall be interchangeable with the color DVD player and shall be compatible for playback with a standard player-receiver, DVD format. Any other format must be approved by CITY.
2. DBF shall provide the CITY with one complete set of DVD's for each project area.

C. Equipment:

1. All equipment, accessories, materials and labor to perform this service shall be furnished by the DBF.
2. The total audio-video system shall reproduce bright, sharp, clear pictures with accurate colors and shall be free from distortion, tearing, rolls or any other form of imperfection. The audio portion of the recording shall reproduce the commentary of the camera operator with proper volume and clarity and be free from distortion and interruptions.
3. When conventional wheeled vehicles are used, the distance from the camera lens to the ground shall not be less than twelve feet. In some instances audio-video recording coverage may be required in areas not accessible by conventional wheeled vehicles. Such coverage shall be obtained by walking or special conveyance approved by the CITY.
4. The color video camera used in the recording system shall have a horizontal resolution of 300 lines at center, a luminance signal to noise ratio of 45 dB and a minimum illumination requirement of 25 foot-candles.

D. Recorded Information - Audio

1. Each DVD shall begin with the current date, project name and municipality and be followed by the general location, i.e., name of street, house address, viewing side and direction of progress. The audio track shall consist of an original live recording. The recording shall contain the narrative commentary of the electrographer, recorded simultaneously with the electrographer's fixed elevation video record of the zone of influence of construction.

E. Recorded Information - Video

1. All video recordings must, by electronic means, display continuously and simultaneously generated with the actual transparent digital information to include the date and time of recording, and station numbers as shown on the drawings. The date information shall contain the month, day and year. The time information shall contain the hour, minutes and seconds. Additional information shall be displayed periodically. Such information shall include, but not be limited to, project name, contract number, name of street, house address, direction of travel and the viewing side. This transparent information shall appear on the extreme upper left hand third of the screen.
2. All video recording shall be done during times of good visibility. No video recording shall be done during precipitation, mist or fog. The recording shall only be done when sufficient sunlight is present to properly illuminate the subjects of recording and to produce bright, sharp video recordings of those subjects.

SECTION 01010 SUMMARY OF WORK

3. The rate of speed of the vehicle used during video recording shall not exceed 10 miles per hour. Panning, zoom-in and zoom-out rates shall be sufficiently controlled to maintain a clear view of the object.
4. DVD coverage shall include all surface features located within the zone influence of construction supported by appropriate audio coverage. Such coverage shall include, but not be limited to, existing driveways, sidewalks, curbs, pavements, ditches, mailboxes, landscaping, culverts, fences, signs and headwalls within the area covered.

F. Payment:

1. Compensation for the audio-video preconstruction record shall be included in the lump sum price bid for Mobilization.

1.20 ADJUSTING EXISTING VALVES, METERS, CATCH BASINS, AND MAS

- A. It shall be the DBF'S responsibility to coordinate and have all adjustments made to existing water meters, valves, and structures encountered during construction, in order to meet all final grades, unless otherwise instructed by the CITY or the respective utility owner. All valves and MAS shall be accessible during all phases of the work for emergency access. Omission of such structures from the Contract Plans does not relieve the DBF from making such adjustments as may be deemed necessary. The DBF shall take this provision into account when personally investigating the site. No additional payment shall be made for these adjustments.

1.21 CONFLICT STRUCTURES

- A. The DBF shall abide by the following criteria concerning conflicts between new drainage, water, or sewer construction and existing utilities.
 1. The DBF shall verify the location of all utilities suspected of being potential conflicts prior to ordering drainage or sewer structures for these locations and inform the CITY as to DBF'S findings.
 2. The CITY shall have full authority to direct the placement of conflict structures, the relocation of structures shown in the plans, and the addition, deletion, or relocation of any pipe or structure shown in the plans in order to facilitate construction, expedite completion and avoid conflicts with existing utilities.
 3. Where an existing utility is to pass through a conflict structure, the DBF shall protect the utility from damage by whatever means the utility owner and the CITY deem necessary.
 4. In no case shall there be less than six (6) inches between any two (2)-pipe lines within the structure or between pipelines and the structure.

1.22 ENVIRONMENTAL PROTECTION

- A. The DBF shall furnish all labor and equipment and perform all work required for the prevention of environmental pollution during and as a result of the work under this contract. For the purpose of this contract, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life, affect other species of importance to humankind, or degrade the utility of the environment for aesthetic and recreational purposes. The control of environmental pollution requires consideration of air, water, land and involves

Exhibit B
Technical Specifications

01010- 7

SECTION 01010 SUMMARY OF WORK

noise, solid waste management and management of radiant energy and radioactive materials, as well as other pollutants. Environmental pollution prevention shall be in accordance with NPDES requirements with no additional cost to the CITY.

- B. The DBF shall take all steps necessary to protect water quality in the connected waters around the project and shall utilize such additional measures as directed by the CITY. Silt screens adjacent to outfall construction shall not be removed until the turbidity of the affected waters is equal to or lower than the ambient turbidity of undisturbed segments of the surface water body. Any discharge into existing drainage facilities shall require the approval of the owner of the system. This may require the DBF to obtain an engineered plan to be furnished at no additional cost to the CITY.

1.23 MAINTENANCE AND PROTECTION OF TRAFFIC

- A. The DBF shall provide all necessary traffic control devices in order to redirect, protect, warn or maintain existing vehicular and pedestrian traffic during the course of construction.

1. CONSTRUCTION PHASING REQUIREMENTS

Following are general requirements for construction phasing to minimize resident disruption yet maximize cost effectiveness of the construction scheduling.

- a. No two adjacent roadways may be under construction at the same time (i.e. construction shall be on alternating roadways, and every other roadway shall remain open for access). In no case shall more than 35% of all roadways in a section be under construction at one time. At least 35% of all roadways shall have an asphalt surface, either original or new asphalt at all times. The DBF shall make every effort to provide access to driveways at the end of the working day. If a driveway is not accessible, the homeowner should have access to a neighboring swale area for temporary parking. When vehicular access to homes is not possible for parking of vehicles, an area for parking shall be provided within one block of the furthest home effected. This condition is to be avoided whenever possible and shall last no longer than five (5) working days. The DBF, with the CITY's approval, shall coordinate the parking area location. The DBF shall lease the property from the landowner, and will provide a compacted, graded parking surface acceptable to the CITY.
 - 1. The DBF shall not begin construction on subsequent roadways until the initial roadways under construction are substantially complete. A roadway shall be considered substantially complete when all work is complete except for the last lift of asphalt. All work on private property and landscaping must also be complete before a road is considered substantially complete.
 - 2. Site restoration work shall be complete on private property within 30 days after being disturbed.
- b. Construction within the right of way of affected roads shall be scheduled so that all improvements are completed at once, and the residents are only disrupted for one time period.
- c. All affected residents and property owners shall be notified by the DBF in writing a minimum of two (2) weeks, or earlier if required by the CITY, prior to any

Exhibit B
Technical Specifications

01010- 8

SECTION 01010 SUMMARY OF WORK

disruption to or construction in road right-of-ways adjacent to their homes. The notification shall also indicate any special parking or traffic conditions that will affect residents.

- d. All affected residents shall be notified by the DBF a minimum of forty-eight (48) hours, or earlier if required by the CITY, prior to a shut off of water supply. Any water supply interruptions shall be rescheduled to be as short as possible and not exceed twelve (12) hours.
- e. All affected residents shall be notified by the DBF a minimum of forty-eight (48) hours, or earlier if required by the CITY, prior to work on the sanitary sewer main. Any sewer supply interruptions shall be rescheduled to be as short as possible and not exceed twelve (12) hours.
- f. At any time, the entire length of two north-south streets and one east-west street shall remain unobstructed and open to through-traffic for the area around each project. Access for emergency vehicles shall be maintained at all times to all homes and businesses. Excavation must be back-filled or barricaded at the end of each workday to prevent hazardous conditions. If a trench, excavation or structure is to be left open, it must be covered with a steel plate and barricaded at the end of each workday or when work will be suspended for more than eight (8) hours.
- g. Transportation provisions for handicapped or disabled residents shall be made by the DBF if construction prevents access to homes.
- h. The DBF shall also make provisions with local bus, school bus, garbage collection, mail delivery and other agencies for continuation of service. A traffic maintenance plan indicating proposed street closings, schedules, and alternate routes, n approved by the CITY, shall be submitted to all affected agencies for coordination and routing purposes.
- i. Materials and equipment shall be stored in a fenced or otherwise enclosed area during non-working hours. Pipe and material shall not be strung out along installation routes for longer than two (2) weeks prior to installation.

B. TRAFFIC CONTROL

- 1. The DBF is required to submit a conceptual Traffic Control Plan at the Pre-Construction Conference. This preliminary plan should identify the phases of construction that the DBF plans to proceed with and identify traffic flows during each phase. The CITY will have ten (10) days to notify the DBF of any comments. Once the conceptual plan for maintaining traffic has been approved, the DBF will be required to submit a detailed plan showing each phase's Maintenance and Protection Plan prior to starting construction of any phase.
- 2. The "Maintenance of Traffic" plan shall include pedestrian traffic as well as vehicular traffic.

A safe walk route for all schools within the vicinity of the construction zone shall be maintained during the arrival and dismissal of school. DBF shall not block bus access to schools during school hours.

Exhibit B
Technical Specifications

01010- 9

**SECTION 01010
SUMMARY OF WORK**

In the case that a designated crossing of any portion of the designated walk route cannot be maintained, then the DBF shall notify the City of Fort Lauderdale and the "School Safety Coordinator" at Broward County Traffic Engineering Division, (954) 484-9600 a minimum of ten (10) working days prior to ceasing that route so that an alternate route can be established with the school and the enforcing agency.

It shall be the responsibility of the DBF for any necessary Construction, Pavement Marking and Signage or any Pedestrian Signalization and/or Signal Modification to accommodate an alternate safe walk route.

Thirty (30) days prior to the beginning of construction the DBF shall notify the City of Fort Lauderdale and the "School Safety Coordinator" at Broward County Traffic Engineering Division (954) 484-9600, to set up a pre-work meeting.

3. The DBF, at all times, shall conduct the work in such a manner as to insure the least obstruction to traffic as is practical. Convenience of the general public and of the residents adjacent to the work shall be provided for in a satisfactory manner, as determined by the CITY.
4. Sidewalks, gutters, drains, fire hydrants and private drives shall, insofar as practical, be kept in condition for their intended uses. Fire hydrants on or adjacent to the work shall be kept accessible to fire apparatus at all times, and no material or obstruction shall be placed within twenty (20) feet of any such hydrant.
5. Construction materials stored upon the public street shall be placed so as to cause as little obstruction to the general public as is reasonably possible. Stored materials shall not impede pedestrian or vehicular traffic at any time.
6. Streets may be closed only as permitted by the approved Maintenance of Traffic Plan, and as directed by the CITY and, whenever the street is not closed, the work must be conducted with the provision for a safe passageway for traffic at all times. The DBF shall make all necessary arrangements with the CITY concerning maintenance of traffic and selection of detours required.
7. All existing stop and street name signs will be maintained as long as deemed necessary by the CITY.
8. When permission has been granted to close an existing roadway, the DBF shall furnish and erect signs, barricades, lights, flags and other protective devices, which shall conform to the requirements, and be subject to the approval of the CITY. The DBF shall furnish and maintain proper protective devices at such location for the entire time of closure as the CITY may direct. Signage shall be affected one week before closure.
9. The DBF shall furnish a sufficient number of protective devices to protect and divert the vehicular and pedestrian traffic from working areas closed to traffic, or to protect any new work. Failure to comply with this requirement will result in the CITY shutting down the work until the DBF provides the necessary protection.
10. Any time traffic is diverted for a period of time that will exceed one-work day temporary pavement markings will be required. Existing pavement markings that conflict with the new work zone traffic pattern must be obliterated. Painting over existing pavement markings (black out) is not permitted.

Exhibit B
Technical Specifications

01010- 10

**SECTION 01010
SUMMARY OF WORK**

11. The DBF may be required to reposition existing traffic signal heads in order to maintain traffic flows at diverted intersections. If this should be necessary, the DBF must submit a plan for approval showing the course of work and the planned repositioning. The Broward County Traffic Engineering Division must approve the plan prior to implementation. No separate payment for repositioning the existing traffic signal heads will be made. The cost of this work shall be included in the bid item for Maintenance of Traffic.
 12. If there are schools within the project area: The DBF will be required to shut down all equipment during the school zone commute time periods (approximately 15 minutes prior to and after school is in session).
- 1.24 MAINTENANCE AND PROTECTION OF EXISTING DRAINAGE SYSTEM
- A. It shall be the responsibility of the DBF to maintain positive drainage on the surface and to ensure that the existing underground drainage system continues to function as intended during construction. The DBF shall submit a plan to maintain the existing drainage patterns and underground system for the approval of the CITY prior to beginning any work near existing drainage systems. The cost of maintaining positive drainage and preparing the maintenance plan shall be included under maintenance of traffic and existing drainage system, of the Schedule of Prices Bid.
- 1.25 BASIS OF PAYMENT (SEE SECTION 01152)
- 1.26 APPLICATION FOR PAYMENT FOR STORED MATERIALS
- A. Application for payment for stored materials may not be made by the DBF.
- 1.27 SPECIAL CONDITIONS FOR CONSTRUCTION BY OTHER AGENCIES
- A. It will be the DBF'S responsibility to coordinate construction schedules with other contractors so as to minimize disruptions, and inconveniences. The project site shall be safe at all times for construction workers and residents.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01010

Exhibit B
Technical Specifications

01010- 11

**SECTION 01025
MEASUREMENT AND PAYMENT**

PART 1 - GENERAL

1.01 SCOPE

- A. Payment for various items of the Bid Schedule , as further specified herein, shall include all compensation to be received by the DBF for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor operations and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the WORK all in accordance with requirements of the Contract Documents, including all appurtenances thereto, and including all costs of permits and cost 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). No separate payment will be made for any item that is not specifically set forth in the Bid Schedule and all costs therefore shall be included in the prices named in the Bid Schedule for the various appurtenances needed to complete the items of work.
- B. Payment for the various items of the Bid Schedule shall constitute full compensation for DBF's superintendent at the job site full-time during construction, for furnishing and installing all pipe and structures complete in place including but not limited to bends, tees, outlets, fittings, blind flanges and specials, including connections to existing pipelines shown on the Drawings; including surveying both horizontal and vertical control for construction of the roadways, structures, pipeline and appurtenances; including protecting and replacing if necessary existing monuments, control points, found iron rods, valves; including all earthwork, trench excavation as shown on the Drawings, removal and disposal of waste, unsuitable and excess material, furnishing and installing pipe bedding material, all backfill and compaction of native material, and dewatering as required; the restoration of interfering portions of existing service and utility lines that are not included in other bid items and shown on the Drawings, including replacement of utility lines where the minimum vertical clearances are not met; restraint of pipe shown on the Drawings and grouting of pipe joints; including providing the water for pressure testing, cleaning the pipe and disinfection, and disposal of the water as required when completed; furnishing, installation, and removal of test heads, cleanup; and restoration of all improvements incidental to construction for which there are no other bid items; including but not limited to, existing sprinkler systems, and all other work not included in other bid items. No additional payment will be made for performing required tests and the furnishing of accurate as-builts.
- C. Payment shall also include providing the necessary equipment and labor power to pothole and verify depths and locations of existing utilities sufficiently ahead of construction to avoid conflicts with the design alignment and grade of structures, culverts, storm drains and exfiltration trenches. Conflicts with utilities shown on the Drawings which result from the DBF's negligence to pothole sufficiently ahead of construction (a minimum of two days ahead of construction of the pipeline or as approved by the CITY) shall be resolved by the DBF at no additional cost to the OWNER.
- D. Payment for all bid items shall constitute full compensation for the complete installation of each bid item including but not limited to excavation, dewatering, backfill and compaction. The work shall include for all bid items to be completed, tested and ready for acceptance by the appropriate government agency.
- E. No separate payment for pavement restoration will be made unless specifically shown on the plans, called out in the Bid Schedule, or directed by the CITY.

Exhibit B
Technical Specifications

01025- 1

**SECTION 01025
MEASUREMENT AND PAYMENT**

- 1.02 PERFORMANCE AND PAYMENT GUARANTY AND INSURANCE (ITEM # 1)
- A. Payment for Performance and Payment Guarantee and Insurance will be made at the lump sum price named in the Bid Schedule. The DBF may request payment for this bid item after the Initial Notice to Proceed has been issued.
 - B. Performance and Payment Guarantee and Insurance are limited to 3% of the Total Bid Price. Any amount in excess of 3% will be moved to Line Item No. 3. However, the total bid amount will not change. The 3% ceiling on Performance and Payment Guarantee and Insurance is not responsiveness, just an instruction on the amount the CITY will pay for Performance and Payment Guarantee Insurance.
- 1.03 MOBILIZATION (ITEM # 2)
- A. See Section 01505, "Mobilization" for payment limitations.
 - B. Payment for mobilization will be made at the lump sum price named in the Bid Schedule. An initial lump sum partial payment of 40% of the Mobilization bid item amount shall be made upon completion the items in Section 01505 Paragraph 1.01A. Payment of the remaining 60% for mobilization will be made in equal monthly lump sum amounts for the duration of the original contract time.
- 1.04 MAINTENANCE OF TRAFFIC (ITEM # 3)
- A. See Section 01570 "Traffic Regulations" and all other references to traffic control and maintenance in this document and any regulatory requirements.
 - B. Payment for maintenance of traffic will be made at the lump sum price named in the Bid Schedule. Payment for maintenance of traffic will be made in equal monthly lump sum amounts for the duration of the original contract time.
- 1.05 REMOVE AND DISPOSE OF EXISTING CONCRETE AND ASPHALT PAVEMENT (ITEM # 4, 5)
- A. Measurement for payment to remove and dispose of existing concrete or asphalt pavement will be based upon the actual number of square yards of such pavement actually removed, all in accordance with the Contract Documents.
 - B. Payment for removal and disposal of existing concrete or asphalt pavement will be made at the unit price per square yard of pavement named in the Bid Schedule which price shall constitute full compensation for sawcutting (as necessary), the removal and disposal of such pavement and include the removal of sidewalks, aprons, collars, miscellaneous concrete, reflective pavement markers, traffic loops (including coordination with Broward County Traffic Engineering), abandoned valves and valve boxes, the removal and salvage of brass valve tabs. Thickness of existing asphalt may vary, asphalt removal will be paid at the square yard cost, no additional compensation will be made for asphalt thickness.
- 1.06 MILL EXISTING ASPHALT PAVEMENT (ITEM # 6)
- A. Measurement for payment for mill of existing asphalt pavement will be based on the number of square yards of such pavement actually milled, as detailed in the drawings, all in accordance with the requirements of the Contract Documents.

Exhibit B
Technical Specifications

01025- 2

SECTION 01025
MEASUREMENT AND PAYMENT

- B. Payment for milling existing asphalt pavement will be made at the unit price per square yard of such as named in the Bid Schedule which price shall constitute full compensation for milling, removal and disposal of asphalt, removal of reflective pavement markers, tack coat and restoration. Milling of local roads and parking lots will be at a minimum depth of ¾ inch and milling of State/City roads will be at a minimum depth of 1 inch.
- 1.07 REMOVE EXISTING LIMEROCK BASE MATERIAL (ITEM # 7)
- A. Measurement for payment for removing existing lime rock base material will be based upon the number of square yards of such materials actually removed, all in accordance with the requirements of the Contract Documents.
- B. Payment for removing of existing limerock base material will be made at the unit price per square yard at the depth indicated and named in the Contract Documents, which price shall constitute full compensation for removing, and disposal of waste or unsuitable material.
- 1.08 REMOVE AND RELOCATE EXISTING SIGNS (ITEM # 8)
- A. Measurement for payment to remove and relocate signs will be based upon actual quantity, each, of such signs relocated, all in accordance with the requirements of the Contract Documents.
- B. Payment for removing and relocating signs will be made at the unit price, each, named in the Bid Schedule which price shall constitute full compensation for the completed removal, temporary relocation, and final installation of the sign and post including all restoration. Final Sign installation shall be installed per City of Fort Lauderdale approval. Signs damaged by the DBF will be replaced by the DBF at no cost to the City.
- 1.09 REMOVE AND REPLACE EXISTING MINOR PALMS AND TREES (ITEM # 9)
- A. Measurement for payment to remove and replace existing trees will be based upon the actual number of trees replaced, all in accordance with the Contract Documents.
- B. Payment for replacement of trees will be made at the unit price, each, as named in the Bid Schedule which price shall constitute full compensation for the removal and installation of new trees complete. No additional compensations will be made for watering and maintaining trees for the duration of the contract. DBF is responsible for any trees or shrubs damaged during execution of DBF's work and will have to replace damaged trees and shrubs with no additional compensation. Removal of shrubs shall be included in line item for clear and grade swales.
- C. Trees with diameters equal to or larger than 3-inch diameter (as measured at a height of 4 foot) but less than 8-inch diameter shall be classified as minor trees. Trees with diameter equal to or greater than 8-inch diameter (as measured at a height of 4 foot) shall be classified as major trees.
- 1.10 REMOVE AND DISPOSE OF EXISTING CURBING (ITEM # 10)
- A. Measurement for payment to remove and dispose of existing concrete curbing will be based upon the actual number of linear feet of such curbing actually removed, all in accordance with the Contract Documents.
- B. Payment for removal and disposal of existing concrete curbing will be made at the unit price per linear feet of curb named in the Bid Schedule which price shall constitute full compensation for

Exhibit B
Technical Specifications

01025- 3

**SECTION 01025
MEASUREMENT AND PAYMENT**

sawcutting (as necessary) and the complete removal and disposal of such concrete.

1.11 REMOVE AND REPLACE EXISTING CONCRETE PARKING STOP (ITEM #11)

- A. Measurement for payment to remove and replace existing concrete wheel parking stops will be based upon actual quantity, each, of such wheel stops removed and replaced all in accordance with the requirements of the Contract Documents.
- B. Payment to remove and replace existing concrete wheel parking stops will be made at the unit price each, named in the Bid Schedule which price shall constitute full compensation for the removal, and complete installation of the concrete wheel stop. Concrete Parking Stops damaged by the DBF will be replaced with new parking stop by the DBF at no cost to the CITY. When existing curb stop is damaged prior to construction, DBF required to notify CITY prior to construction in the area.

1.12 REMOVE AND DISPOSE OF EXISTING FORCEMAIN PIPES (ITEM # 12)

- A. Measurement for payment to remove and dispose of existing force main will be based upon the linear foot of such pipes actually removed and disposed of, all in accordance with the Contract Documents.
- B. Payment for removing and disposing of existing pipes named in the Bid Schedule which price shall constitute full compensation for the excavation, cutting, removing and disposing of such pipe.

1.13 ABANDON EXISTING PRESSURE PIPE (ITEM # 13)

- A. Measurement for payment to abandon existing pipe will be based upon the actual number of open exposed ends of such pipe actually abandoned. The work shall include cutting the existing pipe and providing caps (plugs) for sections of pipes not being removed. Payment for abandoning shall constitute full compensation for the necessary work including backfill compaction and restoration of the area to existing conditions or better.

1.14 FURNISH AND INSTALL HDPE DR 13.5 FORCE MAIN PIPE VIA OPEN CUT METHODS (ITEM # 14)

- A. Measurement for payment for furnishing and installing force main pipe will be based upon the number of linear feet of such pipe actually constructed as determined by measurement along the centerline of the pipe in place at 36 inches minimum cover or more to avoid other underground utilities, all in accordance with the requirements of the Contract Documents.
- B. Payment for furnishing and installing force main pipe will be made at the unit price per linear foot of pipe complete and in place including all clearing and grubbing, saw cut and removal of asphalt, remove and stockpile limerock, pipe, connections to existing pipe, unloading, sheeting, excavation, utility pole protection, trench protection and trench safety, dewatering, laying, backfilling, compaction, pressure testing, flushing and temporary blow off with full cannon. As-builts for newly installed force mains must be provided before compensation for said force main will be approved. Restoration of roadway from subgrade stabilization, limerock base and placing of asphalt is not part of this line item.
- C. Work shall include all necessary adapters, fittings, pipe fusing and staging.

Exhibit B
Technical Specifications

01025- 4

**SECTION 01025
MEASUREMENT AND PAYMENT**

1.15 FURNISH AND INSTALL HDPE DR 11 AND DR 13.5 FORCE MAIN PIPE VIA HORIZONTAL DIRECTIONAL DRILL (ITEM # 15- 16)

- A. Measurement for payment for furnishing and installing force main pipe will be based upon the number of linear feet of such pipe actually constructed as determined by measurement along the centerline of the pipe in place with a minimum cover as shown on the Design Criteria Package conceptual plans to avoid utilities, seawalls, canal banks and related structures all in accordance with the requirements of the Contract Documents.
- B. Payment for furnishing and installing force main pipe will be made at the unit price per linear foot of pipe complete and in place including all clearing and grubbing, saw cut and removal of asphalt, remove and stockpile limerock, pipe, connections to existing pipe, unloading, sheeting, excavation, utility pole protection, trench protection and trench safety, dewatering, laying, backfilling, compaction, pressure testing, flushing and temporary blow off with full cannon. As-builts for newly installed force mains must be provided before compensation for said force main will be approved. Restoration of roadway from subgrade stabilization, limerock base and placing of asphalt is not part of this line item.
- C. Work shall include all necessary adapters, fittings, pipe fusing and staging.

1.16 FURNISH AND INSTALL FORCE MAIN FITTINGS (ITEM # 17)

- A. Measurement for payment to furnish and install force main fittings, unless specifically listed separately in the Bid Schedule (Item Response Form), shall be at the unit bid price per ton for such fittings, including but not limited to crosses, tees, bends and elbows of all angles and radius, concentric and eccentric reducers, offsets, wyes, true wyes, sleeves, plugs, caps, restraining glands and gaskets, base bends, base tees, reducing flanges, mega lugs, fillers and connecting pieces, furnished all in accordance with the Contract Documents.
- B. Payment for furnishing and installing force main fittings complete and in place shall be at the unit bid price per ton and shall include furnishing, storing, transporting and installing the fittings.

1.17 FURNISH AND INSTALL PLUG VALVES AND AIR RELEASE VALVES (ITEM # 18-20)

- A. Measurement for payment to furnish and install plug valves will be based upon actual quantity, each, of such plug valves furnished and installed, all in accordance with the requirements of the Contract Documents. Test valves will not be compensated for under this line item.
- B. Payment for furnishing and installing plug valves will be made at the unit price, each, named in the Bid Schedule (Item Response Form) which price shall constitute full compensation for the completed installation of the valve, including valve, valve box and extension to surface, 2-inch brass ID disk with all restrain glands. No additional compensation will be granted for installation of side mounted valves as directed by the CITY.

1.18 TAPPING SLEEVE AND VALVE (ITEM # 21)

- A. Measurement and payment for performing all connections to existing force mains will be based on the actual quantity, each, of such connection made all in accordance with the Contract Documents.
- B. Payment for tapping to existing force main shall be made at the unit price, each, named in the Bid Schedule (Item Response Form) which shall constitute full compensation for all materials (regardless of size) and labor needed to complete connection which shall include but is not

Exhibit B
Technical Specifications

01025- 5

**SECTION 01025
MEASUREMENT AND PAYMENT**

limited to valves, fittings, spool pieces, corporation stops, saw cutting, removal and disposal of existing piping and fittings to prepare for connection and filling and flushing of main. All coordination needed for force main shut offs shall be responsibility of the DBF and is included in the scope of this item.

1.19 CONNECT TO EXISTING FORCE MAIN (ITEM # 22)

- A. Measurement and payment for performing all connections to existing force mains will be based on the actual quantity, each, of such connection made all in accordance with the Contract Documents.
- B. Payment for connecting to existing force main shall be made at the unit price, each, named in the Bid Schedule (Item Response Form) which shall constitute full compensation for all materials (regardless of size) and labor needed to complete connection which shall include but is not limited to valves, fittings, spool pieces, corporation stops, saw cutting, removal and disposal of existing piping and fittings to prepare for connection and filling and flushing of main. All coordination needed for force main shut offs shall be responsibility of the DBF and is included in the scope of this item.

1.20 STABILIZATION OF SUBGRADE (ITEM # 23)

- A. Measurement for payment for stabilization of subgrade will be based upon the number of square yards of such materials actually stabilized, all in accordance with the requirements of the Contract Documents.
- B. Payment for stabilization of subgrade will be made at the unit price per square yard named in the Bid Schedule (Item Response Form), which price shall constitute full compensation for handling, cleaning, positioning and compacting of said bedding to a Limerock Bearing Ratio (LBR) of 40, importing fill material as needed and disposal of excess waste or unsuitable material.
- C. Existing limerock removed can be blended to be used for subgrade compaction if the DBF elects to do so. If DBF elects to reuse limerock, stockpiling and blending of limerock shall be done at no cost to the CITY.

1.21 FURNISH AND COMPACT LIMEROCK BASE MATERIAL (ITEM # 24)

- A. Measurement for payment for furnishing and placing limerock base material will be based upon the number of square yards of such materials actually compacted in place, all in accordance with the requirements of the Contract Documents. No reuse will be allowed.
- B. Payment for furnishing and placing of limerock base material will be made at the unit price per square yard named in the Bid Schedule (Item Response Form), which price shall constitute full compensation for applying prime coat and furnishing all such material, in place, including all transportation, handling, cleaning, positioning and compacting of said bedding and disposal of waste or unsuitable material.

1.22 FURNISH AND PLACE ASPHALT CONCRETE PAVEMENT (ITEM # 25-26)

- A. Measurement for payment of asphalt concrete pavement will be based upon the number of square yards of such asphalt concrete pavement actually constructed for areas with newly compacted subgrades and limerock bases, as detailed in the drawings, all in accordance with the requirements of the Contract Documents.

Exhibit B
Technical Specifications

01025- 6

**SECTION 01025
MEASUREMENT AND PAYMENT**

- B. Payment for placement of asphalt concrete pavement at the thickness indicated will be made at the unit price per square yard for such placement as named and at the thickness indicated in the Bid Schedule (Item Response Form) which price will constitute full compensation for applying a tack coat, and furnishing, placing and compacting all asphalt surface, complete in place to the cross section and thicknesses shown on the drawings; including replacing brass valve tabs, adjusting valve box and MAS rim elevations, saw cutting of all pavement, temporary striping and all cleanup of the area disturbed by this construction.
- 1.23 PAVER DRIVEWAY RESTORATION (ITEM # 27)
- A. Measurement for payment for paver roadway restoration will be based upon the number of square yards of such paver roadway actually constructed as detailed in the drawing, all in accordance with the requirements of the Contract Documents.
- B. Payment for paver roadway restoration will be made at the unit price per square yard for such paver roadway constructed as named in the Items Response Form which price will constitute full compensation for furnishing and installing all materials necessary to restore paver roadway to conditions equal or better than pre-construction conditions and shall include the all earthwork and grading, subgrade compaction, limerock compaction, installation of pavers; including replacing brass valve tabs, adjusting valve box and MAS rim elevations, saw cutting of all pavement, temporary striping and all cleanup of the area disturbed by this construction.
- 1.24 GRAVEL DRIVEWAY RESTORATION (ITEM # 28)
- A. Measurement for payment for restoration of gravel driveways will be based upon the number of square yards of such driveways actually constructed to repair open cuts made to install pipeline as detailed in the drawing, all in accordance with the requirements of the Contract Documents.
- B. Payment for gravel driveway restoration will be made at the unit price per square yard for such driveways aprons constructed as named in the Item Response Form which price will constitute full compensation for furnishing and installing all materials necessary to restore driveway to conditions equal or better than pre-construction conditions and shall include the removal of existing material, all earthwork and grading, subgrade compaction, disposal of excess material and the appurtenant items for which separate payment is not specifically included in the Items Response Form.
- C. No payment will be made for reconstruction of driveways outside the limits shown on the drawings or not approved by the CITY. Driveway must all requirements of City of Fort Lauderdale to be eligible for payment.
- 1.25 CONCRETE SIDEWALK RESTORATION (ITEM # 29)
- A. Measurement and payment for concrete sidewalk restoration will be based upon the actual number of square yards of such sidewalks constructed as shown in the drawings, all in accordance with the requirements of the Contract Documents.
- B. Payment for concrete sidewalk restoration will be made at the unit price per square yard named in the Bid Schedule (Item Response Form) and detailed on the drawings which price shall constitute full compensation for completing said work, including removing and disposing of existing concrete sidewalk, all earthwork, compaction of subgrade, backfilling of sidewalk, construction of the 6 inch thick concrete sidewalk, furnishing and setting for expansion joint material, furnishing and installing 1 inch PVC sleeve for existing irrigation connections as directed by CITY, disposal of excess material, restoration/replacement of sod disturbed on

Exhibit B
Technical Specifications

01025- 7

**SECTION 01025
MEASUREMENT AND PAYMENT**

private property to equal condition as existing, restoration of driveways disturbed due to sidewalk forms, and the appurtenant items for which separate payment is not specifically included in the Bid Schedule (Item Response Form). Readjusting water meter boxes that need to be raised or lowered to meet sidewalk elevation will also be included in compensation for the installation of sidewalk.

1.26 FURNISH AND INSTALL CURB (ITEM # 30)

- A. Measurement for payment for furnishing and installing curb and gutter will be based upon the number of linear feet of such curb actually constructed as determined by measurement along the centerline of the curb in place, including but not limited to type D curb, all in accordance with the requirements of the Contract Documents.
- B. Payment for furnishing and installing curb and gutter will be made at the unit price per linear foot of curb and gutter named in the Bid Schedule (Item Response Form), which shall constitute full compensation for removing and disposing of existing curb and gutter and complete installation including grading, 4 inch rock curb pad, forming, saw cutting of pavement and cleanup of all areas disturbed by this construction.

1.27 FURNISH AND INSTALL SOD (ITEM # 31)

- A. Measurement for payment for furnishing and installing sod will be based upon the number of square yards of sod actually installed, all in accordance with the requirements of the Contract Documents.
- B. Payment for sod will be made at the unit price per square yard of sod named in the Bid Schedule (Item Response Form) which price shall constitute full compensation for relocating mailboxes as necessary for construction, furnishing and installing the sod matching existing type and maintaining sod for 30 days. No additional compensations will be made for the type of sod installed or watering and maintaining sod for 30 days after installation. Appropriate notifications to home owners announcing the maintenance of newly installed sod is included in this line item.

1.28 FURNISH AND INSTALL SHRUB (ITEM #32)

- A. Measurement for furnishing and installing shrub will be based upon the actual number, per square foot, of such shrubs installed all in accordance with the requirements of the Contract Documents.
- B. Payment for furnishing and installing shrubs will be made at the unit price, per square foot of coverage, named in the Bid Schedule (Item Response Form) which price shall constitute full compensation for the plant material (to match existing type) and complete installation. No additional compensations will be made for watering, fertilizing, staking and any other maintenance needed for the duration of the contract and one-year warranty period. Shrubs shall with required support and protection in accordance with City and County standards.

1.29 EXISTING IRRIGATION SYSTEM RESTORATION (ITEM # 33)

- A. Measurement for payment for irrigation system restoration shall be completed on a per lot and/or per median basis. This quantity has been estimated for every lot and median within the project boundaries. Irrigation restoration, however, will only be provided for lots and medians with existing irrigation systems. As such, the actual quantity may not equal the estimated quantity and no additional compensation will be granted.

Exhibit B
Technical Specifications

01025- 8

**SECTION 01025
MEASUREMENT AND PAYMENT**

- B. Irrigation systems shall be restored with coverage matching that prior to construction, pipe and sprinklers matching the size and type of the existing pipe and sprinkler heads, and necessary adapters, coupling at each end splicing the restored pipe in place and connecting to existing sleeves underneath the sidewalk. If irrigation system is to be partially abandoned, then that which is being abandoned shall be removed, and the remaining exposed pipes shall be capped and protected. All work shall meet the approval of the CITY.
 - C. In locations where lot size is not clearly defined by property lines, irrigation system restoration LOT is to be defined by a maximum area of 400 SY, as approved by CITY.
- 1.30 FURNISH AND PLACE PAVEMENT MARKINGS (ITEM # 34-35)
- A. Measurement for payment for furnishing and placing pavement markings will be based upon the number of linear feet of such markings actually constructed as determined by measurement along the centerline of the pavement markings in place, all in accordance with the requirements of the Contract Documents.
 - B. Payment for furnishing and placing pavement markings will be made at the unit price per linear foot of pavement markings named in the Bid Schedule (Item Response Form), which price shall constitute payment for all colors, widths and types. Pavement marking skip lines will be paid per the linear foot of pavement marking which will be measured as the distance from the beginning of the first painted stripe to the last stripe, including skipped intervals.
- 1.31 FURNISH AND PLACE PAVEMENT SYMBOLS (ITEM # 36)
- A. Measurement for payment for furnishing and placing pavement symbols will be based upon the number, each, of such pavement symbols actually constructed as in place, all in accordance with the requirements of the Contract Documents.
 - B. Payment for furnishing and placing pavement symbols will be made at the unit price, each, of pavement symbols named in the Bid Schedule (Item Response Form). Payment for pavement symbols shall constitute full payment for all such symbols required and shall include but not be limited to bicycle symbols, directional arrows, handicapped designation including hatch between parking spots and any blue, white, or amber lane striping to accompany pavement markings symbol and striping.
- 1.32 FURNISH AND INSTALL TRAFFIC SIGNS (ITEM # 37)
- A. Measurement for payment to furnish and install the traffic signs will be based upon actual quantity, each, of such signs furnished and installed, all in accordance with the requirements of the Contract Documents.
 - B. Payment for furnishing and installing the traffic signs will be made at the unit price, each, named in the Bid Schedule (Item Response Form) which price shall constitute full compensation for the removal of existing sign being replaced (when applicable) and the completed installation of the new sign including sign post. Sign post is considered an in-sequential cost from the actual sign installation. Signs damaged by the DBF will be replaced by the DBF at no cost to the CITY.
- 1.33 UNFORESEEN UTILITY LOCATES OR BREAK REPAIR (ITEM #38)
- A. Measurement and payment for unforeseen utility locates or break repair will be based on the number of hours needed to perform such work in accordance with the requirements of the Contract Documents.

Exhibit B
Technical Specifications

01025- 9

**SECTION 01025
MEASUREMENT AND PAYMENT**

- B. Payment for unforeseen utility locates or break repair will be made at the unit price per hour of time spent to perform such repair or locates on unforeseen or mismarked utilities as named in the Bid Schedule (Item Response Form), which shall constitute full compensation for all necessary materials, equipment and labor needed to perform such task, including but not limited to all excavation, backfill, restoration work and coordination needed. This quantity has been estimated however the use of this line item will only be approved for use as deemed necessary by the CITY.
 - C. This item does not include compensation for potholing as described in this Section Part 1.01 C. DBF is responsible for potholing existing utilities sufficiently ahead of construction to avoid conflicts with the design alignment and grade of structures, culverts, storm drains and exfiltration trenches. Conflicts with utilities shown on the Drawings which result from the DBF's negligence to pothole sufficiently ahead of construction (a minimum of two days ahead of construction of the pipeline or as approved by the CITY) shall be resolved by the DBF at no additional cost to the OWNER.
- 1.34 ALLOWANCE FOR PERMIT FEES (ITEM #39)
- A. Measurement for payment for permit fees will be based upon the actual permit fees required by the DBF from the various agencies having jurisdiction for construction of the project, all in accordance with the Contract Documents. The permit fees are based on allowances and OWNER will reconcile the actual cost with the DBF by change order. The DBF shall produce documentation upon request verifying actual cost. DBF shall not add any mark up to permit fees. Only permit fees substantiated and approved by the CITY will be paid.
- 1.35 BID ALTERNATE – SLIP LINING
- A. Measurement for payment to furnish and install all items required to replace the subaqueous horizontal direction drill shown on plans with slip lining as indicated in section 02990 Slip Lining. Payment includes furnishing all labor, supplies, equipment and materials necessary to complete the installation of *Primus Line* Reinforced Liner and associated materials.
 - B. Payment for furnishing and installing slip lining will be made at the unit price per linear foot of pipe complete and in place including all clearing and grubbing, saw cut and removal of asphalt, remove and stockpile limerock, pipe, connections to proposed pipe, unloading, sheeting, excavation, utility pole protection, trench protection and trench safety, dewatering, laying, backfilling, compaction, pressure testing, flushing and temporary blow off with full cannon. As-builts for newly installed pipe must be provided before compensation for said pipe will be approved.
 - C. Work shall include all necessary adapters, fittings, pipe connectors and staging.
- 1.36 30-INCH TIDAL VALVE AND STORMWATER MODIFICATIONS
- A. Measure and payment to furnish and install a 30-inch tidal valve and all stormwater modifications for the property located at 888 Intracoastal Boulevard not included in any other pay item in accordance with the Contract Documents.
 - B. Payment for furnishing and installing tidal valve and stormwater modifications will be made at the lump sum price pipe in the bid schedule and include all material, equipment and labor, clearing and grubbing, saw cut and removal of asphalt, remove and stockpile limerock, pipe, connections to proposed pipe, unloading, sheeting, excavation, utility pole protection, trench protection and trench safety, dewatering, laying, backfilling, compaction, pressure testing. As-builts for newly

Exhibit B
Technical Specifications

01025- 10

SECTION 01025
MEASUREMENT AND PAYMENT

installed pipe must be provided before compensation for said pipe will be approved.

PART 2 - PRODUCTS (Not Applicable)
PART 3 - EXECUTION (Not Applicable)
END OF SECTION 01025

Exhibit B
Technical Specifications

01025- 11

5/8/2020 1:34 PM

p. 126

**SECTION 01031
ALTERATION PROJECT PROCEDURES**

PART 1 - GENERAL

1.01 REQUIREMENTS

- A. Coordinate work of trades and schedule elements of alterations and renovation work by procedure and methods to expedite completion of the work.
- B. In addition to demolition and that specifically shown, cut, move or remove items necessary to provide access or to allow alterations and new work to proceed. Include such items as:
 - 1. Repair or removal of hazardous or unsanitary conditions.
 - 2. Removal of abandoned items and items serving no useful purpose, such as abandoned piping, conduit and wiring.
 - 3. Removal of unsuitable or extraneous materials not marked for salvage, such as abandoned furnishings and equipment, and debris such as rotted wood, rusted metals and deteriorated concrete, shall be removed from the site expeditiously.
 - 4. Cleaning of surfaces and removal of surface finished as needed to install new work and finishes.
 - 5. Protection as required for existing trees to remain.
 - 6. For purposes of all existing underground utilities work, coordinate as required. Sunshine State One Call number shown on engineering drawings.
 - 7. Arrange site storage for all existing benches, signals, signs, light poles, fire hydrants, MAS covers and grates to be relocated.
- C. Patch, repair and refinish existing items to remain, to the specified condition for each material, with a professional transition to adjacent new items of construction.

1.02 RELATED REQUIREMENTS

- A. All applicable sections of the Specifications.
- B. Conditions of the Contract.

1.03 ALTERATIONS, CUTTING AND PROTECTION

- A. Assign the work of moving, removal, cutting, patching and protection to trades qualified to perform the work in a manner to cause least damage to each type of work, and provide means of returning surfaces to appearance of new work.
- B. Perform cutting and removal work to remove the minimum necessary, and in a manner to avoid damage to adjacent work.
 - 1. Cut finish surfaces such as paving, masonry, tile, plaster or metals, by methods to terminate surfaces in a straight line at a natural point of division.
- C. Perform cutting and patching as specified in Section 01045.

Exhibit B
Technical Specifications

01031- 1

**SECTION 01031
ALTERATION PROJECT PROCEDURES**

- D. Protect existing finishes, equipment, and adjacent work which is scheduled to remain, from damage.

1. Protect existing and new work from weather and extremes of temperature.

PART 2 - PRODUCTS

2.01 PRODUCTS FOR PATCHING, EXTENDING AND MATCHING

- A. General Requirements to complete work by:

1. Provide same products or types of construction as that which is existing, as needed to patch, extend or match existing work.
- a. Generally, Contract Documents will not define products or standards of working conduct present in existing construction; DESIGN-BUILD FIRM shall determine products in inspection and any necessary testing by use of the existing as a sample of comparison.
2. Presence of a product, finish, or type of construction, requires that patching, extending or matching shall be performed as necessary to make work complete and consistent to existing identical standards of quality.

PART 3 - EXECUTION

3.01 PERFORMANCE

- A. Patch and extend existing work using skilled mechanics who are capable of matching existing quality. Quality of patched or extended work shall be not less than that specified for new work.

3.02 DAMAGED SURFACES

- A. Patch and replace any portion of an existing finished surface which is found to be damaged, lifted, discolored, or shows other imperfections, with matching material.
1. Provide adequate support of substrate prior to patching the finish.
2. Refinish patched portions of painted or coated surfaces in a manner to produce uniform color and texture over entire surface.
3. When existing surface finish cannot be matched, refinish entire surface to nearest intersections.

3.03 TRANSITION FROM EXISTING TO NEW WORK

- A. When new work abuts or is finished flush with existing work, make a smooth transition. Patched work shall match existing adjacent work in texture and appearance so that the patch of transition is invisible at a distance of five feet.
1. When finished surfaces are cut in such a way that a smooth transition with new work is not possible, terminate existing surface in a neat manner along a straight line at a natural line of division, and provide trim appropriate to finished surface.

Exhibit B
Technical Specifications

01031- 2

**SECTION 01031
ALTERATION PROJECT PROCEDURES**

3.04 CLEANING

- A. Perform periodic and final cleaning as specified in Section 01710.
 - 1. Clean construction and OWNER occupied areas daily.
 - 2. Clean spillage, overspray, and heavy collection of dust in construction and OWNER occupied areas immediately.
- B. At completion of work of each trade, clean area and make surfaces ready for work of successive trades.
- C. At completion of alterations work in each area, provide final cleaning and return space to a condition suitable for use by OWNER.

3.05 MEASUREMENT AND PAYMENT

- A. There shall be no special measurement or payment for the work in this section. Payment for work shall be included in all other work.

END OF SECTION 01031

**SECTION 01045
CUTTING AND PATCHING****PART 1 - GENERAL****1.01 REQUIREMENTS INCLUDED**

- A. DBF shall be responsible for all cutting, fitting and patching, including attendant excavation and backfill, required to complete the work or to:
 - 1. Make its several parts fit together properly.
 - 2. Uncover portions of the work to provide for installation of ill-timed work.
 - 3. Remove and replace defective work.
 - 4. Remove and replace work not conforming to requirements of Contract Documents.
 - 5. Remove samples of installed work as specified for testing.
 - 6. Provide routine penetrations of nonstructural surfaces for installation of piping and electrical conduit.

1.02 RELATED REQUIREMENTS

- A. All applicable sections of the Specifications.
- B. Conditions of the Contract.

1.03 SUBMITTALS

- A. Submit a written request to CITY well in advance of executing any cutting or alteration, which affects:
 - 1. Work of the OWNER or any separate DBF.
 - 2. Structural value of integrity of any element of the project.
 - 3. Integrity of effectiveness of weather-exposed or moisture-resistant elements or systems.
 - 4. Efficiency, operational life, maintenance or safety of operational elements.
 - 5. Visual qualities of sight-exposed elements.
- B. Request shall include:
 - 1. Identification of the project.
 - 2. Description of the affected work.
 - 3. The necessity for cutting, alteration or excavation.
 - 4. Effect on work of OWNER or any separate DBF, or on structural or weatherproof integrity of project.
 - 5. Description of proposed work:

Exhibit B
Technical Specifications

01045- 1

**SECTION 01045
CUTTING AND PATCHING**

- a. Scope of cutting, patching, alteration, or excavation.
 - b. Trades who will execute the work.
 - c. Products proposed to be used.
 - d. Extent of refinishing to be done.
6. Alternatives to cutting and patching.
7. Cost proposal, when applicable.
8. Written permission of any separate DBF whose work will be affected.
- C. Should conditions of work or the schedule indicate a change of products from original installation, DBF shall submit request for substitution as specified in Section 01600, Paragraph 1.08.
- D. Submit written notice to CITY designating the date and time the work will be uncovered.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Comply with specifications and standards for each specific product involved.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Inspect existing conditions of project, including elements subject to damage or to movement during cutting and patching.
- B. After uncovering the work, inspect conditions affecting installation of products, or performance of work.
- C. Report unsatisfactory or questionable conditions affecting installation of products, or performance of work.

3.02 PREPARATION

- A. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of work.
- B. Provide devices and methods to protect other portions of project from damage.
- C. Provide protection from elements for that portion of the project, which may be exposed by cutting and patching, work, and maintain excavations free from water.

3.03 PERFORMANCE

- A. Execute cutting and demolition by methods, which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs.

Exhibit B
Technical Specifications

01045- 2

**SECTION 01045
CUTTING AND PATCHING**

- B. Execute excavating and backfilling by methods, which will prevent settlement or damage to other work.
 - C. Employ installer or fabricator to perform cutting and patching for:
 - 1. Weather-exposed or moisture-resistant elements.
 - 2. Sight-exposed finished surfaces.
 - D. Execute fitting and adjustment of products to provide a finished installation to comply with specified product, functions, tolerances and finishes.
 - E. Restore work which has been cut or removed; install new products to provide completed work in accordance with requirements of Contract Documents.
 - F. Fit work airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.
 - G. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes:
 - 1. For continuous surfaces, refinish to nearest intersection.
 - 2. For an assembly, refinish entire unit.
- 3.04 MEASUREMENT AND PAYMENT
- A. There shall be no special measurement or payment for the work under this section, it shall be included in the unit price bid of any item requiring cutting and patching, including pavement restoration.

END OF SECTION 01045

**SECTION 01060
REGULATORY REQUIREMENTS & PERMITS**

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. DBF shall comply with all building codes and regulations appropriate to the project, including those but not limited to:
1. City of Fort Lauderdale
 2. Florida Building Code. (Latest Revision)
 3. Broward County Traffic Engineering Division
 4. Broward County Environmental Protection and Growth Management Department
 5. Broward County Health Department
 6. Florida Department of Environmental Protection
 7. United States Army Corps of Engineers
 8. South Florida Water Management District
 9. Florida Department of Environmental Protection
 10. OSHA
- B. DBF shall comply with these codes, laws, regulations, rules, directives of all agencies, boards, districts, and governmental bodies having jurisdiction. The most recent guidelines of the regulatory agencies shall be utilized for the design and construction of the project.
- C. DBF shall obtain and pay the cost of all building permits, fees, tie-in or connection charges associated with the project.
- D. DBF is responsible for compliance with all agencies and shall obtain all the necessary permits to complete the project. In the event that the CITY must obtain permits in addition to those listed below, the DBF shall not have any claim for damages arising from any delay caused by the CITY'S obtaining said additional permits.

1.02 RELATED REQUIREMENTS

- A. All applicable sections of the Specifications.
- B. Conditions of the Contract.

1.03 MEASUREMENT AND PAYMENT

- A. DBF shall be reimbursed for permit fees as described in Section 01025.

PART 2 - PRODUCTS (Not Applicable)

Exhibit B
Technical Specifications

01060- 1

SECTION 01060
REGULATORY REQUIREMENTS & PERMITS

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01060

Exhibit B
Technical Specifications

01060- 2

5/8/2020 1:34 PM

p. 134

SECTION 01070
ABBREVIATIONS OF INSTITUTIONS

PART 1 GENERAL

1.01 GENERAL

- A. Wherever in these Specifications references are made to the standards, specifications, or other published data of the various international, 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.

1.02 ABBREVIATIONS

AAMA	Architectural Aluminum Manufacturer's Association
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists
ACI	American Concrete Institute
AFBMA	Anti-Friction Bearing Manufacturer's Association, Inc.
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AHAM	Association of Home Appliance Manufacturers
AI	The Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association
ANS	American Nuclear Society
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
API	American Petroleum Institute
APWA	American Public Works Association
ASA	American Standards Association
ASAE	American Society of Agricultural Engineers
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASLE	American Society of Lubricating Engineers
ASME	American Society of Mechanical Engineers
ASQC	American Society for Quality Control
ASSE	American Society of Sanitary Engineers
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Association
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BBC	Basic Building Code, Building Officials and Code Administrators International
BCEPD	Broward County Environmental Protection Department (now known as Broward County Environmental Protection and Growth Management Department)
BCHCED	Broward County Highway Construction & Engineering Division
BCHD	Florida Department of Health of Broward County
BCPHU	Broward County Public Health Unit
BCTED	Broward County Traffic Engineering Division
BCWRMD	Broward County Water Resource Management Division

Exhibit B
Technical Specifications

01070- 1

SECTION 01070
ABBREVIATIONS OF INSTITUTIONS

BCWWS	Broward County Water & Wastewater Services Division
BHMA	Builders Hardware Manufacturer's Association
CBM	Certified Ballast Manufacturers
CEMA	Conveyors Equipment Manufacturer's Association
CGA	Compressed Gas Association
CLFMI	Chain Link Fence Manufacturer's Institute
CMA	Concrete Masonry Association
CRSI	Concrete Reinforcing Steel Institute
CSI	Construction Specification Institute
DIPRA	Ductile Iron Pipe Research Association
EIA	Electronic Industries Association
ETL	Electrical Test Laboratories
EPA	Environmental Protection Agency
FAC	Florida Administrative Code
FBC	Florida Building Code
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FM	Factory Mutual System
FPL	Florida Power & Light
FS	Federal Specifications
HI	Hydraulics Institute
IAPMO	International Association of Plumbing and Mechanical Officials
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society
IME	Institute of Makers of Explosives
IP	Institute of Petroleum (London)
IPC	Institute of Printed Circuits
IPCEA	Insulated Power Cable Engineers Association
ISA	Instrument Society of America
ISO	International Organization for Standardization
ITE	Institute of Traffic Engineers
MBMA	Metal Building Manufacturer's Association
MPTA	Mechanical Power Transmission Association
MSS	Manufacturers Standardization Society
MTI	Marine Testing Institute
NAAMM	National Association of Architectural Metal Manufacturer's
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards
NCCLS	National Committee for Clinical Laboratory Standards
NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
N.I.C.	Not In Contract
NLGI	National Lubricating Grease Institute
NMA	National Microfilm Association
NSF	National Sanitation Foundation
NWMA	National Woodwork Manufacturers Association
NPDES	National Pollutant Discharge Elimination System
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PPI	Plastics Pipe Institute

Exhibit B
Technical Specifications

01070- 2

SECTION 01070
ABBREVIATIONS OF INSTITUTIONS

RCRA	Resource Conservation and Recovery Act
RIS	Redwood Inspection Service
RVIA	Recreational Vehicle Industry Association
RWMA	Resistance Welder Manufacturer's Association
SAE	Society of Automotive Engineers
SAMA	Scientific Apparatus Makers Association
SB	Southern Bell
SFWMD	South Florida Water Management District
SMA	Screen Manufacturers Association
SMACCNA	Sheet Metal and Air Conditioning Contractors National Association
SPI	Society of the Plastics Industry, Inc.
SPIB	Southern Pine Inspection Bureau
SPR	Simplified Practice Recommendation
SSA	Swedish Standards Association
SSBC	Southern Standard Building Code, Southern Building Code Congress
SSPC	Steel Structures Painting Council
SSPWC	Standard Specifications for Public Works Construction
TAPPI	Technical Association of the Pulp and Paper Industry
TFI	The Fertilizer Institute
UL	Underwriters Laboratories, Inc.
WCLIB	West Coast Lumber Inspection Bureau
WCRSI	Western Concrete Reinforcing Steel Institute
WEF	Water Environment Federation
WIC	Woodwork Institute of California
WRI	Wire Reinforcement Institute, Inc.
WWED	Broward County Water and Wastewater Engineering Division
WWPA	Western Wood Products Association

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01070

Exhibit B
Technical Specifications

01070- 3

SECTION 01090
REFERENCE STANDARDS

PART 1 GENERAL

1.01 GENERAL

- A. Titles of Sections and Paragraphs: Captions accompanying specification sections and paragraphs are for convenience of reference only, and do not form a part of the Specifications.
- B. Applicable Publications: Whenever in these Specifications references are made to published specifications, codes, standards, or other requirements, it shall be understood that wherever no date is specified, only the latest specifications, standards, or requirements of the respective issuing agencies which have been published as of the date that the WORK is advertised for bids, shall apply; except to the extent that said standards or requirements may be in conflict with applicable laws, ordinances, or governing codes. No requirements set forth herein or shown on the Drawings shall be waived because of any provision of, or omission from, said standards or requirements.

1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Without limiting the generality of other requirements of the Specifications, all work specified herein shall conform to or exceed the requirements of applicable codes and the applicable requirements of the following documents.
- B. References herein to "Building Code" shall mean "Florida Building Code". References to "Mechanical Code" or "Uniform Mechanical Code," "Plumbing Code" or "Uniform Plumbing Code," "Fire Code" or "Uniform Fire Code," shall mean Uniform Mechanical Code, Uniform Plumbing Code and Uniform Fire Code of the International Conference of the Building Officials (ICBO). "Electric Code" or "National Electric Code (NEC)" shall mean the National Electric Code of the National Fire Protection Association (NFPA). The latest edition of the codes as approved by the Municipal Code and used by the local agency as of the date that the WORK is advertised for bids, as adopted by the agency having jurisdiction, shall apply to the WORK herein, including all addenda, modifications, amendments, or other lawful changes thereto.
- C. In case of conflict between codes, reference standards, drawings and the other Contract Documents, the most stringent requirements shall govern. All conflicts shall be brought to the attention of the CITY for clarification and directions prior to ordering or providing any materials or furnishing labor. The DBF shall bid for the most stringent requirements.
- C. The DBF shall construct the WORK specified herein in accordance with the requirements of the Contract Documents and the referenced portions of those referenced codes, standards, and specifications listed herein.
- E. References herein to "OSHA Regulations for Construction" shall mean Title 29, Part 1926, Construction Safety and Health Regulations, Code of Federal Regulations (OSHA), including all changes and amendments thereto.
- F. References herein to "OSHA Standards" shall mean Title 29, Part 1910, Occupational Safety and Health Standards, Code of Federal Regulations (OSHA), including all changes and amendments thereto.
- G. References to "Minimum Standards" shall mean the City of Fort Lauderdale Minimum Standards.

1.03 REGULATIONS RELATED TO HAZARDOUS MATERIALS

Exhibit B

Technical Specifications

01090- 1

SECTION 01090
REFERENCE STANDARDS

- A. The DBF is responsible that all work included in the Contract Documents, regardless if shown or not, shall comply with all EPA, OSHA, RCRA, NFPA, and any other Federal, State, and Local Regulations governing the storage and conveyance of hazardous materials, including petroleum products.
- B. Where no specific regulations exist, all chemical, hazardous, and petroleum product piping and storage in underground locations must be installed with double containment piping and tanks, or in separate concrete trenches and vaults, or with an approved lining which cannot be penetrated by the chemicals, unless waived in writing by the OWNER.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01090

Exhibit B
Technical Specifications

01090- 2

SECTION 01340

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Submit Shop Drawings, Product Data and Samples required by the Contract Documents.

1.02 RELATED REQUIREMENTS

- A. All applicable sections of the Specifications.
- B. Conditions of the Contract.
- C. Designate in the construction schedule, or in a separate coordinated schedule, the dates for submission and the dates that reviewed Shop Drawings, Product Data and Samples will be needed.

1.03 SHOP DRAWINGS

- A. Drawings shall be presented in readable and thorough condition.
1. Drawing size shall be in standard sizes 8½ inch X 11 inch through 24-inch X 36 inch as appropriate for detail.
 2. Details shall be identified by reference to City of Fort Lauderdale Project Number, sheet, detail, specification section, equipment numbers, I.D. numbers and schedule numbers shown on Contract Drawings.

1.04 PRODUCT DATA

- A. Preparation
1. Clearly mark each copy to identify pertinent products or models.
 2. Show performance characteristics and capacities.
 3. Show dimensions and clearances required.
 4. Show wiring or piping diagrams and controls.
- B. Manufacturer's standard schematic drawings and diagrams:
1. Modify drawings and diagrams to delete information, which is not applicable to the work.
 2. Supplement standard information to provide information specifically applicable to the work.

1.05 SAMPLES

- A. Office samples shall be of sufficient size and quantity to clearly illustrate:
1. Functional characteristics of the product with integrally related parts and attachment devices.

Exhibit B
Technical Specifications

01340- 1

SECTION 01340

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

2. Full range of color, texture and pattern.

1.06 DBF RESPONSIBILITIES

- A. Review Shop Drawings, Product Data and Samples prior to submission.
- B. Determine and verify:
 1. Field measurements.
 2. Field construction criteria.
 3. Catalog numbers and similar data.
 4. Conformance with specifications.
- C. Coordinate each submittal with requirements of the work and of the Contract Documents.
- D. Notify the OWNER's Representative in writing, at time of submission, of any deviations in the submittals from requirements of the Contract Documents.

1.07 SUBMISSION REQUIREMENTS

- A. DBF shall furnish the CITY for review, 3 copies of each shop drawing submittal. The term "Shop Drawing" as used herein shall be understood to include detail design calculations, shop drawings, fabrication and installation drawings, erection drawings, lists, graphs, catalog sheets, data sheets, and similar items.
- B. Normally, a separate transmittal form shall be used for each specific item or class of material or equipment for which a submittal is required. Transmittal of a submittal of various items using a single transmittal form will be permitted only when the items taken together constitute a manufacturer's "package" or are so functionally related that expediency indicates review of the group or package as a whole. A multiple-page submittal shall be collated into sets, and each set shall be stapled or bound, as appropriate, prior to transmittal to the CITY. In any case, every separate item submitted for shop drawing approval will be uniquely numbered and dated, between the submittal and transmittal for proper tracking.
- C. Except as may otherwise be indicated herein, the CITY will return prints of each submittal to the DBF with its comments noted thereon, within twenty-one (21) calendar days following their receipt by the DBF. It is considered reasonable that the DBF shall make a complete and acceptable submittal to the CITY by the second submission of a submittal item. The CITY's maximum review period for each submittal, including all resubmittals, will be 15 days per submittal. In other words, for a submittal that required two resubmittals before it is complete, the maximum review period for that submittal could be 45 days.
- D. If 3 copies of a submittal are returned to the DBF marked "NO EXCEPTIONS TAKEN", formal revision and resubmission of said submittal will not be required.
- E. If 3 copies of a submittal are returned to the DBF marked "MAKE CORRECTIONS NOTED," formal revision and resubmission of said submittal will not be required.

Exhibit B
Technical Specifications

01340- 2

SECTION 01340
SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- F. If a submittal is returned to the DBF marked "REVISE AND RESUBMIT" or "AMEND-RESUBMIT," the DBF shall revise said submittal and shall resubmit the required number of copies of said revised submittal to the CITY.
- G. If a submittal is returned to the DBF marked "REJECTED-RESUBMIT", the DBF shall revise said submittal and shall resubmit the required number of copies of said revised submittal to the CITY.
- H. Fabrication of an item shall be commenced only after the CITY has reviewed the pertinent submittals and returned copies to the DBF marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED." Corrections indicated on submittals shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as the basis for changes to the contract requirements.
- I. All DBF shop drawing submittals shall be carefully reviewed by an authorized representative of the DBF, prior to submission to the CITY. Each submittal shall be dated, signed, and certified by the DBF, as being correct and in strict conformance with the Contract Documents. In the case of shop drawings, each sheet shall be so dated, signed, and certified. No consideration for review by the CITY of any DBF submittals will be made for any items, which have not been so certified by the DBF. All non-certified submittals will be returned to the DBF without action taken by the CITY, and any delays caused thereby shall be the total responsibility of the DBF.
- J. The CITY's review of DBF shop drawing submittals shall not relieve the DBF of the entire responsibility for the correctness of details and dimensions. The DBF shall assume all responsibility and risk for any misfits due to any errors in DBF submittals. The DBF shall be responsible for the dimensions and the design of adequate connections and details.
- K. Submittals shall contain:
1. The date of submission and the dates of any previous submissions.
 2. The Project title and Project number.
 3. Contract identification.
 4. The names of:
 - a. DBF
 - b. Supplier
 - c. Manufacturer
 5. Identification of the product, with the specification section number.
 6. Field dimensions clearly identified as such.
 7. Relation to adjacent or critical features of the work or materials.
 8. Applicable standards, such as ASTM or Federal Specification numbers.
 9. Identification of deviations from Contract Documents.
 10. Identification of revisions on resubmittals.
 11. DBF's stamp, initialed or signed, certifying to review of submittal, verification of products, field measurements and field construction criteria, and coordination of the information within the submittal with requirements of the work and of Contract Documents.

Exhibit B
Technical Specifications

01340- 3

SECTION 01340

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

1.08 RESUBMISSION REQUIREMENTS

- A. Make any corrections or changes in the submittals required by OWNER's Representative and resubmit until approved.
- B. Shop Drawings and Product Data:
 - 1. Revise initial drawings or data and resubmit as specified for the initial submittal.
 - 2. Indicate any changes which have been made other than those requested by the OWNER's Representative.
- C. Samples: Submit new samples as required for initial submittal.

1.09 DISTRIBUTION

- A. Distribute reproduction of Shop Drawings and copies of Product Data, which carry the OWNER's Representative's stamp of approval to:
 - 1. Job site file.
 - 2. Record Documents file.
 - 3. Other affected CONTRACTORS.
 - 4. Subcontractors
 - 5. Supplier or Fabricator.
- B. Distribute samples which carry the OWNER's Representative's stamp of approval as directed by the CITY.

1.10 OWNER'S REPRESENTATIVE DUTIES

- A. Review submittals with reasonable promptness and in accord with schedule.
- B. Affix stamp and initials or signature, and indicate requirements for resubmittal, or approval of submittal.
- C. Return submittals to DBF for distribution, or for resubmission.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 MEASUREMENT AND PAYMENT

- A. There shall be no special measurement or payment for the work under this section, it shall be included in the price of all other work.

END OF SECTION 01340

Exhibit B
Technical Specifications

01340- 4

**SECTION 01400
QUALITY CONTROL****PART 1 - GENERAL****1.01 DEFINITION**

- A. Specific quality control requirements for the WORK are indicated throughout the Contract Documents. The requirements of this Section are primarily related to performance of the WORK beyond furnishing of manufactured products. The term "Quality Control" includes inspection, sampling and testing, and associated requirements.

1.02 INSPECTION AT PLACE OF MANUFACTURE

- A. Unless otherwise indicated, all products, materials, and equipment shall be subject to inspection by the CITY at the place of manufacture.
- B. The presence of the CITY at the place of manufacturer, however, shall not relieve the DBF of the responsibility for furnishing products, materials, and equipment which comply with all requirements of the Contract Documents. Compliance is a duty of the DBF and said duty shall not be avoided by any act or omission on the part of the CITY.

1.03 SAMPLING AND TESTING

- A. Unless otherwise indicated, all sampling and testing shall be in accordance with the methods prescribed in the current standards of the ASTM, as applicable to the class and nature of the article or materials considered; however, the OWNER reserves the right to use any generally-accepted system of sampling and testing which, in the opinion of the CITY will insure the OWNER that the quality of the work is in full accord with the Contract Documents.
- B. Any waiver by the OWNER of any specific testing or other quality assurance measures, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the specified testing or other quality assurance requirements as originally specified, and whether or not such guarantee is accompanied by a performance bond to assure execution of any necessary corrective or remedial WORK, shall not be construed as a waiver of any requirements of the Contract Documents.
- C. Notwithstanding the existence of such waiver, the CITY reserves the right to make independent investigations and tests, and failure of any portion of the WORK to meet any of the requirements of the Contract Documents, shall be reasonable cause for the CITY to require the removal or correction and reconstruction of any such work in accordance with the General Conditions.

1.04 INSPECTION AND TESTING LABORATORY SERVICE

- A. Inspection and testing laboratory service shall comply with the following:
 - 1. OWNER will appoint, employ, and pay for services of an independent firm to perform inspection and testing or will perform inspection and testing itself.
 - 2. The OWNER or independent firm will perform inspections, testings, and other services specified in individual specification sections and as required by the CITY.
 - 3. Reports will be submitted to the CITY in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.

Exhibit B
Technical Specifications

01400- 1

SECTION 01400
QUALITY CONTROL

4. The DBF shall cooperate with the OWNER or independent firm and furnish samples of materials, design mix, equipment, tools, storage and assistance as requested.
5. The DBF shall notify CITY 48 hours prior to the expected time for operations requiring inspection and laboratory testing services.
6. Retesting required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the CITY. The DBF shall bear all costs from such retesting at no additional cost to the OWNER.
7. For samples and tests required for DBF'S use, the DBF shall make arrangements with an independent firm for payment and scheduling of testing. The cost of sampling and testing for the DBF'S use shall be included in the Contract Price.
8. DBF shall bear all costs if materials for testing are not ready for testing at time specified by DBF for the test.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Inspection: The DBF shall inspect materials or equipment upon the arrival on the job site and immediately prior to installation and reject damaged and defective items.
- B. Measurements: The DBF shall verify measurements and dimensions of the WORK, as an integral step of starting each installation.
- C. Manufacturer's Instructions: Where installations include manufactured products, the DBF shall comply with manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in Contract Documents.

END OF SECTION 01400

**SECTION 01505
MOBILIZATION****PART 1 GENERAL****1.01 GENERAL**

- A. Mobilization shall include the obtaining of all permits; moving onto the site of all equipment; temporary buildings, and other construction facilities, if applicable; and implementing security requirements; all as required for the proper performance and completion of the WORK. Mobilization shall include the following principal items:
1. Moving on to the site of all DBF's equipment required for first month operations.
 2. Installing temporary construction power, wiring, and lighting facilities.
 3. Developing construction water supply.
 4. Providing all on-site communication facilities, including cellular telephones and internet service.
 5. Providing on-site sanitary facilities and potable water facilities.
 6. Arranging for and erection of DBF's work, site access, and storage.
 7. Obtaining all required permits.
 8. Having all OSHA required notices and establishment of safety programs.
 9. Having the DBF's superintendent at the job site full time.
 10. Submitting initial submittals.
 11. Project identification and signs as described in Section 01580.

PART 2 - PRODUCTS (Not Applicable)**PART 3 - EXECUTION****3.01 PAYMENT FOR MOBILIZATION**

- A. The DBF's attention is directed to the condition that no payment for mobilization, or any part thereof will be approved for payment under the Contract until all mobilization items listed in Paragraph 1.01.A. above have been completed as specified. Furthermore, if DBF does not have required trailer, sanitary and potable facilities in order within the first month of construction, a prorated amount of mobilization will be removed from the mobilization line item, for the extent of time taken to furnish said facilities.

END OF SECTION 01505

**SECTION 01510
TEMPORARY UTILITIES****PART 1 GENERAL****1.01 GENERAL REQUIREMENTS**

- A. The types of utility services required for general temporary use at the project site include the following:
Water service (potable for certain uses)
Storm sewer
Sanitary sewer
Electric power service
Telephone service/Cellular service
Internet Service
Gas service
- B. It shall be the DBF's responsibility to provide equipment that is adequate for the performance of the WORK under this Contract within the time specified. All equipment shall be kept in satisfactory operating condition, shall be capable of safety and efficiently performing the required WORK, and shall be subject to inspection and approval by the OWNER's representative at any time within the duration of the Contract. All work hereunder shall conform to the applicable requirements of the OSHA Standards for Construction.

1.02 JOB CONDITIONS

- A. Scheduled Uses: The DBF shall, in conjunction with establishment of job progress schedule, establish a schedule for implementation and termination of service for each temporary utility or facility; at earliest feasible time, and when acceptable to OWNER change over from use of temporary utility service to permanent service.

PART 2 - PRODUCTS (Not Applicable)**PART 3 - EXECUTION****3.01 INSTALLATION OF POWER DISTRIBUTION SYSTEM**

- A. Power: The DBF shall provide all necessary power required for its operations under the Contract and shall provide and maintain all temporary power lines required to perform the WORK in a safe and satisfactory manner.

3.02 INSTALLATION OF LIGHTING

- A. Construction Lighting: All WORK conducted at night or under conditions of deficient daylight shall be suitably lighted to insure proper WORK and to afford adequate facilities for inspection and safe working conditions.

3.03 WATER SUPPLY

- A. General: The OWNER will furnish reasonable quantities of water required by the DBF for performance of the WORK under the Contract; however, the DBF shall provide all facilities necessary to convey the water from the OWNER-designated source to the points of use in accordance with the requirements of the Contract Document. The DBF shall pay all permit and water charges.
- B. Potable Water: All drinking water on the site during construction shall be furnished by the DBF

Exhibit B
Technical Specifications

01510- 1

**SECTION 01510
TEMPORARY UTILITIES**

and shall be bottled water or water furnished in acceptable metal dispensers. Notices shall be posted conspicuously throughout the site warning the DBF's personnel that piped water may be contaminated.

- C. Water Connections: The DBF shall not make connection to, or draw water from, any fire hydrant or pipeline without first obtaining permission of the authority having jurisdiction over the use of said fire hydrant or pipeline and from the agency owning the affected water system. For each such connection made, the DBF shall first attach to the fire hydrant or pipeline a valve and a meter, if required by the said authority, of a size and type acceptable to said authority and agency. The DBF shall pay all permit and water charges.
- D. Removal of Water Connections: Before final acceptance of the WORK on the project, all temporary connections and piping installed by the DBF shall be entirely removed, and all affected improvements shall be restored to their original condition, or better, to the satisfaction of the CITY and to the agency owning the affected utility.

3.04 INSTALLATION OF SANITARY FACILITIES

- A. Toilet Facilities: Fixed or portable chemical toilets shall be provided wherever needed for the use of DBF's employees. Toilets at construction job sites shall conform to the requirements of Subpart D, Section 1926.51 of the OSHA Standards for Construction.
- B. Sanitary and Other Organic Wastes: The DBF shall establish a regular daily collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided by the DBF or organic material wasted from any other source related to the DBF's operations shall be disposed of away from the site in a manner satisfactory to the CITY and in accordance with all laws and regulations pertaining thereto.

3.05 INSTALLATION OF FIRE PROTECTION

- A. Fire Protection: The construction of the WORK shall be connected with the DBF's water supply system and shall be adequately protected against damage by fire. Hose connections and hose, water casks, chemical equipment, or other sufficient means shall be provided for fighting fires in the temporary structures and other portions of the WORK, and responsible persons shall be designated and instructed in the operation such fire apparatus so as to prevent or minimize the hazard of fire. The DBF's fire protection program shall conform to the requirements of Subpart F of the OSHA Standards for Construction.

3.06 INSTALLATION OF COMMUNICATIONS

- A. Telephone and Internet Services: The DBF shall provide and maintain at all time during the progress of the WORK not less than one telephone and one internet connection in good working order, at CITY's field office and its own field construction office which shall be located at or near the site of the WORK included in the Contract.
- B. Telephone Use: The DBF shall permit the CITY, the OWNER, or their authorized representatives or employees free and unlimited use of said telephone facilities for all calls that do not involve extended long-distance charges.

Exhibit B
Technical Specifications

01510- 2

**SECTION 01510
TEMPORARY UTILITIES**

3.07 MEASUREMENT AND PAYMENT

- A. There shall be no special measurement or payment for the work under this section, it shall be included in the lump sum price for Mobilization.

END OF SECTION 01510

**SECTION 01520
CONSTRUCTION AIDS****PART 1 - GENERAL****1.01 REQUIREMENTS INCLUDED**

- A. Furnish, install and maintain required construction aids, remove on completion of work.

1.02 RELATED REQUIREMENTS

- A. All applicable sections of the Specifications.
- B. Conditions of the Contract.

PART 2 - PRODUCTS**2.01 MATERIALS, GENERAL**

- A. Materials may be new or used, suitable for the intended purpose, but must not violate requirements of applicable codes and standards.

2.02 CONSTRUCTION AIDS

- A. Provide construction aids and equipment required by personnel and to facilitate execution of the work; scaffolds, staging, ladders, stairs, steel plate, ramps, runways, platforms, railings, hoists, cranes, by-pass, chutes and other such facilities and equipment.
 - 1. Refer to respective sections for particular requirements for each trade.
 - 2. Provide protective coverings for finished surfaces.
- B. Maintain facilities and equipment in first-class condition.

PART 3 - EXECUTION**3.01 PREPARATION**

- A. Consult with OWNER's Representative, review site conditions and factors which affect construction procedures and construction aids including adjacent properties and public facilities which may be affected by execution of the work.

3.02 GENERAL

- A. Comply with applicable requirements specified in sections of Division 2 through 4 (as applicable).
- B. Relocate construction aids as required by progress of construction, by storage or work requirements, and to accommodate legitimate requirements of OWNER and other Contractors employed at the site.

3.03 REMOVAL

- A. Completely remove temporary materials, equipment and services:
 - 1. When construction needs can be met by use of permanent construction.

Exhibit B
Technical Specifications

01520- 1

**SECTION 01520
CONSTRUCTION AIDS**

2. At completion of project.
 - B. Clean, repair damage caused by installation or by use of temporary facilities.
 1. Remove foundations and underground installations for construction aids.
 2. Grade areas of site affected by temporary installations to required elevations and slopes and clean the area.
 - C. Restore permanent facilities used for temporary purposes to specified condition.
- 3.04 MEASUREMENT AND PAYMENT
- A. There shall be no special measurement or payment for the work under this section, it shall be included in the price of all other work.

END OF SECTION 01520

**SECTION 01530
PROTECTION OF EXISTING FACILITIES**

PART 1 - GENERAL

1.01 GENERAL

- A. The DBF shall protect all existing utilities and improvements not designated for removal and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation, all in accordance with requirements of the Contract Documents.
- B. The DBF shall verify the exact locations and depths of all utilities shown and the DBF shall make exploratory excavations of all utilities that may interfere with the WORK. All such exploratory excavations shall be performed as soon as practicable after award of the contract and, in any event, a sufficient time in advance of construction to avoid possible delays to the DBF's work. When such exploratory excavations show the utility location as shown to be in error, the DBF shall so notify the CITY.
- C. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the utility.

1.02 RIGHTS-OF-WAY

- A. The DBF shall not do any work that would affect any oil, gas, sewer, or water pipeline; any telephone, cable or electric transmission line; any fence; or any other structure, nor shall the DBF enter upon the rights-of-way involved until notified that the OWNER has secured authority from the proper party. After authority has been obtained, the DBF shall give said party due notice of its intention to begin work, if required by said party, and shall remove, shore, support or otherwise protect such pipeline, transmission line, ditch, fence, or structure or replace the same. When two or more contracts are being executed at one time on the same or adjacent land in such manner that work on one contract may interfere with that on another, the OWNER shall determine the sequence and order of the WORK. When the territory of one contract is the necessary or convenient means of access for the execution of another contract, such privilege of access or any other reasonable privilege may be granted by the OWNER to the DBF so desiring, to the extent, amount, in the manner, and at the times permitted. No such decision as to the method or time of conducting the WORK or the use of territory shall be made the basis of any claim for delay or damage, except as provided for temporary suspension of the WORK in the General Conditions of the Contract.

1.03 PROTECTION OF STREET OR ROADWAY MARKERS

- A. The DBF shall not destroy, remove, or otherwise disturb any existing survey markers or other existing street or roadway markers without proper authorization. No pavement breaking, or excavation shall be started until all survey or other permanent marker points that will be disturbed by the construction operations have been properly referenced. All survey markers or points disturbed by the DBF shall be accurately restored after all street or roadway resurfacing has been completed.

1.04 RESTORATION OF PAVEMENT

- A. General: All paved areas including asphaltic concrete berms cut or damaged during construction shall be replaced with similar materials and of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents or in the requirements of the agency issuing the permit. All temporary and

Exhibit B
Technical Specifications

01530 - 1

**SECTION 01530
PROTECTION OF EXISTING FACILITIES**

permanent pavement shall conform to the requirements of the affected pavement OWNER. All pavements which are subject to partial removal shall be neatly saw cut in straight lines.

- B. Temporary Resurfacing: Wherever required by the public authorities having jurisdiction, the DBF shall place temporary surfacing promptly after backfilling and shall maintain such surfacing for the period of time fixed by said authorities before proceeding with the final restoration of improvements.
- C. Permanent Resurfacing: In order to obtain a satisfactory junction with adjacent surfaces, the DBF shall saw cut back and trim the edge so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement.
- D. Restoration of Sidewalks or Private Properties: Wherever sidewalks or private properties and driveways have been removed for purposes of construction, the DBF shall place suitable temporary sidewalks or driveways promptly after backfilling and shall maintain them in satisfactory condition for the period of time fixed by the authorities having jurisdiction over the affected portions before proceeding with the final restoration or, if no such period of times is so fixed, the DBF shall maintain said temporary sidewalks or driveways until the final restoration thereof has been made. The DBF shall restore all private properties within thirty (30) days after a complaint is received by the OWNER.

1.05 EXISTING UTILITIES AND IMPROVEMENTS

- A. General: The DBF shall protect all Underground Utilities and other improvements which may be impaired during construction operations. It shall be the DBF's responsibility to ascertain the actual location of all existing utilities and other improvements that will be encountered in its construction operations, and to see that such utilities or other improvements are adequately protected from damage due to such operations. The DBF shall take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.
- B. Utilities to be Moved: In the case it shall be necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon request of the DBF, be notified by the OWNER to move such property within a specified reasonable time. When utility lines that are to be removed are encountered within the area of operations, the DBF shall notify the CITY a sufficient time in advance for the necessary measures to be taken to prevent interruption of service.
- C. Where the proper completion of the WORK requires the temporary or permanent removal and/or relocation of an existing utility or other improvement which is indicated, the DBF shall remove and, without unnecessary delay, temporarily replace or relocate such utility or improvement in a manner satisfactory to the OWNER of the facility. In all cases of such temporary removal or relocation, restoration to former location shall be accomplished by the DBF in a manner that will restore or replace the utility or improvement as nearly as possible to its former locations and to as good or better condition than found prior to removal.
- D. OWNER's Right of Access: The right is reserved to the OWNER and to the OWNERS of public utilities and franchises to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the WORK of this Contract.

Exhibit B
Technical Specifications

01530 - 2

**SECTION 01530
PROTECTION OF EXISTING FACILITIES**

- E. **Underground Utilities Indicated:** Existing utility lines that are indicated or the locations of which are made known to the DBF prior to excavation and that are to be retained, and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired or replaced by the DBF at no cost to the CITY.
 - F. **Underground Utilities Not Indicated:** In the event that the DBF damages any existing utility lines that are not indicated or the locations of which are not made known to the DBF prior to excavation, a written report thereof shall be made immediately to the CITY. If directed by the CITY, repairs shall be made by the DBF under the provisions contained in these Contract Documents.
 - G. **All costs of locating, repairing damage not due to failure of the DBF to exercise reasonable care, and removing or relocating such utility facilities not shown in the Contract Documents with reasonable accuracy, and for equipment on the project which was actually working on that portion of the work which was interrupted or idled by removal or relocation of such utility facilities, and which was necessarily idled during such work will be paid for in accordance with the provisions of the Contract Documents.**
 - H. **Approval of Repairs:** All repairs to a damaged utility or improvement are subject to inspection and approval by an authorized representative of the utility or improvement OWNER before being concealed by backfill or other work.
 - I. **Maintaining in Service:** All oil and gasoline pipelines, power, and telephone or the communication cable ducts, gas and water mains, irrigation lines, sewer lines, storm drain lines, poles, and overhead power and communication wires and cables encountered along the line of the WORK shall remain continuously in service during all the operations under the Contract, unless other arrangements satisfactory to the CITY are made with the owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, or wire or cable. The DBF shall be responsible for and shall repair all damage due to its operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.
 - J. **Existing Water Services:** DBF shall protect and provide temporary support for existing water services. Any water service damaged by the DBF, shall be replaced at the DBF's expense, with a new water service complete with new water main tap.
- 1.06 TREES WITHIN STREET RIGHTS-OF-WAY AND PROJECT LIMITS**
- A. **General:** The DBF shall exercise all necessary precautions so as not to damage or destroy any trees or shrubs, including those lying within street rights-of-way and project limits, and shall not trim or remove any trees unless such trees have been approved for trimming or removal by the jurisdictional agency or OWNER. All existing trees and shrubs which are damaged during construction shall be trimmed or replaced by the DBF or a certified tree company under permit from the jurisdictional agency and/or the OWNER. Tree trimming and replacement shall be accomplished in accordance with the following paragraphs.
 - B. **Trimming:** Symmetry of the tree shall be preserved; no stubs or splits or torn branches left; clean cuts shall be made close to the trunk or large branch. Spikes shall not be used for climbing live trees. All cuts over 1-1/2 inches in diameter shall be coated with an asphaltic emulsion material. There shall be no additional compensation for trees that require trimming due to damage by the DBF's operation.

Exhibit B
Technical Specifications

01530 - 3

**SECTION 01530
PROTECTION OF EXISTING FACILITIES**

- C. Replacement: The DBF shall immediately notify the jurisdictional agency and/or the OWNER if any tree is damaged by the DBF's operations. If, in the opinion of said agency or the OWNER, the damage is such that replacement is necessary, the DBF shall replace the tree at DBF's own expense. The tree shall be of a like size and variety as the tree damaged, or, if of a smaller size, the DBF shall pay to the OWNER of said tree a compensatory payment acceptable to the tree OWNER, subject to the approval of the jurisdictional agency or OWNER. The size of the trees shall be not less than 1-inch diameter, nor less than 6 feet in height.

1.07 NOTIFICATION BY THE DBF

- A. Prior to any excavation in the vicinity of any existing underground facilities, including all water, sewer, storm drain, gas, petroleum products, or other pipelines; all buried electric power, communications, or television cables; all traffic signal and street lighting facilities; and all roadway and state highway rights-of-way the DBF shall notify the respective authorities representing the OWNERS or agencies responsible for such facilities not less than 3 days nor more than 7 days prior to excavation so that a representative of said OWNERS or agencies can be present during such work if they so desire. The DBF shall also notify the Sunshine State One Call Center 1-800-432-4770 at least 2 days, but no more than 14 days, prior to such excavation.

PART 2 - PRODUCTS

2.01 MATERIALS, GENERAL

- A. Materials may be new or used, suitable for the intended purpose, but must not violate requirements of applicable codes and standards.

2.02 FENCING

- A. Materials to DBF's option, minimum fence height = 6 feet.

2.03 BARRIERS

- A. Materials to DBF's option, as appropriate to serve required purpose.

PART 3 - EXECUTION

3.01 GENERAL

- A. Install facilities with a neat and reasonable uniform appearance, structurally adequate for required purposes.
- B. Maintain barriers during entire construction period.
- C. Relocate barriers as required by progress of construction.

3.02 TREE AND PLANT PROTECTION

- A. Preserve and protect existing trees and plants adjacent to work areas.
- B. Consult with OWNER's Representative and remove agreed-on roots and branches which interfere with work.

Exhibit B
Technical Specifications

01530 - 4

**SECTION 01530
PROTECTION OF EXISTING FACILITIES**

1. Employ qualified tree surgeon to remove branches, and to treat cuts.
 - C. Protect root zones of trees and plants.
 1. Do not allow vehicular traffic and parking.
 2. Do not store materials or products.
 3. Prevent dumping of refuse or chemically injurious materials or liquids.
 1. Prevent puddling or continuous running water.
 2. Provide temporary tree protection in accordance with City/County requirements.
 - D. Carefully supervise all work to prevent damage.
 - E. Replace trees and plants which are damaged or destroyed due to work operations under this contract.
- 3.03 REMOVAL
- A. Completely remove barricades, including foundations, when construction has progressed to the point that they are no longer needed, and when approved by OWNER's Representative.
 - B. Clean and repair damage caused by installation, fill and grade areas of the site to required elevations and slopes, and clean the area.
- 3.04 MEASUREMENT AND PAYMENT
- A. There shall be no special measurement or payment for the work under this section, it shall be included in the price of all other work.

END OF SECTION 01530

**SECTION 01550
SITE ACCESS AND STORAGE****PART 1 - GENERAL****1.01 HIGHWAY LIMITATIONS:**

- A. The DBF 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 DBF's responsibility to construct and maintain any haul roads required for its construction operations.

1.02 TEMPORARY CROSSINGS:

- A. General: Continuous, unobstructed, safe, and adequate pedestrian and vehicular access shall be provided to fire hydrants, commercial and industrial establishments, churches, schools, parking lots, service stations, motels, fire and police stations, and hospitals. Safe and adequate public transportation stops and pedestrian crossings at intervals not exceeding 300 feet shall be provided. The DBF shall cooperate with parties involved in the delivery of mail and removal of trash and garbage so as to maintain existing schedules for such services. Vehicular access to residential driveways shall be maintained to the property line except when necessary construction precludes such access for reasonable periods of time.
- B. Temporary Bridges: Wherever necessary, the DBF shall provide suitable temporary bridges or steel plates over unfilled excavations, except in such cases as the DBF shall secure the written consent of the individuals or authorities concerned to omit such temporary bridges or steel plates, which written consent shall be delivered to the CITY prior to excavation. All such bridges or steel plates shall be maintained in service until access is provided across the backfilled excavation. Temporary bridges or steel plates for street and highway crossing shall conform to the requirements of the authority having jurisdiction in each case, and the DBF shall adopt designs furnished by said authority for such bridges or steel plates, or shall submit designs to said authority for approval, as may be required.
- C. Street Use: Nothing herein shall be construed to entitle the DBF to the exclusive use of any public street, alleyway, or parking area during the performance of the WORK hereunder, and it shall so conduct its operations as not to interfere unnecessarily with the authorized work of utility companies or other agencies in such streets, alleyways, or parking areas. No street shall be closed to the public without first obtaining permission of the CITY and proper governmental authority. Where excavation is being performed in primary streets or highways, one lane in each direction shall be kept open to traffic at all times unless otherwise indicated. Toe boards shall be provided to retain excavated material if required by the CITY or the agency having jurisdiction over the street or highway. Fire hydrants on or adjacent to the WORK shall be kept accessible to fire-fighting equipment at all times. Temporary provisions shall be made by the DBF to assure the use of sidewalks and the proper functioning of all gutters, storm drain inlets, and other drainage facilities.
- D. Traffic Control: For the protection of traffic in public or private streets and ways, the DBF shall provide, place, and maintain all necessary barricades, traffic cones, warning signs, lights, and other safety devices in accordance with the requirements of The City of Fort Lauderdale and the "Manual of Uniform Traffic Control Devices, Part VI - Traffic Controls for Street and Highway Construction and Maintenance Operations," published by U.S. Department of Transportation, Federal Highway Administration (ANSI D6.1).

The DBF shall take all necessary precautions for the protection of the WORK and the safety of the public. All barricades and obstructions shall be illuminated at night, and all lights shall be kept burning from sunset until sunrise. The DBF shall station such guards or flaggers and shall

Exhibit B
Technical Specifications

01550 - 1

SECTION 01550 SITE ACCESS AND STORAGE

conform to such special safety regulations relating to traffic control as may be required by the public authorities within their respective jurisdictions. All signs, signals, and barricades shall conform to the requirements of the Florida Department of Transportation.

The DBF shall submit 3 copies of a traffic control plan to the CITY for approval a minimum of 2 weeks prior to construction. The CITY reserves the right to observe these traffic control plans in use and to make any changes as field conditions warrant. Any changes shall supersede these plans and be done solely at the DBF's expense. Submittal to CITY of traffic control plan does not alleviate DBF from requirements of submitting plan to authorizing authority.

The DBF shall remove traffic control devices when no longer needed, repair all damage caused by installation of the devices, and shall remove post settings and backfill the resulting holes to match grade.

- E. Temporary Driveway Closure: The DBF shall notify the OWNER or occupant (if not OWNER-occupied) of the closure of the driveways to be closed more than one eight-hour work day at least 3 working days prior to the closure. The DBF shall minimize the inconvenience and minimize the time period that the driveways will be closed. The DBF shall fully explain to the OWNER/occupant how long the work will take and when closure is to start. Total closure time shall not exceed 5 days.

1.03 DBF'S WORK AND STORAGE AREA:

- A. The DBF shall designate and arrange for the use of a portion of the property adjacent to the WORK, as applicable, for its exclusive use during the term of the Contract as a storage and shop area for its construction operations relative to this Contract.
- B. The DBF's use of the project site shall be limited to its construction operations. The DBF shall make its own arrangements for any necessary off-site storage or shop areas necessary for the proper execution of the WORK. A copy of an agreement for use of other property shall be furnished to the CITY. No material may be stored in the public right of way without prior authorization by the agency having jurisdiction. No material shall be stored within the public right of way in excess of 15 days. The DBF shall keep these areas in a clean and orderly condition so as not to cause a nuisance or sight obstruction to motorists or pedestrians.
- C. The DBF 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 all 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, two-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. The DBF shall develop and submit to the CITY a plan for storing and disposing of the materials above.

Exhibit B
Technical Specifications

01550 - 2

**SECTION 01550
SITE ACCESS AND STORAGE**

4. The DBF shall obtain and submit to the CITY a single EPA number for wastes generated at the site.
5. The separate storage area shall meet all the requirements of all authorities having jurisdiction over the storage of hazardous materials.
6. All hazardous materials which are delivered in containers shall be stored in the original containers until use. Hazardous materials which are delivered in bulk shall be stored in containers which meet the requirements of authorities having jurisdiction.

1.04 PARKING:

A. The DBF shall:

1. The DBF shall direct its employees to park in designated areas secured by the DBF.
2. Traffic and parking areas shall be maintained in a sound condition, free of excavated material, construction equipment, mud, and construction materials. The DBF shall repair breaks, potholes, low areas which collect standing water, and other deficiencies.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 MEASUREMENT AND PAYMENT

- A. There shall be no special measurement or payment for the work under this section, it shall be included in the price of Mobilization and of all other work.

END OF SECTION 01550

**SECTION 01560
TEMPORARY CONTROLS**

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Provide and maintain methods, equipment, and temporary construction, as necessary, to provide controls over environmental conditions at the construction site and related area under DBF's control; remove physical evidence of temporary facilities at completion of work.

1.02 RELATED REQUIREMENTS

- A. All applicable sections of the Specifications.
- B. Conditions of the Contract.

1.03 NOISE CONTROL

- A. Provide all necessary requirements for noise control during the construction period.
 - 1. Noise procedures shall conform to all applicable OSHA requirements and local ordinances having jurisdiction on the work.
 - 2. Noise levels during nighttime hours shall not exceed 55 db measured at the property line of a residence.

1.04 DUST CONTROL

- A. Provide positive methods and apply dust control materials to minimize raising dust from construction operations and provide positive means to prevent air-borne dust from dispersing into the atmosphere.

1.05 WATER CONTROL

- A. Provide methods to control surface water to prevent damage to the project, the site, or adjoining properties.
 - 1. Control fill, grading and ditching to direct surface drainage away from excavations, pits, tunnels and other construction areas; and to direct drainage to proper runoff.
- B. Provide, operate and maintain hydraulic equipment of adequate capacity to control surface and water.
- C. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to any portion of the site or to adjoining areas.

1.06 PEST CONTROL

- A. Provide pest control as necessary to prevent infestation of construction or storage area.
 - 1. Employ methods and use materials which will not adversely affect conditions at the site or on adjoining properties.
 - 2. Should the use of pesticides be considered necessary, submit an informational copy of the proposed program to OWNER with a copy to CITY. Clearly indicate:

Exhibit B
Technical Specifications

01560- 1

**SECTION 01560
TEMPORARY CONTROLS**

- a. The area or areas to be treated.
 - b. The pesticide to be used, with a copy of the manufacturer's printed instructions.
 - c. The pollution preventative measures to be employed.
 - B. The use of any pesticide shall be in full accordance with the manufacturer's printed instructions and recommendations.
- 1.07 RODENT CONTROL
- A. Provide rodent control as necessary to prevent infestation of construction or storage area.
 - 1. Employ methods and use materials, which will not adversely affect conditions at the site or on adjoining properties
 - 2. Should the use of rodenticide be considered necessary, submit an informational copy of the proposed program to OWNER with a copy to OWNER's Representative. Clearly indicate:
 - a. the area or areas to be treated.
 - b. the rodenticide to be used, with a copy of the manufacturer's printed instructions.
 - c. the pollution preventative measures to be employed.
 - B. The use of any rodenticide shall be in full accordance with the manufacturer's printed instructions and recommendations.
- 1.08 DEBRIS CONTROL
- A. Maintain all areas under DBF's control free of extraneous debris.
 - B. Initiate and maintain a specific program to prevent accumulation of debris at construction site, storage and parking area, or along access roads and haul routes.
 - 1. Provide containers for deposit of debris as specified in Section 01710 - Cleaning.
 - 2. Prohibit overloading of trucks to prevent spillage on access and haul routes.
 - a. Provide periodic inspection of traffic areas to enforce requirements.
 - C. Schedule periodic collections and disposal of debris as specified in Section 01710 - Cleaning.
 - 1. Provide additional collections and disposal of debris whenever the periodic schedule is inadequate to prevent accumulation.
- 1.09 POLLUTION CONTROL
- A. Provide methods, means and facilities required to prevent contamination of soil, water or atmosphere by the discharge of noxious substances from construction operations.
 - B. Provide equipment and personnel, perform emergency measures required to contain any spillage, and to remove contaminated soils or liquids.

Exhibit B
Technical Specifications

01560- 2

**SECTION 01560
TEMPORARY CONTROLS**

1. Excavate and dispose of any contaminated earth off-site and replace with suitable compacted fill and topsoil.
 - C. Take special measures to prevent harmful substances from entering public waters.
 1. Prevent disposal of wastes, effluents, chemicals, or other such substances adjacent to streams or in sanitary or storm sewers.
 - D. Provide systems for control of atmospheric pollutants.
 1. Prevent toxic concentrations of chemicals.
 2. Prevent harmful dispersal of pollutants into the atmosphere.
- 1.10 EROSION CONTROL
- A. Plan and execute construction and earthwork, by methods to control surface drainage from cuts and fills, and from borrow and waste disposal areas to prevent erosion and sedimentation.
 1. Hold the areas of bare soil exposed at one time to a minimum
 2. Provide temporary control measures such as berms, dikes and drains.
 3. Provide silt screens as required preventing surface water contamination.
 - B. Construct fills and waste areas by selective placement to eliminate surface silts or clays, which will erode.
 - C. Periodically inspect earthwork to detect any evidence of the start of erosion, apply corrective measures as required to control erosion.
 - D. All erosion control procedures must comply with the National Pollutant Discharge Elimination System (NPDES). The DBF shall develop and implement a Stormwater Pollution Prevention Plan as outlined by NPDES.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 MEASUREMENT AND PAYMENT

- A. There shall be no special measurement or payment for the work under this section; it shall be included in the price of all other work.

END OF SECTION 01560

**SECTION 01570
TRAFFIC REGULATIONS****PART 1 - GENERAL****1.01 REQUIREMENTS INCLUDED**

- A. Provide, operate and maintain equipment, services and personnel, with traffic control and protective devices, as required to expedite vehicular traffic flow on haul routes, at site entrances, on-site access roads, and parking areas.
- B. Remove temporary equipment and facilities when no longer required, restore grounds to original, or specified conditions.

1.02 RELATED REQUIREMENTS

- A. All applicable sections of the Specifications.
- B. Conditions of the Contract.

1.03 TRAFFIC SIGNALS AND SIGNS

- A. Provide and operate traffic control and directional signals or signs required to direct and maintain an orderly flow of traffic in all areas under DBF's control or affected by DBF's operations.

1.04 FLAGPERSON

- A. Provide qualified and suitably equipped flag-person when construction operations encroach on traffic lanes, as required for regulation of traffic.

1.05 FLARES AND LIGHTS

- A. Provide flares and lights during periods of low visibility:
 - 1. To clearly delineate traffic lanes and to guide traffic.
 - 2. For use of flag-person in directing traffic.
- B. Provide illumination of critical traffic and parking areas.
 - 1. Maintain free vehicular access to and through parking areas.
 - 2. Prohibit parking on or adjacent to access roads, or in non-designated areas.

1.06 HAUL ROUTES

- A. Consult with OWNER and governing authorities, establish public thoroughfares which will be used as haul routes and site access.
- B. Confine construction traffic to designated haul routes.
- B. Provide traffic control at critical areas of haul routes to expedite traffic flow, to minimize interference with normal public traffic.

Exhibit B
Technical Specifications

01570- 1

**SECTION 01570
TRAFFIC REGULATIONS****1.07 EMERGENCY ACCESS**

- A. In order to provide protection to the workers and residents, the DBF shall maintain emergency access to all adjacent properties at all times during construction. If a road is required to be closed to vehicular traffic and the distance of the closure exceeds 150 feet between stabilized surfaces or prevents access to properties for a distance that exceeds 150 feet, the DBF shall provide a 10-foot-wide stabilized access way on one side of the trench capable of supporting a Fire Truck. DBF shall also provide stabilized access ways across the trench or unstabilized area a minimum of 6 feet in width at a spacing not to exceed 100 feet capable of supporting foot traffic. These access ways shall be protected and delineated with lighted barricades or other such devices as approved by the regulatory agency. Both ends of the emergency access way shall be blocked in accordance with the MOT permit approved by the applicable permitting agency (i.e. City of Fort Lauderdale) with signage indicating that this access way is to be used by emergency vehicles only.

No trenches or holes shall be left open after working hours. In the event a trench must be left open after hours, it shall be done so only with the express written permission from the CITY, and it shall be the DBF's responsibility to provide proper protection of the open trench or hole as required by the regulatory agency. In addition, the DBF shall provide a security guard at the site whenever the DBF's personnel are not present, 24 hours per day/ 7 days per week. It shall be the Security Guard's responsibility to protect the open trench or hole from trespassers and to direct emergency personnel on site. The Security Guard shall not have any other responsibilities such as operation pumps or equipment but shall be dedicated to protecting the trench or open hole. The Security Guard shall be equipped with a wireless telephone capable of calling 911 to report an emergency and shall keep that telephone on their person at all times. In addition to this provision the DBF shall maintain trench safety and comply with current OSHA regulations and the Trench Safety Act. The DBF shall maintain and keep all safety barricades, signage, flashers, and detours, in operation condition. A copy of the approved MOT plans, and details, shall be on site at all times.

- B. Measurement and payment for security guard services shall be included in the utility pipe installation unit price. Measurement for temporary emergency access ways will be paid for under the specified line item at the unit price described in the Bid Schedule

PART 2 - PRODUCTS (Not Applicable)**PART 3 - EXECUTION****3.01 MEASUREMENT AND PAYMENT**

- A. There shall be no special measurement and payment for work under the section; it shall be included in the lump sum price bid for Maintenance of Traffic.

END OF SECTION 01570

**SECTION 01580
PROJECT IDENTIFICATION AND SIGNS**

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Furnish, install and maintain project identification sign.
- B. Provide temporary on-site informational signs to identify key elements of construction facilities.
- C. Remove signs on completion of construction.
- D. Allow no other signs to be displayed.

1.02 RELATED REQUIREMENTS

- A. All applicable sections of the Specifications.
- B. Conditions of the Contract.

1.03 PROJECT IDENTIFICATION SIGN

- A. Two painted sign, of not less than 32 square feet area, with painted graphic content to include:
 - 1. Title of project.
 - 2. Name of CITY.
 - 3. Names and titles as directed by CITY.
 - 4. Funding sources.
- B. Graphic design, style and size of lettering, and colors: As designated by CITY.
- C. Erect on the site at a lighted location of high public visibility, adjacent to main entrance to site, as approved by the CITY.

1.04 INFORMATIONAL SIGNS

- A. Painted signs and painted lettering, or standard products.
 - 1. Size of signs and lettering: As required by regulatory agencies, or as appropriate to usage.
 - 2. Colors: As required by regulatory agencies, otherwise of uniform colors throughout project.
- B. Erect at appropriate locations to provide required information by the commencement of construction activities.

1.05 QUALITY ASSURANCE

- A. Sign Painter: Professional experience in type of work required.
- B. Finishes, Painting: Adequate to resist weathering and fading for scheduled construction period.

Exhibit B
Technical Specifications

01580- 1

SECTION 01580
PROJECT IDENTIFICATION AND SIGNS

PART 2 - PRODUCTS

2.01 SIGN MATERIALS

- A. Structure and Framing: May be new or used, wood or metal, in sound condition structurally adequate to work and suitable for specified finish.
- B. Sign Surfaces: Exterior softwood plywood with medium density overlay, standard large sizes to minimize joints.
 - 1. Thickness: As required by standards to span framing members, to provide even, smooth surface without wave or buckles.
- C. Rough Hardware: Galvanized
- D. Paint: Exterior quality.
 - 1. Use Bulletin colors for graphics.
 - 2. Colors for structure, framing, sign surfaces and graphics: As selected by CITY.

PART 3 - EXECUTION

3.01 PROJECT IDENTIFICATION SIGN

- A. Paint exposed surfaces of supports, framing and surface material; one coat of primer and one coat of exterior paint.
- C. Paint graphics in styles, sizes and colors selected.
- C. Install at a height for optimum visibility, on ground-mounted poles or attached to temporary structural surfaces.

3.02 INFORMATIONAL SIGNS

- A. Paint exposed surfaces: One coat of primer and one coat of exterior paint.
- B. Paint graphics in styles, sizes and colors selected.
- C. Install at a height for optimum visibility, on ground-mounted poles or attached to temporary structural surfaces.

3.03 MAINTENANCE

- A. Maintain signs and supports in a neat, clean condition; repair damages to structure, framing or sign.
- B. Relocate informational signs as required by progress of the work.

3.04 REMOVAL

- A. Remove signs, framing, supports and foundations at completion of project.

Exhibit B
Technical Specifications

01580- 2

**SECTION 01580
PROJECT IDENTIFICATION AND SIGNS**

3.05 MEASUREMENT AND PAYMENT

- A. There shall be no special measurement or payment for the work under this section; it shall be included in the lump sum price bid for Mobilization.

END OF SECTION 01580

Exhibit B
Technical Specifications

01580- 3

5/8/2020 1:34 PM

p. 167

**SECTION 01600
MATERIAL AND EQUIPMENT**

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Material and equipment incorporated into the work:
1. Conform to applicable specifications and standards.
 2. Comply with size, make, type and quality specified, or as specifically approved in writing by the OWNER's Representative.
 3. Manufactured and fabricated products:
 - a. Design, fabricate and assemble in accord with the best engineering and shop practices.
 - b. Manufacture like parts of duplicate units to standard sizes and gauges to be interchangeable.
 - c. Two or more items of the same kind shall be identical, by the same manufacturer.
 - d. Products shall be suitable for service conditions.
 - e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
 4. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.02 RELATED REQUIREMENTS

- A. All applicable sections of the Specifications.
- B. Conditions of the Contract.

1.03 MANUFACTURER'S INSTRUCTIONS

- A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation prior to installation, including two copies to OWNER's Representative. Maintain one set of complete instructions at the job site during installation and until completion.
- B. Handle, install, connect, clean, condition and adjust products in strict accordance with such instructions and in conformity with specified requirements.
1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with OWNER's Representative for further instructions.
 2. Do not proceed with work without clear instructions.
- C. Perform work in accord with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

Exhibit B
Technical Specifications

01600- 1

**SECTION 01600
MATERIAL AND EQUIPMENT**

1.04 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of products in accordance with construction schedules, coordinate to avoid conflict with work and conditions at the site. Products shall be delivered to the job site on an "as needed" basis.
 - 1. Pipe and materials shall not be strung out along installation routes for longer than two (2) weeks prior to installation.
- B. Provide equipment and personnel to handle products by methods which prevent soiling or damage to products or packaging.
- C. Coordinate deliveries to avoid conflict with Work and conditions at site such as:
 - 1. Work of other contractors, or OWNER.
 - 2. Limitations of storage space.
 - 3. Availability of equipment and personnel for handling products.
 - 4. OWNER's use of premises.
- D. Deliver products in undamaged condition in original containers or packaging, with identifying labels intact and legible.
- E. Partial deliveries of component parts of equipment shall be clearly marked to identify the equipment, to permit easy accumulation of parts and to facilitate assembly.
- F. Immediately on delivery, inspect shipment to assure:
 - 1. Product complies with requirements of Contract Documents and approved submittals.
 - 2. Quantities are correct.
 - 3. Containers and packages are intact, labels are legible.
 - 4. Products are properly protected and undamaged.
- G. Provide equipment and personnel necessary to handle products, including those products provided by OWNER, by methods which prevent soiling or damage to products or packaging.
- H. Provide additional protection during handling as necessary to prevent scraping, marring or otherwise damaging products or surrounding surfaces.
- I. Handle products by methods to prevent bending or overstressing.
- J. Lift heavy components only at designated lifting points.

Exhibit B
Technical Specifications

01600- 2

**SECTION 01600
MATERIAL AND EQUIPMENT**

1.05 STORAGE

- A. Store products in accord with manufacturer's instructions, with seals and labels intact and legible.
 - 1. Store products subject to damage by the elements in weather-tight enclosures.
 - 2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.
 - 3. Store unpacked products on shelves, in bins or in neat piles, accessible for inspection.
- B. Exterior Storage
 - 1. Provide substantial platforms, blocking or skids to support fabricating products above ground, prevent soiling or staining.
 - (a) Cover products, subject to discoloration or deterioration from exposure to the elements, with impervious sheet coverings. Provide adequate ventilation to avoid condensation.
 - 2. Store loose granular materials on solid surface such as paved areas or provide plywood or sheet materials to prevent mixing with foreign matter.
 - 3. Provide surface drainage to prevent flow or ponding of rainwater.
 - 4. Prevent mixing of refuse or chemically injurious materials or liquids.

1.06 MAINTENANCE OF STORAGE

- A. Maintain periodic system of inspection of stored products on scheduled basis to assure that:
 - 1. State of storage facilities is adequate to provide required conditions.
 - 2. Required environmental conditions are maintained on continuing basis.
 - 3. Surfaces of products exposed to elements are not adversely affected.
 - (a) Any weathering of products, coatings and finishes is not acceptable under requirements of Contract Documents.
- B. Mechanical and electrical equipment which requires servicing during long term storage shall have complete manufacturer's instructions for servicing accompanying each item, with notice of enclosed instructions shown on the exterior of packaging.

1.07 PROTECTION AFTER INSTALLATION

- A. Provide protection of installed products to prevent damage from subsequent operations. Remove when no longer needed, prior to completion of work.
- B. Control traffic to prevent damage to equipment and surfaces.
- C. Provide coverings to protect finished surfaces from damage.

Exhibit B
Technical Specifications

01600- 3

**SECTION 01600
MATERIAL AND EQUIPMENT**

1. Cover projections, wall corners, and jambs, sills and soffits of openings, in areas used for traffic and for passage of products in subsequent work.
 2. Protect finished floors and stairs from dirt and damage.
 - (a) In areas subject to foot traffic, secure heavy paper, sheet goods, or other materials in place.
 - (b) For movement of heavy products, lay planking or similar materials in place.
 - (c) Cover wall and floor surfaces in the vicinity of construction personnel activities and all finished surfaces used by construction personnel.
- D. Waterproofed surfaces
1. Prohibit use of surfaces for traffic of any kind, and for storage of any products.
 2. When some activity must take place in order to carry out the Contract, obtain recommendations of installer for protection of surface.
 - (a) Install recommended protection; remove on completion of that activity.
 - (b) Restrict use of adjacent unprotected areas.
- E. Lawns and landscaping
1. Prohibit traffic of any kind across planted lawn and landscaped areas.
- F. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.
- 1.08 SUBSTITUTIONS AND PRODUCT OPTIONS
- A. Products List
1. Within 15 days after Contract Date submit to CITY a complete list of major products proposed to be used, with the name of the manufacturer and the installing Subcontractor.
- B. DBFs Options
1. For products specified only by reference standard, select any product meeting that standard.
 2. For products specified by naming several products or manufacturers, select any one of the products or manufacturers named or approved equal, which complies with the Specifications.
 3. For products specified by naming one or more products or manufacturers and "or approved equal," DBF must submit a request as for substitutions for any product or manufacturer not specifically named.

Exhibit B
Technical Specifications

01600- 4

**SECTION 01600
MATERIAL AND EQUIPMENT**

C. Substitutions

1. For a period of 15 days after Contract Date, CITY will consider written request from DBF for substitution of products.
2. Identify product by specification Section and Article Numbers. Provide manufacturer's name and address, trade name of product, and model or catalog number. List fabricators and suppliers as appropriate.
3. List similar projects using product, dates of installation, and name of OWNER.
4. List availability of maintenance services and replacement materials.
5. Submit a separate request for each product, supported with complete data, with drawings and samples as appropriate, including:
 - a. Comparison of the qualities and performance of the proposed substitution with that specified.
 - b. Changes required in other elements of the work because of the substitution.
 - c. Effect on the construction schedule.
 - d. Cost data comparing the proposed substitution with the product specified.
 - e. Any required license fees or royalties.
 - f. Availability of maintenance services, and source of replacement materials.
6. The burden of proof as to the type, function, and quality of any such substitute material or equipment shall be upon the DBF.
7. The CITY will be the sole judge as to the type, function, and quality of any such substitute material or equipment and the CITY's decision shall be final.
8. The CITY may require the DBF to furnish at the DBF's expense additional data about the proposed substitute.
9. The OWNER may require the DBF to furnish at the DBF's expense a special performance guarantee or other surety with respect to any substitute.
10. Acceptance by the CITY of a substitute item proposed by the DBF shall not relieve the DBF of the responsibility for full compliance with the Contract Documents and for adequacy of the substitute item.
11. The DBF shall be responsible for resultant changes and all additional costs which the accepted substitution requires in the DBF work, the work of its Subcontractors and of other Contractors, and shall effect such changes without cost to the OWNER.

D. DBFs Representation:

1. A request for a substitution constitutes a representation that DBF:

Exhibit B
Technical Specifications

01600- 5

**SECTION 01600
MATERIAL AND EQUIPMENT**

- a. Has investigated the proposed product and determined that it is equal to or superior in all respects to that specified.
- b. Will provide the same guarantees or bonds for the substitution as for the product specified.
- c. Will coordinate the installation of an accepted substitution into the work and make such other changes as may be required to make the work complete in all respects.
- d. Waives all claims for additional costs, under DBF'S responsibility, which may subsequently become apparent.

E. Submittal Procedures

- 1. Submit three (3) copies of request for substitution.
- 2. CITY will review requests for substitutions with reasonable promptness, and notify DBF, in writing, of the decision to accept or reject the requested substitution. The CITY will receive credit, as applicable, if substitution is accepted. The CITY will not approve change orders for approved substitutions.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01600

**SECTION 01700
CONTRACT CLOSEOUT****PART 1 - GENERAL****1.01 REQUIREMENTS INCLUDED**

- A. Comply with requirements stated in Conditions of the Contract and in specifications for administrative procedures in closing out the work.

1.02 RELATED REQUIREMENTS

- A. All applicable sections of the Specifications.
- B. Conditions of the Contract.

1.03 SUBSTANTIAL COMPLETION

- A. When DBF considers the work is substantially complete, DBF shall submit to OWNER's Representative:
 - 1. A written notice that the work, or designated portion thereof is substantially complete.
 - 2. A list of items to be completed or corrected.
- B. Within a reasonable time after receipt of such notice, OWNER's Representative will make an inspection to determine the status of completion.
- C. Should OWNER's Representative determine that the work is not substantially complete:
 - 1. OWNER's Representative will promptly notify the DBF in writing, giving the reasons therefore.
 - 2. DBF shall remedy the deficiencies in the work and send a second written notice of substantial completion to the OWNER's Representative.
 - 3. OWNER's Representative will re-inspect the work.
- D. When OWNER's Representative concurs that the work is substantially complete, OWNER's Representative will:
 - 1. Prepare a Certificate of Substantial Completion accompanied by DBF's list of items to be completed or corrected, as verified and amended by the OWNER's Representative.
 - 3. Submit the Certificate to the OWNER and the DBF for their written acceptance of the responsibilities assigned to them in the Certificate.

1.04 FINAL INSPECTION

- A. A punch list shall be compiled at the end of the project and the DBF will be responsible to rectify all items prior to final acceptance by the OWNER. When DBF considers the work is complete, DBF shall submit written certification that:
 - 1. Contract Documents have been reviewed.

Exhibit B
Technical Specifications

01700- 1

**SECTION 01700
CONTRACT CLOSEOUT**

2. Work has been inspected for compliance with Contract Documents.
 3. Work has been completed in accordance with Contract Documents.
 4. Equipment and systems have been tested in the presence of the OWNER's Representative and are operational.
 5. Work is completed and ready for final inspection.
- B. OWNER's Representative will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.
- C. Should OWNER's Representative consider that the work is incomplete and defective:
1. OWNER's Representative will promptly notify the DBF, in writing, listing the incomplete or defective work.
 2. DBF shall take immediate steps to remedy the stated deficiencies and send a second written certification to OWNER's Representative that the work is complete.
 3. OWNER's Representative will re-inspect the work.
- D. When the OWNER's Representative finds that the work is acceptable under the Contract Documents, OWNER's Representative shall request the DBF to make closeout submittals.
- 1.05 REINSPECTION FEES
- A. Should OWNER's Representative perform re-inspections due to failure of the work to comply with the claims of status of completion made by the DBF:
1. OWNER will compensate OWNER's Representative for such additional services.
 2. OWNER will deduct the amount of such compensation from the final payment to the DBF.
- 1.06 DBF'S CLOSEOUT SUBMITTALS TO OWNER'S REPRESENTATIVE
- A. Evidence of compliance with requirements of governing authorities.
1. Certificate of Occupancy (as applicable)
 2. Certificates of Inspection (as applicable)
 - (a) Mechanical
 - (b) Electrical
 - (c) City of Fort Lauderdale Public Works
 - (c) Other, as may be required.
- B. Project Record Documents
- C. Guarantees and Bonds

Exhibit B
Technical Specifications

01700- 2

**SECTION 01700
CONTRACT CLOSEOUT**

- D. Evidence of Payment and Release of Liens: To requirements of General and Supplementary General Conditions.
- E. Certificate of Insurance for Products and Completed Operations.
- F. Permit closeouts and certifications.

1.07 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit a final statement of accounting to OWNER's Representative.
- B. Statement shall reflect all adjustments to the Contract Sum:
 - 1. The original Contract Sum.
 - 2. Additions and deductions resulting from:
 - (a) Previous Change Orders.
 - (b) Allowances.
 - (c) Unit Prices.
 - (d) Deductions for uncorrected work.
 - (e) Penalties and Bonuses.
 - (f) Deductions for liquidated damages.
 - (g) Deductions for re-inspection payments.
 - (h) Other adjustments.
 - 3. Total Contract Sum, as required.
 - 4. Previous payments.
 - 5. Sum remaining due.
- C. OWNER's Representative will prepare a final Change Order, reflecting approved adjustments to the Contract Sum, which were not previously made by Change Orders.

1.08 FINAL APPLICATION FOR PAYMENT

- A. DBF shall submit the final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01700

Exhibit B
Technical Specifications

01700- 3

**SECTION 01710
CLEANING****PART 1 - GENERAL****1.01 REQUIREMENTS INCLUDED**

- A. Execute cleaning, during progress of the Work, and at completion of the Work, as required by the General Conditions.

1.02 RELATED REQUIREMENTS

- A. All applicable sections of the Specifications.
- B. Conditions of the Contract.

1.03 DISPOSAL REQUIREMENTS

- A. Conduct cleaning and disposal operations to comply with codes, ordinances, regulations, and anti-pollution laws.

PART 2 - PRODUCTS**2.01 MATERIALS**

- A. Use only those cleaning materials which will not create hazards to health or property, and which will not damage surfaces.
- B. Use only those cleaning materials and methods recommended by cleaning material manufacturer.

PART 3 - EXECUTION**3.01 DURING CONSTRUCTION**

- A. Execute periodic cleaning to keep the work, the site and adjacent properties free from accumulation of waste material, rubbish and windblown debris, resulting from Construction Work.
- B. Provide on-site containers for the collection of waste materials, debris and rubbish.
- C. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas away from the site.
- D. The OWNER's Representative reserves the right to direct the DBF to remove waste materials, after which waste shall be removed within 24 hours.
- E. Mechanical Sweeping: DBF shall maintain on site a mechanical sweeping device for removing debris from existing, temporary and permanent pavement.

3.02 DUST CONTROL

- A. Perform operations so that dust and other contaminants resulting from Construction Work operations will not cause any damages or maintenance problems to adjacent properties.

Exhibit B
Technical Specifications

01710- 1

**SECTION 01710
CLEANING**

- B. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly coated surfaces.

3.03 FINAL CLEANING

- A. Employ skilled laborers for final cleaning.
- B. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.
- C. Polish glossy surfaces to a clear shine.
- D. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds.
- E. Prior to final completion, or OWNER occupancy, DBF shall conduct an inspection of sight-exposed interior and exterior surfaces, and all work areas, to verify the entire work is clean.
- F. All storage and staging areas shall be cleaned and returned to prior conditions or better as per requirements of this section.

3.04 MEASUREMENT AND PAYMENT

- A. There shall be no special measurement or payment for the work under this section; it shall be included in the price of all other work.

END OF SECTION 01710

**SECTION 01720
PROJECT RECORD DOCUMENTS**

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Maintain at the site of the OWNER a record copy of:
 - 1. Drawings (AutoCAD 2015 or approved equal)
 - 2. Specifications
 - 3. Addenda
 - 4. Change Orders and other modifications to the Contract.
 - 5. Approved Shop Drawings, Product Data and Samples.
 - 6. Field Test Records.

1.02 RELATED REQUIREMENTS

- A. All applicable sections of the Specifications.
- B. Conditions of the Contract.

1.03 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Store documents and samples in DESIGN-BUILD FIRM's field office apart from documents used for construction.
 - 1. Provide files and racks for storage of documents.
 - 2. Provide locked cabinet or secure storage space for storage of samples.
- B. File documents and samples in accordance with CSI format.
- C. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
- D. Make documents and samples available at all times for inspection by OWNER's Representative.

1.04 MARKING DEVICES

- A. Provide felt tip-marking pens for recording information in the color code designated by OWNER's Representative.

1.05 RECORDING

- A. Label each document, "PROJECT RECORD" in neat large printed letters, or by rubber stamp.
- B. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.
- C. Drawings: Legibly mark to record actual construction: (in AutoCAD 2015 format or approved equal)

Exhibit B
Technical Specifications

01720- 1

**SECTION 01720
PROJECT RECORD DOCUMENTS**

1. Horizontal (NAD 83) and vertical (NAVD 88) locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 2. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
 3. Field changes of dimension and detail.
 4. Changes made by Field Order or by Change Order.
 5. Details not on original Contract Drawings.
- D. Specifications and Addenda; Legibly mark each Section to record:
1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
 2. Changes made by Supplemental Instruction, Field Order or by Change Order.
- 1.06 AS-BUILT PLANS (AS-BUILT DRAWINGS)
- A. The DESIGN-BUILD FIRM shall maintain full size (24"X36") field drawings and electronic drawings in AutoCAD 2015 format (or approved equal) to reflect the "as-built" items of work as the work progresses. Upon completion of the work, the DESIGN-BUILD FIRM shall prepare a record set of "as-built" drawings on full-size, reproducible material. No separate payment will be made for those "as-built" drawings.
 - B. The cost of maintaining record changes, and preparation of the As-Built Drawings shall be included in the unit prices bid for the affected items. Upon completion of the work, the DESIGN-BUILD FIRM shall furnish the OWNER the reproducible "as-built" drawings. The completed As-Built Drawings shall be delivered to the OWNER at least 48 hours prior to final inspection of the work. The Final Inspection will not be conducted unless the As-Built Drawings are in the possession of the OWNER.
 - C. The completed (or final) As-Built Drawings shall be certified by a Professional Land Surveyor registered in the State of Florida. This certification shall consist of the surveyor's embossed seal bearing registration number, the surveyor's signature and date on each sheet of the drawing set. In addition, the key sheet, cover sheet or first sheet of the plans set shall list the business address and telephone number of the surveyor.
 - D. Representative items of work that should be shown on the As-Built Drawings as verified, changed or added are shown below:
 1. Plans:
 - a. Structure types, location with grade of rim, flow-line elevations and facility ID number(s).
 - b. Sewer type, length, size and elevations.
 - c. Utility type, length, size and elevation in conflict structures.
 - d. All MAS (including facility ID number), water services, water meters, connections to existing facilities, fittings, valves and hydrants within right-of-way.
 - e. Spot (critical) elevations at plateaued intersections.

Exhibit B
Technical Specifications

01720- 2

**SECTION 01720
PROJECT RECORD DOCUMENTS**

- f. Sewer laterals and cleanouts.
- 2. Pavement Marking and Signing Plans: Sign location where installed if different from plans.
- 3. Water and Sewer Plans: Location (NAD 83 horizontal and NAVD 88 vertical) of all pipe lines, structures, fittings, valves and appurtenances.
- E. The DESIGN-BUILD FIRM shall submit one set of progress As-Built Drawings with each application for payment. This drawing shall accurately depict the work completed and for which payment is being requested.
- F. As-built drawings shall include the following criteria at a minimum.
 - 1. As-builts of water lines shall include the following information:
 - a. Top of pipe elevations and horizontal location every 100 LF.
 - b. Locations and elevations of all fittings include bends, tees, sleeves, valves, double detector check valves, fire hydrants, service saddles, manual blow-off, changes in alignment, automatic blow-offs, etc.
 - c. All tie-ins to existing lines shall be as-built.
 - d. The ends of all water services at the buildings, homes, property lines, and meters shall be as-built or where the water service terminates.
 - e. Limits of abandoned water mains, including caps and hatching of abandoned and/or grouted lines.
 - d. Top of pipe where line crosses all other facilities (drainage, telephone, cable, electrical, etc.) and clearance from facility.
 - 2. As-builts of all gravity sanitary sewer lines shall include the following information:
 - a. Facility ID number(s), rims, inverts and length of piping between structures as well as slopes.
 - b. The stub ends, and main wyes of all sewer laterals shall be located and if there are any clean outs installed on the sewer laterals then the location and invert elevation of these cleanouts need to be obtained.
 - c. Pump station as-builts shall consist of facility ID number(s), top of wet well elevation, invert elevation of the incoming line, invert of effluent line, float elevations, bottom of the wet well and as-builts of the compounds area.
 - d. Top of pipe where line crosses all other facilities (drainage, telephone, cable, electrical, etc.) and clearance from facility.
 - 3. Force main as-builts shall be prepared the same as the water line as-builts.
 - a. Abandoned force main shall be as-built by locating caps and hatching.
 - 4. As-builts of all drainage lines shall include the following information:
 - a. Rims, inverts and length of piping between structures and weir elevations if applicable.
 - b. The size and material of the piping shall be verified by the survey crew at the time of as-built.
 - 5. As-builts for the edge of pavement, curb and sidewalk locations shall include horizontal locations, vertical elevations and shall indicate all deviations from the design plans.
 - 6. All rock as-builts for parking lot, roadways and swale areas shall consist of the following:

Exhibit B
Technical Specifications

01720- 3

**SECTION 01720
PROJECT RECORD DOCUMENTS**

- a. Rock elevations at all high and low points, and at enough intermediate points to confirm slope consistency and every 50' of roadways.
- b. Rock as-builts shall be taken at all locations where there is a finish grade elevation shown on the design plans.
- c. All catch basin and maintenance access structure rim elevations shall be shown.
- d. Elevations around island areas will also be required.
- e. As-builts 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.

Note: Rock as-builts are required prior to paving. DESIGN-BUILD FIRM shall review rock as-builts within five days of receipt.

- 7. Lake and canal banks as-builts shall include a key sheet of the lake for the location of cross sections. Lake and canal bank cross sections shall be plotted at a minimum of every 100 LF, unless otherwise specified. As-builts shall consist of the location and elevation of the top of bank, edge of water and the deep cut line, with the distance between each shown on the drawing.

1.07 PROGRESS AS-BUILT DRAWING INFORMATION

- A. Submit with each progress payment application progress "As-Built" drawing information current to the date of the submittal date with verification by the OWNER's Representative.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 MEASUREMENT AND PAYMENT

- A. There shall be no special measurement or payment for the work under this section, it shall be included in the price of all other work.

END OF SECTION 01720

**SECTION 02010
SUB-SURFACE INVESTIGATION**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section

1.02 WORK INCLUDED

- A. Provide all labor, materials, necessary equipment and services to complete the sub-surface investigation work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".
- B. The sub-surface investigation for conditions of the project site is the sole responsibility of the DBF. In preparing the Bid, the DBF shall make all sub-surface or surface investigations necessary to provide proper background and knowledge to determine the nature and extent of work required.
- C. OWNER or OWNER's Representative provides limited sub-surface information and makes no warranties or guarantees concerning the nature of materials to be encountered on the site.

1.03 RELATED WORK

- A. Section 02110 - Clearing.
- B. Section 02200 - Earthwork.
- C. Section 02400 – Storm Drainage Facilities
- D. All applicable sections under Divisions 1, 2, 3, and 4.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 MEASUREMENT AND PAYMENT

- A. There shall be no special measurement or payment for the work under this section; it shall be included in the price of all other work.

END OF SECTION 02010

**SECTION 02050
DEMOLITION****PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section

1.02 WORK INCLUDED

- A. Provide all labor, materials, necessary equipment and services to complete the site demolition work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".

1.03 RELATED WORK

- A. Section 02200 - Earthwork.
- B. All applicable Sections under Divisions 1, 2, and 3.

1.04 QUALITY ASSURANCE

- A. DBF Qualifications: Minimum of five years of experience in demolition of comparable nature.
- B. Requirements of All Applicable Regulatory Agencies:
 - 1. All applicable Building Codes and other Public Agencies having jurisdiction upon the work.

1.05 SUBMITTALS

- A. Permits and notices authorizing building demolition.
- B. Certificates of severance of utility services.
- C. Permit for transport and disposal of debris.
- D. Demolition procedures and operational sequence for review and acceptance by CITY.

1.06 JOB CONDITIONS

- A. Existing Conditions
 - 1. The demolition work shall be done as indicated on the construction plans.
 - 2. Remove all demolition debris from the site the same day the work is performed. Leave no deposits of demolished material on site overnight.
 - 3. Structural demolition, excavation, backfill and compaction as indicated in drawings.
- B. Protection:
 - 1. Erect barriers, fences, guardrails, enclosures, and shoring to protect personnel, structures, and utilities remaining intact.

Exhibit B
Technical Specifications

02050- 1

**SECTION 02050
DEMOLITION**

2. Protect designated trees and plants from damages.
 3. Use all means necessary to protect existing objects and vegetation designated to remain, and, in the event of damage, immediately make all repairs, replacements and dressings to damaged plants necessary, to the approval of the CITY at no additional cost to the OWNER.
- C. Maintaining Traffic:
1. Ensure minimum interference with roads, streets, driveways, sidewalks, and adjacent facilities.
 2. Do not close or obstruct streets and sidewalks without written approval from the CITY.
 3. If required by governing authorities, provide alternate routes around closed or obstructed traffic ways.
- D. Dust Control:
1. Use all means necessary for preventing dust from demolition operations from being a nuisance to adjacent property owners. Methods used for dust control are subject to approval by the CITY prior to use.
- E. Burning:
1. On-site burning will not be permitted.
- 1.07 GENERAL ITEMS
- A. Scope of work shall comprise the following: Provide all labor, materials, necessary equipment and services to complete the demolition and clearing work, as indicated on the contract plans, and as specified herein.
 - B. The DBF shall provide references to the OWNER to demonstrate that they are well versed in demolition of a comparable nature. Current occupational licenses held by DBF shall be submitted to OWNER.
 - C. The DBF shall be responsible for adherence to all applicable codes of all regulatory agencies having jurisdiction upon the works.
- 1.08 PRE-DEMOLITION MEETING
- A. A meeting shall be held with the OWNER or OWNER's representative at the jobsite to describe intended demolition and cleaning procedures and schedules. This shall include identifying access routes for bringing necessary equipment in, removing debris from site, and designation of any trees, drives or other items to remain.
- 1.09 EXISTING CONDITIONS
- A. The DBF shall become thoroughly familiar with the site, and of existing utilities and their connections, and note all conditions, which may influence the work.
 - B. By submitting a bid, the DBF affirms that DBF has carefully examined the site and all conditions

Exhibit B
Technical Specifications

02050- 2

**SECTION 02050
DEMOLITION**

affecting work. No claim for additional costs will be allowed because of lack of full knowledge of existing conditions.

- C. The OWNER shall be responsible for removal of all hazardous materials such as asbestos, chemicals, etc., from the site prior to DBF mobilizing on site. The OWNER shall be notified immediately should the DBF discover any further hazardous materials during demolition.

PART 2 - PRODUCTS (Not Applicable)**PART 3 - EXECUTION****3.01 INSPECTION**

- A. DBF shall verify that structures to be demolished are discontinued in use and ready for removal.
- B. DBF shall not commence work until all conditions and requirements of all applicable public agencies are complied with.

3.02 PREPARATION

- A. Arrange for and verify termination of utility services to include removing meters and capping lines.
- B. Notification:
 - 1. Notify the OWNER at least three full working days prior to commencing the work of this Section.
- A. The drawings do not purport to show all objects existing on the site; at the pre-demolition meeting before commencement of the work, verify with the OWNER all objects to be removed and all objects to be preserved.

3.03 CLARIFICATION

- A. The drawings do not purport to show all objects existing on the site.
- B. Before commencing the work of this Section, verify with the OWNER all objects to be removed and all objects to be preserved.

3.04 SCHEDULING

- A. Schedule all work in a careful manner with all necessary consideration for the public and the OWNER.
- B. Avoid interference with the use of, and passage to and from, adjacent facilities.

3.05 DISCONNECTION OF UTILITIES

- A. Before starting site operations, disconnect or arrange for the disconnection of all affected utility service.
 - 1. Arrange and pay for disconnecting, removing, capping, and plugging utility services. Disconnect and stub off. Notify affected utility company in advance and obtain approval

Exhibit B
Technical Specifications

02050- 3

**SECTION 02050
DEMOLITION**

before starting this work.

2. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction.
3. Place markers to indicate location of disconnected services.
4. On-site drainage structures and drain fields shall be removed in their entirety by methods approved by the OWNER's representative.

3.06 PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- A. Utility Services: Maintain existing offsite utilities, keep in service, and protect against damage during demolition operations.
- B. Prevent movement or settlement of adjacent structures. Provide and place bracing or shoring and be responsible for safety and support of structures. Assume liability for such movement, settlement, damage, or injury.
- C. Cease operations and notify OWNER immediately if safety of adjacent structures appears to be endangered. Take precautions to properly support structures. Do not resume operations until safety is restored.
- D. Prevent movement, settlement, damage, or collapse of adjacent services, sidewalks, driveways and trees. Assume liability for such movement, settlement, or collapse. Promptly repair damage at no cost to the OWNER.
- E. Ensure safe passage of persons around areas of demolition.

3.07 MAINTAINING TRAFFIC

- A. Do not interfere with use of adjacent buildings and facilities. Maintain free and safe passage to and from. Conduct demolition operations and removal of debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed travel ways if required by governing authorities.

3.08 POLLUTION CONTROLS

- A. Use water sprinkling, temporary enclosures, and other suitable methods to limit dust and dirt rising and scattering in air to lowest practical level. Comply with governing regulations pertaining to environmental protection.
- B. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations as directed by the OWNER or their representative or governing authorities. Return adjacent areas to condition existing prior to start of work.

3.09 DEMOLITION

- A. Pull out any existing utility lines designated for abandonment, irrigation, electrical lines, pull boxes and splice boxes, Maintenance Access Structure (MAS) and catch basins to be removed and all other objects designated to be removed or interfering with the work. Contact the utility

Exhibit B
Technical Specifications

02050- 4

**SECTION 02050
DEMOLITION**

company or agency involved for their requirements for performing this work. All removed equipment and materials shall be removed from the work area the same day as removed.

- B. Remove all debris from the site and leave the site in a neat, orderly condition to the full acceptance of the OWNER. No debris shall be left on the site overnight.
- C. Clear and Grub and dispose of all hedges, shrubs and other organic matter not otherwise addressed on tree removal and relocation plans and specifications.

3.10 DEMOLITION OF SITE STRUCTURES

- A. Demolish all site structure items designated to be removed or which are required to be removed to perform the work. This item does not include buildings.

3.11 REMOVAL OF DEBRIS AND DISPOSAL OF MATERIAL

- A. Material resulting from demolition and not scheduled for salvaging shall become the property of the DBF and shall be removed from site and legally disposed of off-site. Disposal shall be timely, performed as promptly as possible and not left until the final cleanup. Material shall not be left on the job site for more than 60 days.
- B. Remove from site contaminated, vermin infested, or dangerous materials encountered and disposed of by safe means so as not to endanger health of workers and public.
- C. Burning of removed materials from demolished structures will not be permitted on-site.

3.12 COMPLETION OF WORK

- A. Leave the site in a neat, orderly condition to the full acceptance of the OWNER.
- B. Dirt remaining after demolition shall be graded level and compacted, in preparation for filling operations to follow demolition. Trenches shall be filled in layers of 12-inch maximum thickness and compacted in accordance with the technical specifications applicable to backfilling of trenches.

3.13 MEASUREMENT AND PAYMENT

- A. There shall be no special measurement or payment for the work under this section. It shall be included in the lump sum price bid for items associated with the demolition.

END OF SECTION 02050

**SECTION 02110
CLEARING****PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. Provide all labor, materials, necessary equipment and services to complete the clearing work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".
- B. Under this section, the DBF shall do all clearing, grubbing, root-raking, and necessary clean-up operations in connection with the construction of the work and its related site work.
- C. The work shall consist of the removal and disposal of plants, shrubs, hedges, stumps, roots, limbs, brush, fences, asphalt, etc. from all project areas as designated on the drawings and specified herein, and as directed by the CITY on the site.
- D. The DBF shall remove all refuse, asphalt pavement, concrete pavement, glass, metal, stone, plaster, lumber, paper materials, and any and all trash found in clearing project area and in adjacent areas as directed by the CITY.
- E. The DBF shall furnish all services, labor, transportation, materials, and equipment necessary for the performance of these operations. All clearing and cleanup operations shall be accomplished to the complete satisfaction of the CITY.

1.03 RELATED WORK

- A. Section 02010 – Sub-surface Investigation
- B. Section 02200 - Earthwork.

PART 2 - PRODUCTS (Not Applicable)**PART 3 - EXECUTION****3.01 TREE REMOVAL AND TREE PRESERVATION**

- A. No trees shall be removed if located outside of the right-of-way and dedicated easement.
- B. Within the rights-of-way and easements, no trees with a trunk diameter of 3 inch or greater at 4-1/2 inch above grade shall be removed without the approval of the CITY with the exception of Australian Pines, Melaleuca or Florida Holly. Trees shall be evaluated on an individual basis in accordance with following:
 - a. Type and size of tree.
 - b. Proximity to proposed and/or existing utility lines and/or exfiltration trench.
 - c. Change in adjacent grades for swale excavation.
 - d. Proximity to proposed sidewalk.
 - e. Proximity to proposed edge of roadway.
 - f. Living condition of the tree.

Exhibit B
Technical Specifications

02110- 1

**SECTION 02110
CLEARING**

- C. If trees are determined to remain, Biobarrier shall be installed in accordance with the Biobarrier detail as shown on the Landscape Plans.

3.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment for this item will be made per square yard per Section 02210.

END OF SECTION 02110

**SECTION 02140
DEWATERING****PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. Provide all labor, materials, necessary equipment and services to complete the dewatering work, as indicated in the Contract Documents or listed in permit requirements, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".

1.03 RELATED WORK

- A. Section 02200 - Earthwork
- B. Section 02271 - Sacked Sand Cement Riprap
- C. Section 02400 - Storm Drainage Facilities
- D. Section 02401 - Exfiltration Trench Drains
- E. Section 02221 - Excavation and Backfilling for Utilities
- F. Section 02601 - Subterranean Structures
- G. Section 02610 - Piping, General Section

PART 2 - PRODUCTS**2.01 EQUIPMENT**

- A. Dewatering, where required, may include the use of temporary reservoirs and diking, well points, sump pumps, temporary pipelines for water disposal, rock or gravel placement, and other means. Standby pumping equipment must be maintained on the job site and operate within any local noise ordinance limits. All safety requirements, fencing, etc. shall be installed and maintained by the DBF.

PART 3 - EXECUTION**3.01 GENERAL REQUIREMENTS**

- A. The DBF shall provide all equipment necessary for dewatering. It shall have on hand, at all times, sufficient pumping equipment and machinery in good working condition and shall have available, at all times, competent laborers for the operation of the pumping equipment. Adequate standby equipment shall be kept available at all times to insure efficient dewatering and maintenance of dewatering operation during power failure.
- B. Dewatering for structures and pipelines shall commence when groundwater is first encountered and shall be continuous until such times as water can be allowed to rise in accordance with the provisions of this Section or other requirements.
- C. At all times, site grading shall promote drainage. Surface runoff shall be diverted from

Exhibit B
Technical Specifications

02140- 1

**SECTION 02140
DEWATERING**

excavations. Water entering the excavation from surface runoff shall be collected in shallow ditches around the perimeter of the excavation, drained to sumps, and be pumped or drained by gravity from the excavation to maintain a bottom free from standing water.

- D. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation.
- E. If foundation soils are disturbed or loosened by the upward seepage of water or an uncontrolled flow of water, the affected areas shall be excavated and replaced with pea rock at no additional cost to the CITY.
- F. The DBF shall maintain the water level below the bottom of excavation in all work areas where groundwater occurs during excavation construction, backfilling, and up to acceptance.
- G. The DBF shall prevent flotation by maintaining positive and continuous removal of water. The DBF shall be fully responsible and liable for all damages which may result from failure to adequately keep excavations dewatered.
- H. If well points or wells are used, they shall be adequately spaced to provide the necessary dewatering and shall be sand-packed and/or other means used to prevent pumping of fine sands or silts from the sub-surface. A continual check by the DBF shall be maintained to ensure that the sub-surface soil is not being removed by the dewatering operation. Well point shall be grouted when removal.
- I. The DBF shall dispose of water from the WORK in a suitable manner without damage to adjacent property. DBF shall be responsible for obtaining any permits that may be necessary to dispose of water. No water shall be drained into work built or under construction without prior consent of the CITY. Water shall be filtered using a silt box or another approved method to remove sand and fine-sized soil particles before disposal into any drainage system. The dewatering disposal points shall be approved by the CITY prior to being used. Storm drains facilities used by the DBF for dewatering shall be cleaned by a jet vac, or other method approved by the CITY after dewatering is complete.
- J. The release of groundwater to its static level shall be performed in such a manner as to maintain the undisturbed state of the natural foundation soils, prevent disturbance of compacted backfill and prevent flotation or movement of structures, pipelines, and sewers.
- K. Dewatering of trenches and other excavations shall be considered, as incidental to the construction of the WORK and all costs thereof shall be included in the various contract prices in the Bid Forms, no separate bid item has been established for dewatering.
- L. The DBF shall submit a dewatering plan to the CITY for review. The DBF is advised that the Broward County Environmental Protection and Growth Management Department (BCEPD) and/or SFWMD permits are to be obtained and will require that the DBF follow certain dewatering constraints. The dewatering plan shall be prepared by a State of Florida licensed Professional Engineer or Registered Professional Geologist and shall meet dewatering permit requirements. SPECIAL INSTRUCTIONS are noted on approved dewatering permit.
- M. The DBF is advised that the BCEPD may have identified contaminated sites within 1/4-mile radius of the project site. The DBF will be required to provide testing and monitoring of the dewatering operations, and to institute dewatering methods and controls, as required by BCEPD, as noted in permit documents.

Exhibit B
Technical Specifications

02140- 2

**SECTION 02140
DEWATERING****3.02 QUALITY CONTROL**

- A. It shall be the sole responsibility of the DBF to control the rate and effect of the dewatering in such a manner as to avoid all objectionable settlement and subsidence.
- B. All dewatering operations shall be adequate to assure the integrity of the finished project and shall be the responsibility of the DBF.
- C. Where critical structures or facilities exist immediately adjacent to areas of proposed dewatering, reference points shall be established and observed at frequent intervals to detect any settlement, which may develop. The responsibility for conducting the dewatering operation in a manner, which will protect adjacent structures and facilities, rests solely with the DBF. The cost of repairing any damage to adjacent structures and restoration of facilities shall be the responsibility of the DBF.

3.03 DBF SUBMITTALS

- A. Prior to commencement of excavation, the DBF shall submit a detailed plan and operation schedule for dewatering of excavations. The DBF may be required to demonstrate the system proposed and to verify that adequate equipment, personnel, and materials are provided to dewater the excavations at all locations and times. The DBF's dewatering plan is subject to review by the CITY and regulatory agencies.

3.04 SPECIAL INSTRUCTIONS

- A. See permit documents.

3.05 MEASUREMENT AND PAYMENT

- A. There shall be no special measurement or payment for the work under this section. It shall be included in the unit price bid of any item requiring dewatering.

END OF SECTION 02140

SECTION 02200 EARTHWORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. Provide all labor, materials, necessary equipment and services to complete the Earthwork, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".
- B. Including but not necessarily limited to the following:
1. Excavation, including demucking
 2. Backfilling
 3. Filling
 4. Grading, general site and building pads
 5. Compaction
- C. There shall be no classification of excavation for measurement of payment regardless of materials encountered.
- D. The work of this Section includes all earthwork required for construction of the WORK. Such earthwork shall include, but not be limited to, the loosening, removing, loading, transporting, depositing, and compacting in its final location of all materials wet and dry, as required for the purposes of completing the work specified in the Contract Documents, which shall include, but not be limited to, the furnishing, placing, and removing of sheeting and bracing necessary to safely support the sides of all excavation; all pumping, ditching, draining, and other required measures for the removal or exclusion of water from the excavation; the supporting of structures above and below the ground; all backfilling around structures and all backfilling of trenches and pits; the disposal of excess excavated materials; borrow of materials to makeup deficiencies for fills; and all other incidental earthwork, all in accordance with the requirement of the Contract Documents.

1.03 RELATED WORK

- A. All applicable sections of Division 1, 2, 3, and 4.

1.04 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Codes: All codes, as referenced herein, are specified in Section 01090, "Reference Standards".
- B. Commercial Standards:

ASTM D 422
ASTM D 698

Method for Particle-Size Analysis of Soils.
Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5-lb (2.49-kg) Rammer and 12-in (304.8-mm) Drop.

Exhibit B
Technical Specifications

02200- 1

SECTION 02200 EARTHWORK

ASTM D 1556	Test Method for Density of Soil in Place by the Sand Cone Method.
ASTM D 1557	Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.54-kg) Rammer and 18-in (457-mm) Drop.
ASTM D 1633	Test Method for Compressive Strength of Molded Soil-Cement Cylinders.
ASTM D 2419	Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
ASTM D 2487	Classification of Soils for Engineering Purposes.
ASTM D 2901	Test Method for Cement Content of Freshly-Mixed Soil-Cement.
ASTM D 2922	Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
ASTM D 4253	Test Methods for Maximum Index Density of Soils Using a Vibratory Table.
ASTM D 4254	Test Methods for Minimum Index Density of Soils and Calculation of Relative Density.

1.05 SUBSOIL INFORMATION

- A. There are no representations of any type made as to sub-surface conditions.

1.06 SITE INSPECTION

- A. DBF shall visit the site and acquaint with all existing conditions. DBF shall investigate the site and sub-surface conditions with no cost to the OWNER if DBF chooses to. Such sub-surface investigations shall be performed only under time schedules and arrangements approved in advance by the OWNER's Representative.

1.07 TOPOGRAPHIC INFORMATION

- A. The existing grades shown on the drawings are approximate only and no representation is made as to their accuracy or consistency. The DBF shall verify all existing grades to the extent necessary to insure completion of the job to the proposed grades indicated on the drawings.

1.08 DISPOSAL OF SURPLUS OR UNSUITABLE MATERIAL

- A. Unsuitable material encountered during the course of construction shall be removed from the construction site at the expense of the DBF. Unsuitable material shall not be stockpiled on-site. All suitable material shall be stockpiled on-site at areas designated by the CITY.

1.09 BENCH MARKS AND MONUMENTS

- A. DBF shall employ a registered Professional Surveyor and Mapper per Florida Statute 472.001-472.037 to lay out lines and grades as indicated. The surveyor shall establish benchmarks.

Exhibit B
Technical Specifications

02200- 2

**SECTION 02200
EARTHWORK**

Benchmarks shall be permanent and easily accessible and maintained and replaced if disturbed or destroyed. All benchmarks shall be NAVD 88.

1.10 UTILITIES

- A. Before starting site operations, disconnect or arrange for the disconnection of all utility services designated to be removed.
- B. Locate all existing active utility lines traversing the site and determine the requirements for their protection. Preserve in operating condition all active utilities adjacent to or traversing the site which are designated to remain.
- C. Observe rules and regulations governing respective utilities when working under requirements of this section. Adequately protect utilities from damage, remove or replace as indicated, specified or required. Remove, plug or cap inactive or abandoned utilities encountered in excavation. Record the location of all utilities.

1.11 QUALITY ASSURANCE

- A. The DBF shall re-adjust all work performed that does not meet technical or design requirements but make no deviations from the Contract Documents without specific and written acceptance of the CITY.
- B. Where soil material is required to be compacted to a percentage of maximum density, the maximum density at optimum moisture content will be determined in accordance with ASTM D 1557. Where cohesionless, free draining soil material is required to be compacted to a percentage of relative density, the calculation of relative density will be determined in accordance with ASTM D 4253 and D 4254. Field density in-place tests will be performed in accordance with ASTM D 1556, ASTM D 2922, or by such other means acceptable to the CITY.
- C. In case the tests of the fill or backfill show non-compliance with the required density, the DBF shall accomplish such remedy as may be required to insure compliance. Subsequent testing to show compliance shall be by a testing laboratory selected by the OWNER and shall be at the DBF's expense.
- D. Particle size analysis of soils and aggregates will be performed using ASTM D 422.
- E. Determination of sand equivalent value will be performed using ASTM D 2419.
- F. Unified Soil Classification System: References in these specifications to soil classification types and standards are set forth in ASTM D 2487. The DBF shall be bound by all applicable provisions of said ASTM D 2487 in the interpretation of soil classifications.
- G. Requirements of all applicable building codes and other public agencies having jurisdiction upon the work.

PART 2 - PRODUCTS**2.01 SUITABLE FILL AND BACKFILL MATERIAL REQUIREMENTS**

- A. General: Fill, backfill, and embankment materials shall be suitable selected or processed clean, fine earth, rock, or sand, free from grass, roots, brush, or other vegetation.

Exhibit B
Technical Specifications

02200- 3

SECTION 02200 EARTHWORK

- B. Fill and backfill materials to be placed within 6 inches of any structure or pipe shall be free of rocks or unbroken masses of earth materials having a maximum dimension larger than 3 inches.
- C. Suitable Materials: Soils not classified as unsuitable as defined in the Paragraph entitled, "Unsuitable Material" herein, are defined as suitable materials and may be used in fills, backfilling, and embankment construction subject to the specified limitations. In addition, when acceptable to the CITY, some of the material listed as unsuitable may be used when thoroughly mixed with suitable material to form a stable composite.
- D. Suitable materials may be obtained from on-site excavations, may be processed on-site materials, or may be imported. If imported materials are required to meet the requirements of this Section or to meet the quantity requirements of the project the DBF shall provide the imported materials at no additional expense to the OWNER, unless a unit price item is included for imported materials in the bidding schedule.
- E. The following types of suitable materials are designated and defined as follows:
1. Type A (one inch minus granular backfill): Crushed rock, gravel, or sand with 100 percent passing a 1-inch sieve and a sand equivalent value not less than 50.
 2. Type B (one half inch minus granular backfill): Crushed rock, gravel, or sand with 100 percent passing a 1/2-inch sieve and a sand equivalent value not less than 50.
 3. Type C (sand backfill): Sand with 100 percent passing a 3/8-inch sieve, at least 90 percent passing a number 4 sieve, and a sand equivalent value not less than 30.
 4. Type D (coarse rock backfill): Crushed rock or gravel with 100 percent passing a 1-inch sieve and not more than 10 percent passing a Number 4 sieve.
 5. Type E (pea gravel backfill): Crushed rock or gravel with 100 percent passing a 1/2-inch sieve and not more than 10 percent passing a Number 4 sieve.
 6. Type F (coarse drainrock): Crushed rock or gravel meeting the following gradation requirements:

<u>Sieve Size</u>	<u>Percentage Passing</u>
2-inch	100
1-1/2-inch	90-100
1-inch	20-55
3/4-inch	0-15
No. 200	0-3

7. Type G (aggregate base): Crushed rock aggregate base material of such nature that it can be compacted readily by watering and rolling to form a firm, stable base for pavements. At the option of the DBF, the grading for either the 1-1/2-inch maximum size or 3/4-inch maximum size shall be used. The sand equivalent value shall be not less than 22, and the material shall meet the following gradation requirements.

<u>Sieve Size</u>	<u>Percentage Passing</u>	
	<u>1-1/2inch Max.</u>	<u>3/4-inch Max.</u>
2-inch	100	-
1-1/2 inch	90-100	-

Exhibit B
Technical Specifications

02200- 4

**SECTION 02200
EARTHWORK**

1-inch	-	100
3/4-inch	50-85	90-100
No. 4	25-45	35-55
No. 30	10-25	10-30
No. 200	2-9	2-9

8. Type H (graded drainrock): Drainrock shall be crushed rock or gravel, durable and free from slaking or decomposition under the action of alternate wetting or drying. The material shall be uniformly graded and shall meet the following gradation requirements.

<u>Sieve Size</u>	<u>Percentage Passing</u>
1-inch	100
3/4-inch	90-100
3/8-inch	40-100
No. 4	25-40
No. 8	18-33
No. 30	5-15
No. 50	0-7
No. 200	0-3

The drainrock shall have a sand equivalent value not less than 75. The finish-graded surface of the drainrock immediately beneath hydraulic structures shall be stabilized to provide a firm, smooth surface upon which to construct reinforced concrete floor slabs. The DBF shall use, at its option, one of the asphalt types listed below:

	<u>Type 1</u>	<u>Type 2</u>	<u>Type 3</u>
Designation	SC-70	SC-250RS-1	
Spray Temperature (°F)	135-175	165-200	70-120
Coverage (gal/ sq yd)	0.50	0.50	0.50

If the surface remains tacky, sufficient sand shall be applied to absorb the excess asphalt.

9. Type I: Any other suitable material as defined herein.
10. Type J (cement-treated backfill): Material which consists of Type H material, or any mixture of Types B, C, G and H materials which has been cement-treated so that the cement content of the material is not less than 5 percent by weight when tested in accordance with ASTM D 2901. The ultimate compressive strength at 28 days shall be not less than 400 psi when tested in accordance with ASTM D 1633.
11. Type K (topsoil): Stockpiled topsoil materials, which have been obtained at the site by removing soil to a depth not exceeding 2 feet. Removal of the topsoil shall be done after the area has been stripped of vegetation and debris as specified.
12. Type L (Class I crushed stone): Manufactured angular, granular crushed stone, rock, or slag, with 100 percent passing a 1-inch sieve and less than 5 percent passing a Number 4 sieve.
13. Type M (aggregate subbase): Crushed rock aggregate subbase material that can be compacted readily by watering and rolling to form a firm stable base. The sand

SECTION 02200 EARTHWORK

equivalent value shall be not less than 18 and shall meet the following gradation requirements.

<u>Sieve Size</u>	<u>Percentage Passing</u>
3-inch	100
2-1/2 inch	87-100
No. 4	35-95
No. 200	0-29

14. Type N (trench plug): Low permeable fill material, a non-dispersible clay material having a minimum plasticity index of 10.

2.02 UNSUITABLE MATERIAL

- A. Unsuitable soils for fill material shall include soils which, when classified under ASTM D 2487, fall in the classifications of PT, OH, CH, MH or OL.
- B. In addition, any soil, which cannot be compacted sufficiently to achieve the percentage of maximum density specified for the intended use, shall be classed as unsuitable material.

2.03 USE OF FILL, BACKFILL, AND EMBANKMENT MATERIAL TYPES

- A. The DBF shall use the types of materials as designated herein for all required fill, backfill, and embankment construction hereunder.
- B. Where these Specifications conflict with the requirements of any local agency having jurisdiction, or with the requirements of a material manufacture, the CITY shall be immediately notified. In case of conflict therewith, the DBF shall use the most stringent requirement, as determined by the CITY.
- C. Fill and backfill types shall be used in accordance with the following provisions:
1. Embankment fills shall be constructed of Type I material, as defined herein, or any mixture of Type I and Type A through Type H materials.
 2. Pipe zone backfill, as defined under "Pipe and Utility Trench Backfill" herein, shall consist of the following materials for each pipe material listed below. Where pipelines are installed on grades exceeding 4 percent, and where backfill materials are graded such that there is less than 10 percent passing a Number 4 sieve, trench plugs of Type J or N material shall be provided at maximum intervals of 200 feet or as shown on the Drawings.
 - a. Mortar coated pipe, concrete pipe, and uncoated ductile iron pipe shall be provided Type A, B, C, D, E, or L pipe zone backfill material.
 - b. Coal tar enamel coated pipe, polyethylene encased pipe, tape wrapped pipe, and other non-mortar coated pipe shall be backfilled with Type C pipe zone backfill material.
 - c. Plastic pipe and vitrified clay pipe shall be backfilled with Type L pipe zone backfill material.

Exhibit B
Technical Specifications

02200- 6

SECTION 02200 EARTHWORK

3. Trench zone backfill for pipelines as defined under "Pipe and Utility Trench Backfill" shall be Type I backfill material or any of Types A through H backfill materials or any mixture thereof, except that Type K material may be used for trench zone backfill in agricultural areas unless otherwise shown or specified.
4. Final backfill material for pipelines under paved area, as defined under "Pipe and Utility Trench Backfill" shall be Type G backfill material. Final backfill under areas not paved shall be the same material as that used for trench backfill, except that Type K material shall be used for final backfill in agricultural areas unless otherwise shown or specified.
5. Trench backfill, and final backfill for pipelines under structures shall be the same material as used in the pipe zone, except where concrete encasement is required by the Contract Documents.
6. Aggregate base materials under pavements shall be Type G material constructed to the thickness shown or specified. Where specified or shown, aggregate subbase shall be Type M Material.
7. Backfill around structures shall be Type I material, or Types A through Type H materials, or any mixture thereof.
8. Backfill materials beneath structures shall be as follows:
 - a. Drainrock materials under hydraulic structures or other water retaining structure with underdrain systems shall be Type H material.
 - b. Under concrete hydraulic structures or other water retaining structures without underdrain systems, Types G or H materials shall be used.
 - c. Under structures where groundwater must be removed to allow placement of concrete, Type F material shall be used.
 - d. Under all other structures, Type D, E, G, or H material shall be used.
9. Backfill used to replace pipeline trench over-excavation shall be a layer of Type F material with a 6-inch top filter layer of Type E material or filter fabric to prevent migration of fines for wet trench conditions or the same material as used for the pipe zone backfill if the trench conditions are not wet. Filter fabric shall be Mirafi 140 N, Mirafi 700X, or approved equal.
10. The top 6 inches of fill on reservoir roofs, embankment fills around hydraulic structures, and all other embankment fills shall consist of Type K material, topsoil.

2.04 EMBANKMENT

- A. The maximum sizes of rock, which will be permitted in the completed fill areas, are as follows:

<u>Depth Below Finish Grade</u>	<u>Maximum Allowable Diameter</u>
Top 4 inches	1 inch
4 inches to 12 inches	3-1/2 inches
12 inches to 2 feet	6 inches

Exhibit B
Technical Specifications

02200- 7

SECTION 02200 EARTHWORK

2 feet to 4 feet	12 inches
4 feet to 8 feet	24 inches
Below 8 feet	36 inches

- B. Embankments shall be constructed of material containing no muck, stumps, roots, brush, vegetable matter, rubbish or other material that will not compact into a suitable and enduring roadbed, and material designated as undesirable shall be removed from the site. Where embankments are constructed adjacent to bridge end bents or abutments, rock larger than 3-1/2 inches in diameter shall not be placed within three feet of the location of any abutment.
- C. Fill material containing debris, sod, and biodegradable materials shall not be used as fill in construction areas.
- D. Fill material required for the building pads and for pavement subgrade shall be granular fill, free of organic material.
- E. Fill material required for pervious and sodded areas shall have a maximum organic component of 10%. DBF shall provide, at DBF'S cost, organic content test results for approval by the CITY.

PART 3 - EXECUTION

3.01 JOB CONDITIONS

- A. Protection: Use all means necessary to protect existing objects and vegetation. In the event of damage, immediately make all repairs, and replacements necessary to the acceptance of the OWNER's Representative at no cost to the OWNER.

3.02 BACKFILL, FILLING & GRADING

A. Grades:

- 1. Cut, backfill, fill and grade to proper grade levels indicated. The existing grades shown on the drawings are to be matched for finished grade over the site.

B. Filling:

- 1. Fill material shall be placed in horizontal layers and spread to obtain a uniform thickness.
- 2. After compaction, layers of fill are not to exceed twelve (12) inches for cohesive soils or eight (8) inches for non-cohesive soils.

3.03 STRUCTURE, ROADWAY, AND EMBANKMENT EXCAVATION

- A. General: Except when specifically provided to the contrary, excavation shall include the removal of all materials of whatever nature encountered, including all obstructions of any nature that would interfere with the proper execution and completion of the work. The removal of said materials shall conform to the lines and grades shown or ordered. Unless otherwise provided, the entire construction site shall be stripped of all vegetation and debris, and such material shall be removed from the site prior to performing any excavation or placing any fill. The DBF shall furnish, place, and maintain all supports and shoring that may be required for the sides of the excavations, and all pumping, ditching, or other measure for the removal or exclusion of water,

Exhibit B
Technical Specifications

02200- 8

**SECTION 02200
EARTHWORK**

including taking care of storm water, groundwater, and wastewater reaching the site of the work from any source so as to prevent damage to the work or adjoining property. Excavations shall be sloped or otherwise supported in a safe manner in accordance with applicable State safety requirements and the requirements of OSHA Safety and Health Standards for Construction (29CFR1926).

- B. **Excavation Beneath Structures and Embankments:** Except where otherwise specified for a particular structure or ordered by the CITY, excavation shall be carried to the grade of the bottom of the footing or slab. Where shown or ordered, areas beneath structures or fills shall be over-excavated. The subgrade areas beneath embankments shall be excavated to remove not less than the top [6 inches] of native material and where such subgrade is sloped, the native material shall be benched. When such over excavation is shown, the DBF shall perform both over-excavation and subsequent backfill to the required grade. When such over-excavation is not shown but is ordered by the CITY, such over-excavation and any resulting backfill will be paid for under a separate unit price bid item if such bid item has been established; otherwise payment will be made in accordance with a negotiated price. After the required excavation or over-excavation has been completed, the exposed surface shall be scarified to a depth of 6 inches, brought to optimum moisture content, and rolled with heavy compaction equipment to obtain density as specified in Paragraph 3.14.I.
- C. **Excavation Beneath Paved Areas:** Excavation under areas to be paved shall extend to the bottom of the aggregate base or subbase, if such base is called for; otherwise it shall extend to the paving thickness. After the required excavation has been completed, the top 12 inches of exposed surface shall be scarified, brought to optimum moisture content, and rolled with heavy compaction equipment to obtain density as specified in Paragraph 3.14.I. The finished subgrade shall be even, self-draining, and in conformance with the slope of the finished pavement. Areas that could accumulate standing water shall be regraded to provide a self-draining subgrade.
- D. **Notification:** The DBF shall notify the CITY at least 3 days in advance of completion of any structure excavation and shall allow the CITY a review period of at least one day before the exposed foundation is scarified and compacted or is covered with backfill or with any construction materials.

3.04 PIPELINE AND UTILITY TRENCH EXCAVATION

- A. **General:** Unless otherwise shown or ordered, excavation for pipelines and utilities shall be open-cut trenches. Trench widths shall be kept as narrow as is practical for the method of pipe zone densification selected by the DBF, but shall have a minimum width at the bottom of the trench equal to the outside diameter of the pipe plus 24 inches for mechanical compaction methods and 18 inches for water consolidation methods.
- B. **Trench Bottom:** Except when pipe bedding is required, the bottom of the trench shall be excavated uniformly to the grade of the bottom of the pipe. The trench bottom shall be given a final trim, using a string line for establishing grade, such that each pipe section when first laid will be continually in contact with the ground along the extreme bottom of the pipe. Rounding out the trench to form a cradle for the pipe will not be required. Excavations for pipe bells and welding shall be made as required.
- C. **Open Trench:** The maximum amount of open trench permitted in any one location shall be 300 feet, or the length necessary to accommodate the amount of pipe installed in a single day, whichever is greater. All trenches shall be fully backfilled at the end of each day or, in lieu thereof, shall be covered by heavy steel plates adequately braced and capable of supporting vehicular traffic in those locations where it is impractical to backfill at the end of each day. The

Exhibit B
Technical Specifications

02200- 9

**SECTION 02200
EARTHWORK**

above requirements for backfilling or use of steel plate will be waived in cases where the trench is located further than 100 feet from any traveled roadway or occupied structure. In such cases, however, barricades and warning lights meeting OSHA requirements shall be provided and maintained.

- D. Trench Over-Excavation: Where the Drawings indicate that trenches shall be over-excavated, they shall be excavated to the depth shown, and then backfilled to the grade of the bottom of the pipe.
- E. Over-Excavation: When ordered by the CITY, whether indicated on the Drawings or not, trenches shall be over-excavated beyond the depth shown. Such over-excavation shall be to the depth ordered. The trench shall then be backfilled to the grade of the bottom of the pipe. All work specified in this Section shall be performed by the DBF when the over-excavation ordered by the CITY is less than 6 inches below the limits shown. When the over-excavation ordered by the CITY is 6 inches or greater below the limits shown, additional payment will be made to the DBF for that portion of the work which is located below said 6-inch distance. Said additional payment will be made under separate unit price bid items for over-excavation and bedding if such bid items have been established; otherwise payment will be made in accordance with a negotiated price.
- F. Where pipelines are to be installed in embankment or structure fills, the fill shall be constructed to a level at least one foot above the top of the pipe before the trench is excavated.

3.05 OVER-EXCAVATION NOT ORDERED, SPECIFIED, OR SHOWN

- A. Any over-excavation carried below the grade ordered, specified, or shown, shall be backfilled to the required grade with the specified material and compaction. The DBF at its own expense shall perform such work.

3.06 EXCAVATION IN LAWN AREAS

- A. Where excavation occurs in lawn areas, the sod shall be carefully removed, kept damp, and stockpiled to preserve it for replacement. Excavated material may be placed on the lawn; provided that a drop cloth or other suitable method is employed to protect the lawn from damage. The lawn shall not remain covered for more than 72 hours. Immediately after completion of backfilling and testing of the pipeline, the sod shall be replaced and lightly rolled in a manner so as to restore the lawn as near as possible to its original condition. DBF shall provide new sod if stockpiled sod has not been replaced within 72 hours.

3.07 EXCAVATION IN VICINITY OF TREES

- A. Except where trees are shown to be removed, trees shall be protected from injury during construction operations. No tree roots over 2 inches in diameter shall be cut without express permission of the CITY. Trees shall be supported during excavation by any means previously reviewed and approved by the CITY.

3.08 ROCK EXCAVATION

- A. Rock is defined as follows:

Exhibit B
Technical Specifications

02200- 10

**SECTION 02200
EARTHWORK**

1. Rock shall be classified as material having a blow count in excess of 30 blows per foot from a Standard Penetration Test (ASTM D-1586) and exceeding 1000 psi from an Unconfined Compression Strength Test (ASTM D-2938); and,
 2. General Excavation - Any material that cannot be excavated with a single-toothed ripper drawn by a crawler tractor having a minimum draw bar pull rated at not less than 71,000 lbs. (Caterpillar D9N or equivalent), and occupying an original volume of at least 2 cubic yards or more; and,
 3. Trench Excavation - Any material that cannot be excavated with a backhoe having a break out force rated at not less than 44,000 lbs. (Caterpillar 235D or equivalent) and occupying an original volume of at least 2 cubic yards.
- B. Rock excavation shall include removal and disposal of the following: (1) all boulders measuring 1/3 of a cubic yard or more in volume; (2) all rock material in ledges, bedding deposits, and unstratified masses which cannot be removed without systematic drilling and blasting; (3) concrete or masonry structures which have been abandoned; and (4) conglomerate deposits which are so firmly cemented that they possess the characteristics of rock as described in Paragraph 3.09(A).
- C. Said rock excavation shall be performed by the DBF; provided, that should the quantity of rock excavation be affected by any change in the scope of the work, an appropriate adjustment of the contract price will be made under a separate bid item if such bid item has been established; otherwise payment will be made in accordance with the negotiated price.
- D. Explosives and Blasting: Blasting will not be permitted, except by express permission of the CITY on a case-by-case basis. The use of explosives will be subject to the approval and regulations of all agencies having jurisdiction. If blasting is utilized at the site of the WORK, the DBF shall take all precautions and provide all protective measures necessary to prevent damage to property and structures or injury to person. Prior to blasting, the DBF shall secure all permits required by law for blasting operations and shall provide any additional hazard insurance required by the OWNER. The DBF shall have a fully qualified and experienced blasting construction supervisor in charge of all blasting operations.
- E. The DBF will be held responsible for all and shall make good any damage caused by blasting or resulting from its possession or use of explosives on the WORK.
- F. All operations involving the handling, storage, and use of explosives shall be conducted in accordance with the requirements of the OSHA Standards for Construction, and in accordance with all local laws and regulations.
- 3.09 DISPOSAL OF EXCESS EXCAVATED MATERIAL
- A. The DBF shall remove and dispose of all excess excavated material at a site selected by the DBF and reviewed by the CITY.
- 3.10 DISPOSAL OF UNSUITABLE EXCAVATED MATERIAL
- A. The DBF shall remove and dispose of all unsuitable excavated material. This shall include muck, tree roots, rocks, garbage, debris, or any other material designated as unsuitable by Paragraph 2 of this Section. Disposal shall be at a site selected by the DBF that is designated as an approved disposal site for the unsuitable material.

Exhibit B
Technical Specifications

02200- 11

**SECTION 02200
EARTHWORK****3.11 BACKFILL - GENERAL**

- A. Backfill shall not be dropped directly upon any structure or pipe. Backfill shall not be placed around or upon any structure until the concrete has attained sufficient strength to withstand the loads imposed. Backfill around water retaining structures shall not be placed until the structures have been tested, and the structures shall be full of water while backfill is being placed.
- B. Except for drainrock materials being placed in over-excavated areas or trenches, backfill shall be placed after all water is removed from the excavation.

3.12 PLACING AND SPREADING OF BACKFILL MATERIALS

- A. Backfill materials shall be placed and spread evenly in layers. When compaction is achieved using mechanical equipment the layers shall be evenly spread so that when compacted each layer shall not exceed 6 inches in thickness.
- B. During spreading each layer shall be thoroughly mixed as necessary to promote uniformity of material in each layer. Pipe zone backfill materials shall be manually spread around the pipe so that when compacted the pipe zone backfill will provide uniform bearing and side support.
- C. Where the backfill material moisture content is below the optimum moisture content water shall be added before or during spreading until the proper moisture content is achieved.
- D. Where the backfill material moisture content is too high to permit the specified degree of compaction the material shall be dried until the moisture content is satisfactory.

3.13 COMPACTION - GENERAL

- A. Compact each layer of fill in designated areas with approved equipment to achieve a maximum density at optimum moisture, AASHTO T 180 - latest edition.
 - 1. Building Pads: compaction shall be to 98% of maximum density, unless otherwise shown on the drawings or specifications. Building pads shall be within plus or minus one-tenth (0.1) of a foot of the elevations shown on the plans.
 - 2. Refer to Sections 02513 Asphaltic Concrete Paving - General for compaction requirements in the affected areas.
 - 3. Under landscaped area, compaction shall be to density as specified in Paragraph 3.14.I., unless otherwise shown on the Drawings.
- B. No backfill shall be placed against any masonry or other exposed building surface until permission has been given by the OWNER's Representative, and in no case until the masonry has been in place seven days.
- C. Heavy construction equipment will not be permitted within ten (10) feet of any masonry or other exposed building surface.
- D. Compaction in limited areas shall be obtained by the use of mechanical tampers or approved hand tampers. When hand tampers are used, the materials shall be deposited in layers not more than four inches thick. The hand tampers used shall be suitable for this purpose and shall

Exhibit B
Technical Specifications

02200- 12

**SECTION 02200
EARTHWORK**

have a face area of not more than 100 square inches. Special precautions shall be taken to prevent any wedging action against masonry, or other exposed building surfaces.

3.14 COMPACTION OF FILL, BACKFILL, AND EMBANKMENT MATERIALS

- A. Each layer of Types, A, B, C, G, H, I, and K backfill materials as defined herein, where the material is graded such that at least 10 percent passes a No. 4 sieve, shall be mechanically compacted to the specified percentage of maximum density. Equipment that is consistently capable of achieving the required degree of compaction shall be used and each layer shall be compacted over its entire area while the material is at the required moisture content.
- B. Each layer of Type D, E, F, and J backfill materials shall be compacted by means of at least 2 passes from a flat plate vibratory compactor. When such materials are used for pipe zone backfill, vibratory compaction shall be used at the top of the pipe zone or at vertical intervals of 24 inches, whichever is the least distance from the subgrade.
- C. Type L material requires mechanical spreading and placement to fill voids but does not require mechanical compaction or vibration.
- D. Fill on reservoir and structure roofs shall be deposited at least 30 days after the concrete roof slab has been placed. Equipment weighing more than 10,000 pounds when loaded shall not be used on a roof. A roller weighing not more than 8,000 pounds shall be used to compact fill on a roof.
- E. Flooding, ponding, or jetting shall not be used for fill on roofs, backfill around structures, backfill around reservoir walls, for final backfill materials, or aggregate base materials.
- F. Pipe zone backfill materials that are granular may be compacted by a combination of flooding and vibration using concrete vibrators or by jetting, when acceptable to the CITY.
- G. Pipeline trench zone backfill materials, containing 5 percent or less of material passing a No. 200 sieve, may be compacted using flooding and jetting or vibration if the DBF uses effective procedures that yield the specified compaction test results. Flooding and jetting shall not be done in such a manner that the pipe or nearby utilities are damaged, in areas of poorly draining or expansive soils, or where the use of the procedure is prohibited by any agency having jurisdiction over the street or right-of-way. Approved jet pipes or immersible vibrators shall be used so that each backfill layer is saturated and consolidated to its full depth before the next layer is placed. Jet pipes shall be kept at least 6 inches away from the pipe where the backfills being consolidated and 2 feet away from other pipes or utilities.
- H. Equipment weighing more than 10,000 pounds shall not be used closer to walls than a horizontal distance equal to the fill at that time. Hand operated power compaction equipment shall be used where use of heavier equipment is impractical or restricted due to weight limitations.
- I. Compaction Requirements: The following compaction test requirements shall be in accordance with AASHTO T-180. Where agency or utility company requirements govern, the highest compaction standards shall apply.

Exhibit B
Technical Specifications

02200- 13

SECTION 02200
EARTHWORK

<u>Location or Use of Fill</u>	<u>Percentage of Maximum Density</u>
Pipe zone backfill portion above bedding for flexible pipe.	98
Pipe zone backfill bedding and over-excavated zones under bedding/pipe for flexible pipe, including trench plugs.	98
Pipe zone backfill portion above bedding for rigid pipe.	98
Pipe zone backfill bedding and over-excavated zones under bedding/pipe for rigid pipe.	98
Final backfill, beneath paved areas or structures	98
Final backfill, not beneath paved areas or structures	95
Trench zone backfill, not beneath paved areas or structures, including trench plugs	95
Embankments	98
Embankments, beneath paved areas or structures	98
Backfill beneath structures, hydraulic structures	98
Backfill around structures	98

<u>Location or Use of Fill</u>	<u>Percentage of Maximum Density</u>
Topsoil (Type K material)	80
Aggregate base or subbase Type G or M material)	98

- J. Trench Backfill Requirements: the pipe has been structurally designed based upon the trench configuration specified herein.
- K. The DBF shall maintain the indicated trench cross section up to a horizontal plane lying 6 inches above the top of the pipe.
- L. If, at any location under said horizontal plane, the DBF slopes the trench walls or exceeds the maximum trench widths indicated in the Contract Documents, the pipe zone backfill shall be

Exhibit B
 Technical Specifications

02200- 14

**SECTION 02200
EARTHWORK**

“improved” or the pipe class increased as specified herein, at no additional cost to the OWNER. “Improved” backfill shall mean sand-cement backfill or other equivalent materials acceptable to the CITY.

- M. If the allowable deflection specified for the pipe is exceeded, the DBF shall expose and reground or replace the pipe, repair all damaged lining and coating, and reinstall the pipe zone material and trench backfill as specified at no additional expense to the OWNER.

3.15 PIPE AND UTILITY TRENCH BACKFILL

- A. Pipe zone Backfill: The pipe zone is defined as that portion of the vertical trench cross-section lying between a plane 6 inches below the bottom surface of the pipe, i.e., the trench subgrade, and a plane at a point 6 inches above the top surface of the pipe. The bedding for flexible pipe is defined as that portion of pipe zone backfill material between the trench subgrade and the bottom of the pipe. The bedding for rigid pipe is defined as that portion of the pipe zone backfill material between the trench subgrade and a level line which varies from the bottom of the pipe to the springline as shown.
- B. Bedding shall be provided for all sewers, drainage pipelines, and other gravity flow pipelines. Unless otherwise specified or shown, for other pipelines the bedding may be omitted if all the following conditions exist.
 - 1. The pipe bears on firm, undisturbed native soil, which contains only particles that will pass a one-inch sieve.
 - 2. The trench excavation is not through rock or stones.
 - 3. The trench subgrade soils are classified as suitable fill and backfill materials per Paragraph 2.01.
 - 4. The trench subgrade soils have, as a maximum, a moisture content that allows compaction.
- C. Where bedding is required, after compacting the bedding the DBF shall perform a final trim using a stringline for establishing grade, such that each pipe section when first laid will be continually in contact with the bedding along the extreme bottom of the pipe. Excavation for pipe bells and welding shall be made as required.
- D. The pipe zone shall be backfilled with the specified backfill material. The DBF shall exercise care to prevent damage to the pipeline coating, cathodic bonds, or the pipe itself during the installation and backfill operations.
- E. Trench Zone Backfill: After the pipe zone backfill has been placed as specified above, and after all excess water has completely drained from the trench, backfilling of the trench zone may proceed. The trench zone is defined as that portion of the vertical trench cross-section lying between a plane 6 inches above the top surface of the pipe and a plane at a point 18 inches below the finished surface grade, or if the trench is under pavement, 18 inches below the roadway subgrade. If flooding, ponding, or jetting is used the pipe shall be filled with water to prevent flotation.
- F. Final Backfill: Final backfill is all backfill in the trench cross-sectional area within 18 inches of finished grade, or if the trench is under pavement, all backfill within 18 inches of the roadway subgrade.

Exhibit B
Technical Specifications

02200- 15

**SECTION 02200
EARTHWORK****3.16 EMBANKMENT CONSTRUCTION**

- A. The area where an embankment is to be constructed shall be cleared of all vegetation, roots and foreign material. Following this, the surface shall be moistened, scarified to a depth of 6 inches, and rolled or otherwise mechanically compacted as specified in Paragraph 3.14.I. Embankment fill material shall be placed and spread evenly in horizontal layers. Each layer shall be moistened or aerated, as necessary. Unless otherwise approved by the CITY, each layer shall not exceed 6 inches of compacted thickness. The embankment fill and the scarified layer of underlying ground shall be compacted to 95 percent of maximum density under structures and paved areas, and 90 percent of maximum density elsewhere.
- B. When an embankment fill is to be made and compacted against hillsides or fill slopes steeper than 4:1, the slopes of hillsides or fills shall be horizontally benched to key the embankment fill to the underlying ground. A minimum of 12 inches normal to the slope of the hillside or fill shall be removed and recompact as the embankment fill is brought up in layers. Material thus cut shall be recompact along with the new fill material at the DBF's expense. Hillside of fill slopes 4:1 or flatter shall be prepared in accordance with Paragraph A, above.
- C. Where embankment or structure fills are constructed over pipelines, the first 4 feet of fill over the pipe shall be constructed using light placement and compaction equipment that does not damage the pipe. Heavy construction equipment shall maintain a minimum distance from the edge of the trench equal to the depth of the trench until at least 4 feet of fill over the pipe has been completed.

3.17 CORRECTION OF GRADE

- A. Bring to required grade levels areas where settlement, erosion or other grade changes occur.

3.18 MAINTENANCE AND PROTECTION OF WORK

- A. While construction is in progress adequate drainage for the roadbed shall be maintained at all times.

The DBF shall maintain all earthwork construction throughout the life of the contract, unless otherwise provided, and shall take all reasonable precautions to prevent loss of material from the roadway due to the action of wind or water. DBF shall repair at DBF'S expense, except as otherwise provided herein, any slides, washouts, settlement, subsidence, or other mishap which may occur prior to final acceptance of the work.

All channels excavated as a part of the contract work shall be maintained against natural shoaling or other encroachments to the lines, grades, and cross sections shown on the plans, until final acceptance of the project.

3.19 AS-BUILT SURVEY

- A. At the completion of the work and prior to final inspection of the area, the DBF shall provide the CITY with an as-built topographic survey made by a Professional Surveyor and Mapper per Florida Statute 472.001-472.037.
- B. The surveyor is to certify on the survey whether or not the as-built conditions conform to the elevations shown on the Drawings to within plus or minus two-hundredth (0.02) of a foot.

Exhibit B
Technical Specifications

02200- 16

**SECTION 02200
EARTHWORK**

3.20 MEASUREMENT AND PAYMENT

- A. There shall be no special measurement or payment for the work under this section, it shall be included in the unit price per square yard bid for compaction of subgrade when constructing new roads and shall be included in the cost of all other work called out in the Bid Schedule requiring earth work.

END OF SECTION 02200

SECTION 02212
MILLING OF EXISTING ASPHALT PAVEMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. Remove existing asphalt concrete pavement by milling to improve the rideability and cross slope of the finished pavement, to lower the finished grade adjacent to existing curb prior to resurfacing, or to completely remove existing pavement.
- B. When milling to improve rideability, the plans will specify an average depth of cut.
- C. DBF to take ownership of milled material.

PART 2 – PRODUCT

2.01 EQUIPMENT

- A. Provide a milling machine capable of maintaining a depth of cut and cross slope that will achieve the results specified in the Contract Documents. Use a machine with a minimum overall length (out to out measurement excluding the conveyor) of 18 feet and a minimum cutting width of 6 feet.
- B. Equip the milling machine with a built-in automatic grade control system that can control the transverse slope and the longitudinal profile to produce the specified results.
- C. To start the project, the CITY will approve any commercially manufactured milling machine that meets the above requirements. If it becomes evident after starting milling that the milling machine cannot consistently produce the specified results, the CITY will reject the milling machine for further use.
- D. The DBF may use a smaller milling machine when milling to lower the grade adjacent to existing curb or other areas where it is impractical to use the above described equipment.
- E. Equip the milling machine with means to effectively limit the amount of dust escaping during the removal operation.
- F. For complete pavement removal, the CITY may approve the use of alternate removal and crushing equipment in lieu of the equipment specified above.

PART 3 – EXECUTION

3.01 MILLING

- A. Remove the existing raised reflective pavement markers prior to milling. Include the cost of removing existing pavement markers in the price for milling.
- B. When milling to improve rideability or cross slope, remove the existing pavement to the average depth specified in the plans, in a manner that will restore the pavement surface to a uniform

Exhibit B

Technical Specifications

02212- 1

SECTION 02212
MILLING OF EXISTING ASPHALT PAVEMENT

cross-section and longitudinal profile. The CITY may require the use of a stringline to ensure maintaining the proper alignment.

- C. Establish the longitudinal profile of the milled surface in accordance with the milling plans. Ensure that the final cross slope of the milled surface parallels the surface cross slope shown on the plans or as directed by the CITY. Establish the cross slope of the milled surface by a second sensing device near the outside edge of the cut or by an automatic cross slope control mechanism. The plans may waive the requirement of automatic grade or cross slope controls where the situation warrants such action.
- D. Multiple cuts may be made to achieve the required pavement configuration or depth of cut. Include in the Quality Control Plan a system to control the cross slope of the milling surface with a minimum frequency of one cross slope measurement every 250 feet during milling operations in order to ensure that the slopes are uniform and in compliance with the designed milling slope. When the difference between the measured cross slope and the designed cross slope exceeds $\pm 0.2\%$ for travel lanes (including turn lanes) and $\pm 0.5\%$ for shoulders, make all corrections immediately to bring the cross slope into an acceptable range. The CITY will periodically verify the DBF's measurements at the job site.
- E. The CITY can randomly take ten measurements of the cross slope per day for the first two days of milling operation. If the average cross slope of the ten random measurements per day varies more than the required tolerance (0.2% for travel lanes including turn lanes and 0.5% for shoulders), the milling operation shall be stopped until appropriate corrective actions are made to bring the cross slope into an acceptable range. Approval by the CITY will be required prior to resuming the milling operation.
- F. A recheck of ten random measurements will be made after corrective actions are taken. If the recheck indicates that the cross slope is out of control, the deficient section(s) shall be corrected to bring the cross slope into an acceptable range. During milling operations, the CITY reserves the right to take ten cross slope measurements per day. If the average cross slope of the ten measurements varies more than the permissible tolerance, the milling operation will be stopped until appropriate corrective actions are made to bring the cross slope into an acceptable range and the deficient sections shall be corrected accordingly.
- G. The CITY may waive the corrections specified above if an engineering determination indicates that the deficiencies are sufficiently separated so as not to significantly affect the final cross slope.
- H. For intersections, tapers, crossovers, transitions at the beginning and end of the project and in other similar areas, the cross slope will be adjusted as directed by the CITY to match the actual site conditions.
- I. Operate the milling machine to minimize the amount of dust being emitted. The CITY may require pre-wetting of the pavement.
- J. Provide positive drainage of the milled surface and the adjacent pavement. Perform this operation on the same day as milling. Repave all milled surfaces no later than the day after the surface was milled unless otherwise stated in the plans.
- K. If traffic is to be maintained on the milled surface prior to the placement of the new asphalt concrete, provide suitable transitions between areas of varying thickness to create a smooth

Exhibit B
Technical Specifications

02212- 2

SECTION 02212
MILLING OF EXISTING ASPHALT PAVEMENT

longitudinal riding surface. Produce a pattern of striations that will provide an acceptable riding surface.

- L. Prior to opening an area which has been milled to traffic, sweep the pavement with a power broom or other approved equipment to remove, to the greatest extent practicable, fine material which will create dust under traffic. Sweep in a manner that will minimize the potential for creation of a traffic hazard and to minimize air pollution.
- M. Sweep the milled surface with a power broom prior to placing asphalt concrete.
- N. In urban and other sensitive areas, use a street sweeper or other equipment capable of removing excess milled materials and controlling dust.
- O. Perform the sweeping operation immediately after the milling operations or as directed by the CITY.

3.02 MILLED SURFACE

- A. Provide a milled surface with a reasonably uniform texture, within 1/4 inch of a true profile grade, and with no deviation in excess of 1/4 inch from a straightedge applied to the pavement perpendicular to the centerline.
- B. Ensure that the variation of the longitudinal joint between multiple cut areas does not exceed 1/4 inch. The CITY may accept areas varying from a true surface in excess of the above stated tolerance without correction if the CITY determines that they were caused by a pre-existing condition which could not have reasonably been corrected by the milling operations.
- C. Correct any unsuitable texture or profile, as determined by the CITY, at no additional expense to the OWNER.
- D. The CITY may require remilling of any area where a surface lamination causes a non-uniform texture to occur.
- E. Refer to Section 02513 for specifications on resurfacing of asphaltic pavement.

3.03 MEASUREMENT AND PAYMENT

- A. Price and payment will be full compensation for all work specified in this Section, including hauling off and stockpiling or otherwise disposing of the milled material. Payment will be made for the plan quantity area, in square yards, over which milling is completed and accepted as more specifically discussed and described in SECTION 01025 for MEASUREMENT AND PAYMENT.

END OF SECTION 02212

Exhibit B
Technical Specifications

02212- 3

**SECTION 02221
EXCAVATION AND BACKFILLING UTILITIES**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. The work shall consist of furnishing all materials, labor and equipment for excavation, trenching and backfilling for utilities. "Utilities" shall include storm water drains, culverts, water mains, gravity sewers, sewage force mains and appurtenant structures.

1.03 RELATED WORK

- A. 02200 - Earthwork

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 EXCAVATION

- A. General: This work shall consist of the excavation of whatever substances shall be encountered to the depths as shown on the plans. Excavated materials not required for fill or backfill shall be removed from the work site as directed by the CITY and shall be considered to be a part of the bid price of the utility pipe for which excavation and backfill is required.
- B. Excavation for structures and other accessories shall have a minimum clearance of twelve inches and a maximum clearance of twenty-four inches on all sides.
- C. Excavation shall not be carried below the required depths as indicated by the plans. Excess excavation below the required level shall be backfilled at the DBF's expense with sharp sand, gravel or other suitable material thoroughly compacted and approved by the CITY.
- D. Any unstable soil shall be removed and shall be replaced by material acceptable to the CITY. The removal and replacement of such unstable soil shall be considered to be part of the bid price of the pipe for which excavation and backfill is required.
- E. Water shall not be permitted to accumulate in the excavated area. It shall be removed by pumping or other means as approved by the CITY. The removal of water shall be considered to be a part of the bid price of the pipe for which excavation and backfill is required.

Well points, pumps or other approved means shall be used to keep the ground water sufficiently low in the opinion of the CITY to permit the placing of concrete, masonry or pipe in first class condition, and sufficiently long thereafter to protect the concrete, masonry or joints against washing or damage.

The DBF shall also use such other means as may be necessary to keep the excavation in satisfactory condition for the construction of the work, and the use of well points, or other approved method, will not relieve the DBF of DBF'S responsibility to make structures water tight.

- F. Banks and trenches shall be vertical unless shown otherwise on plans. The width of the trench

Exhibit B
Technical Specifications

02221- 1

**SECTION 02221
EXCAVATION AND BACKFILLING UTILITIES**

shall be no less than 24 inch plus the diameter of the pipe, or as approved by the CITY. Bell holes shall be accurately excavated by hand.

- G. If the bottom of the trench is rock, the excavation shall be carried eight inches below the invert of the pipe and backfilled with thoroughly compacted sharp sand, gravel or other suitable material approved by the CITY.
- H. See Section 02200 Part 3.08 for specifications on Rock Excavation.
- I. Whenever it is necessary, in the interest of safety, to brace or shore the sides of the trench, such bracing or shoring shall be considered to be part of the bid price of the pipe for which excavation and backfill is required.

The DBF shall furnish, put in place and maintain such sheeting, bracing, as may be required to support the side of the excavation, and to prevent any movement which can in any way damage the work or endanger adjacent structures. If the CITY is of the opinion that supports are insufficient, the CITY may order additional supports. The compliance with such order shall not release the DBF from DBF'S responsibility for the sufficiency of the sheeting. The DBF shall leave all sheeting in place. The CITY may require sheeting to be cut off at any specified elevation, but in no case will any sheeting be left closer than two (2) feet below the natural surface, nor cut off below the elevation of the top of the pipe.

3.02 BACKFILLING

- A. After pipes, structures and other appurtenances have been installed, the trench or opening shall be backfilled with material free from large stones or clods of a quality acceptable to the CITY.
- B. Backfill around the pipe and to a point twelve inches above the top of the pipe shall be placed in six-inch layers compacted with 20-pound hand tampers or mechanical tampers suitable for this purpose. Backfilling shall follow lying closely and shall not be more than one hundred (100) feet behind completed lying. Backfill over pipe shall be carefully placed by experienced labor and thoroughly consolidated without shock to the pipe and carried up uniformly on both sides of the pipe. No backfilling with bulldozers will be permitted adjacent to pipe line.
- C. Within roadway right-of-ways, or within areas where pavements are to be constructed over the pipe, the remainder of the trench shall be placed in six-inch layers (compacted thickness) and shall be compacted to that as noted in Section 02200. DBF will be responsible for correcting settlement in all backfilled areas whether under the pavement or otherwise.
- D. In areas where no pavement is to be constructed, the backfill above the twelve-inch line above the pipe shall be compacted to firmness approximately equal to that of the soil adjacent to the pipe trench or to that as noted in Section 02200. Backfill below the 12-inch line shall be compacted in 6-inch layers (compacted thickness) and shall be compacted to 98% of maximum density as determined by AASHTO T-180.

3.03 EXPLOSIVES

- A. The use of explosives will not be permitted. See Section 02200 Part 3.08 Paragraph D through F for further instruction.

3.04 PAYMENT AND MEASUREMENT

Exhibit B
Technical Specifications

02221- 2

**SECTION 02221
EXCAVATION AND BACKFILLING UTILITIES**

- A. No separate payment is provided for work covered by this Section. All costs in connection with Excavation and Backfilling, including testing, shall be included in the bid price of any item for which excavation and backfilling is required.

END OF SECTION 02221

**SECTION 02400
STORM DRAINAGE FACILITIES**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. Provide all labor, materials, necessary equipment and services to complete the Storm Drainage Facilities work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".

1.03 RELATED WORK

- A. Section 02110 - Clearing
- B. Section 02200 - Earthwork
- C. Section 02601 - Subterranean Structures

1.04 CLEARING

- A. Clearing or installation of pipe and all drainage structures shall be confined within the working limits of the trenches. Trees, utility poles, survey monuments, underground and overhead utilities shall be suitably protected and preserved.

1.05 EXISTING UTILITIES

- A. Furnish temporary support, adequate protection and maintenance of all underground and surface utility structures, drains, sewers, cables, etc., and other obstructions encountered in the progress of the work.
- B. When the grade of alignment of the pipe is obstructed by existing utility structures, such as conduits, ducts, pipes, branch connections to water or sewer mains, and other obstructions, the obstructions shall be permanently supported, relocated, removed or reconstructed by the DBF in cooperation with the owners of such structures. The CITY shall make no deviation from the required line or grade except as directed in writing.
- C. It shall be the responsibility of the DBF to notify the owners of existing utilities in the area of construction a minimum of 48 hours prior to any excavation adjacent of such utilities, so that field locations of said utilities may be established.
- 1. It shall be the responsibility of the DBF to maintain positive drainage on the surface and to ensure that the existing underground drainage system continues to function as intended during the construction of the new drainage system. The DBF shall submit a plan to maintain the existing drainage patterns and underground system for the approval of the CITY prior to beginning any work on the existing or new drainage systems.

Exhibit B
Technical Specifications

02400- 1

**SECTION 02400
STORM DRAINAGE FACILITIES**

PART 2 - PRODUCTS

2.01 PIPE

A. REINFORCED CONCRETE CULVERT PIPE:

1. A reputable manufacturer, engaged in the full-time business of manufacturing concrete pipe, shall produce the concrete pipe. Pipe manufacturer shall produce the pipe from an approved, permanent plant acceptable to the CITY.
2. All concrete pipe shall be reinforced and shall conform to the requirements of A.S.T.M. C-76. Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe." Pipe shall be Class III. Pipe shall have an interior surface, which is smooth, uniform and free from rough spots, irregularities and projections. Nominal pipe lengths shall be 8 feet unless authorized otherwise by the OWNER'S Representative. Lifting holes will not be permitted.
3. Concrete pipe shall be either bell or spigot, unless approved by CITY.
4. Internal rubber gasket joints will be used at DBF'S option. The internal rubber gasket joint shall be supplied by the pipe manufacturer and shall be completely compatible in every respect with the pipe furnished. The pipe manufacturer shall install the rubber gasket on the inside of the bell or groove on the pipe at the plant. All materials and accessories for the rubber gasket joint and the methods of jointing shall be in strict conformance with the pipe manufacturer's direction and recommendation. Joint must be completely watertight.
5. Cement grout joints shall be completely water tight and acceptable to the OWNER'S Representative. A full bed of mortar shall be placed in the bell and/or groove and on the tongue and/or spigot. The annular space in the pipe joint shall be wiped with cement mortar to insure the joint is filled and to present a smooth surface. The complete exterior periphery of the joint shall have a standard cement grout diaper joint. Diaper shall be installed within the aid of an approved cloth ring. Cement mortar joints shall be made in the dry. Mortar and grout shall be one-part Portland Cement to two parts by weight of sand. Mortar shall have enough water to make a stiff mixture that can be molded and worked. Cement mortar joints shall not be covered until inspected and approved by the OWNER'S Representative.

B. CORRUGATED PIPE:

1. Corrugated steel pipe, including round culvert pipe, pipe arch and underdrain and coupling bands for each type shall conform to AASHTO M36. Except for underdrain, corrugated steel pipe including pipe arch shall be fabricated with helical corrugations with a minimum of two annular corrugations formed on each end of each pipe to accommodate a coupling band. Annular fabrication is not permitted unless specifically called for in the Contract Documents. Provide, as part of the shipping ticket, the actual mean inside diameter and total measured lengths of each lot of pipe shipped to the project. Include the minimum and maximum inside diameters used to calculate the actual mean inside diameter.
2. Test the pipe joints hydrostatically at the specified pressure using test methods in ASTM D3212 with the exceptions of Sections 7.3 and 7.4. In lieu of Section 7.4, deflect one side of the pipe to a 5% reduction in internal diameter using the parallel

Exhibit B
Technical Specifications

02400- 2

**SECTION 02400
STORM DRAINAGE FACILITIES**

plate testing methodology of ASTM D2412. Load the deflected pipe to within 1/2 the actual pipe diameter from the centerline of the gasket or just beyond the end of the hugger band, whichever is greater. Ensure that the loading mechanism does not contact the hugger band or associated hardware. Testing of pipe joints shall be done at the manufacturing plant and witnessed by the CITY or designated representative.

3. Pipe, appurtenants, applications and installation for corrugated pipe shall meet FDOT Specifications.

2.02 SUBMITTALS.

- A. Submit copies of product and material information and data.

PART 3 - EXECUTION

3.01 EXCAVATIONS

- A. Trenches shall be kept as nearly vertical as possible and, if required, shall be properly sheeted and braced. Where, in the opinion of the CITY, damage could result from withdrawing sheeting, the sheeting shall be left in place. Not more than 100 feet of trench shall be opened at any one time or in advance of pipe laying unless permitted by the CITY.
 1. Except in rock, water-bearing earth or where a granular or concrete base is to be used, mechanical excavation of trenches shall be stopped above the final grade elevation so that the pipe may be laid on a firm, undisturbed native earth bed. If over digging occurs, all loosened earth shall be removed, and the trench bottom brought back to grade with granular material.
 2. Excavations and trenches in rock shall be carried to a depth of not less than 12 inches below the pipe bottom. This space shall be filled with granular material or washed rock.
 3. Width of trenches shall be such as to provide adequate space for placing and jointing pipe properly, but in every case the trench shall be kept to a minimum width.
 4. Any unstable soil encountered shall be removed and replaced with gravel, crushed rock or rock and sand suitably compacted.

3.02 PREPARATION TO TRENCH BOTTOM

- A. Water shall not be allowed in the trenches while the trench bottom is being prepared or while pipe is being installed, unless directed by the CITY.
- B. A continuous trough shall be shaped to receive the bottom quadrant of the pipe barrel. Bell holes shall be excavated so that after placement, only the barrel of the pipe receives bearing pressure from the trench bottom.
- C. Preparation of the trench bottom and placement of the pipe shall be placed in the trench bottom a minimum of 8 inches below the bottom of the pipe, and a trough as described above shall be formed to uniformly support the bottom quadrant of the pipe barrel.

Exhibit B
Technical Specifications

02400- 3

**SECTION 02400
STORM DRAINAGE FACILITIES**

3.03 INSTALLATION OF DRAINAGE PIPE

- A. Pipe shall be protected during handling against impact shocks and free falls. Pipe shall be kept clean at all times and no pipe shall be used that does not conform to the Specifications.
- B. The laying of the pipe shall be commenced at the lowest point with spigot ends pointing in the direction of flow. All pipes shall be laid with ends abutting and true to line and grade. They shall be laid in accordance with manufacturer's requirements as approved by the CITY.
- C. Pipe shall be laid accurately to the line and grade as designated on the plans. Preparatory to making pipe joints, all surfaces of the portions of the pipe to be jointed or of the factory-made jointing material shall be clean and dry. Lubricant, primers, adhesive, etc., shall be used as recommended by the pipe or joint manufacturer's specifications. The jointing materials or factory-fabricated joints shall then be placed, fitted, joined and adjusted in such a manner as to obtain a water tight line. As soon as possible after the joint is made, sufficient backfill material shall be placed along each side of the pipe to prevent movement of pipe off line and grade.
- D. The exposed ends of all pipes shall be suitably plugged to prevent earth, water, or other substances from entering the pipe when construction is not in progress.

3.04 BACKFILLING TRENCHES

- A. No trenches or excavations shall be backfilled until the trench and installation has been inspected and written approval given by the OWNER'S Representative. Under no circumstances shall water be permitted to rise in unbackfilled trenches after pipe has been placed. Trenches shall be backfilled with approved material, free of large clods, stones or rocks and carefully deposited in layers not to exceed 6 inches until enough fill has been placed to provide a cover of not less than 1 foot above the pipe. Each layer shall be placed, then carefully and uniformly tamped, so as to eliminate the possibility of pipe displacement. The remainder of backfill materials shall then be placed, moistened and compacted in 6-inch layers to density as specified in Section 02200, Paragraph 3.14.I.
- B. Whenever the trenches have been improperly filled or if settlement occurs, they shall be refilled, compacted, smoothed off and made to conform to grade. Unless otherwise directed or shown on the plans, backfill in trenches in or through roadways shall be made as specified above, except that the entire fill above 1 foot over the pipe shall be deposited in layers not to exceed 8 inches in thickness, moistened, and compacted to density equal to or greater than that of adjacent material so that pavement can be placed immediately.

3.05 CONCRETE ENCASEMENT OF DRAINAGE PIPE

- A. Trenches in which encasement for pipe are to be placed, may be excavated completely with mechanical equipment. Prior to formation of the encasement, temporary supports consisting of timber wedges or masonry shall be used to support the pipe in place. Temporary supports shall have minimum dimensions and shall support the pipe at no more than two places, one at the bottom of the barrel of the pipe adjacent to the shoulder of the socket and the other near the spigot end.

3.06 DRAINAGE STRUCTURES

- A. All structures shall be built to the line and grade shown on drawings. All reinforced concrete work shall be in strict conformance with the concrete specifications contained herein. After erection of the forms and placing of the steel, the DBF must have inspection and approval from

Exhibit B
Technical Specifications

02400- 4

**SECTION 02400
STORM DRAINAGE FACILITIES**

the CITY before placing any concrete. After removal of the forms, the DBF shall backfill around each structure with approved granular fill. The fill shall be placed in layers not exceeding 8 inches in depth measured loose and compacted to density as specified in Section 02200, Paragraph 3.14.I. No defects of any kind in the pipe section will be accepted. All pipe stubs shall be made of the same type of pipe. Pipe stubs shall be sealed with a concrete plug, water tight. The ends of the pipes, which enter masonry, shall be neatly cut to fit the inner face of the masonry. Cutting shall be done before the pipes are built in.

3.07 INSPECTION

- A. All storm sewers shall be lapped and physically inspected by the CITY prior to acceptance of the work. Repairs or misalignment shown necessary by the tests shall be corrected at the DBF'S expense. All sewers shall be thoroughly cleaned before being placed into use and shall be kept clean until final acceptance by the CITY.

3.08 RESTORATION OF SURFACES AND/OR STRUCTURES

- A. The DBF shall restore and/or replace paving, curbing, sidewalks, fences and survey points, or any other disturbed surfaces or structures to a condition equal to that before the work was begun and to the satisfaction of the CITY. Relative to restoration of surfaces and/or structures, the DBF shall comply with all requirements of governing agencies including CITY, and STATE.

3.09 ABANDONMENT OF PIPELINE IN PLACE

- A. All drainage pipelines or structures shown on the drawings to be abandoned in place shall be properly cut and plugged after new mains and provisions for proper drainage are installed. The pipeline shall be filled with concrete one foot from end of pipe as specified in Division 3 - Concrete, and section 03010. Excavation, backfill, and restoration shall be executed in accordance with requirements for removing existing and installing new pipelines.

3.10 MEASUREMENT AND PAYMENT

- A. Measurement and payment will be based on the actual quantities installed as more specifically discussed and described in SECTION 01025 for MEASUREMENT AND PAYMENT.

END OF SECTION 02400

SECTION 02410

INSTALLATION OF PIPE BY DIRECTIONAL DRILL TECHNIQUE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. The DBF shall furnish all labor, materials, equipment and incidentals required to install pipe by the technique of inserting the pipe directly into a directional drilled opening; at the locations shown on the Drawings and as specified herein.
- B. All directional drill operations shall be performed in accordance with all requirements of the permitting agency and other agencies having jurisdiction over the work area.

1.03 RELATED WORK

- A. Division 2 as applicable
- B. Section 02200 Earthwork
- C. Section 02221 Excavation and Backfilling for Utilities
- D. Section 02510 Piping, General
- E. Section 02541 Valves, General
- F. Exhibit D Permit Conditions
- G. Commercial Standards:
- ASTM F 1962 Maxi-Horizontal Directional Drilling
- ASTM F 2620 Heat Fusion Joining of Polyethylene Pipe and Fittings

1.04 GENERAL REQUIREMENTS

- A. Directional drilling and pipe installation shall be done only by an experienced, licensed contractor specializing in directional drilling technique and whose key personnel have at least five (5) years of experience in this work. Furthermore, the said contractor shall have had experience in directional drilling under Florida waterways and major roadways.
- B. The DBF shall visit the site and determine the proximity of structures on either side of the crossings. The DBF shall provide the OWNER with a drilling plan outlining procedures to prevent drilling fluid or the drilling process from adversely affecting these structures.
- C. Prior to pre-construction meeting DBF is to submit "Frac-Out Plan" (see Exhibit A) per State Water Quality Standards, pursuant to Rule 62-302, with details of the non-toxic florescent tracking dyes that the DBF will be using with the drilling lubricant as a monitoring method with the bentonite.

Exhibit B
Technical Specifications

02410- 1

**SECTION 02410
INSTALLATION OF PIPE BY DIRECTIONAL DRILL TECHNIQUE**

- D. Prior to the start of work, the DBF shall engage a Professional Engineer registered in the State of Florida to design a detailed plan of boring and receiving pits, including excavation, together with an outline of the methods to be used and a time schedule for directional drill operations. In addition, DBF shall identify an environmental scientist/biologist with experience in water quality monitoring and habitat protection to be used in the event of a frac-out.
- E. Three workdays written notice prior to start of the actual work shall be given to the OWNER.
- F. The DBF shall install, maintain, and leave in place any sheeting, underpinning, cribbing, and other related items (other than that required for the boring and receiving pits) to support any structure or facility affected by the boring operations. The CITY, depending upon existing conditions, may require that additional sheeting for the excavation be left in place.
- G. The DBF shall assume all responsibility for the methods and means of construction, the stability and accuracy of the drilled and reamed hole and constructed pits, and all cost responsible for the safety of the pits and related structures, and personnel engaged in construction throughout the duration of work.
- H. All work under this specification affecting the right-of-way, or municipal facilities shall be carried out to the full satisfaction of the authorized representative. It is the DBF's responsibility to be fully informed of all requirements, and permit conditions as it pertains to the specific project and shall conduct all work accordingly.
- I. All equipment used by the DBF on OWNER's property and rights-of-way may be inspected by the OWNER or the OWNER's Representatives.
- J. The DBF shall be fully responsible for all damages arising from the failure of the DBF or Subcontractors to comply with the regulations and the requirements of these Specifications.
- K. The DBF's methods and schedule shall comply with the overall project requirements. The DBF shall be familiar with the work within the local subsurface conditions. The DBF's selection of inadequate, inappropriate, or inefficient equipment and methods will not be cause for adjustments to the Contract price or Contract time.
- L. The DBF shall be responsible for all clean-up of project site, debris, materials and equipment and shall clear the site of and dispose of them in accordance with Contract Documents.

1.05 SUBMITTALS

- A. The DBF shall submit for the OWNER's approval the qualifications of the directional drilling specialty provider indicating compliance with the following minimum experience criteria:
 - 1. Descriptions of successfully completed similar projects using the guided directional drill technique, which shall include a listing of the following information:
 - a. Project name and location
 - b. Year of Project
 - c. Owner/Client
 - d. Client contact information

Exhibit B
Technical Specifications

02410- 2

**SECTION 02410
INSTALLATION OF PIPE BY DIRECTIONAL DRILL TECHNIQUE**

- e. Diameter and material of pipe
 - f. Length of direction drilling installation
 - g. Other information relevant to the successful completion of the project
2. Documentation of compliance with the following minimum standards:
- a. The directional drilling specialty provider shall be an experienced, licensed contractor specializing in guided directional drilling and whose key personnel assigned to this work shall have a minimum of five (5) years of related directional drilling experience.
 - b. The directional drilling specialty provider shall have installed utilities under major roadways and waterways via directional drill technique.
- B. Prior to commencing of construction activities, the DBF shall provide the CITY with pull calculations and all applicable information necessary for the installation of HDPE pipe through Horizontal Directional Drilling.
- C. Two (2) weeks prior to the start of the directional drilling work, the DBF shall submit the directional drilling work plan for the OWNER's review. The work plan shall include the following information.
- 1. A plan showing details of the proposed method of construction, sequence of operations to be performed, number and size of construction crew, hours to be worked, pilot hole drilling procedure, reaming procedure, pullback procedure, method of monitoring the drilling head and method of verifying pipe location for as-built drawings.
 - 2. A drilling fluid plan which details types of drilling fluids, including the of non-toxic fluorescent tracking dyes, cleaning and recycling equipment, estimated flow rates, and procedures for minimizing drilling fluid escape.
 - 3. A plan in the event of drilling fluid escape including, but not limited to, stoppage of work, notification of applicable permitting authorities whose right-of-way is impacted by the escape of drilling fluid, procedure to confine drilling fluids/muds, and procedure for repair/plugging of fissures. See Dewatering Permit for requirements that will need to be met, at no additional cost to the OWNER, should fluid escape.
 - 4. A plan and profile drawing showing the DBF's proposed pilot bore hole routing and location of other underground utilities. The plan drawing shall be at a 1 inch = 20-foot scale and the profile drawing at a 1 inch = 20-foot scale horizontal and 1 inch = 2 foot scale vertical.
 - 5. A 1 inch = 20-foot scale drawing of the proposed setup of major equipment at the entry point and the proposed layout at the exit point.
- D. The DBF shall furnish shop drawings showing all fabrication and construction details for the directional drilled crossings.
- E. The DBF will be responsible for maintaining drilling logs that provide drill bit locations at least 30 feet along the drill path. In addition, logs will be kept that record the following on an hourly basis

Exhibit B
Technical Specifications

02410- 3

SECTION 02410

INSTALLATION OF PIPE BY DIRECTIONAL DRILL TECHNIQUE

throughout each drill pass, backream pass or pipe installation pass:

1. Drill fluid pressure
 2. Drilling fluid flow rate
 3. Drill thrust pressure
 4. Drill pullback pressure
 5. Drill head torque
 6. Horizontal distance of drill head from entry point
- F. Upon completion of the pilot hole phase of the operation, a complete set of as-built records showing the actual horizontal and vertical alignment of the pilot bore at intervals not exceeding 30 feet shall be submitted in duplicate to the CITY along with one electronic AutoCad as-built drawing file. These records shall include copies of the plan drawing at a 1 inch = 20-foot scale, and a profile drawing at a 1 inch = 20 foot scale horizontal and a 1 inch = 2 foot scale vertical, as well as directional survey reports as recorded during the drilling operation.
- 1.06 SAFETY
- A. The DBF shall, at all times, conform to all applicable State and Federal regulations.
 - B. DBF is to adhere to requirements of all permits. See Permit Conditions for permit requirements.
 - C. Guided Directional Drilling Equipment machine safety requirements will include a common grounding system to prevent electrical shock in the event of high voltage underground cable strike. The grounding system will connect all pieces of interconnecting machinery: the drill, mud mixing system, drill power unit, drill rod trailer, operator's booth, worker grounding mats and any other interconnected equipment to a common ground. The drill will be equipped with an "electrical strike" audible and visual warning system that will notify the system operators of an electrical strike.
 - D. Operators of the drill will wear electrical shock protection equipment and operate from common grounded mats as required.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. The carrier pipe shall conform to Section 02610; Piping, General.
- B. Equipment (graders, shovels, etc.) and materials (such as groundsheets, hay bales, booms, and absorbent pads) for cleanup and contingencies shall be provided in sufficient quantities by DBF and maintained at all sites for use in the event of inadvertent leaks, seeps or spills.
- C. Technical criteria for bentonite shall be as given in API Spec. 13A, Specification for Oil Well Drilling Fluids Material for fresh water drilling fluids. Any modification to the basis drilling fluid involving additives must describe the type of material to be used and be included in DBF's drilling plan presented to OWNER. The OWNER retains the right to sample and monitor the waste drilling mud, cuttings and water.

Exhibit B
Technical Specifications

02410- 4

SECTION 02410

INSTALLATION OF PIPE BY DIRECTIONAL DRILL TECHNIQUE

2.02 HDPE PIPELINE IDENTIFICATION

- A. All polyethylene pipe shall be black, and shall contain a continuous colored stripe, 2 inches wide, at three separate locations along the length of the pipe. Stripe color shall be:
1. Potable Water Mains - blue stripe
 2. Reclaimed Water Mains - purple stripe
 3. Force Mains - brown stripes
 4. Sanitary Sewer - green stripe
 5. Storm Sewer - no stripes required

PART 3 - EXECUTION

3.01 DIRECTIONAL DRILLING OPERATION

- A. The DBF shall provide all material, equipment, and facilities required for directional drilling. Proper alignment and elevation of the opening shall be consistently maintained throughout the directional drilling operation. Entrance and exit angles for the drill are at the DBF's discretion such that the elevation profile maintains adequate ground cover to reasonably precaution against hydraulic fractures with the drilling fluid and maintain the minimum cover shown in the Drawings and specified herein.
- B. The position of the drill string shall be monitored by the DBF with the downhole survey instruments. The DBF shall compute the position in the X, every 30 feet. Serious deviations between the design position which may affect the installation of the pipeline and are beyond the control of the DBF to correct shall be documented and immediately brought to the attention of the OWNER for discussion and/or approval. The profile and alignment defined on the construction drawings for the bores define the minimum depth and radius of curvature. At no point in the drilled profile shall the radius of curvature of the bore be less than the minimum defined by the pipe manufacturer with a 10% factor of safety. The DBF shall maintain and provide to the OWNER, upon request, the data generated by the downhole survey tools in a form suitable for independent calculation of the pilot hole profile.
- C. The use of a separate steering system employing a ground survey grid system, such as "TRU-TRACKER" or equal should be used, at the DBF's discretion, to ensure proper monitoring of the drill string.
- D. Boring pits shall be shored with sheeting or such other materials as required. Sheeting shall be driven to a sufficient depth below the invert of the carrier pipe to resist any pressure developed by the soil outside the boring pit. Sheeting when used shall terminate not less than 3 feet 6 inches above existing grade.
- E. At the completion of the direction drilling operations, the DBF will be required to remove all sheeting in place. If steel sheeting is used, it may be removed after installation of the carrier pipe in the bore hole, but prior to installation of the joining carrier pipe. However, should damage to the roadway, pipeline or any other adjacent structure occur, the DBF shall leave all remaining sheeting in place and redrive and leave in place any sheeting which is required to stabilize the site and prevent additional damage from occurring. The top of all sheeting left in place shall be cut off 36 inches below finished grade.
- F. Bentonite or other stabilizing gels shall be used to prevent calving of the unsupported bore hole.

Exhibit B
Technical Specifications

02410- 5

SECTION 02410

INSTALLATION OF PIPE BY DIRECTIONAL DRILL TECHNIQUE

3.02 DRILLING FLUIDS AND CUTTINGS

- A. To the extent practical, the DBF shall maintain a closed loop drilling fluid system and utilize drilling tools and procedures which will minimize the discharge of any drilling fluids.
- B. DBF shall have divers present during the drilling operations in order to respond to potential frac-out release.
- C. The Guided Horizontal Direction Drilling operation is to be operated in a manner to eliminate the discharge of water, drilling mud and cuttings to the canal or land areas involved during the construction process. The DBF shall provide equipment and procedures to maximize the recirculation or reuse of drilling mud to minimize waste. All excavated pits used in the drilling operation shall be lined by DBF with heavy duty plastic sheeting with sealed joints to prevent the migration of drilling fluids and/or ground water.
- D. Pits constructed at the entry or exit point area shall be so constructed to completely contain the drill fluid and prevent its escape to the surrounding land or canal.
- E. Waste cuttings and drilling mud shall be processed through a solids control plant comprised as a minimum of stumps, pumps, tanks, distiller/desander, centrifuges, material handlers, and haulers all in a quantity sufficient to perform the cleaning/separating operation without interference with the drilling program. The cuttings and excess drilling fluids shall be dewatered and dried by DBF to the extent necessary for disposal, and disposal in offsite landfills at the DBF's expense. Water from the dewatering process shall be treated by DBF to meet permit requirements and disposed of locally. The cuttings and water for disposal are subject to being sampled and tested. The construction site and adjacent areas will be checked frequently for signs of unplanned leaks or seeps.
- F. All drilling mud shall be removed from the entry and exit area soils such that water will percolate. All disturbed areas shall be restored to original conditions.

3.03 INSTALLING PIPE

- A. The pipe installed within the boring shall be in full conformity with these Specifications and as shown on the Drawings. The pipe shall be installed, as to a reasonable directional drilling ability, to the exact lines grades required after having been satisfactorily approved by the CITY from the directional drillers expected drill path plan and profile sheets provided in Section 1.5.
- B. The type and size of the pilot string cutting head shall be at the DBF's discretion. The type and outside diameter of the drill pipe to be used in the pilot string shall also be at the DBF's discretion.
- C. A minimum depth requirement of 25 feet below the existing crossing bottoms shall be maintained, depths deeper than 25 feet shall be acceptable. Lateral positioning at exit shall be no further than 5 feet left or right of planned centerline, and horizontal positioning shall be no further than 5 feet short or long of proposed exit location. Entry and exit locations, as well as intermediate centerline stationing, shall be staked by the DBF.
- D. Upon approval of the pilot hole location by the CITY, the hole opening or enlarging phase of the installation shall begin. The type of hole opener or back reamer to be utilized in this phase shall be determined by the types of subsurface soil conditions that have been encountered during the pilot hole drilling operation. The reamer type shall be at the DBF's discretion.

Exhibit B
Technical Specifications

02410- 6

SECTION 02410

INSTALLATION OF PIPE BY DIRECTIONAL DRILL TECHNIQUE

- E. The open borehole may be stabilized by means of bentonite drilling slurry being pumped through the inside diameter of the drill pipe and through opening in the reamer. The slurry will also serve as an agent to carry the loose cutting to the surface through the annulus of the borehole. These cuttings and bentonite slurry are to be contained at the exit or entry side of the directional bore in pits or holding tanks. The slurry may be recycled at this time for reuse in the hole opening operation, or it shall be hauled by the DBF to an approved dump site and properly disposed.
 - F. Each length of pipe shall be inspected and cleaned as necessary to be free of debris immediately prior to joining.
 - G. A complete list of all drilling fluid additives and mixtures to be used in the directional operation will be submitted to the CITY, along with their respective Material Safety Data Sheets. All drilling fluids and loose cuttings shall be contained in pits or holding tanks for recycling or disposal, no fluids shall be allowed to enter any unapproved areas or natural waterways. Upon completion of the directional drill project, drilling fluid shall be disposed of by the DBF at an approved dump site.
 - H. A "weak-link or breakaway device shall be used at the leading end of the pipe to protect the pipe from excessive pulling loads. The breakaway strength of this device shall be set at or below the allowable tensile load of the pipe.
 - I. High Density Polyethylene (HDPE) pipe shall not be placed in direct sunlight immediately prior to installation.
 - J. HDPE pipe shall have the beads removed from the interior of the fused joints.
 - K. A sufficient length of HDPE pipe shall be pulled past the exit point and left before the entry point to allow for relaxation.
 - L. HDPE pipe shall have mechanical joint adapters to connect to the pipe on either side of the directional drills. Mechanical joint adapter used is to match HDPE pipe manufacturer requirements for connection to ductile iron pipe.
 - M. HDPE shall have sufficient time for relaxation before connecting to the pipe on either side of the direction drill.
- 3.04 EXISTING UTILITIES
- A. The Drawings show existing buried utilities that are believed to be near the directional drill alignment. There is no guarantee that these utilities are located as shown or that other utilities may be present. It is the DBF's responsibility to locate all utilities or other subsurface obstructions that may interfere with the work.
 - B. Utility lines and structures indicated on the Drawings which are to remain in service shall be protected by the DBF from any damage as a result of the operations. Where utility lines or structures not shown on the drawings are encountered, the DBF shall report them to the OWNER before proceeding with the Work. The DBF shall bear the cost of repair or replacement of any utility lines or structures which are broken or damaged by the DBF's operations.
 - C. All utilities in close proximity to the drill pilot bore, back ream or carrier pipe installation must be exposed through a "pot-hole" or other opening, in accordance with state utility locate laws and regulations, to ensure, through visual inspection, that the drill, reamer or pipe has caused no damage to the utility and maintains adequate clearance.

Exhibit B
Technical Specifications

02410- 7

SECTION 02410

INSTALLATION OF PIPE BY DIRECTIONAL DRILL TECHNIQUE

3.05 TESTING

- A. DBF is required to perform a pressure test prior to installation of pipe. A leakage test in accordance with Contract Documents shall also be performed post pulling. All leakage tests shall be completed and approved prior to placing of permanent resurfacing. When leakage exceeds the amount allowed by the Specifications, the DBF, at its expense, shall locate the leaks and make the necessary repairs or replacements in accordance with the Specifications to reduce the leakage to the specified limits. Any individually detectable leaks shall be repaired, regardless of the results of the tests.

- B. Leakage Tests: The leakage testing shall be as follows:

1. Gravity sewers greater than 24 inches in diameter; air pressure test, or as approved.
2. All pressure test (force mains): pressure mains shall be hydrostatically pressure tested for a period of not less than 2 hours at 150 PSI with an allowable leakage not to exceed the formula:

$$L = \frac{SD (P)^{1/2}}{148,000}$$

L = Allowable leakage in gallons per hour

S = Length of pipe in feet

D = Nominal diameter of pipe in inches

P = average test pressure during test in pounds per square inch.

All testing is to be in accordance with AWWA C605.

- C. Water Pressure Test: The DBF shall perform preparatory testing prior to installation of directional drilled pipe. Preparatory to testing, the section of the pipeline to be tested shall be filled with water and placed under a slight pressure for at least 48 hours. The pipeline shall then be brought up to the test pressure specified and maintained on the section under test for a period of not less than four (4) hours. Accurate means shall be provided for measuring the quantity of water required to maintain full pressure on the line for the test period, which volume shall not exceed:

$$L = \frac{CND (P)^{1/2} H}{1850}$$

Where:

L = Maximum allowable leakage in gallons for the section of pipeline tested

N = Number of joints in length tested

D = Diameter of pipe in inches

P = Test pressure in psi = 150 psi

H = Number of hours the pipe is tested

C = 1.0 for reinforced concrete pressure pipe with rubber ring joints, cylinder type

C = 3.0 for reinforced concrete pressure pipe with rubber joints, noncylinder type

Exhibit B
Technical Specifications

02410- 8

SECTION 02410

INSTALLATION OF PIPE BY DIRECTIONAL DRILL TECHNIQUE

C = 0.50 for cast iron pipe with mechanical or rubber gasket joints and asbestos cement pipe

C = 1.0 for other type of cast iron joints (calked) and other types of pipe

- D. Post installation CCTV inspection must be conducted with the camera at the approximate center of the pipeline, while traveling no faster than 30 feet/minute with adequate lighting, no water and 360-degree views.

3.06 COMPLETION OF DIRECTIONAL DRILLING

- A. Completion and successful testing of the approved pipe will entitle the DBF to full payment of the applicable amounts in the Contract.
- B. In the event of failure to install the directional drilled pipelines, the DBF shall retain possession of any DBF-supplied pipe and remove it from the site. The bore holes shall be completely filled with grout to prevent future problems. If the pipe cannot be removed from the bore hole, it shall be cut off five feet below ground, and the pipe and annular space shall be grouted.

3.07 MEASUREMENT AND PAYMENT

- A. Measurement and payment will be based on the quantities as more specifically discussed and described in SECTION 01025 for MEASUREMENT AND PAYMENT.

END OF SECTION 02410

**SECTION 02510
CONCRETE SIDEWALK**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. The work specified in this Section consists of the construction of concrete sidewalk in accordance with these Specifications and in conformity with the lines, grades, dimensions and notes shown on the plans.

1.03 RELATED WORK

- A. Section 02200 - Earthwork
- B. Section 02110 - Clearing
- D. Section 03010 - Concrete
- E. Section 03300 - Cast-In-Place Concrete
- F. Section 03370 - Concrete Curing

PART 2 - PRODUCTS

2.01 CONCRETE

- A. Concrete shall be Class I Concrete, with a minimum compressive strength of 3,000 psi in accordance with Section 345, Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

2.02 FORMS

- A. Forms for this work shall be made of either wood or metal and shall have a depth equal to the plan dimensions for the depth of concrete being deposited against them. They shall be straight, free from warp or bends, and of sufficient strength when staked, to resist the lateral pressure of the concrete without displacement from lines and grade. Forms shall be cleaned each time they are used and shall be oiled prior to placing the concrete.

2.03 SUBGRADE AND GRADING

- A. Excavation shall be made to the required depth, and the foundation material upon which the sidewalk is to be set shall be compacted to a firm, even surface, true to grade and cross-section, and shall be moist at the time that the concrete is placed. Subgrade shall be compacted to an LBR of 40.

2.04 JOINTS

- A. Contraction joints may be of the open type or may be sawed. Staking a metal bulkhead in place and depositing the concrete on both sides shall form open type contraction joints. After the concrete has set sufficiently to preserve the width and shape of the joint, the bulkhead shall be removed. After the sidewalk has been finished over the joint, the slot shall be edged with a tool having a 1/2-inch radius.

Exhibit B
Technical Specifications

02510- 1

**SECTION 02510
CONCRETE SIDEWALK**

If the DBF elects to saw the contraction joints, a slot approximately 1/8-inch-wide and not less than 1-1/2 inches deep shall be cut with a concrete saw after the concrete has set, and within the following periods of time:

Contraction joints shall be constructed at not more than 20-foot intervals and shall be in place within 12 hours after finishing.

PART 3 - EXECUTION**3.01 PLACING**

- A. The concrete shall be placed in the forms to the required depth and shall be vibrated and spaded until mortar entirely covers its surface.

3.02 FINISHING

- A. Screeding: The concrete shall be struck-off by means of a wood screed, used perpendicular to the forms, and floated in order to obtain the required grade and remove surplus water and laitance.
- B. Surface requirements: The concrete shall be given a broom finish. The surface variations shall not be more than 1/4 inch under a ten-foot straightedge, nor more than 1/8 inch on a five-foot transverse section. The exposed edge of the slab shall be carefully finished with an edging tool having a radius of 1-1/2 inch.

3.03 CURING

- A. The concrete shall be continuously cured for a period of at least 72 hours. Curing shall be commenced after finishing has been completed and as soon as the concrete has hardened sufficiently, to permit application of the curing material without marring the surface.
- B. Wet burlap, white-pigmented curing compound, waterproof paper or polyethylene sheets may be used for the curing of grey concrete only.

3.04 COLORED CONCRETE (NOT USED)

- A. Colored – Conditioned Concrete shall be placed, finished, and cured in strict accordance with applicable requirements of this Section and Sections 03010, 03370, and the requirements of the chosen manufacturer.

3.05 MEASUREMENT AND PAYMENT

- A. Measurement and payment will be based on the actual quantities installed as more specifically discussed and described in Section 01025 for MEASUREMENT AND PAYMENT.

END OF SECTION 02510

SECTION 02513
ASPHALTIC CONCRETE PAVING - GENERAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. This section of the specifications covers the control and general conduct of asphalt paving construction for roads, parking, walks and court areas.
- B. All work within the right-of-way shall be constructed using materials and methods in accordance with the drawings, City of Fort Lauderdale Public Works Standard Details.
- C. Provide all labor, materials, necessary equipment and services to complete the Asphaltic Concrete Paving work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".
- D. Including, but not necessarily limited to the following:
1. Preparation of subgrade.
 2. Installation and compaction of base course.
 3. Spreading of asphalt surface course.

1.03 RELATED WORK

- A. Section 02200 – Earthwork
- B. Section 02400 – Storm Drainage Facilities

1.04 TRAFFIC CONTROL

- A. The DBF shall provide and maintain access to and from all properties along the line of DBF'S work. The DBF shall also provide temporary bypasses and maintain them in a safe and usable condition whenever the public cannot do detouring of traffic to parallel routes without hardship or excessive increases in travel.

1.05 SPECIAL SUBGRADE CONDITIONS

- A. When special subgrade conditions are encountered for which these "Asphaltic Concrete Paving Specifications" are not applicable, portions of these specifications shall be deleted or revised to provide a properly finished paved surface. A requested revision or deletion of the specifications shall be accompanied with reports and laboratory tests on existing field conditions. Any change from these "Asphaltic Concrete Paving Specifications" shall be approved by the CITY and shall be in effect only for a specified area or paving project.

SECTION 02513
ASPHALTIC CONCRETE PAVING - GENERAL

1.06 QUALITY ASSURANCE

A. D.O.T. Standard Specifications.

1. Work and materials shall conform to all applicable requirements of Florida Department of Transportation "Standard Specifications for Road and Bridge Construction – Latest Edition" (referred to herein as D.O.T.).

B. American Society for Testing and Materials.

1. ASTM 3515-80 "Standard Specification for Hot-Mixed, Job Laid, Bituminous Paving mixtures."

1.07 SUBMITTALS

- A. Provide copies of materials, notarized certificates of compliance signed by material producer and DBF, certifying that each material item complies with, or exceeds, specified requirements.**

1.08 JOB CONDITIONS

- A. Apply prime and tack coats when ambient temperature is above 50 degrees, and when temperature has not been below 35 degrees for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.**
- B. Construct asphalt concrete surface course only when atmospheric temperature is above 40 degrees, and when base is dry. Base course may be placed when air temperature is above 30 degrees and rising.**

1.09 LOCATIONS, LAYOUT AND GRADES

- A. Locate and layout paved areas and right-of-ways with reference to benchmarks, property lines or buildings according to the drawings and as accepted by the CITY.**
- B. Determine locations of paved edges and right-of-way line from surveyor's permanent reference monuments and information on the drawings.**
- C. Where permanent reference monuments are not available, obtain proper line locations from authorities having jurisdiction.**
- D. Establish and maintain required lines and elevations.**

PART 2 - PRODUCTS

2.01 FILL

- A. All fill shall be clean rock and sand (maximum rock size = 1 inch).**
- B. Fill shall be compacted thoroughly as per Section 02200 - Earthwork.**

Exhibit B
Technical Specifications

02513- 2

**SECTION 02513
ASPHALTIC CONCRETE PAVING - GENERAL**

2.02 LIMEROCK

- A. Limerock shall be obtained from pits for which all overburden has been removed previous to blasting and shall show no tendency to air slake and must undergo the following chemical requirements.

	<u>Percent</u>
1. Carbonates of Calcium	Min.70.0 (Miami Limerock) and Magnesium. 95.0 (Ocala Limerock)
2. Oxides of Iron and Aluminum	Max. 2.0
3. Organic Matter	Max. 0.5
4. Any constituents of other than those listed above shall be silica or inert material.	
5. The material shall be crushed to such size that not less than 97% shall pass a 3-1/2 inch sieve and it shall be graded uniformly down to dust. All fine material shall consist entirely of dust of fracture.	
6. Limerock from on-site may be used if the material meets the requirements of this section of the specifications.	

B. All limerock shall comply with requirements set forth under D.O.T. Section 911.

C. Equipment: The equipment for constructing the rock base shall be in first class working condition and shall include:

1. Three-wheel roller weighing not less than ten tons.
2. Self-propelled blade grader weighing not less than three tons. The wheelbase shall be not less than fifteen feet and blade length not less than ten feet.
3. Scarifiers shall have teeth space not to exceed 4-1/2 inches.
 - a. Provision for furnishing water at the construction site by tank or hose at a rate not less than 50 gallons per minute.

2.03 PRIME COAT

- A. Prime coat shall be Grade RC-70, cut-back asphalt, D.O.T. Section 916-2.
- B. Prime coat shall have full compatibility with surface treatment asphalt.
- C. The bituminous material shall conform to the requirements of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Section 300-2.
- D. The sand for cover shall be clean dry sand.

Exhibit B
Technical Specifications

02513- 3

SECTION 02513
ASPHALTIC CONCRETE PAVING - GENERAL

2.04 TACK COAT

- A. The bituminous material to be used for the tack coat shall conform to the requirements of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Section 300-2.

2.05 ASPHALT

- A. The asphaltic concrete surface course shall be in accordance with the City of Fort Lauderdale, Florida Department of Transportation Standard Specifications for Friction Course, Superpave, Type S-1 and Type S-3, Asphaltic Concrete Surface Course.
- B. Pavement within public road right-of-way, which has been disturbed by this construction, shall be replaced with the same type and thickness to match the existing pavement section.
- C. General composition of mixtures:
2. The aggregate in the asphaltic concrete shall be crushed stone and manufactured sand screening of natural sand or combination of both when necessary to meet requirements of composition of mix. All aggregate shall have a Los Angeles abrasion loss of less than 40%.
 2. The mineral aggregate shall be so graded, and the prescribed constituents, prepared as hereinafter set out, shall be combined in such proportions as to produce a mixture conforming to the following general composition limits by weight:

<u>Constituent</u>	<u>Passing Sieve</u>	<u>S-1 Percent by Weight</u>	<u>S-3 Percent by Weight</u>
Course Aggregate	3/4"	100	100
	1/2"	80-100	100
	3/8"	75-93	88-100
	No. 4	47-75	60-90
Total Course Aggregate	No. 10	31-53	40-70
Fine Aggregate	No. 40	19-35	20-45
	No. 80	7-21	10-30
Filler	No. 200	2-6	2-6
<u>Constituent</u>		<u>Percent by Weight</u>	
Total Fine Aggregate and Filler	No. 10	100	100
Total Mineral Aggregate		100	100
Total Mix		100	100
Total Mineral Aggregate		91-95	

Exhibit B
 Technical Specifications

02513- 4

SECTION 02513
ASPHALTIC CONCRETE PAVING - GENERAL

Asphalt Cement	5-9*
(Bitumen) Total Mix	100

*For highly absorptive aggregates the upper limit may be raised.

2.06 SEAL COATING

- A. Homogeneous mixture of emulsified coal tar pitch, asbestos, sand and other inert fillers. It shall be easily remixed if settlement occurs in storage (except in the case of freezing). It shall be capable of application and complete coverage by rubber squeegee, brush, or approved mechanical method, to the surface of bituminous pavements at the spreading rate of point two (.2) to point three (.3) gallons per square yard in two (2) coats.
- B. Approved product: "TARFEX" manufactured by Bitucote Products Co. or approved equal.

PART 3 - EXECUTION

3.01 BARRICADES

- A. Provide substantial temporary barricades around all areas of operation and maintain until work under this section is completed and approved.
- B. Install temporary traffic markers, signals, and signs as per the City of Fort Lauderdale requirements for:
 - 1. Eliminate potentially hazardous conditions.
 - 2. Maintain adequate traffic patterns free of conflict with work under this Contract.

3.02 PREPARATION OF SUBGRADE

- A. This work consists of bringing the bottom of excavations and top of embankments of the roadway between the outer limits of the shoulders or base course to a surface conforming to the grades, lines, and cross sections shown on the plans. The subgrade shall be of uniform density ready to receive the rock base of the paving course.
- B. All soft and yielding material and other portions of the subgrade which will not compact readily shall be removed and replaced with suitable material and the entire subgrade brought to line and grade to provide a foundation of uniform compaction and supporting power.
- C. Stumps, roots, and other deleterious organic matter encountered in the preparation of the subgrade shall be removed.
- D. Where fills are required on areas covered or partly covered by existing paving, the entire area of such existing paving shall be scarified to a depth of at least six inches, and the scarified material spread evenly over the area to be filled to a width not less than that of the proposed paving.
- E. Material for fills shall consist of sand or other suitable material approved by the CITY free from stumps, roots, brushes, and other deleterious organic matter.
- F. Where fill is more than one foot (1 foot) in depth, the backfill material above the ground water

Exhibit B
 Technical Specifications

02513- 5

**SECTION 02513
ASPHALTIC CONCRETE PAVING - GENERAL**

table shall be compacted on one (8 inch) depth lift. Each individual layer of fill under the rock base shall have a density as specified in Section 02200, Paragraph 3.14.I. unless shown otherwise on the plans. Each individual layer of fill under the shoulder area shall have a density as specified in Section 02200, Paragraph 3.14.I., unless shown otherwise on the plans.

- G. The bottom of all excavated areas and the top of all fills where rock base is to be constructed shall be thoroughly compacted by rolling. Water shall be used to insure thorough compaction. The stability of the top 12 inch thickness of the subgrade immediately under the base, for the full base width plus six (6) inches on each side, shall be at least LBR 40 as determined by AASHTO T-180.
- H. Bring subgrade, which has been properly filled and shaped to a firm unyielding surface, by rolling an entire area with an approved vibratory power roller weighing a minimum of 10 tons.
 - 1. Thoroughly compact area inaccessible to the roller with approved hand tamper.
 - 2. Apply water sufficiently to compact the subgrade where the subgrade is of a dry, sandy nature and cannot be rolled.
- I. The subgrade shall be maintained free from ruts, depressions or other irregularities until rock base material is spread.
- J. For all roads and streets other than state highways, the stabilized subgrade shall have a minimum Limerock Bearing Ratio (LBR) of 40, unless otherwise noted on the plans.
- K. Where the bearing value of the existing subgrade is adequate without addition of stabilizing material, the subgrade shall be scarified and disked, harrowed, bladed or tilled for removal of boulders, roots, etc. to assure uniformity and thorough mixing of material to the full width and depth of required stabilization. The compacted subgrade shall conform to the lines, grades and cross-section shown on the plans.
- L. Test subgrade for crown and elevation after preparation and immediately before base of paving course is laid.
 - 1. Remove or add material and compact to bring to a correct elevation and uniform bearing if the subgrade is found not to be at the specified elevation at all points.
 - 2. Adjust the MAS rims, catch basin frames and valve boxes where necessary to match proposed finish grade.

3.03 CONSTRUCTION OF BASE COURSE

- A. This work consists of construction of lime rock base course for the asphaltic concrete wearing surface. The base course shall be constructed on the prepared subgrade with eight (8) inch thick limerock bases constructed in two four-inch lifts as shown on the drawings. Twelve (12) inch thick limerock bases shall be constructed in two six-inch lifts. The limerock base shall be a minimum LBR of 100 and shall extend six (6) inches beyond the edge of the asphaltic concrete on each side.
- B. Spreading Rock: The rock shall be transported to the points where it is to be used over rock previously placed and dumped on the end of the preceding spread. It shall then be spread uniformly with hand tools, or mechanical equipment. In no case shall rock be dumped directly on the subgrade. No hauling shall be done over the subgrade.

Exhibit B
Technical Specifications

02513- 6

SECTION 02513
ASPHALTIC CONCRETE PAVING - GENERAL

C. Compacting Rock

1. Following spreading, the rock shall be rolled with a three-wheel roller weighing not less than ten tons, water being added as required, until the entire depth of base is compacted into a dense unyielding mass.
2. No greater area of rock base shall be placed during any one day than that which can be rolled and compacted on the same day.

D. Finishing Base

1. After watering and rolling, the entire surface shall be thoroughly scarified to a depth not less than four inches (4") and shaped to exact crown and cross section, re-watered and again thoroughly rolled. Rolling shall continue until the entire depth of base is bonded and compacted into a dense, unyielding mass, true to grade and cross section.
 - a. Any irregularities, which may develop in the surface during such finishing, shall be corrected by the removal or addition of rock as the case may be.
 - b. If at any time the subgrade material becomes churned up and mixed with the base rock, the DBF shall 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.
 - c. Where 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 DBF shall remove such cracks or checks by re-scarifying, reshaping, watering, rolling and adding rock where necessary.
 - d. During final compacting operations, if grading 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 tests on the finished base.

E. Inferior Rock: If in the opinion of the CITY at any time during the progress of the work, rock of inferior quality is being delivered to the construction site, a laboratory analysis of the rock shall be made. Should the results of such tests indicate that the rock does not conform to specifications, the DBF shall, at DBF's own expense, remove such inferior material from the area indicated and deliver and spread satisfactory rock on said area.

F. Testing Surface: The finished surface of the rock base shall be true to the required cross section. Any irregularities in the grade greater than 1/4 inch, as determined by placing a ten-foot straight edge parallel with the centerline, shall be corrected by scarifying to a depth of three inches (3"), removing or adding rock as may be required and again watering, rolling, and compacting the scarified area. In testing the surface for irregularities, the measurements under the straight edge shall not be taken in small holes caused by individual pieces of rock having been pulled out by the road grader.

G. Thickness Determination: Thickness of the base shall be measured by intervals as required by the CITY. Measurements shall be taken at various points on the cross section. The measurements shall be taken in holes through the base of not less than three inches (3") in diameter. Where the base is more than 1/2 inch less than the required compacted thickness, the DBF shall correct such areas by scarifying and adding rock. The affected areas shall then

Exhibit B
Technical Specifications

02513- 7

SECTION 02513
ASPHALTIC CONCRETE PAVING - GENERAL

be watered, rolled and brought to a satisfactory state of completion, and of required thickness and cross section.

- H. Density: An average required density shall be as specified in Section 02200, Paragraph 3.14.I at intervals acceptable to the OWNER. No section of base shall be accepted when more than 10% of tests fall below 98% of maximum density and in no case shall a density of less than 96% of maximum be accepted.
- I. Testing: The DBF shall coordinate with CITY for all testing. All test shall be made in accordance with AASHTO, T-180 for each class of material in the subgrade and base.
 - 1. In place density tests in accordance with AASHTO T-147 shall be made in the locations shown on the plans. Two copies of the test reports will be sent directly to the CITY for evaluation.
 - 2. Any material, which fails to meet these specifications, shall be removed, replaced, and retested, all at the DBF's expense.
 - 3. Tests shall be taken at least every 1,000 square yards and taken at locations and lifts as directed by the CITY.

3.04 PRIME COAT FOR BASE COURSE

- A. Cleaning the prepared base:
 - 1. Before any bituminous material is applied, all loose material: dust, dirt, caked clay and foreign matter which might prevent proper bond with the existing surface shall be moved to the shoulders, to the full width of the treatment, by means of revolving brooms or approved mechanical sweepers and by mechanical blowers, of approved types, supplemented by hand sweeping. Dust and other loose materials not removed by mechanical means shall be removed with hand brooms. Particular care shall be taken to clean the outer edges of the strip to be treated in order to ensure that the prime coat will adhere. Sweeping and blowing shall be continued until all the loose dust and dirt is removed from the surfaces.
 - 2. Application of bituminous material shall be made during the same day surface has been swept and as soon as practical thereafter.
- B. Application for prime coat:
 - 1. The bituminous material shall be applied to the clean dry surface of the rock base at such temperature as will insure uniform distribution. The amount applied will be at the rate of approximately 0.10 to 0.20 gallons per square yard of base area. The application shall be made by means of self-propelled pressure distributor operating under a pressure not less than 20 pounds per square inch. Application of bituminous material shall be made on only one-half of the width of base at one time.
 - 2. The primed base shall then be covered with a uniform layer of clean sand and kept thoroughly and uniformly covered by additional sand or sweeping until it shows no signs of picking up under traffic. For a period of one week after priming, the DBF shall again broom any area where insufficient cover sand or excess of bituminous material causes "bleeding" and, if necessary, spread additional sand on such area.

Exhibit B
Technical Specifications

02513- 8

SECTION 02513
ASPHALTIC CONCRETE PAVING - GENERAL

- C. Prime coat finish: After prime has cured or sat and been sanded, the shoulder shall be shaped to conform to all grade lines and cross sections and the entire area shall be rolled and compacted with a rubber-tired roller or a power roller before asphalt surface is laid on the finished base.

3.05 BITUMINOUS TACK COAT

- A. Before applying any bituminous material, all loose material: dust, dirt and foreign material, which might prevent proper bond with the existing surface, shall be removed for the full width of the application.
- B. Application for tack coat:
1. The surface to receive the tack coat shall be clean and dry. The tack coat shall be clean and dry. The tack coat shall be applied with a pressure distributor except that on small jobs, if approved by the CITY, the application may be made by other approved mechanical methods or by hand methods. The pressure distributor shall operate at a pressure not less than 20 pounds per square inch and at a consistency such that it can be properly pumped and sprayed uniformly over the surface.
 2. The bituminous material shall be applied in a thin uniform layer. The rate of application shall be between 0.02 and 0.10 gallon per square yard. The tack coat shall be applied sufficiently in advance of the laying of the wearing surface to permit drying but shall not be applied so far in advance that it might lose adhesiveness as a result of being covered with dust or other foreign material. The tack coat surface shall be kept free from traffic until the wearing surface is laid.

3.06 ASPHALTIC CONCRETE WEARING SURFACE COURSE

- A. Cleaning and preparing base:
1. Prior to the laying of the asphaltic concrete, the base of pavement to be covered shall be cleaned of all loose deleterious material by the use of power brooms or blowers. A tack coat shall be applied on all pavements. The tack coat shall not be applied so far in advance of laying operations as to allow shifting and sand or weather conditions to nullify its effectiveness.
 2. After the surface has been thoroughly cleaned, all holes shall be filled with asphaltic concrete, if necessary, and thoroughly compacted to conform to the existing surface and to form a smooth surface.
- B. Placing asphaltic concrete: The asphaltic concrete surface course shall be applied after the tack coat after a reasonable permitted time for drying but not to an extent that the tack coat is allowed to lose its adhesiveness.
1. Machine spreading: Upon arrival the mixture shall be dumped into the approved mechanical spreader and immediately spread and struck off to the full width required and to the appropriate loose depth for each successive course that when the work is completed the required weight of the mixture per square yard or the specified thickness will be secured. An excessive amount of mixture shall be carried ahead of the screen at all times. Hand raking shall be done behind the machine as required.

Exhibit B
Technical Specifications

02513- 9

SECTION 02513
ASPHALTIC CONCRETE PAVING - GENERAL

2. Hand spreading: In limited areas, where, on account of irregularities or unavoidable obstacles, the use of mechanical spreading and finishing equipment is impractical, the mixture may be spread by hand, when so authorized by the CITY.
 3. The mixture shall be laid only when the surface to be covered is dry and only when weather conditions are suitable.
 4. All structures which will be in actual contact with asphaltic mixture, including the face or surface of curbs or gutters and the vertical faces of existing pavements, shall be painted with a uniform coating of asphalt material to provide a closely bonded, watertight joint.
 5. Where necessary, due to the traffic requirements, the mixture shall be laid in strips in such manner as to provide for the passage of traffic.
 6. Any mixtures caught in transit by a sudden rain may be laid at the DBF's risk. In no case shall the mixture be laid while rain is falling or when there is water on the surface to be covered.
 7. The depth of the layer being spread shall be gauged as directed, and where the thickness fails to average the specified thickness, immediate steps shall be taken to correct the depth.
 8. Before any rolling is started, the course surface shall be checked, any inequalities adjusted, and all drippings, fat sand accumulations from the screed and fat spots from any source shall be removed and replaced with satisfactory material.
 9. Straight-edging and back patching shall be done after initial completion has been obtained and while the material is still hot. Any irregularity greater than 1/4 inch either longitudinally or transversely shall be corrected at this time.
 10. No skin patching shall be done. When a depression is to be corrected while the mixture is hot, the surface shall be well scarified before the addition of fresh mixture. If irregularities occur and are not corrected while the mixture is still hot, the irregularities shall be cut out the full depth of the layer and replaced with fresh mixture.
- C. Compacting mixture: After the spreading, the mixture shall be rolled when it has set sufficiently or come to the proper condition to be rolled, and when the rolling does not cause undue displacement or shoving.
1. The motion of the roller shall at all times be slow enough to avoid displacement and shall at once be corrected by the use of rakes and fresh mixture where required. The rolling shall include all transverse, longitudinal, and diagonal rolling, as may be necessary to obtain the maximum density.
 2. The seal rolling with tandem steel rollers weighing from five to eight tons shall follow as close behind the spreader as is possible without picking up or displacing or blistering the material.
 3. Rolling with the self-propelled pneumatic-tired rollers shall follow as soon as possible and as close behind the seal rolling as the heat of the mixture will permit. The rolling shall be done while pavement temperature is between 175° and 240°F, and to such an extent that the self-propelled traffic roller shall cover every area of the surface with at least ten passes. Final rolling with tandem steel rollers shall be done after the rolling

Exhibit B
Technical Specifications

02513- 10

SECTION 02513
ASPHALTIC CONCRETE PAVING - GENERAL

with self-propelled pneumatic tired rollers is completed. This final rolling shall be done before the pavement temperature is lower than 175°F and shall be continued until all roller marks or tire marks are eliminated.

4. Self-propelled pneumatic rollers shall be used for the rolling of patching and leveling courses. At the option of the DBF, a steel-wheeled roller may be used to supplement the self-propelled pneumatic-tired rollers but not more than one steel-wheeled roller may be used in conjunction with the necessary number of self-propelled pneumatic-tired rollers. After final completion, the finished pavement shall at no point have a density less than 95% of the laboratory compacted density.
 5. Rolling with the self-propelled pneumatic-tired roller shall proceed at a speed from six to twelve miles per hour and the rate of rolling shall not exceed 3,000 square yards per hour per roller. A sufficient number of self-propelled pneumatic-tired rollers shall be used so that the rolling of the surface for the required number of 10 passes within this maximum rolling rate shall not delay any other phase of the placing operation and not result in excessive cooling of the mixture before the rolling is complete. In the event that the rolling is not properly maintained to schedule as outlined above, the laying operation shall be discontinued until the rolling operations are sufficiently caught up.
 6. In all places inaccessible to a roller, such as adjacent to curbs, headers, gutters, bridges, MAS, etc., the required compaction shall be secured with tamps. Depressions, which may develop before the completion of the rolling, shall be remedied by loosening the mixture laid and adding new material to bring such depressions to a true surface.
 7. Should any depressions remain after final compaction has been obtained, the mixture shall be removed sufficiently, and new material added to form a true and even surface. All high spots, high joints and honeycombs shall be adjusted as directed by the CITY.
 8. The mixture, after compaction, shall be of the thickness shown on the plans. After compactions, at no place on the surface shall an excess of asphalt be shown and any area showing such excess or other defect, shall be cut out and replaced with fresh mixture and immediately compacted to conform with the surrounding area. Any mixture which becomes loose or broken, mixed with dirt in the wearing course shall be removed and replaced with fresh mixture which shall be immediately compacted to conform with surrounding areas.
 9. Gasoline or oil from rollers shall not be allowed to deposit on the pavement and any pavement damaged by such deposits shall be removed and replaced as directed by the CITY.
 10. Any mixture remaining unbonded after rolling shall be removed and replaced.
- D. Protection of pavement: After the completion of the pavement, no vehicular traffic of any kind shall be permitted on the pavement until it has set sufficiently as approved by the CITY.
- 3.07 ABUTTING EXISTING PAVING
- A. Meet elevation of existing paving and structures, facilities and utilities where applicable by sawcutting and removing no less than two (2) feet from abutment. Milling of asphalt for a width of two (2) feet is an alternative if approved by CITY. Do not cover access covers, MAS tops, water meters or other similar devices.

Exhibit B
Technical Specifications

02513- 11

SECTION 02513
ASPHALTIC CONCRETE PAVING - GENERAL

3.08 PAVEMENT EDGES

- A. Make edges of paved area conform to details and sections as shown on drawings.

3.09 SEAL COATING

- A. Preparation of surface: Pavement to be sealed must be sound and free of loose dust, dirt, stones, or other foreign matter:

1. Repair any breaks or holes.
2. Scrape off accumulations of oil or fuel drippings and scrub with detergent and water. Remove all traces of detergent.
3. Soft or damaged spots must be repaired.
4. Flush entire area with clean water.
5. Pavement should be damp (no puddles or excess water) when seal coating is applied.

- B. MIXING: Stir seal coating to a uniform consistency, use no solvents for thinning. Dilute seal coating with ten (10) percent to twenty (20) percent clean water, stirring to uniform consistency.

- C. Application:

1. Seal coat may be applied to dampened surface with a rubber squeegee, soft bristled push broom, or approved mechanized equipment.
2. Seal coating may be poured directly onto pavement in a ribbon or window. Squeegee is placed on pavement at a slight angle to edge line of pavement and pulled in a window along pavement in parallel lines, always working excess material toward bottom edge of squeegee.
3. Seal coating should be applied in two (2) thin coats. After first coat is completely dry to touch, a second coat may be applied at right angles to the first. Rate of application will depend on porosity of surface.
4. Allow to cure for twenty-four (24) hours before opening to traffic.
5. Do not apply seal coating when temperature is below fifty (50) degrees Fahrenheit, or falling, before sealer is dry, or rain appears imminent or forecast.
6. Apply in strict accord with manufacturers published instructions.

3.10 FIELD QUALITY CONTROL

- A. Test in place asphalt concrete course for compliance with requirements for thickness and surface smoothness. Repair or remove and replace unacceptable paving as directed by OWNER's Representative.

1. In-place compacted thickness will not be acceptable if exceeding following allowable variation from required thickness:

Exhibit B
Technical Specifications

02513- 12

SECTION 02513
ASPHALTIC CONCRETE PAVING - GENERAL

- a. Base Course: Not greater than 1/2 inch of specified thickness.
- b. Surface Course: Not greater than 1/4 inch of specified thickness.
- 2. Test finished surface of each asphalt concrete course for smoothness, using 10-foot straight edge applied parallel with, and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding the following tolerances for smoothness.
 - a. Base Course Surface: 1/4 inch.
 - b. Wearing Course Surface: 1/8 inch.
- B. Check surface area at intervals as directed by the CITY.
- C. Finish grade shall be within ± 0.01 feet of the grades indicated on the plans or ± 0.05 feet as long as no ponding of water is observed after final paving.
- 3.11 CLEAN UP
 - A. Remove all debris and excess material immediately from project site.
 - B. Take down all barricades and temporary traffic markers, signals and signs only after all work included in this section is finished and inspected, and only after so directed by the CITY.
 - C. Leave project area clean, orderly and free of any hazardous conditions.
- 3.12 CONSTRUCTION OF SWALES
 - A. This work consists of regrading existing swales and construction of new swales adequate for conveying storm water along the right-of-way to catch basins. The swale shall be shaped according to the cross section shown on the plan. In areas adjacent to existing roadways all swales shall be regraded to meet the City of Fort Lauderdale standards, unless otherwise noted.
 - B. Requirements: All soft and yielding material and other portions of the swale which will not compact readily shall be removed and replaced with suitable material and the entire swale area brought to the proper grade. Stumps, roots, and other deleterious organic matter encountered during the shaping for the swale shall be removed.
 - C. The bottom of all excavated areas and the top of all fills of swale areas shall be thoroughly compacted by rolling. Water shall be used as necessary to insure thorough compaction. The stability of the top 12-inch thickness of swale area shall be at least LBR 40. Sufficient stabilizing material shall be added to swale area soil as required to provide the specified stability.
 - D. The DBF shall place sod over existing areas damaged by construction. The sod shall match the existing sod type in the affected areas.
- 3.13 MEASUREMENT AND PAYMENT
 - A. Measurement and payment will be based on the actual quantities installed as more specifically discussed and described in SECTION 01025 for MEASUREMENT AND PAYMENT.

END OF SECTION 02513

Exhibit B
Technical Specifications

02513- 13

SECTION 02577
PAVEMENT MARKING AND CAR STOPS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. The work covered by this section shall include the furnishing of all labor, equipment and materials necessary to construct and install all pavement marking, striping and car stops in accordance with the plans and these specifications.

1.03 RELATED WORK

- A. Section 02513 - Asphaltic Concrete Paving - General

1.04 QUALITY ASSURANCE

- A. Perform all work in accordance with the requirements of local agencies.

1.05 SUBMITTALS

- A. Submit copies of product and material information and data.

PART 2 - PRODUCTS

- 2.01 Chlorinated rubber-alkyd type, as per Fed Spec. No. TT-P-115, Type III, or shall be Code T-1, conforming to Section 971-12.2 of the Florida Department of Transportation Standard Specifications.

1. Paint shall be factory mixed, quick drying and non-bleeding type.
2. Color shall be as per D.O.T. requirements.
3. Striping, arrows, lane markers and stop bars shall be provided with paint containing reflective additive.

- 2.03 Car stops shall be of the size and dimensions of existing car stop being replaced. Concrete for car stops shall have a minimum compressive strength of 2,500 psi.

- 2.04 Reflectors shall be in accordance with the City of Fort Lauderdale Minimum Standards.

PART 3 - EXECUTION

3.01 TRAFFIC AND LANE MARKINGS

- A. Sweep dust and loose material from the sealed surface.
- B. Apply paint striping as indicated on the drawings, with suitable mechanical equipment to produce uniform straight edges.

Exhibit B
Technical Specifications

**SECTION 02577
PAVEMENT MARKING AND CAR STOPS**

1. Apply in not less than (2) two coats as per manufacturer's recommended rates of applications.
- C. Protect pavement markings until completely dry in accordance with manufacturers recommendations.

3.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment will be based on the actual quantities installed as more specifically discussed and described in SECTION 01025 for MEASUREMENT AND PAYMENT.

END OF SECTION 02577

Exhibit B
Technical Specifications

02577 - 2

5/8/2020 1:34 PM

p. 247

**SECTION 02601
SUBTERRANEAN STRUCTURES**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. The work covered by this section shall include the furnishing of all labor, equipment, services, materials, products and tests to perform all operations in connection with the construction of all new structures or modifications or abandonment of existing structures as shown on the plans, defined in these specifications and subject to the terms and conditions of this contract, including, but not limited to, maintenance access structures (MAS), conflict structures, catch basins, and inlets.

1.03 RELATED WORK

- A. Section 02200 - Earthwork
B. Section 02221 - Excavation and Backfilling for Utilities
C. Section 02400 - Storm Drainage Facilities

1.04 SUBMITTALS

- A. The DBF shall furnish the CITY shop drawings of the precast drainage structures and MAS for approval. Shop drawings should illustrate all dimensions, reinforcements and specifications.

PART 2 - PRODUCTS

2.01 MORTAR

- A. Mortar for use in constructing and plastering sewer structures shall conform to ASTM C-270, "Specifications for Mortar for Unit Masonry". A Portland cement-hydrated lime mixture or a masonry cement may be used provided that the same materials are used throughout the project.
B. Mortar materials shall be proportioned by volume and shall consist of one-part Type II Portland Cement to two parts aggregate (sand). Portland Cement shall conform to ASTM C-150, "Specifications for Portland Cement". Aggregate shall conform to ASTM C-144, "Specifications for Aggregate for Masonry Units."

2.02 PRECAST CONCRETE MAS

- A. Precast MAS sections shall conform to ASTM C-478, Specifications for Precast Reinforce Concrete MAS Sections as modified thereto. Concrete shall attain a minimum compressive strength of 4,000 pounds per square inch at 28 days. Minimum wall thickness shall be 8 inches.
B. Unless otherwise specified on the plans, all joints shall be made with neoprene or rubber "O" ring compression joints; mastic joint sealing compound or approved equal. After assembly, all joints shall be filled with mortar and painted to provide a smooth surface without joint voids.

Exhibit B
Technical Specifications

02601 - 1

**SECTION 02601
SUBTERRANEAN STRUCTURES**

- C. The base and walls that compose the bottom section of precast MAS shall be of monolithic construction, minimum 8 inches thick, and the edge of the base slab shall project a minimum 4 inches beyond the outside diameter of the wall.
- D. Holes for piping shall be 6 inches larger than the outside diameter of the respective pipe. After the pipe is set, the void space between the pipe and the hole perimeter shall be completely filled with non-shrinking, quick-setting, waterproof cement mortar and struck smooth.
- E. The minimum height of precast base section shall be 36 inches from the bottom of the base slab; however, no holes for piping shall be cast less than 8 inches from the top of the base section or less than 2 inches from the top of the base slab.
- F. The maintenance access structure walls shall be coated inside and outside with 2 coats of coal tar epoxy. The first coat shall be red and the second coat shall be black. Each coat shall have a thickness of 8 mil for a total thickness of 16 mil outside and 16 mil inside.

2.03 ENDWALLS, CATCH BASINS, INLETS AND JUNCTIONS BOXES

- A. Endwalls, valve vaults, catch basins, inlets and junction boxes shall be constructed at the locations shown and to the dimensions indicated on site plans. Unless otherwise specified on the plans, inlets, junction boxes, catch basins, valve vaults and similar structures may be constructed of brick, concrete block, poured concrete or precast concrete. Precast catch basins shall conform to latest Portland Cement Association specifications. Concrete shall have not less than 4,000-pounds per square inch compressive strength at 28 days.
- B. Unless otherwise specified on the plans, all concrete for these structures shall be Class I concrete as specified in the Florida Department of Transportation "Standard Specifications for Road and Bridge Construction", latest revision, Section 345. Mortar for use in constructing and plastering shall be as previously set forth in this section.
- C. Brick shall be solid hard-burned clay conforming to ASTM Serial C-32-73, Grade MA. Concrete brick shall conform to ASTM Serial C-55-75, Grade P-I. Concrete block shall conform to ASTM Serial C-90-78, Grade PI.
- D. All brick or concrete block structures covered in this Section shall be plastered inside and outside with 1/2 inch of cement mortar. Inside surfaces shall be smooth and even.
- E. Base slabs and walls of concrete structures shall be constructed in a continuous pour between expansion joints.
- F. For each grate type inlet, two layers of Mirafi 140 fabric of "Poly Filter X" polypropylene material or approved equal, shall be sandwiched between 2 x 2 x 10/10 welded wire fabric cut to the grate size and attached to the underside of the grate. The sandwiched filter material shall be wired to the cross members of the grate each way on 4-inch centers. After inlet construction and the roadway construction is completed and the project site work (including landscaping) has been established, the filter material and fabric shall be removed with any retained silt or sand.

2.04 CASTINGS (INCLUDING FRAMES, COVERS AND GRATINGS)

- A. Iron castings shall conform to ASTM A-48, "Specifications for Gray Iron Castings", and shall be Class 30. Frames and grates may be Class 20.

Exhibit B
Technical Specifications

02601 - 2

**SECTION 02601
SUBTERRANEAN STRUCTURES**

- B. All castings shall be made of clean, even grain, tough grey cast iron. The castings shall be smooth, true to pattern and free from projections, san holes, warp and other defects. The horizontal surface of the frame cover seats and the under surface of the frame cover seat which rests upon the cover seat shall be machined. After machining, it shall not be possible to rock any cover that has been seated in any position in its associated frame. Machining shall be required only on those frames and covers intended for vehicular traffic.
- C. Bearing surfaces between cast frames, covers and grates shall be machined and fitted together to assure a true and even fit. Within areas of vehicular traffic, the frames, covers and gratings shall be machined-ground so that irregularity of contact will be reduced to a minimum and will be rattle-proof.
- D. All MAS covers shall be provided with concealed pick holes. Manufacturer's name and catalog number shall be cast on all frames, covers, grates, etc. Covers shall be lettered "Storm Sewer" or "Sanitary Sewer" as applicable and shall be plainly visible as shown on the plans. The MAS frames and covers shall be flush with finished grade.
- E. Grates and covers for inlets shall be as shown on the plans, set to the grades indicated and conforming with the requirements of the castings described above. Grates shall be furnished complete with frames specifically constructed to provide full bearing at all points of contract.

PART 3 - EXECUTION

3.01 CHANNELS

- A. Channels shall be accurately and smoothly formed in accordance with the plans. Channels shall be constructed of concrete with trowel-finished surfaces. The upper surface of the MAS shall be sloped toward the channels as shown.
- B. Drop pipe at sanitary sewer MAS shall be installed when the difference in elevation between the pipe invert and the invert at the center of the MAS exceeds two feet (2'), or where directed by the CITY. The drop MAS structure shall be built according to the plans and specifications.
- C. After channels are formed and section joints are pointed, the interior of the sanitary sewer MAS shall be painted with two coats of Koppers Bitumastic 300-M (7 mils per coat) or approved equal. The exterior shall be painted in a similar manner, if required by local regulations.
- D. Storm drainage structures are not required to be painted inside or outside. Provide finish and water proofing as specified in 3.02 and 3.03 below.

3.02 BRICKS

- A. All bricks shall be thoroughly wetted before being laid. Brick shall be laid by the above shove joint method so as to bond them thoroughly into the mortar. Headers and stretcher courses shall be so arranged as to bond and mass thoroughly. Joints shall be finished smooth and shall be not less than 1/4 inch or more than 1/2 inch in thickness.

3.03 MAS AND OTHER STRUCTURES

- A. All joints shall be finished watertight; all openings for sewers, frames, etc., in precast MAS and catch basins shall be cast at time of manufacture. Spaces around all piping entering or leaving MAS shall be completely filled with Embecco mortar or approved equal.

Exhibit B
Technical Specifications

02601 - 3

**SECTION 02601
SUBTERRANEAN STRUCTURES**

B. All MAS shall be set plumb to line and grade and shall rest on a firm carefully graded subgrade which shall provide uniform bearing under base.

C. Grout for MAS bottoms shall consist of broken block, brick and 2:1 cement mortar.

3.04 CLEANING AND MAINTENANCE

A. All structures shall be cleaned and maintained in workable condition until accepted by the CITY

3.05 ABANDONMENT OF EXISTING STRUCTURES IN PLACE

A. All structures shown on the drawings to be abandoned in place shall be removed to a minimum of 3 feet below existing grade and properly filled with material as in section 02200 paragraph 3.14. Excavation, backfill, and restoration shall be executed in accordance with requirements for removing existing and installing new structures.

3.06 MEASUREMENT AND PAYMENT

A. Measurement and payment will be based on the actual quantities installed as more specifically discussed and described in SECTION 01025 for MEASUREMENT AND PAYMENT.

END OF SECTION 02601

**SECTION 02610
PIPING, GENERAL**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. The DBF shall furnish and install all piping systems shown and specified, in accordance with the requirements of the Contract Documents. Each system shall be complete with all necessary fittings, hangers, supports, anchors, expansion joints, flexible connectors, valves, accessories, heat tracing, insulation, lining and coating, testing, disinfection, excavation, backfill and encasement, to provide a functional installation.
- B. The piping shown is intended to define the general layout, configuration, routing, method of support, pipe size, and pipe type. The mechanical drawings are not pipe construction or fabrication drawings. It is the DBF's responsibility to develop the details necessary to construct all mechanical piping systems, to accommodate the specific equipment provided, and to provide and install all spools, spacers, adapters, connectors, etc., for a complete and functional system.

1.03 RELATED WORK

- A. Division 2 as applicable.
- B. Section 02200 - Earthwork.
- C. Section 02221 - Excavation and Backfilling Utilities
- D. Section 02641 – Valves, General

1.04 REFERENCE STANDARDS

- A. Codes: All codes, as referenced herein are specified in Section 01090, "Reference Standards".

- B. Commercial Standards:

ANSI/ASME B1.20.1	Pipe Threads, General Purpose (inch).
ANSI B16.5	Pipe Flanges and Flanged Fittings, Steel Nickel Alloy and other Special Alloys.
ANSI/AWWA C100	Ductile Iron Pipe
ANSI/AWWA C900	Plastic Pipe
ANSI/AWWA C207	Steel Pipe Flanges for Water Works Service, Sizes 4 inch through 144 inch.
ANSI/AWWA C606	Grooved and Shouldered Joints.
ANSI/AWS D1.1	Structural Welding Code.

Exhibit B
Technical Specifications

02610 - 1

**SECTION 02610
PIPING, GENERAL**

ASTM A 307	Specification for Carbon Steel Bolts and Studs, 6,000 psi Tensile.
ASTM A 325	Specification for High-Strength Bolts for Structural Steel Joints.
ASTM D 792	Test Methods for Specific Gravity and Density of Plastics by Displacement.
ASTM D 2000	Classification System for Rubber Products in Automotive Applications.

1.05 SUBMITTALS

- A. The DBF shall submit complete shop drawings and certificates, test reports, affidavits of compliance, of all piping systems, in accordance with the requirements in Section 01340, "Shop Drawings, Product Data and Samples", and as specified in the individual sections. The shop drawings shall include all necessary dimensions and details on pipe joints, fittings, fitting specials, valves, appurtenances, design calculations, and material lists. The submittals shall include detailed layout, spool, or fabrication drawings which show all pipe spools, spacers, adapters, connectors, fittings, and pipe supports necessary to accommodate the equipment and valves provided in a complete and functional system.
- B. All expenses incurred in making samples for certification of tests shall be borne by the DBF.
- C. The DBF shall submit as part of the shop drawings a certification from the pipe fabricator stating that all pipes that are fabricated are subject to a recognized Quality Control Program. An outline of the program shall be submitted to the CITY for review prior to the fabrication of any pipe

1.06 QUALITY ASSURANCE

- A. Inspection: All pipes shall be subject to inspection at the place of manufacture. During the manufacture of the pipe, the CITY shall be given access to all areas where manufacturing is in progress and shall be permitted to make all inspections necessary to confirm compliance with the Specifications.
- B. Tests: Except where otherwise specified, all materials used in the manufacture of the pipe shall be tested in accordance with the applicable Specifications and Standards.

1.07 MANUFACTURER'S SERVICE REPRESENTATIVE

- A. Where the assistance of a manufacturer's service representative is advisable, in order to obtain perfect pipe joints, supports, or special connections, the DBF shall furnish such assistance at no additional cost to the OWNER

1.08 MATERIAL DELIVERY, STORAGE, AND HANDLING

- A. All piping materials, fittings, valves, and accessories shall be delivered in a clean and undamaged condition and stored off the ground, to provide protection against oxidation caused by ground contact. All defective or damaged materials shall be replaced with new materials.

Exhibit B
Technical Specifications

02610 - 2

**SECTION 02610
PIPING, GENERAL****1.09 CLEANUP**

- A. After completion of the work, all remaining pipe cuttings, joining and wrapping materials, and other scattered debris, shall be removed from the site. The entire piping system shall be handed over in a clean and functional condition.

PART 2 - PRODUCTS**2.01 GENERAL**

- A. All pipes, fittings, and appurtenances shall be furnished in accordance with the requirements of the applicable Sections of Division 2 and as specified herein.
- B. Lining: All requirements pertaining to thickness, application, and curing of pipe lining, are in accordance with the requirements of the applicable Sections of Division 2, unless otherwise specified.
- C. Coating: All requirements pertaining to thickness, application, and curing of pipe coating, are in accordance with the requirements of the applicable Sections of Division 2, unless otherwise specified. Pipes above ground or in structures shall be field-painted as directed by the CITY.
- B. Grooved Piping Systems: Piping systems with grooved joints and fittings may be provided in lieu of screwed, flanged, welded, or mechanical joint systems for ductile iron yard piping. (All piping above and below ground within the property limits of treatment plants, pump stations, and similar installations). All grooved couplings on buried piping must be bonded. To assure uniform and compatible piping components, all grooved fittings, couplings, and valves shall be from the same manufacturer. The DBF shall make the coupling manufacturer responsible for the selection of the correct style of coupling and gasket for each individual location.

2.02 DUCTILE IRON

1. Ductile iron shall conform to AWWA C 151. Ductile Iron Pipes and Fittings exterior surfaces shall be coated with a 100% polyamine epoxy specifically design for wastewater immersion and low permeation to H₂S gas. Material shall be TNEMEC PERMA-GLAZE, Series 435, or approved equal. It shall be applied in two (2) coats of 20 MILS (DFT) each (40 MILS Total DFT). Valves shall receive only the final 20 MILS (DFT) coat. Final color is to be beige. Surface preparation, priming and application shall be in accordance with the more stringent of the manufacturers recommendations or BCWWS specifications.
2. Ductile Iron Pipes and Fittings interior shall be coated with 40 MILS (DFT) of Protecto 401 or approved equal. Surface preparations and application shall be in accordance with the manufacturers recommendations. Certification of the manufacturer shall be provided.
3. Ductile iron shall conform to AWWA C 151. Ductile Iron Pipes and Fittings exterior surfaces shall be coated with a 100% polyamine epoxy specifically design for wastewater immersion and low permeation to H₂S gas. Material shall be TNEMEC PERMA-GLAZE, Series 435, or approved equal. It shall be applied in two (2) coats of 20 MILS (DFT) each (40 MILS Total DFT). Valves shall receive only the final 20 MILS (DFT) coat. Final color is to be beige. Surface preparation, priming and application shall be in accordance with the more stringent of the manufacturers recommendations or BCWWS specifications.

Exhibit B
Technical Specifications

02610 - 3

**SECTION 02610
PIPING, GENERAL**

2.03 PIPE FLANGES

- A. Flanges: Where the design pressure is 150 psi or less, flanges shall conform to either ANSI/AWWA C207 Class D or ANSI B16.5 150-lb class. Where the design pressure is greater than 150 psi, up to a maximum of 275 psi, flanges shall conform to ANSI/AWWA C207 Class E, Class F, or ANSI B16.5 150-lb class. However, AWWA flanges shall not be exposed to test pressure greater than 125 percent of rated capacity. For higher test pressures, the next higher rated AWWA flange or an ANSI-rated flange shall be selected. Where the design pressure is greater than 275 psi up to a maximum of 700 psi, flanges shall conform to ANSI B16.5 300-lb class. Flanges shall have flat faces and shall be attached with boltholes straddling the vertical axis of the pipe unless otherwise shown. Attachment of the flanges to the pipe shall conform to the applicable requirements of ANSI/AWWA C207. Flanges for miscellaneous small pipes shall be in accordance with the standards specified for these pipes.
- B. Blind Flanges: Blind flanges shall be in accordance with ANSI/AWWA C207, or with the standards for miscellaneous small pipes. All blind flanges for pipe sizes 12 inches and over shall be provided with lifting eyes in form of welded or screwed eyebolts.
- C. Flange Coating: All machined faces of metal blind flanges and pipe flanges shall be coated with a temporary rust-inhibitive coating to protect the metal until the installation is completed.
- D. Flange Bolts: All bolts and nuts shall conform to pipe manufacturers recommendations. Studs and bolts shall extend through the nuts a minimum of 1/4-inch. All-thread studs shall be used on all valve flange connections, where space restrictions preclude the use of regular bolts.
- E. Insulating Flanges: Insulated flanges shall have boltholes 1/4-inch diameter greater than the bolt diameter.
- F. Insulating Flange Sets: Insulating flange sets shall be provided where shown. Each insulating flange set shall consist of an insulating gasket, insulating sleeves and washers and a steel washer. Insulating sleeves and washers shall be one piece when flange bolt diameter is 1-1/2-inch or smaller and shall be made of acetal resin. For bolt diameters larger than 1-1/2-inch, insulating sleeves and washers shall be 2-piece and shall be made of polyethylene or phenolic. Steel washers shall be in accordance with ASTM A 325. Insulating gaskets shall be full-face.
- G. Insulating Flange Manufacturers, or approved equal:
1. JM Red Devil, Type E;
 2. Maloney Pipeline Products Co., Houston;
 3. PSI Products, Inc., Burbank, California.
- H. Flange Gaskets: Gaskets for flanged joints shall be full-faced, 1/16-inch thick compressed sheets of aramid fiber base, with nitrile binder and non-stick coating, suitable for temperatures to 700 degrees F, a pH of one to eleven, and pressures to 1000 psi. Blind flanges shall have gaskets covering the entire inside face of the blind flange and shall be cemented to the blind flange. Ring gaskets shall not be permitted.
- I. Flange Gasket Manufacturers, or approved equal:
1. John Crane, style 2160;

Exhibit B
Technical Specifications

02610 - 4

**SECTION 02610
PIPING, GENERAL**

2. Garlock, style 3000.

2.04 THREADED INSULATING CONNECTIONS

- A. General: Threaded insulating bushings, unions, or couplings, as appropriate, shall be used for joining threaded pipes of dissimilar metals and for piping systems where corrosion control and cathodic protection are involved.
- B. Materials: Threaded insulating connections shall be of nylon, Teflon, polycarbonate, polyethylene, or other non-conductive materials, and shall have ratings and properties to suit the service and loading conditions.

2.05 MECHANICAL-TYPE COUPLINGS (GROOVED OR BANDED PIPE)

- A. General: Cast mechanical-type couplings shall be provided where shown. The couplings shall conform to the requirements of ANSI/AWWA C606. All gaskets for mechanical-type couplings shall be compatible with the piping service and fluid utilized, in accordance with the coupling manufacturer's recommendations. The wall thickness of all grooved piping shall conform with the coupling manufacturer's recommendations to suit the highest expected pressure. To avoid stress on equipment, all equipment connections shall have rigid-grooved couplings, or harness sets in sizes where rigid couplings are not available, unless thrust restraint is provided by other means. The DBF shall have the coupling Manufacturer's service representative verify the correct choice and application of all couplings and gaskets, and the quality of work, to assure a correct installation.
- B. Couplings for Steel Pipe, Manufacturers, or approved equal:
1. Gustin-Bacon (banded or grooved);
 2. Victaulic Style 41 or 44 (banded, flexible);
 3. Victaulic Style 77 or 07 (grooved).
- C. Ductile Iron Pipe Couplings, Manufacturers, or approved equal:
1. EBAA Iron
 2. Romac
 3. Sigma

Note: Ductile iron pipe couplings shall be furnished with flush seal gaskets.

2.06 SLEEVE-TYPE COUPLINGS

- A. Construction: Sleeve-type couplings shall be provided where shown, in accordance with ANSI/AWWA C219 unless otherwise specified, and shall be of steel with steel bolts, without pipe stop, and shall be of sizes to fit the pipe and fittings shown. The middle ring shall be not less than 1/4-inch in thickness and shall be either 5 or 7 inches long for sizes up to and including 30 inches and 10 inches long for sizes greater than 30 inches, for standard steel couplings, and 16 inches long for long-sleeve couplings. The followers shall be single-piece contoured mill section welded and cold expanded as required for the middle rings. They shall be of sufficient strength

Exhibit B
Technical Specifications

02610 - 5

**SECTION 02610
PIPING, GENERAL**

to accommodate the number of bolts necessary to obtain adequate gasket pressures without excessive rolling. The shape of the follower shall be of such design as to provide positive confinement of the gasket. Buried sleeve-type couplings shall be epoxy-coated at the factory as specified.

- B. Pipe Preparation: The ends of the pipe, where specified or shown, shall be prepared for flexible steel couplings. Plain ends for use with couplings shall be smooth and round for a distance of 12 inches from the ends of the pipe, with outside diameter not more than 1/64-inch smaller than the nominal outside diameter of the pipe. The middle ring shall be tested by cold-expanding a minimum of one percent beyond the yield point, to proof-test the weld to the strength of the parent metal. The weld of the middle ring shall be subjected to air test for porosity.
- C. Gaskets: Gaskets for sleeve-type couplings shall be rubber-compound material that will not deteriorate from age or exposure to air under normal storage or use conditions. Gaskets for wastewater and sewerage applications shall be Buna "N," grade 60, or equivalent suitable elastomer. The rubber in the gasket shall meet the following specifications:
1. Color - Jet Black
 2. Surface - Non-blooming
 3. Durometer Hardness - 74 ± 5
 4. Tensile Strength - 1000 psi Minimum
 5. Elongation - 175 percent Minimum

The gaskets shall be immune to attack by impurities normally found in water or wastewater. All gaskets shall meet the requirements of ASTM D 2000, AA709Z, meeting Suffix B13 Grade 3, except as noted above. All gaskets shall be compatible with the piping service and fluid utilized.

- D. Insulating Couplings: Where insulating couplings are required, both ends of the coupling shall have a wedge-shaped gasket which assembles over a rubber sleeve of an insulating compound in order to obtain insulation of all coupling metal parts from the pipe.
- E. Restrained Joints: All sleeve-type couplings on pressure lines shall be harnessed unless thrust restraint is provided by other means. Harnesses shall be in accordance with the requirements of the appropriate reference standard, or as shown.
- F. Manufacturers or Equal:
1. JCM Industries
 2. Hymax
 3. Smith-Blair

2.07 FLEXIBLE CONNECTORS

- A. Flexible connectors shall be installed in all piping connections to engines, blowers, compressors, and other vibrating equipment, and where shown. Flexible connectors for service temperatures up to 180 degrees F shall be flanged, reinforced Neoprene or Butyl spools, rated for a working pressure of 40 to 150 psi, or reinforced, flanged duck and rubber, as best suited for the application. Flexible connectors for service temperatures above 180 degrees F shall be flanged

Exhibit B
Technical Specifications

02610 - 6

**SECTION 02610
PIPING, GENERAL**

braided stainless steel spools with inner, annular, corrugated stainless steel hose, rated for minimum 150 psi working pressure, unless otherwise shown. The connectors shall be 9 inches long, face-to-face flanges, unless otherwise shown. The manufacturer shall approve the final material selection. The DBF shall submit manufacturer's shop drawings and calculations.

2.08 EXPANSION JOINTS

- A. All piping subject to expansion and contraction shall be provided with sufficient means to compensate for such movement, without exertion of undue forces to equipment or structures. This may be accomplished with expansion loops, bellow-type expansion joints, or sliding-type expansion joints. Expansion joints shall be of stainless steel, monel, rubber, or other materials, best suited for each individual service. The DBF shall submit detailed calculations and manufacturer's shop drawings, guaranteeing satisfactory performance of all proposed expansion joints, piping layouts showing all anchors and guides, and information on materials, temperature and pressure ratings.

2.09 PIPE THREADS

- A. All pipe threads shall be in accordance with ANSI/ASME B1.20.

2.10 HIGH DENSITY POLYETHYLENE (HDPE) MATERIALS

- A. Resin and Material Requirements: All material shall be manufactured from a PE 4710 resin listed with the Plastic Pipe Institute (PPI) as TR-4. The resin material shall meet the specifications of ASTM D 3350 with a minimum cell classification of 445474C. HDPE pipe and fittings shall contain no recycled compounds except that generated in the manufacturer's own plant from resin of the same specification from the same raw material. HDPE products shall be homogeneous throughout and free of visible cracks, holes, foreign inclusions, voids, or other injurious defects.
- B. HDPE Pipe
1. Pipe shall be made of HDPE material with a minimum material designation code of PE4710 and with a minimum Cell Classification as noted in 2.01.A. The polyethylene compound shall be suitably protected against degradation by ultraviolet light by means of carbon black of not less than 2 percent. The manufacture of the HDPE resin shall certify the cell classification indicated.
 2. Pipe sizes 3" and large shall have a manufacturing standard of ASTM F 714, while pipe smaller than 3" shall be manufactured to the dimensional requirements listed in ASTM D 3035. Dimension Ratio (DR) and Outside Diameter (IPS/DIPS) shall be as specified on plans.
 3. Pipe shall meet AWWA C901 (1/2" to 3") or AWWA C906 (4" to 63") and shall be listed as meeting NSF-61.
 4. Pipe shall be manufactured by an ISO 9001 certified manufacturer. The pipe manufacturer shall have an ongoing Quality Control program for incoming and outgoing materials and shall assure that the pipe will meet the material requirements of this specification. HDPE resins for manufacturing of pipe shall be checked for density, melt flow rate, and contamination. The facility shall have the necessary testing equipment to verify that pipe meets the AWWA and NSF standards. Pipe shall be checked for outside diameter, wall thickness, length, and surface finish on the inside and outside. The Manufacturer's production facilities shall be open for inspection by the OWNER and DBF.

Exhibit B
Technical Specifications

02610 - 7

**SECTION 02610
PIPING, GENERAL**

5. All pipe shall be color coded for the intended service. The color coding shall be permanently coextruded stripes on the pipe outside surface as part of the pipe's manufacturing process. Painting HDPE pipe to accomplish color coding is not permitted. Color coding shall be as follows:
 - a. Sanitary Sewer – green
 - b. Potable Water Mains – blue
 - c. Force Mains – Brown
 - d. Reclaimed Water Mains – purple

C. HDPE Fittings

1. Butt Fusion Fitting: Fittings shall be made of HDPE material with a minimum material designation code of PE4710 and with a minimum Cell Classification as noted in 2.01.A. Fittings shall have a minimum pressure rating equal to or greater than the pipe to which they are joined unless otherwise specified on the plans or accepted by owner. All fittings shall meet the requirements of AWWA C901 or C906.
 - a. Molded fittings shall comply with the requirements of ASTM D 3261.
 - b. All fabricated elbows, tees, reducing tees and end caps shall be produced and meet the requirements of ASTM F 2206, as manufactured by ISCO Industries, Inc or other approved manufacturer holding an ISO 9001 quality system certificate. Each fitting will be marked per ASTM F 2206 section 10 including the nominal size and fitting EDR, which will meet or exceed the pipe DR identified for the project. Fabricated fittings shall be manufactured using a McElroy DataLogger to record fusion pressure and temperature and shall be stamped with unique joint number that corresponds to the joint report. A graphic representation of the temperature and pressure data for all fusion joints made producing fittings shall be maintained for a minimum of 5 years as part of the quality control and will be available upon request of owner. Test results to validate ASTM F 2206 section 7.3 and 9 shall be provided to owner or owner's representative upon request.
 - c. Socket fittings shall meet ASTM D 2683.
2. Electrofusion Fittings: Fittings shall be made of HDPE material with a minimum material designation code of PE 4710 and with a minimum Cell Classification as noted in 2.01.A. Electrofusion Fittings shall have a manufacturing standard of ASTM F1055. Fittings shall have a minimum pressure rating equal to or greater than the pipe to which they are joined unless otherwise specified on the plans. For potable water systems, all electrofusion fittings shall have AWWA approval.
3. Bolted Connections: Flanged and Mechanical Joint Adapters can be made to ASTM D 3261 or if machined, must meet the requirements of ASTM F 2206. Flanges and MJ Adapters shall be fused onto the pipe and have a minimum pressure rating equal to or greater than the pipe unless otherwise specified on the plans.
 - a. Flange Adapters shall meet the dimensional and material requirements of ASTM F 2880.
 - b. Metallic back-up rings (Van-Stone style lap joint flanges), shall have a radius on the inside diameter of the bore so as to be compatible with HDPE Flanges. Back

Exhibit B
Technical Specifications

02610 - 8

**SECTION 02610
PIPING, GENERAL**

up rings shall have bolt pattern that will mate with AWWA C207 Class D (or B or E), ASME/ANSI B 16.5 Class 150, ASME/ANSI B 16.1 Class 125, or ASME/ANSI B16.47 Series A.

- c. Flange assemblies shall be assembled and torqued according to PPI TN-38, "Bolt Torque for Polyethylene Flanged Joints."
- d. Where shown on the drawings, 4" and larger transitions to mechanical joint fittings and valves shall be accomplished using a MJ Adapter with kit. The D.I./HDPE mechanical joint adaptor shall consist of:
 - i. A molded or fabricated HDPE mechanical joint transition fitting.
 - ii. A rubber gasket.
 - iii. A mechanical joint backup drive ring.
 - iv. Corten mechanical joint tee bolts.

- 4. Mechanical Fittings: The use of mechanical coupling and saddles shall be approved by the owner prior to installation. Mechanical Fittings shall be designed for use and compatible with HDPE pipe. Mechanical fittings shall have a pressure rating equal to or greater than the pipe.

- a. Couplings without self-restraining capabilities (integrated serrated teeth or grippers) shall include a plan for external restraint or isolation from pipeline generated forces.
- b. Mechanical Saddles shall have wide straps for distribution of clamping loads. No U-bolts shall be allowed.
- c. When required by mechanical coupling manufacturer, pipe stiffeners shall be employed to support the interior wall of the HDPE. The stiffeners shall support the pipe's end and control the "necking down" reaction to the pressure applied during normal installation. The pipe stiffeners shall be formed of 304 or 316 stainless steel, with a wedged style design to fit the HDPE manufacturers published average inside diameter of the specific size and DR of the HDPE.

D. Fusion Unit Requirements

- 1. All Fusion Equipment, whether new or used, rented or owned, shall comply with the requirements of ISO 12176-1 "Equipment for Fusion Jointing Polyethylene Systems".
- 2. Butt fusion equipment must be in satisfactory working order and the hydraulic system must be leak free. Heater plates shall be free from scrapes, gouges, and have a consistent clean coated surface. The pressure gage and thermometer should be checked for accuracy. When requested by the OWNER, records showing a maintenance service/inspection within 3 months prior to use for this project shall be provided.
- 3. Electrofusion Processors shall be maintained and calibrated per manufacturer's requirements and recommendations.

2.11 PIPELINE LOCATING MATERIALS

- A. Detectable Marker Tape- Plastic marker tape shall be 5 mil minimum thickness with a solid aluminum core of .35mil minimum thickness and a minimum width of 2". The background of

Exhibit B
Technical Specifications

02610 - 9

**SECTION 02610
PIPING, GENERAL**

the tape shall be colored based on pipe service with black lettering continuously printed. Marker tape shall have a minimum 35 lbs./inch tensile strength. The installation of the tape shall be at 18 inches below finish grade.

- B. Tracer Wire- All HDPE pipe 4" and greater shall be installed with an extra high-strength, copper clad steel tracer wire including 45 mil HDPE jacket that has a minimum average break load of at least 1150 lbs. The jacket shall be colored based on pipe service, with blue for potable water or green for sewer. Tracer wire gauge shall be 12 AWG, 10 AWG, or 8 AWG depending upon application and installation procedure. DBF must secure tracer wire to the pipe to prevent breaking during pipe installation. This wire shall be continuous and brought up in the valve boxes at the ends of each line segment with splices made only by methods per the equipment manufacturer's recommendation. All miscellaneous splicing components shall be furnished and installed by the DBF.

PART 3 - EXECUTION**3.01 GENERAL**

- A. All pipes, fittings, and appurtenances shall be installed in accordance with the requirements of the applicable Section of Divisions 2. The lining manufacturer shall take full responsibility for the complete, final product and its application. All pipe ends and joints at screwed flanges shall be epoxy-coated, to assure continuous protection.
- B. Where core drilling is required for pipes passing through existing concrete, core drilling locations shall be determined by radiograph of concrete construction to avoid damage to embedded raceways and rebars.
- C. All exposed piping shall be painted. All piping to be painted shall be color coded in accordance with OWNER's standard color code. Color samples shall be submitted to CITY for final color selection.
- D. The DESIGN-BUILD FIRM or one of its principal subcontractors shall demonstrate expertise in the installation of HDPE pipe with experience on similar projects including the installation of HDPE pipe.

3.02 TRANSPORTATION, UNLOADING, AND STORAGE

- A. The manufacturer shall package product in a manner designed to deliver the pipe and fittings to the project neatly, intact and without physical damage. During transportation each pipe shall rest on suitable pads, strips skids, or blocks securely wedged or tied in place.
- B. During loading, transportation, and unloading, every precaution should be taken to prevent damage to the pipe. The handling of the pipeline shall be in such a manner that the pipe is not damaged by dragging it over sharp and cutting objects. Cuts or gouges that reduce the wall thickness by more than 10% are not acceptable and must be cut out and discarded.
- C. Handle the pipe in accordance with the PPI Handbook of Polyethylene Pipe (2nd Edition), Chapter 2. All pipe and accessories shall be loaded and unloaded by lifting with hoists or by skidding in order to avoid shock or damage. Under no circumstances shall materials be dropped. Pipe handled on skidways shall not be rolled or skidded against pipe on the ground. Slings, hooks or pipe tongs shall be padded and used in such a manner as to prevent damage to the exterior surface or interior of the pipe. All pipe and fittings shall be subjected to visual inspection

Exhibit B
Technical Specifications

02610 - 10

**SECTION 02610
PIPING, GENERAL**

at time of delivery and before they are lowered into the trench to be laid.

- D. Materials, if stored, shall be kept safe from damage and shall not be stacked higher than the limits recommended by the manufacturer. The bottom tiers shall be kept off the ground on timbers, rails, or concrete. Pipe shall not be stored close to heat sources. The DBF shall be responsible for all security, damage and loss of pipe, excluding Acts of God.
- E. The interior of the pipe as well as all sealing surfaces of mating components (i.e. flange faces) shall be kept free from dirt or foreign matter at all times. The open ends of all sections of joined and/or installed pipe (not in service) shall be plugged to prevent insects, animals, or foreign material from entering the pipe line or pipe section. The practice of stuffing cloth or paper in the open ends of the pipe will not be permitted. Use waterproof nightcaps to prevent the entrance of any type of natural precipitation into the carrier or containment pipe and will be secured to the pipe in such a manner that the wind cannot blow them loose. Where possible, the pipe shall be raised and supported at a suitable distance from the open end such that the open end will be below the level of the pipe at the point of support.

3.03 RECEIPT INSPECTION

- A. All pipe and fittings shall be subjected to visual inspection at time of delivery and before they are installed or lowered into the trench to be laid. Defective, damaged, or unsound pipe will be rejected. Cuts, punctures, or gouges that penetrate or reduce the wall thickness by 10% or more are not acceptable and must be removed and discarded. Joints or fittings that do not conform to these specifications will be rejected and must be removed immediately by the DESIGN-BUILD FIRM.

3.04 FUSION AND JOINING OF HDPE PIPE

- A. Fusion Joining Requirements
 - 1. All HDPE pipe shall be joined to itself by the heat fusion process which produces homogeneous, seal, leak tight joints. Tie-ins between sections of HDPE pipe shall be made by butt fusion whenever possible.
 - 2. Butt Fusion: The pipe shall be joined by the butt fusion procedure outlined in ASTM F 2620 or PPI TR-33. All fusion joints shall be made in compliance with the pipe or fitting manufacturer's recommendations. Fusion joints shall be made by qualified fusion technicians per PPI TN-42. A record or certificate of training for the fusion operator must be provided that documents training to the fundamentals of ASTM F 2620. Considerations should be given to and provisions made for adverse weather conditions, such as temperatures below freezing, precipitation, or wind, which is accepted by the OWNER.
 - 3. Electrofusion: Electrofusion joining shall be done in accordance with the manufacturers recommended procedure. Other sources of electrofusion joining information are ASTM F 1290, PPI TN 34, and PPI Municipal Advisory Board (MAB) Generic Electrofusion Procedure for Field Joining of 12 Inch and Smaller Polyethylene (PE) Pipe. The process of electrofusion requires an electric source, commonly called an electrofusion processor that has wire leads and a method to read electronically (by laser) or otherwise input the barcode of the fitting. The electrofusion processor must be capable of reading and storing the input parameters and the fusion results for later download to a record file. Qualification of the fusion technician shall be demonstrated by evidence electrofusion training within the past year on the equipment to be utilized for this project.

Exhibit B
Technical Specifications

02610 - 11

**SECTION 02610
PIPING, GENERAL**

B. Fusion Operators

1. The employer of the fusion machine operator is responsible for the fusion joint quality of the fusion weld made by that individual. The employer is responsible for documenting all training and qualification records for that individual, including compliance to any code requirements for fusion/bonder operators.
2. All HDPE fusion equipment operators shall be qualified to the procedure used to perform pipe joining. Fusion equipment operators shall have current, formal training on all fusion equipment employed on the project. Training received more than two years prior to operation with no evidence of activity within the past 6 months shall not be considered current.
3. When the fusion machine operator is employed by the HDPE pipe and fusion machine supplier, the supplier shall maintain an ISO 9001 Certified Quality Management System.

C. Butt Fusion Equipment

1. For 6" and larger pipe sizes, the pipe butt fusion machine shall be a self-contained hydraulic fusion machine capable of butt fusing HDPE pipe. The carriage must be removable from the chassis for in-ditch use. The machine must be compatible with an electronic data recording device. Accessories will include all butt fusion inserts for the specified range of pipe sizes, a pyrometer kit for checking the surface temperature of the heater, extension cord of appropriate gauge (25' minimum), and hydraulic extension hoses (minimum of four).
2. In areas where there may be insufficient space to layout the entire length of fused pipe to be pulled-back, the DESIGN-BUILD FIRM shall utilize a continuous HDPE pipe fusion equipment such as a PolyHorse by McElroy or other means in order to fuse the length of pipe necessary for the installation. The DESIGN-BUILD FIRM shall be responsible for securing and obtaining permission/permits from adjacent property if necessary, for staging and/or fusing of the pipe and HDD equipment at no additional cost to the OWNER.

D. Fusion Data Recording

1. For 6" and larger pipe sizes, McElroy DataLogger or equivalent fusion data recorder shall be used to record all fusion welds on hydraulically operated fusion machines. The device shall be capable of meeting the requirements of ASTM F 3124, "Standard Practice for Data Recording the Procedure used to Produce Heat Butt Fusion Joints in Plastic Piping Systems or Fittings". The device, or combination of devices, shall record the following variables of each fused joint:
 - a. Heater surface temperature- immediately before inserting the heater plate, measure with a pyrometer and manually enter into the weld record.
 - b. Gauge pressure during the initial heat cycle.
 - c. Gauge pressure and elapsed time during the heat-soak cycle.
 - d. Heater removal (dwell) time.
 - e. Gauge pressure and elapsed time during the fusing/cool cycle.

Exhibit B
Technical Specifications

02610 - 12

5/8/2020 1:34 PM

p. 263

**SECTION 02610
PIPING, GENERAL**

- f. Drag pressure.
 - g. Pipe diameter and wall thickness.
 - h. Type of HDPE material(Specification and Classification) and manufacturer.
 - i. Fusion Machine Identification.
 - 2. The device shall record the operator name and a unique operator ID number, along with the date and time of each weld.
 - 3. Records showing the device is up to date on all required calibration should be available for presentation when requested.
 - 4. All fusion welds should be traceable to the report (via operator and weld ID) with an indentation weld stamp or by permanent paint marker/pen next to fusion weld.
 - 5. A weld location map may be requested, prior to commencement of work, by the owner or owner's representative.
- E. Butt Fusion Examination and Testing
- 1. Examinations
 - a. Visual: For pipe sections, examine the full exterior circumference for bead uniformity before cutting. After cutting the pipe section, review the interior bead. All beads should have visually acceptable bead formation as shown in Fig 4 and Appendix X2 of ASTM F 2620. In addition, the following characteristics are expected:
 - i. There shall be no evidence of cracks or incomplete fusing.
 - ii. There shall be no evidence of captured objects (e.g., pipe shavings, facer ribbons) between bonded surfaces.
 - iii. Variations in upset bead heights on opposite sides of the cleavage and around the circumference of fused pipe joints are acceptable.
 - iv. The apex of the cleavage between the upset beads of the fused joint shall remain above the base material surface.
 - v. Fused joints shall not display visible angular misalignment, and outside diameter mismatch shall be less than 10% of the nominal wall thickness.
 - vi. Fusion data record review that meet criteria of section 3.04.D.1 can be used as additional verification of visual indicators.
 - b. Fusion Data Record Review

The fusion data record for each fused joint shall be compared to the approved fusion procedure. The reviewer shall verify the following:

 - i. That all data required by section 3.04.D.1 was recorded.

Exhibit B
Technical Specifications

02610 - 13

5/8/2020 1:34 PM

p. 264

**SECTION 02610
PIPING, GENERAL**

- ii. Interfacial pressure was within the acceptable range.
 - iii. Heater surface temperature was within the acceptable range.
 - iv. Butt fusion pressure applied during the fusing/cool cycle was correctly calculated to include drag pressure, fell within the acceptable range for the applicable size and agrees with the recorded hydraulic fusing pressure.
 - v. Butt fusing pressure was reduced to a value less than or equal to drag pressure at the beginning of the heat soak cycle.
 - vi. Fusing machine was opened at the end of the heat soak cycle, the heater was removed, and the end were brought together at the fusion pressure with the acceptable time range.
 - vii. Cooling time at butt fusing pressure met the minimum time specified.
- c. If the recorded data in section 3.04.D.1 is outside the limits of the acceptable range, the joint is unacceptable, and must be removed and replaced.
- d. Records for test fusion joints should be reviewed immediately after the joint is completed. Fusion joints for jobsite fusions should be reviewed daily or before being covered with backfill.

2. Mechanical Tests

- a. DESIGN-BUILD FIRM shall mechanically test the first fusion of each operator and each machine used on the project. Installation shall not continue until a fusion test has passed the test. Additional mechanical test are not required as long as long as the fusion are reviewed with the frequency specified in section 3.04.E.1.d. Testing of fusion joints with no fusion data record review shall be at a frequency specified by the OWNER.
- b. The fusion shall be allowed to cool completely, then fusion test straps shall be cut out.
- c. All samples shall be labeled with operator information. Testing must be done at 73 degrees F plus or minus 5 degrees. The test temperature and sample size are critical to testing. Testing performed at cold or elevated temperatures may not give similar results to tests performed at ambient temperatures.
- d. Each pipe sample weld shall be subjected to testing at two locations 180 degrees apart from each other in the joint weld. All specimens shall be tested by one of the following methods:
 - i. Reverse Bend Test are allowed for pipe sizes 4" IPS or smaller. The specimens shall be prepared and tested in accordance with ASTM F 2620, Appendix X4.
 - ii. Guided Side Bend Test are allowed for all wall thicknesses of 1" or greater. The specimens shall be removed and tested in accordance with ASTM F 3183.
 - iii. Hydrostatic Burst Test is allowed for pipe sizes 2"-24". The specimen length

Exhibit B
Technical Specifications

02610 - 14

**SECTION 02610
PIPING, GENERAL**

should measure 6 times pipe diameter with the butt fusion joint in the center of the specimen. The specimen should be tested in a tank filled with water, and testing conditions monitored and recorded with computerized equipment. The specimen will be tested at 4 times pipe rated pressure for 5 minutes with no failure of joint allowed.

- e. Results of any mechanical test should be documented. Information on the weld and operator should be transferred from the sample to the testing record.

3.05 INSTALLATION**A. Direct Burial**

1. Buried HDPE pipe and fittings shall be installed per engineering drawings and ASTM D2487, ASTM D2774, ASTM D2321 and AWWA Manual of Water Supply Practices M55 Chapter 8. The Design Window identified in AWWA M55 Chapter 5 (page 65 of 2006 version) shall be considered acceptable design and installation conditions.
2. When moveable trench bracing such as trench boxes, moveable sheeting, shoring or plates are used to support the sides of the trench, care shall be taken in placing and moving the boxes or supporting bracing to prevent movement of the pipe, or disturbance of the pipe bedding and the backfill. Trench boxes, moveable sheeting, shoring or plates shall not be allowed to extend below top of the pipe. As trench boxes, moveable sheeting, shoring or plates are moved, pipe bedding shall be placed to fill any voids created and the backfill shall be re-compacted to provide uniform side support for the pipe.
3. Embedment material should be Class I, Class II, or Class III materials as defined by ASTM D-2321 Section 6. The use of Class IV or Class V materials is not recommended; however they may be used only with the evaluation and approval of the CITY at a demonstrated achievable compaction.
4. Pipe bedding shall be in conformance with ASTM D2321 Section 8. Compaction rates should be as specified in ASTM D2321. Deviations shall be approved by the OWNER.
5. Haunching and backfill shall be as specified in ASTM D 2321 Section 9 with Class I, II, or III materials. Compaction shall be in excess of 85% Proctor, providing a minimum modulus of 1000 psi or greater.

B. Pull-In Installation

1. Per ASTM F1804 and/or www.HDPEapp.com, the DESIGN-BUILD FIRM shall determine and document the maximum proposed pull-in length and pull-in force for the pressure class and pipe diameter to be pulled into an open trench. Pull-in lengths will not exceed the maximum lengths for the class and diameter pipe. A commercially available load limiter (weak link) approved by the OWNER shall be used between the puller and the pipe.
2. Prior to pulling the pipeline, DESIGN-BUILD FIRM shall place rollers or other approved devices beneath the pipe to avoid unnecessary damage and to reduce pipe drag.
3. Trenchless Installation
 - a. For Horizontal Directional Drilling, refer to section 2410.

Exhibit B
Technical Specifications

02610 - 15

**SECTION 02610
PIPING, GENERAL**

C. Appurtenances

1. All appurtenances (tees, elbows, services, valves, air relief valves, fire hydrants, etc.), must be independently supported and shall not rely on the pipeline and its connections for this support. Excessive stresses may be encountered when appurtenances are inadequately supported.
2. Installation of Tracer Wire. When tracer wire is required, the DESIGN-BUILD FIRM shall install along the entire section of pipeline and along all service connections as listed below. The tracer wire shall be installed simultaneously with the polyethylene piping system. Tracer wire shall be installed by the DESIGN-BUILD FIRM once backfill has been placed and compacted to at least 12 inches above the top of the pipe and not more than 18 inches above the top of the pipe. Tracer wire shall be properly spliced at each end connection and each service connection. Care should be taken to adequately wrap and protect wire at all splice locations. No bare tracer wire shall be accepted. Provide Magnesium alloy anode for cathodic protection that conforms to the requirements of ASTM B843. Install tracer wire per local and manufacturer's requirements.

3.06 MEASUREMENT AND PAYMENT

- A. Measurement and payment will be based on the actual quantities installed as more specifically discussed and described in SECTION 01025 for measurement and payment.

END OF SECTION 02610

**SECTION 02641
VALVES, GENERAL**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Provide all labor, materials, necessary equipment and services to complete the water distribution and wastewater transmission system work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".

1.02 WORK INCLUDED

- A. The DBF 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 DBF 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 and Division 2 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.

1.03 RELATED WORK

- A. Section 02221 - Excavation and Backfilling for Utilities
- B. Section 02610 - Piping, General

1.04 REFERENCE STANDARDS

- A. Codes: All codes, as referenced herein, are specified in Section 01090, "Reference Standards".
- B. Commercial Standards:

ANSI B16.1	Cast Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250, and 800.
ANSI B16.5	Pipe Flanges and Flanged Fittings, Steel Nickel Alloy and Other Special Alloys.
ANSI/ASME B31.1	Power Piping.
ASTM A 36	Specification for Structural Steel.
ASTM A 48	Specification for Gray Iron Castings.
ASTM A 126	Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
ASTM A 536	Specification for Ductile Iron Castings.
ASTM B 61	Specification for Steam or Valve Bronze Castings.
ASTM B 62	Specification for Composition Bronze or Ounce Metal Castings.

Exhibit B
Technical Specifications

**SECTION 02641
VALVES, GENERAL**

ASTM B 148	Specification for Aluminum-Bronze Castings.
ASTM B 584	Specification for Copper Alloy Sand Castings for General Applications.
ANSI/AWWA C223	Fabricated Steel and Stainless-Steel Tapping Sleeves
ANSI/AWWA C500	Gate Valves for Water and Sewerage Systems.
ANSI/AWWA C502	Dry-Barrel Fire Hydrants.
ANSI/AWWA C503	Wet-Barrel Fire Hydrants.
ANSI/AWWA C504	Rubber-Seated Butterfly Valves.
ANSI/AWWA C507	Ball Valves 6 Inches Through 48 Inches.
ANSI/AWWA C508	Swing-Check Valves for Waterwork Service, 2 Inches Through 24 Inches NPS.
ANSI/AWWA C509	Resilient-Seated Gate Valves for Water and Sewage Systems.
ANSI/AWWA C511	Reduced-Pressure Principle Backflow-Prevention Assembly.
ANSI/AWWA C550	Protective Interior Coatings for Valves and Hydrants.
SSPC-SP-2	Hand Tool Cleaning.
SSPC-SP-5	White Metal Blast Cleaning.

1.05 SUBMITTALS

- A. Shop Drawings: Shop drawings of all valves and operators including associated wiring diagrams and electrical data, shall be furnished as specified in Section 01340, "Shop Drawings, Product Data and Samples".
- B. Valve Labeling: The DBF shall submit a schedule of valves to be labeled indicating in each case the valve location and the proposed wording for the label.

1.06 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 B 62, or where not subject to dezincification, to ASTM B 584.
- C. Certification: Prior to shipment, the DBF shall submit for all valves over 12 inches in size, certified, notarized copies of the hydrostatic factory tests, showing compliance with the applicable standards of AWWA, ANSI, ASTM, etc.

Exhibit B
Technical Specifications

**SECTION 02641
VALVES, GENERAL**

PART 2 - PRODUCTS

2.01 VALVES, GENERAL

- A. General: The DBF shall furnish all valves, gates, valve-operating units, stem extensions, and other accessories as shown or specified. All valves and gates shall be new and of current manufacture. All shut-off valves, 6-inch and larger, shall have operators with position indicators. Where buried, these valves shall be provided with valve boxes and covers containing position indicators, and valve extensions. Shut-off valves mounted higher than 5 feet-6 inches above working level shall be provided with chain operators.
- B. Valve Flanges: The flanges of valves shall be in accordance with Section 02610, "Piping, General".
- C. Gate Valve Stems: Where subject to dezincification, gate valve stems shall be of bronze conforming to ASTM B 62, containing not more than 5 percent of zinc nor more than 2 percent aluminum. Gate valve stems shall have a minimum tensile strength of 60,000 psi, a minimum yield strength of 40,000 psi, and an elongation of at least 10 percent in 2 inches, as determined by a test coupon poured from the same ladle from which the valve stems to be furnished are poured. Where dezincification is not a problem, bronze conforming to ASTM B 584 may be used.
- D. Protective Coating: Except where otherwise specified, ferrous surfaces, exclusive of 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 be coated with 2-part thermal setting epoxy coatings. Flange faces of valves shall not be epoxy coated. 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.
- E. Valve Operators: Where shown, certain valves and gates shall be furnished with electric operators, provided by the valve or gate manufacturer. The same manufacturer shall furnish all operators of a given type. Where different manufacturers supply these operators, the DBF shall coordinate their selection to provide uniformity of each type of electric operator. All valve operators, regardless of type, shall be installed, adjusted, and tested by the valve manufacturer at the manufacturing plant.
- F. Valve Labeling: Except when such requirement is waived by the CITY in writing, a label shall be provided on all shut-off valves exclusive of hose bibbs and chlorine cylinder valves. The label shall be of 1/16-inch plastic or stainless steel, minimum 2 inches by 4 inches in size, and shall be permanently attached to the valve or on the wall adjacent to the valve as directed by the CITY. Valve labels shall be photographed and marked on the As-Built Drawings. Valves are also required to have an Identification Marker in accordance with the Contract Documents.
- G. Nuts and Bolts: All nuts and bolts on valve flanges and supports shall be in accordance with manufacturers recommendations. Where submerged or buried, all nuts and bolts on valve flanges and valve bodies shall be stainless steel.

2.02 GATE VALVES

- A. All buried gate valves shall be of the inside screw, non-rising stem type. Valves shall be capable of being repacked under line pressure. Valves 14-inch and larger installed on vertical pipes with their stems horizontal shall be fitted with bronze slides, tracks, rollers, and scrapers to assist the travel of the gate assembly. Quick opening valves shall have quick opening levers and cams in

Exhibit B
Technical Specifications

SECTION 02641 VALVES, GENERAL

lieu of handwheel operators.

B. Knife Gate Valves

1. Knife gate valves shall be provided with raised face and resilient seats for positive seating. Wetted parts shall be constructed of Type 316 stainless steel. Gates shall be finish-ground on both sides to prevent packing or seat damage. Valves 2 to 4 inches in size shall be furnished with cast stainless steel bodies; valves 6 to 24 inches in size shall be furnished with cast semi-steel bodies with stainless steel linings. Valve ends shall be of the flanged or wafer design, as shown. Gate guides and jams shall be steel. Actuator shall be handwheel. Port design shall be full-round.
2. Manufacturers or approved equal:
 - a. Red Valve Company Inc.;
 - b. DeZurik Corporation;
 - c. Fabri-Valves;
 - d. Rovang, Inc.

C. Resilient-Seated Gate Valves

1. Resilient-seated gate valves conforming to ANSI/AWWA C509 shall be provided. Resilient-seated gate valves shall have cast iron bodies with flanged, bell, or mechanical joint ends, rubber-coated cast iron disc, flanged bonnet, bronze stem, O-ring seals, and operators with handwheel or square nut, unless otherwise shown. Rubber and rubber composition materials (EPDM) shall be suitable for use in water chlorine or chloramines and in sanitary sewage.
2. Manufacturers or approved equal:
 - a. Clow Valve Co.;
 - b. Kennedy Valve;
 - c. Mueller Company;
 - d. M&H Valve

2.03 ECCENTRIC PLUG VALVES

- A. Equipment Requirements: Plug valves shall be of the non-lubricated, eccentric type with resilient faced plugs, port areas for valves shall be 100% of full pipe area. The body shall be of semi-steel (ASTM A-126 C1.B) and shall have bolted bonnet, which gives access to the intervals of the valve. Seats shall be welded overlay of high nickel content or a stainless-steel plate locked in the body cavity. If a plate is used, it shall be replaceable through the bonnet access. Bearings shall be permanently lubricated of stainless steel, bronze or teflon lined, fiberglass backed duralon. Bearing areas shall be isolated from the flow with grit seals. Valves shall have packing bonnets where the shaft protrudes from the grit seals. Valves shall have packing bonnets where the shaft protruded from the valve and the packing shall be self-adjusting chevron type, which can be replaced without removing the bonnet. All nuts, bolts, springs and washers shall be stainless steel.
- B. Valves shall be designed for a working pressure of 150 PSI. The valve and actuator shall be capable of satisfactory operation in either direction of flow against pressure drops up to and including 100 PSI (for plug valves over 12 inches in diameter). Valves shall be bubble tight in both directions at 100-psi differential.

Exhibit B
Technical Specifications

**SECTION 02641
VALVES, GENERAL**

- C. Plug valves over 12 inches in diameter shall have worm gear operators. The operating mechanism shall be for buried service with a 2 inch square-operating nut.
- D. Plug valves are to be installed with the sear pointed towards the upstream flow, when specified.
- E. Manufacturers or approved equal:
 - 1. Val-Matic
 - 2. DeZurik Corporation.
 - 3. Clow
 - 4. American

2.04 BALL VALVES (4-INCH AND SMALLER)

- A. General Requirements: Unless otherwise specified or shown, general purpose ball valves in sizes up to 4-inch shall have manual operators with lever or handwheel. Ferrous surface of 4-inch valves, which will be in contact with water, shall be epoxy-coated. All ball valves shall be of best commercial quality, heavy-duty construction.
- B. Body: All ball valves up to 1-1/2 inch (incl.) in size shall have bronze or forged brass 2 or 3 piece bodies with screwed ends for a pressure rating of not less than 300 psi WOG (water-oil-gas). Valves 2-inch to 4-inch in size shall have bronze forged brass or steel 2 or 3 piece bodies with flanged ends for a pressure rating of 125 psi or 150 psi.
- C. Balls: The balls shall be solid brass or chrome plated bronze, or stainless steel, with large or full openings.
- D. Stems: The valves seats shall be of Polytetrafluoroethylene (PTFE) or Buna N, for bi-directional service and easy replacement.
- E. Manufacturers or approved equal:
 - 1. Jamesbury Corporation;
 - 2. Jenkins Bros.;
 - 3. Lunkenheimer Flow Control;
 - 4. Wm. Powell Company;
 - 5. Worcester Controls;
 - 6. Valve Primer Corporation.

2.05 SWING CHECK VALVES (3-INCH AND LARGER)

- A. General: Swing check valves for water, sewage, sludge, and general service shall be of the outside lever and spring or weight type, in accordance with ANSI/AWWA C 508 - Swing-Check Valves for Waterworks Service, 2 inch through 24 inch NPS, unless otherwise indicated, with

Exhibit B
Technical Specifications

**SECTION 02641
VALVES, GENERAL**

full-opening passages, designed for a water-working pressure of 150 psi. They shall have a flanged cover piece to provide access to the disc.

- B. Body: The valve body and cover shall be of cast iron conforming to ASTM A 126, with flanged ends conforming to ANSI B 16.1, or mechanical joint ends, as shown.
- C. Disc: The valve disc shall be of cast iron, ductile iron, or bronze conforming to ASTM B 62.
- D. Seat and Rings: The valve seat and rings shall be of bronze conforming to ASTM B 62 or B 148, or of Buna-N.
- E. Hinge Pin: The hinge pin shall be of bronze or stainless steel.
- F. Manufacturers or approved equal:
 - 1. AFC.;
 - 2. M& H
 - 3. Danfoss Flo-Flex;
 - 4. Mueller Company;
 - 5. Clow.

2.06 AIR-VACUUM AND AIR-RELEASE VALVES

- A. Air and Vacuum Valves: Air and vacuum valves shall be capable of venting large quantities of air while pipelines are being filled and allowing air to re-enter while pipelines are being drained. They shall be of the size shown, with flanged or screwed ends to match piping. Bodies shall be of high-strength cast iron. The float, seat, and all moving parts shall be constructed of Type 316 stainless steel. Seat washers and gaskets shall be of a material insuring water tightness with a minimum of maintenance. Valves shall be designed for minimum 150-psi water-working pressure, unless otherwise shown.
- B. Air-Release Valves: Air-release valves shall vent accumulating air while system is in service and under pressure and be of the size shown and shall meet the same general requirements as specified for air and vacuum valves except that the vacuum feature will not be required. They shall be designed for a minimum water-working pressure of 150 psi, unless otherwise shown.
- C. Combination Air Valves: Combination air valves shall combine the characteristics of air and vacuum valves and air release valves by exhausting accumulated air in systems under pressure and releasing or re-admitting large quantities of air while a system is being filled or drained, respectively. They shall have the same general requirements as specified for air and vacuum valves.
- D. Manufacturers or approved equal:
 - 1. ARI (Optimal Flow Solutions)

2.07 CORPORATION STOPS (Ball Valve Type)

- A. Unless otherwise shown, corporation stops shall be made of brass alloy for key operation, with
- Exhibit B
Technical Specifications

**SECTION 02641
VALVES, GENERAL**

screwed ends with corporation thread or iron pipe thread, as required. AWWA taper thread for inlet thread and compression type fittings for outlet.

B. Manufacturer or approved equal:

1. Ford Meter Box Company;
2. Cambridge Brass;
3. Mueller Company.

2.08 VALVE OPERATORS

A. Electric Motor Operators

1. All motorized valves shall be furnished by the DBF through the valve manufacturers as a complete package. Motor driven valve operators shall be furnished and installed in accordance with the applicable requirements shown on the process and instrumentation diagrams and electrical elementary diagrams. Operators shall comply with AWWA requirements for electrical operators.
2. Electric operators including the motor, all required gearing, integral continuous duty rated reversing starter, AC line surge suppressors, controls and switches shall be as manufactured by Rotork, Limitorque, EIM; or approved equal.
3. The motorized operators for modulating service shall be furnished with an integral position indicator/transmitter/controller. The above unit shall be internally powered, factory calibrated and furnished with adjustable zero, span, gain and deadband controls.
4. The position indicator/transmitter shall provide a linear, isolated, 4-20 mA, 24 VDC output to remote instrumentation and controls proportional to 0-100 percent travel span. An external DC power source shall not be required.
5. The position controller shall accept a linear 4-20 mA, 24 VDC input signal proportional to 0-100 percent travel span and shall generate appropriate outputs to the reversing starter to open/close the valve until the desired portion has been reached as determined by the position feedback signal to the position controller. Input signal isolation shall be provided.
6. The controller shall be furnished with circuitry to "lock in the last position" upon loss of control signal. DBF shall be responsible for proper transmitter/controller calibration in accordance with the manufacturer's recommendations.
7. Operator capacity shall be adequate to continuously operate the valve under all operating conditions. Unless otherwise indicated, or specified, motor operators shall be furnished complete with motors, limit switch operating mechanisms, travel limit switches, torque switches, transmitters, controllers, starters, lightening and surge suppression, terminal blocks, gear reducers, handwheel, gearing, necessary components, and incidental accessories as follows:
 - a. All phases of the power supply shall be monitored. The DBF shall de-energize the motor upon detection of single phasing.
 - b. Logic circuits shall be protected against spurious voltage spikes, using opto-isolators

Exhibit B
Technical Specifications

**SECTION 02641
VALVES, GENERAL**

in circuits connected to any remote input or output signals.

8. Enclosure: The starter for 240 volt single phase motor operators and all local devices shall be mounted on a common NEMA 4 and PVC coated cast aluminum enclosure. The enclosure shall be permanently affixed to the valve operator housing.
9. Valve Stops: Valve stops for the operators shall be positive in action. Closing shall be complete and opening full. Stops shall be field adjustable to the required settings. The torque switches shall prevent any excessive mechanical stress or electrical overloading any direction of travel.
10. Limit switches and gearing shall be an integral part of the motorized valve operator. The limit switch gearing shall be of the intermittent type, totally enclosed in its own gear case, grease lubricated to prevent direct and foreign matter from entering the gear train and shall be made of bronze or stainless steel. Limit switches shall be of the adjustable type capable of being adjusted to trip at any point between the normal position (full open, or full closed) and 75 percent of the travel to the opposite position.
11. Local (Motor) Devices: Local devices shall include, but not be limited to the following:
 - a. Torque Switches: Torque switches, responsive to high torque encountered in either direction of travel. A torque switch, which has tripped due to mechanical load, shall not reset when the operator motor has come to a halt.
 - b. Limit Switches: Travel limit switches, for opening and closing direction of travel. Contract operations shall be as indicated on the Drawings. If not shown on the Drawings, the operator shall be furnished with a minimum of two DPDT switches. All switches shall be furnished with 5-ampere contacts. Switches shall be connected such that when the valve is fully open, or fully closed, the "open" or "close" light shall be illuminated. All limit switch contacts shall be wired out to a terminal strip so that the electrician in the field does not have to connect to the switches.
 - c. Local/remote selector switch with phase motor relay and auxiliary to provide dry contacts for collective indication of placement in the "remote" operating mode, the unit is powered, and that all safety/overload interlocks are satisfied to provide the above signal. For further requirements refer to electrical elementary control schematic.
 - d. Open/close push-button for local manual operation (modulating service).
 - e. Position indicator calibrated to 0-100 percent travel span.
 - f. Terminals for remote indication of full open, full closed and overload (torque).
12. Operating Unit Gearing: The actuator shall be double reaction unit with the capability of quickly changing the output speed with a gear change. The power gearing shall consist of generated spur or helical gears of heat-treated steel, and worm gearing where required by the type of operator. Quarter turn or traveling unit operators do not specifically require worm gearing. The worm shall be of hardened alloy steel and the worm gear shall be of alloy bronze. All power gearing shall be grease-lubricated. Ball or roller bearings shall be used throughout for all motor operators. A mechanical dial position indicator to display valve position in percent of valve opening shall be provided. The gearing shall comply with

Exhibit B
Technical Specifications

**SECTION 02641
VALVES, GENERAL**

AWWA requirements.

13. **Stem Nuts:** The actuator for other than quarter turn valves shall have a stem nut of high tensile bronze or other material compatible with the valve stem and suited to the application. The nut arrangement, where possible, shall be of the two-piece type to simplify field replacement. The stem nut for rising stem valves must be capable of being removed from the top of the actuator without removing the actuator from the valve, disconnecting the electrical wiring, or disassembling any of the gearing within the actuator.
14. **Manual Operation:** A handwheel shall be provided for manual operation. The handwheel shall not relocate during hand operation nor shall a fused motor prevent manual operation.
15. When in manual operating position, the volt motor driven unit will remain in this position until motor is energized at which time the valve operator will automatically return to electric operation and shall remain in motor position until handwheel operation is desired. This movement from motor operation to handwheel operation shall be accomplished by a positive declutching knob or lever, which will disengage the motor and motor gearing mechanically not electrically. Hand operation must be reasonably fast and require no more than 100 lbs. of rim effort at the maximum required torque. It shall not be possible for the unit to be simultaneously in manual and motor operation.
16. **240 Volt Single Phase Motors:** All motors on valves shall be designed for 240 volts 1-phase 60 Hz power. The motor shall be specifically designed for valve actuator service and shall be of high torque, squirrel cage reversible, totally enclosed, non-ventilated construction, with motor leads brought into the limit switch compartment without having external piping or conduit box. Motor insulation shall be NEMA Class B with maximum continuous temperature rating of 120° C (rise + ambient). Motors shall be sized to have a rated running time at the rated running torque of 15 minutes without exceeding the temperature rating of the insulation system. Running load torque shall be not more than 20 percent of the rated seating/unseating torque.
17. **Speed-torque curves** for the motors and torque calculations for seating, unseating, and running conditions shall be submitted. The maximum valve torque (seating/unseating) shall be less than 50 percent of stall torque or starting torque potential of the motor whichever is greater.
18. **Operator Type:**

Type A: Remote set point using a 4-20 mA analog signal

 - a. **Local Operation**
 - (1) LOCAL/REMOTE selector
 - (2) OPEN/CLOSE push buttons
 - (3) Position set-point potentiometer/indicator
 - (4) LOCAL accepts local position set point
 - (5) OPEN/CLOSE indication
 - (6) Fault (torque) indication
 - b. **Remote operation**
 - (1) REMOTE - accept a remote 4-20 mA position set-point
 - (2) Position transmitter 4-20mA signal to RTU

Exhibit B
Technical Specifications

**SECTION 02641
VALVES, GENERAL**

- (3) Available Ready of Auto to RTU
- (4) Fault torque status to RTU

19. Valve Closure Time: Valve closure time shall be 1 minute.

20. Spare Parts:

- a. The DBF shall furnish loose, one unit valve operator, complete with all the devices specified herein and with all the features and characteristics similar to the equipment supplied in this Contract. The spare operator shall be delivered to the OWNER still in crates.

2.09 BUTTERFLY VALVES

A. General: Butterfly valves used for 12 inch diameter and larger ONLY. All valves shall meet or exceed ANSI/NSF 61, latest revision. All valves shall meet or exceed AWWA C-504, Class 150B, latest revision. Valves shall open left, or counterclockwise. Buried service valves shall have a 2 inch operating nut.

- a. Body: Body and disc material shall be cast or ductile iron meeting or exceeding ASTM A126 (latest revision) or A536, latest revision. Seat and all rubber material shall be chloramine resistant.
- b. Shaft: Shaft, nuts, screws, and hardware material shall be stainless steel (Type 304 minimum). Valve disc shall be rigidly attached to the shaft to eliminate any relative motion. Shaft shall be offset from the disc and body seats so that they do not intersect. Shafts of 3 inch diameter and smaller shall be one piece through the valve with factory set thruster(s) to center the disc in the seat. Shafts larger than 3 inches diameter shall be stub-shafts rigidly keyed to the disc. Stub-shafts shall be provided with an adjustable thruster(s) to move the disc and shaft assembly positively in either direction to center the disc in the seat.
- c. Coating: Except where otherwise specified, interior and exterior ferrous surfaces, exclusive of stainless steel surfaces, in all valves shall be coated with two-part thermosetting epoxy coating or fusion bonded epoxy coating. Flange faces of valves shall not be epoxy coated. The epoxy shall be suitable for use in potable water, reclaimed water, and wastewater.
- d. Manufacturers or approved equal:
 - 1. Mueller
 - 2. Val-Matic
 - 3. Pratt
 - 4. Clow

2.10 PLUG VALVES

A. Plug valves shall be of the non-lubricating, eccentric type and shall be designed for a working pressure of 175 psi for valves 12" and smaller, 150 psi for valves 14" and larger. Valves shall provide tight shut-off at rated pressure. Valves 12" and smaller shall have round port design. 14" and larger valves shall have rectangular port design.

Exhibit B
Technical Specifications

**SECTION 02641
VALVES, GENERAL**

- a. Body: The plug valve body shall be cast iron ASTM A126 Class B with welded-in overlay of at least 95% nickel alloy content on all surfaces contacting the face of the plug.
- b. Plug: The valve plug shall be ductile iron ASTM A-536, Grade 65-45-12, in valve sizes up to 20", and ASTM A126 Class B cast iron in sizes 24" and larger, with Buna N resilient seating surface to mate with the body seat.
- c. Bearings: Plug valve shall be furnished with permanently lubricated sleeve type bearings conforming to AWWA C517. Bearings shall be of sintered, oil impregnated type 316 stainless steel ASTM A-743 Grade CF8M or bronze ASTM B-127.
- d. Shaft Seals: Valves shaft seals shall be of the "U" cup type, in accordance with AWWA C517. Seals shall be self-adjusting and re-packable without moving the bonnet from the valve.
- e. Actuators: 6" and smaller exposed valves shall be provided with wrench actuators. 8" and larger exposed valves shall be provided with worm gear type manual actuators. All buried valves shall be provided with worm and gear actuators suited for the intended service. Valve actuators shall be fully grease packed and have stops in the open/close position. The actuator shall have a mechanical stop which will withstand an input torque of 450 lbs. against the stop. The actuator shall be able to provide 1.25 times the required operating torque under full rated line pressure combined with a flow velocity of 8 feet per second.

2.11 TAPPING SLEEVES

- A. Tapping sleeves shall be STS420 model by ROMAC Industries, Inc. or an approved equal. Tapping sleeves must meet all specifications set forth in the AWWA Standard C223.

PART 3 -EXECUTION

3.01 VALVE INSTALLATION

- A. General: All valves, gates, operating units, stem extensions, valve boxes, and accessories shall be installed in accordance with the manufacturer's written instructions and as shown and specified. All gates shall be adequately braced to prevent warpage and bending under the intended use. 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 or handrails.
- C. Valve Accessories: Where combinations of valves, sensors, switches, and controls are specified, it shall be the responsibility of the DBF to properly assemble and install these various items so that all systems are compatible and operating properly. The relationship between interrelated items shall be clearly noted on shop drawing submittals.
- D. Butterfly Valves: All exposed butterfly valves shall be installed with a means of removing the complete valve assembly without dismantling the valve or operator.

3.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment will be based on the actual quantities installed as more specifically Exhibit B
Technical Specifications

**SECTION 02641
VALVES, GENERAL**

discussed and described in SECTION 01025 for MEASUREMENT AND PAYMENT.

END OF SECTION 02641

Exhibit B
Technical Specifications

02641 - 12

5/8/2020 1:34 PM

p. 279

**SECTION 02900
LANDSCAPE WORK****PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. The work included in this section consists of furnishing all labor, supplies equipment and materials necessary to complete the installation of all landscaping as shown on the Plans as base bid including the installation of sod and seeding as shown, as well as all other related responsibilities as described in these Specifications and accompanying plans.
- B. Installation: All plant materials included shall be of the specific size and quality indicated on the plans and in these specifications and shall be installed in strict accordance with sound nursery practices and shall include maintenance and watering for all work outlined on the plans and specifications until final acceptance.
- C. Quantities and Locations: The CITY reserves the right to adjust the number and locations of the designated types and species to be used at any of the locations shown in order to provide for any modifications which might become necessary.

1.03 RELATED WORK

- B. Section 02910 - Sodding

1.04 QUALITY ASSURANCE

- A. Responsibility for Assuring Quality Work: The DBF'S Superintendent shall be well versed in Florida plant material, planting operations, blue print reading, and coordination with other performing contracts or services in the job area.

All employees shall be competent and highly skilled in their particular job in order to properly perform the work assigned to them. The DBF shall be responsible for maintaining the quality of the material on the job throughout the duration of the CONTRACT.

- B. Correct Grade of Plants: In the event that it becomes apparent that any nursery supplying plants for this work has knowingly and consistently represented the grade of plants as being higher than their actual grades as determined under these provisions, all plants already delivered from such sources shall be removed from the job at the DBF'S expense, and no further plants will be accepted from such nursery until written evidence is submitted and confirmed that all material for delivery has been inspected and approved by inspectors of the State Plant Board as being of the grade as represented.
- C. Authority for Nomenclature, Species, Etc.: All plant material shall conform to the names given in Hortus Third, 1976 edition. Names of varieties not included therein conform generally with names accepted in the nursery trade.
- D. Grade Standards: All plant materials shall be nursery grown except where specified as collected material, and shall comply with all required inspections, grading standards and plant regulations as set forth by the Florida Department of Agriculture's "Grades and Standards for Nursery Plants" revised 1973, or with any superseding specifications that may be called for on the Plans

Exhibit B
Technical Specifications

02900 - 1

SECTION 02900 LANDSCAPE WORK

or in the Specifications. ALL PLANTS NOT LISTED IN THE GRADES AND STANDARDS FOR NURSERY PLANTS, shall conform to a Florida No. 1 as to: (1) Health and Vitality, (2) Condition of Foliage, (3) Root System, (4) Freedom from Pest or Mechanical Damage, (5) Heavily Branched and Densely Foliated according to the accepted normal shape of the species, or sport, (6) Form and branching habit.

- E. Balled and Burlapped (B&B) and Wire Balled and Burlapped (WB&B) Plants: These plants shall be properly protected until they are planted. The plant shall be handled only by the earth ball and not be the plant itself.

Any (B&B) or (WB&B) plant which shows evidence of having handled by a method other than the method outlined above and resulting in a cracked or broken ball or of the roots being loosened within the ball shall be rejected.

For plants grown in soil of loose texture, which does not readily adhere to the root system, (especially in the case of large plant material), WB&B plants may be specified. For WB&B plants, before plant is removed from the hole, sound hog wire shall be placed around the burlapped ball and looped and tensioned until the burlapped ball is substantially packaged by the tightened wire netting, such as to prevent disturbing of the loose soil around the roots during handling. Any wire, synthetic material or chemically treated material will be removed from the rootball at planting time, all ties shall be removed from the rootball and around the trunk at planting.

- F. Container Grown Plants (CG): Any Container Grown (CG) plants, which have become "pot bound" or for which the top system is out of proportion (larger) to the size of the container, will not be acceptable.

With metal containers, unless the root-ball system slips easily and unbroken from the can, a nursery can-cutter shall be used to slit the can in such a way that the can may be opened fully.

CG plants shall not be removed from the can until immediately before planting, and with all due care to prevent damage to the root system.

- G. Submit to the CITY the names and locations of nurseries proposed as sources of acceptable plant material. The CITY reserves the right to visit the nursery to inspect and/or select the specified material.
- H. The CITY will be included in the hand selecting of all Live Oaks for the project.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Inspection and Transporting: Movement of nursery stock shall comply with all Federal, State, and local laws and regulations. Therefore, required inspection certificates shall accompany each shipment, and shall be filed with the CITY.

Wrap root balls with burlap. Wire wraps burlap if root ball is not sufficiently compacted. Palms will not require burlap wrapping if the following requirements are met:

1. Dug from marl or heavy soil that adheres to roots and retains shape without shattering.
2. Moistened material used to cover ball and roots not exposed to wind and sun.

**SECTION 02900
LANDSCAPE WORK**

3. Transport material on vehicles large enough to allow plants not to be crowded. Plants shall be covered to prevent wind damage during transit and shall be kept moist, fresh and protected at all times. Such protection shall encompass the entire period, which the plants are in transit, being handled, or are in temporary storage.
 - B. All plant material shall not remain on the work site longer than two (2) days prior to being installed.
- 1.06 SUBSTITUTIONS
- A. Substitutions of plant types or change in the size of plant material will only be permitted upon submission of documented proof that the particular plant type and size specified is not obtainable.
 - B. Where B&B or WB&B plants are specified, CG plants of the same species, etc., will not be accepted. Where a B&B or WB&B is not specified on a particular plant material, B&B, WB&B or CG plants may be used provided they meet all specifications.
- 1.07 GUARANTEE
- A. All plant material shall be guaranteed for a minimum of one (1) calendar year from the time of final acceptance.
- 1.08 REPLACEMENT
- A. The guaranteeing of plant material shall be construed to mean the complete and immediate replacement of plant material if it is:
 1. Not in a healthy growing condition.
 2. There is a question to its survival ability at the end of the guarantee period.
 3. It is dead.
- 1.09 SIZE, QUALITY AND GRADE OF REPLACEMENT
- A. Replacement plant material shall be of the same species, quality and grade as that of the plant to be replaced. The size of the replacement shall not necessarily be the same size as the original specified plant at its initial planting but shall closely match specimens of the same species. Replacements shall be guaranteed for a period equal to the originally specified guarantee. This guarantee period shall begin at time of plant replacement.
- 1.10 GUARANTEE NULL AND VOID
- A. The guarantee shall be null and void for plant material which is damaged or dies as a result of "Act of God" limited to hail, freeze, lightening, winds which exceed hurricane force, and lethal yellowing, providing the plant was in a healthy growing condition prior to these "Acts of God".

**SECTION 02900
LANDSCAPE WORK****PART 2 - MATERIALS****2.01 PLANT MATERIAL**

- A. Florida No. 1: Except where another grade is specifically called for in the Plans, all plant material shall be no less than Florida No. 1 at the time of final inspection immediately prior to the acceptance by the OWNER.
- B. Habit of Growth: All plant material shall have a habit of growth that is normal for that species and shall be sound, healthy, vigorous and free from insects, plant diseases, injuries, and dead limbs.
- C. Branching, Leafing, Measurements and Ball Sizes:
 - 1. Trees and Shrubs: Requirements for the measurement, branching character, ball diameter, depth and other standards shall follow the Code of Standards recommended by the American Association of Nursery Stock, Bulletin Z-60.1-1973 and as revised.
 - 2. Palms: Requirements for the measurement of clear trunk, clear wood and graywood ball diameter and depth shall comply with requirements as set forth by the Florida department of Agriculture's "Grades and Standards for Nursery Plants, Part II for Palms and Trees".
- D. Die-Back and Leaf-Drop: Plant material showing signs of die-back or leaf-drop will not be accepted and must be removed from the job immediately if so, directed by the CITY. Therefore, any plant material with tendencies toward leaf-drop or dieback must be root pruned early enough to provide a sound network of hair roots prior to relocation to the job site.
- E. Mechanical Destruction of Foliage: Mechanical destruction of foliage resulting from root pruning shall not affect more than 10% of the total foliage prior to planting on the job site. Loss of foliage caused by seasonal change will be accepted.
- F. Spanish Moss: If Spanish Moss (*Tillandsia usneoides*) exists on plant material, it shall be completely removed prior to planting on the job site.
- G. Palms: Before transporting, see Delivery, Storage and Handling; for requirements related to wrapping of root balls.
 - 1. Remove a minimum of fronds from the crown of the palms to facilitate transporting and handling.
 - 2. Palms with burn marks, nail holes, and frond boots on trunk shall not be accepted.
 - 3. Using untreated burlap strip or untreated cotton twine, tie Sabal Palmetto buds and leave in place until Palmetto is established. Tying shall be as set forth in Florida Department of Agriculture's "Grades and Standards for Nursery Plants". Tying of other palms shall be at the option of the DBF.
 - 4. To reduce head volume, Palm fronds may be taper trimmed by not more than one-third (1/3).
 - 5. Palm trees showing cable or chain marks and equipment scars shall be rejected.

Exhibit B
Technical Specifications

02900 - 4

**SECTION 02900
LANDSCAPE WORK**

- H. Chlorosis: The allowable level of Chlorosis in foliage shall be as set forth in the Florida Department of Agriculture's "Grades and Standards for Nursery Plants".

2.02 PLANTING SOILS

- A. General Type: All plant material with the exception of Sabal Palmetto shall be planted with planting soil mixed with 50% original soil, if the soil is of good quality, as determined by the CITY. The planting soils shall be sandy loam (50% sand, and 50% muck) typical of the locality. The soil must be taken from ground that has never been stripped, with a slight acid reaction (5.5 to 6.5ph) and without an excess of calcium or carbonate. Soil shall be delivered in a loose friable condition.
- B. Special Type: Planting soil for palms shall be a good grade of salt free sand, which is free of all weeds.

2.03 WATER

- A. Water shall be potable, from municipal water supplies or other sources, which are approved by a public health department.

2.04 MULCH

- A. Mulch shall be Eucalyptus mulch or other approved non-native tree bark mulch. It must be uniformly shredded and be free from pieces of bark larger than 1 inch, foreign matter, weed seeds and any other organic or inorganic material. Submit sample for approval. DBF shall apply one application at initial installation and a second application prior to final acceptance.

2.05 FERTILIZER

- A. New Plant Material: Trees, palms and shrubs, fertilize with Agriform planting tablets, 20-20-5 formula, 21 gram or approved equal.
- B. New Ground Covers: Fertilize with an approved fertilizer of fifty percent (50%) or greater organic 6-6-6 or 8-8-8 with minor elements including, but not limited to, iron zinc and manganese.
- C. Composition of Quality: All fertilizer shall be uniform in composition and dry. Granular fertilizer shall be free flowing and delivered in manufacturers standard container with name of material, weight and guaranteed analysis printed on container. Tabletized fertilizer shall be delivered in unopened containers or boxes. All bags, containers or boxes shall be fully labeled with the manufacturer's analysis. Submit labels to CITY for approval prior to placement of fertilizer.
- D. All shall comply with the State of Florida fertilizer laws.

2.06 PRUNING PAINT

- A. Pruning paint shall be commercial tree paint, which is waterproof, antiseptic, adhesive, elastic and free of kerosene, water, cresol and any other substances harmful to plant material.

2.07 VEGETATIVE ROOT INHIBITOR

- A. A vegetative root inhibitor shall consist of a polypropylene fabric with root control time-release modules of Trifluralin with an effective life of 100 years or approved equal.

Exhibit B
Technical Specifications

02900 - 5

**SECTION 02900
LANDSCAPE WORK**

- B. Vegetative root inhibitor shall be Bio-Barrier as manufactured by Reemay, Inc. or approved equal.

PART 3 - EXECUTION**3.01 INSPECTION**

- A. Utilities: The location and existence of utilities (overhead and underground) shall be thoroughly investigated and verified by the DBF before the work begins in the area of said utilities. The DBF shall exercise care in digging and work so as not to damage existing utilities in said areas, such as underground pipes, cables, wires, etc. Should such overhead or underground obstructions be encountered which interfere with planting, the CITY shall be consulted immediately in order for a decision to be made on the relocations of plant material to clear such obstruction. The DBF shall be responsible for the immediate repair of any damage to utilities caused by DBF's work.

3.02 PREPARATION

- A. Staking Plant Locations: Plant locations must be staked or marked prior to plant hole excavation or placing on deck, by scaling the plants from existing features found on-site and shown on the plans or by given dimensions if shown.
- B. Spacing of Shrubs: Shrub beds located next to another bed, walkway, structure, etc., shall have the plants along the perimeter spaced so that the plants can mature properly without growing into the other bed, walkway, structure, etc.
- C. Excavation of Plant Holes: Excavation of plant holes shall be roughly cylindrical in shape with the sides approximately vertical. The CITY reserves the right to adjust the size and shape of the plant hole and the location of the plant in the hole to compensate for unanticipated structures or unanticipated factors. All plant holes shall be sufficiently deep to allow the rootball to set on existing soil and have root collar at grade level. Plants shall be centered in the holes with the tree trunk locations scaled from existing permanent structures as shown on the drawings. Plants shall be set straight or plumb in locations. All plant holes to accommodate plants with ball sizes less than 24 inches in diameter shall be at least 18 inch greater than the diameter of the ball. All plants holes to accommodate plants with ball sizes two feet (2') and larger in diameter shall be at least twice the diameter of the ball. The excavated material from the plant holes may not be used to back-fill around the plant material. Such material shall be disposed of either on the project site or off the site as directed by the CITY. Plant holes for shrub material planted in mass shall meet all requirements listed above for plant holes. However, they shall not be individual holes but one continuous hole or excavation. Plant holes for hedge material shall also meet all requirements listed above for plant holes, however, a continuous trench shall be used in lieu of individual holes.

3.03 INSTALLATION

- A. Setting of Plants:
1. When lowered into the hole the plant shall rest on the prepared hole bottom such that the roots after settlement are level, or slightly above the level of its previous growth condition and the final level of the ground around the plant shall conform to the surrounding grade. The plants shall be set straight or plumb or normal to the relationship of their growth prior to transplanting. The CITY reserves the right to realign any plant material after it has been set.

Exhibit B
Technical Specifications

02900 - 6

**SECTION 02900
LANDSCAPE WORK**

2. Palms of the Sabal species may be set deeper than the depth of their original growth condition in order to lessen the necessity for support or bracing. For such deeper planting however, it will be required that the underlying soil be friable and that the clear trunk requirements set forth in the plant list be maintained from the finished grade and NOT from the previous grade of the palm trees before it was transplanted.
 3. Plant material of the shrub category and smaller must be handled by the ball only. Plant material too large for hand handling, if moved by winch or crane, must be thoroughly protected from chain, rope or cable marks, girdling, bark slippage, limb breakage and any other damage that might occur by improper handling or negligence.
 4. All palm trees handled by the trunks must be wrapped with burlap and wood battens, held in place by banding strips as called for in the details.
- B. Backfilling:
1. Use planting soils approved by the City. Backfill to the bottom two thirds of the planting hole and firmly tamp and settle by watering as backfilling progresses. After having tamped and settled the bottom two thirds (2/3) of the hole, thoroughly puddle with water and fill remaining one third (1/3) of the hole with planting soil, tamping and watering to eliminate air pockets.
- C. Application of Fertilizer:
1. Fertilize New Planting (Trees, Palms and Shrubs) as follows:

a.	Specified Container Size	Application Rate
	1 gallon container	1 tablet
	3 gallon container	2 tablets
	5 gallon container	3 tablets
	7 gallon container	5 tablets
b.	Large tubs or boxes and B&B material shall receive one (1) tablet for each one-half (1/2) inch of trunk diameter (measured three (3) feet from ground). For large shrubs, one (1) tablet for each one (1) foot of height or spread.	
- D. Mulch: Within 24 hours after planting, planting areas must be mulched as called for in these specifications. The mulch shall be uniformly applied to a depth of two (2) inches over all shrub, tree and groundcover areas and any areas indicated on the plans.
- E. Staking and Guying shall be installed within 24 hours; in accordance with details.
- F. Initial Watering: Initially, water the plant material to develop uniform coverage and deep-water penetration of at least six inches (6"). Avoid erosion, puddling, and washing soil away from plant roots.
- G. Hand Watering: Provide hand watering of plant material as necessary subject to weather conditions, to maintain healthy growing conditions until final acceptance. This shall be in addition to water received from irrigation system, if any.

Exhibit B
Technical Specifications

02900 - 7

**SECTION 02900
LANDSCAPE WORK****H. Pruning:**

1. The amount of general pruning shall be limited to the minimum necessary to remove dead or injured twigs and branches and to compensate for the loss of roots as a result of transplanting operations. Pruning shall be done in such a manner as not to change the natural habit of shape of a plant, and in accordance with National Arborist Association standards for pruning.
 2. All broken or damaged roots shall be cut off smoothly. The tops of all trees shall be pruned in a manner complying with standard horticultural practices. All cut surfaces of one-half inch (1/2") or more in diameter above ground level shall be treated with approved commercial tree paint.
- I. Weeding: In the event that weeds, or undesirable vegetation becomes prevalent to such an extent that they threaten plant material, they shall be removed as directed by the CITY. If necessary, the plant material and/or planting soil shall be replaced as needed to eliminate the weeds at the expense of the DBF.

3.04 CLEANING AND PROTECTION

- A. Disposal of Trash: All debris and other objectionable material created through planting operations and landscape construction shall be removed completely on a daily basis from the job or as directed by the CITY. Excess soil shall be disposed of as directed by the CITY.
- B. Responsibility for Protection and Restoration of Property: The DBF shall be responsible for all damage to property whether it is accidental or necessary for the completion of the contract.
- C. Protection Against Mechanical Damage: The DBF's responsibility for protection against mechanical damage shall include providing protection from vehicles and providing warning signs and barricades as might be necessary and DBF shall repair, restore and replace any planting areas which become damaged as a result of any negligence of the DBF or DBF's employees in complying with these requirements. Coordination shall be with the OWNER.
- D. Responsibility Prior to Final Acceptance:
1. Maintenance shall begin immediately after each plant is planted and continue until final acceptance.
 2. Plants shall be watered by hose, soaking thoroughly each day for the first two weeks (14 calendar days) and every other day for the following two week period. Soaking then shall continue on a twice weekly basis for another period of three (3) weeks for material over five feet (5') height, amounting to a total of 28 days after installation of planting under five feet (5') and a total of 45 days for plants over five feet (5'). All watering is required without regard to an irrigation system.
 3. Plant maintenance shall include watering, pruning, weeding, cultivating, mulching, tightening and repairing of guys, stakes, braces, etc., replacement of sick or dead plants, resetting plants to proper grades or upright position and maintenance of the watering saucer, and all other care needed for proper growth of the plants. Plant material rejected during the course of the construction shall be removed within five (5) working days and replaced before the inspection for completion will be scheduled.

Exhibit B
Technical Specifications

02900 - 8

**SECTION 02900
LANDSCAPE WORK**

4. During the maintenance period and up to the issuance of Certificate of Final Acceptance, the DBF shall do all seasonal spraying and/or dusting of all planting. The materials and methods shall be in accordance with the highest standard nursery practices and as recommended by the CITY prior to implementation.
5. Planting areas and plants shall be protected against trespassing and damage. If any plants become damaged or injured, they shall be treated or replaced, as directed and in compliance with this specification. No work shall be done within or over planting areas or adjacent to plants without proper safeguards and protection.

3.05 MEASUREMENT AND PAYMENT

- A. Measurement and payment will be based on actual quantities installed as more specifically discussed and described in SECTION 01025 of MEASUREMENT AND PAYMENT.

END OF SECTION 02900

**SECTION 02910
SODDING****PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. The work included in this section consists of furnishing all labor, supplies, equipment and materials necessary to complete the installation of sod and associated materials herein after listed and as shown on the plans.

1.03 RELATED WORK

- A. Section 02200 - Earthwork.
- B. Section 02900 - Landscape Work.

1.04 QUALITY ASSURANCE

- A. Sodding work shall be performed by a firm specializing in sodding.
- B. Source Quality Control: Ship sod with certificates of inspection as required by governing authorities.

Do not make substitutions. If specified sod is not obtainable, submit proof of non-availability to CITY, together with proposal for use of equivalent material.

- C. Analysis and Standards: Package standard products with manufacturer have certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.

1.05 SUBMITTALS

- A. Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Plant and Material Certifications:
 - 1. Certificate of inspection as required by governmental authorities.
 - 2. Manufacturer's or vendor's certified analysis for soil amendments or fertilizer materials.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Packaged Materials: Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery, and while stored at site.
- B. Sod: Time delivery so that sod will be placed within 24 hours after stripping. Protect sod against drying.
- C. Transporting:

Exhibit B
Technical Specifications

02910 - 1

**SECTION 02910
SODDING**

1. Sod transported to the project in open vehicles shall be covered with tarpaulin or other suitable covers securely fastened to the body of the vehicle to prevent injury to the sod material. Closed vehicles shall be adequately ventilated to prevent overheating of the sod. Evidence of inadequate protection against drying out in transit shall be cause for rejection.
2. Sod shall be kept moist, fresh and protected at all times. Such protection shall encompass the entire period during which the sod is in transit, being handled, or in temporary storage.
3. Upon arrival at the temporary storage location or the site of work, sod shall be inspected for proper shipping procedures. Should the roots be dried out, the CITY will reject the sod. When sod has been rejected, the DBF shall remove it at once from the area of the work and replace it.
4. Unless otherwise authorized by the CITY, the DBF shall notify the CITY at least 48 hours in advance of the anticipated delivery date of sod material. A legible copy of the invoice, showing species and variety of sod included for each shipment shall be submitted to the CITY. Certificate of Inspection must accompany each sod shipment.

1.07 JOB CONDITIONS

- A. Begin installation of sod after preceding related work is accepted.
- B. Environmental Requirements:
 1. Install sod during months acceptable to the CITY.
 2. Do not install sod on saturated soil.
- C. Protection: Erect signs and barriers to control vehicular traffic.
- D. Utilities: Determine location of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate, as required. Maintain grade stakes set by others until parties concerned mutually agree upon removal.

1.08 SEQUENCING AND SCHEDULING

- A. Correlate planting with specified maintenance periods to provide maintenance from date of substantial completion.
- B. Coordination with sodding: Plant trees, palms and shrubs after final grades are established and prior to planting of sod, unless otherwise acceptable to CITY. If planting of trees, palms and shrubs occurs after sod work, protect sod areas and promptly repair damage to lawns resulting from planting operations.

1.09 SPECIAL PROJECT WARRANTY

- A. Warranty sod through specified lawn maintenance period, and until final acceptance.

Exhibit B
Technical Specifications

02910 - 2

**SECTION 02910
SODDING****PART 2 - PRODUCTS****2.01 PLANTING SOIL**

- A. Provide new planting soil that is fertile, friable, natural loam, surface soil, reasonably free of subsoil, clay lumps, brush, weeds and other litter, and free of roots, stumps, stones larger than 1 inch in any dimension, and other extraneous or toxic matter harmful to plant growth.
- B. Obtain planting soil from local sources or from areas having similar soil characteristics to that found at project site.
- C. Refer to Section 162 of the "FDOT Standard Specifications for Road and Bridge Construction" dated 2007 for Topsoil Specifications.

2.02 COMMERCIAL FERTILIZER

- A. For sod, provide fertilizer with percentage of nitrogen required to provide not less than 1 pound of actual nitrogen per 1,000 square foot of lawn area and not less than 4 percent phosphoric acid and 2 percent potassium. Provide nitrogen in a form that will be available to sod during initial period of growth; at least 50 percent of nitrogen to be organic form.

2.03 SOD

- A. Provide strongly rooted sod, not less than 2 years old, free of weeds and undesirable native grasses, and machine cut to pad thickness of 1-1/2 inch (plus or minus 1/4 inch), excluding top growth and thatch. Provide only sod capable of vigorous growth and development when planted (viable, not dormant).
- B. Provide sod uniform pad sizes with maximum 5 percent deviation in either length or width. Broken pads with uneven ends will not be acceptable. Sod pads incapable of supporting their own weight when suspended vertically with a firm grasp on upper 10 percent of pad will be rejected.
- C. Provide sod composed of the following:
 - 1. St. Augustine
 - 2. Bahia
- D. Sod shall be nursery grown on cultivated mineral agricultural soils. Sod shall have been mowed regularly and carefully maintained from planting to harvest.
- E. American Sod Producers Association (ASPA) Grade: Nursery Grown or Approved. Field grown sod is not acceptable.
- F. Furnished in pads:
 - 1. Size:
 - a. Length: 24 inches plus or minus 5%.
 - b. Width: 18 inches plus or minus 5%
 - c. Thickness: 1-1/2 inches excluding top growth and thatch.
 - 2. Not stretched, broken or torn.

Exhibit B
Technical Specifications

02910 - 3

**SECTION 02910
SODDING**

- G. Uniformly mowed height when harvested: 2 inches.
 - H. Thatch: Maximum 1/2 inch uncompressed.
 - I. Inspected and found free of disease, nematodes, pests, and pest larvae, by entomologist of State Department of Agriculture.
 - J. Weeds:
 - 1. Free of Bermuda grass, nut grass or other objectionable weeds.
 - K. Uniform in color, leaf texture, and density.
- 2.04 WATER
- A. Water shall be potable, from municipal water supplies or other sources which are approved by a public health department.
- 2.05 FERTILIZER
- A. FS O-F-241c (1), Grade A or B.
 - B. The chemical designation shall be 1-8-8, with at least 50 percent of the nitrogen from a non-water-soluble organic source.
- 2.06 HERBICIDES
- A. As recommended by the State Department of Agriculture.
- 2.07 STAKES
- A. Softwood, 3/4-inch diameter, 8-inch length.

PART 3 - EXECUTION**3.01 PREPARATION OF GROUND SURFACE**

- A. Before mixing, clean planting soil of roots, plants, sods, stones, clay lumps, and other extraneous material harmful or toxic to plant growth.
- B. Mix specified fertilizers with planting soil as necessary at rates specified. Delay mixing fertilizer if planting will not allow placing of planting soil within a few days.
- C. For sod, mix planting soil either prior to planting or apply on surface of topsoil and mix thoroughly before planting.

3.02 PREPARATION OF PLANTING BEDS

- A. Loosen subgrade of lawn areas to a minimum depth of 4 inches. Remove stones measuring over 1 1/2 inches in any dimension. Remove sticks, stones, rubbish, and other extraneous matter. Limit preparation to areas, which will be planted promptly after preparation.
- B. Spread planting soil to minimum depth of 2 inches or as required meeting lines, grades, and

Exhibit B
Technical Specifications

02910 - 4

**SECTION 02910
SODDING**

elevations shown, after light rolling and natural settlement. Add specified fertilizer and mix thoroughly into upper 4 inches of topsoil.

- C. Place approximately 1/2 of total amount of topsoil required. Work into top of loosened subgrade to create a transition layer and then place remainder of planting soil. Add specified soil amendments and mix thoroughly into upper 4 inches.
- D. Where sod is to be planted in areas that have not been altered or disturbed by excavating, grading, or stripping operations, prepare soil for lawn planting as follows: Till to a depth of not less than 6 inches. Apply fertilizers as specified. Remove high areas and fill in depressions. Till soil to a homogenous mixture of fine texture, free of lumps, clods, stones, roots and other extraneous matter.
- E. Prior to preparation of unchanged areas, remove existing grass, vegetation and turf. Dispose of such material outside of OWNER's property. Do not turn existing vegetation over into soil being prepared for lawns.
- F. Allow for sod thickness in areas to be sodded.
- G. Apply specified commercial fertilizer at rates specified and thoroughly mix into upper 2 inches of topsoil. Delay application of fertilizer if lawn planting will not follow within a few days.
- H. Fine grade sod areas to smooth, even surface with loose, uniformly fine texture. Roll, rake, and drag lawn areas, remove ridges and fill depressions, as required to meet finish grades. Limit fine grading to areas, which can be planted immediately after grading.
- I. Moisten prepared sod areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting lawns. Do not create a muddy soil condition.
- J. Restore sod areas to specified condition, if eroded or otherwise disturbed, after fine grading and prior to planting.

3.03 SODDING NEW LAWNS

- A. Lay sod within 24 hours from time of stripping.
- B. Lay sod to form solid mass with tightly fitted joints. Butt ends and sides of sod strips; do not overlap. Stagger strips to offset joints in adjacent courses. Work from boards to avoid damage to subgrade or sod. Tamp or roll lightly to ensure contact with subgrade. Work sifted soil into minor cracks between pieces of sod; remove excess to avoid smothering of adjacent grass.
- C. Anchor sod on slopes with wood pegs to prevent slippage.
- D. Water sod thoroughly with a fine spray immediately after planting.

3.04 MAINTENANCE

- A. Begin maintenance immediately after planting.
- B. Maintain lawns for not less than 30 days after substantial completion, and longer as required to establish an acceptable lawn.
- C. Maintain sod by watering, fertilizing, weeding, mowing, trimming, and other operations such as

Exhibit B
Technical Specifications

02910 - 5

**SECTION 02910
SODDING**

rolling, regrading and replanting as required to establish a smooth, acceptable lawn, free of eroded or bare areas.

D. Mowing:

1. Whenever grass reaches a height of 3 inches, it shall be cut back to 2 inches with all clippings removed.
2. After two mowings, DBF shall topdress the sod with an application of fertilizer at the rate of 1 pound of actual nitrogen per 1,000 square feet.

3.05 CLEANUP AND PROTECTION

- A. During sodding work, keep pavements clean and work area in an orderly condition.
- B. Protect sodding work and materials from damage due to landscape operations, operations by other DBFs and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged sod work as directed.

3.06 INSPECTION AND ACCEPTANCE

- A. Sod areas will be accepted when in compliance with all the following conditions:
1. The roots are thoroughly attached to the soil.
 2. Absence of visible joints.
 3. All areas show a uniform stand of specified grass in healthy condition.
 4. At least 60 days have elapsed since the completion of the work in this section.
- B. When inspected sod work does not comply with requirements, replace rejected work and continue specified maintenance until reinspected by CITY and found to be acceptable. Remove rejected plants and materials promptly from project site.
- C. Procedure:
1. The DBF shall submit a request for acceptance in writing to the CITY. Request must be received not less than 10 days before the anticipated date for final inspection.
 2. Upon completion of all repairs and/or renewals required by CITY at the inspection, the CITY will verify the completeness of the work and then notify the DBF that the work is completed.
 3. Upon completeness, the OWNER will assume maintenance of all sod areas.

3.07 MEASUREMENT AND PAYMENT

- A. Measurement and payment will be based on actual quantities installed as more specifically discussed and described in SECTION 01025 of MEASUREMENT AND PAYMENT.

END OF SECTION 02910

Exhibit B
Technical Specifications

02910 - 6

**SECTION 02990
SLIP LINING****PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. The work included in this section consists of furnishing all labor, supplies, equipment and materials necessary to complete the installation of **Primus Line** Reinforced Liner and associated materials. Includes the rehabilitating an existing 18" DIP via the installation of a Primus Line® a flexible Kevlar® reinforced liner with an outer layer of PE and an inner layer of TPU.

1.03 QUALITY ASSURANCE AND WARRANTY

- A. DBF shall provide all necessary quality control and a warranty period of two (2) years in which all repairs will be at the DBF.
- B. The DBF shall determine the design loads for the pipe to be installed and determine the required thickness with regard to the materials specified. External loads (earth loads/live loads/hydrostatic pressure), construction loads (external grout pressure/jacking force), support developed by annulus grouting, long-term flexural strength/modulus, together with appropriate safety factors are engineering considerations. The Design is specific to the Process.
- C. Do not make substitutions

1.04 SUBMITTALS

- A. Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
1. Fittings
 2. Pipe material and related shop drawings
 3. Related Materials
 4. Manufacturer's or vendor's material certification.

1.05 DELIVERY, STORAGE AND HANDLING

- A. As per manufacturer's recommendation.

1.06 DESIGN REQUIREMENTS

- A. Pipe shall be able to accommodate 100 psi or working pressure.
- B. Pipe shall be designed to accommodate for negative pressure and surge pressures.

1.06 EXPERIENCE REQUIREMENTS

For this project, Prospective Bidder shall have the minimum following experience installing Primus Line and must submit representative projects that support said experience:

1. Prime contractor must have completed three (3) Subaqueous Bore crossings of 20" or

Exhibit B
Technical Specifications

02990 - 1

**SECTION 02990
SLIP LINING**

- larger in the past 5 years.
2. Prime contractor must have a minimum of five years of experience in installation of ***Primus Line***.
 3. Prime Contractor must have completed at a minimum of 10,000 linear of 18" or larger in the past 3 years.

B. Pipe shall be designed to accommodate for negative pressure and surge pressures.

PART 2 - EXECUTION**2.01 CLEANING**

- A. Cleaning: The DBF shall thoroughly clean the sewer line prior to the TV inspection and subsequent line installation. Host pipe must be free of debris, jagged edges, appurtenances and anything that can compromise the liner
- B. TV Inspection: The pipeline shall be inspected to determine the location of any conditions which may prevent proper line installation.
- C. Obstruction Removal: It shall be the responsibility of the DBF to clear the line of obstructions such as solids, dropped joints, intruding service connections, or collapsed pipe that would prevent line installation.
- D. Pipe Installation: Procedures for liner installation are specific to the method being used and shall strictly adhere to manufacturer's recommendation.

2.02 MEASUREMENT AND PAYMENT

- A. Measurement and payment will be based on actual quantities installed.

END OF SECTION 02990

**SECTION 03010
CONCRETE****PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. Provide all labor, materials, necessary equipment and services to complete the concrete work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".
- B. Including but not necessarily limited to the following:
 - 1. Form work, shoring, bracing and anchorage.
 - 2. Concrete reinforcement and accessories.
 - 3. Cast-in-place concrete.
 - 4. Plugging abandoned pipelines and/or structures in place.

1.03 RELATED WORK

- A. Section 02510 - Concrete sidewalk
- B. Section 02513 - Asphaltic Concrete Paving - General
- C. Section 03300 - Cast-in-Place Concrete.
- D. All applicable sections of Division 1, 2, 3 and 4.

1.04 QUALITY ASSURANCE

- A. All work shall be in accordance with ACI 301, latest edition, a copy of which shall be maintained on site.
- B. Requirements of Regulatory Agencies: perform work in accordance with local building and other applicable codes.
- C. Installation: Performed only by skilled laborers with satisfactory record of performance on completed projects of comparable size and quality.
- D. Inspection and Testing:
 - 1. Test Cylinders - As per ASTM C-39.
 - a. Minimum of three (3) concrete test cylinder shall be taken for every 75 or less cubic yards of concrete placed each day.

Exhibit B
Technical Specifications

03010 - 1

**SECTION 03010
CONCRETE**

- b. Minimum of one (1) slump test shall be taken during any cold weather concreting and be cured on job site under same conditions as the concrete it represents.
 - 2. Slump Test - As per ASTM C-143.
 - a. Minimum of one (1) slump test shall be taken for each set of test cylinders taken.
- 1.05 SUBMITTALS
- A. Test Reports: Reports of concrete compression, yield, air content and slump tests.
 - B. Certificates:
 - 1. Manufacturer's certification that materials meet specification requirements.
 - 2. Material content per cubic yards of each class of concrete furnished.
 - a. Dry weights of cement.
 - b. Saturated surface-dried weights of fine and coarse aggregate.
 - c. Quantities, type and name of all mixtures.
 - d. Weight of water.
 - 3. Ready-mix delivery tickets as per ASTM C-94.
 - C. Shop Drawings:
 - 1. Show sizes and dimensions for fabrication and placing of reinforcing steel and bar supports.
 - 2. Indicate reinforcement sizes, spaces, locations and quantities of reinforcing steel, and wire fabric, bending and cutting schedules, splicing and supporting and spacing devices.
 - 3. Indicate formwork dimensioning, materials, arrangement of joints and ties.
 - 4. Shop drawings shall be prepared under seal of a Professional Structural Engineer, registered in the State of Florida.
- 1.06 DELIVERY, STORAGE AND HANDLING
- A. Deliver reinforcement to project site in bundles marked with metal tags indicating bar size and length.
 - B. Handle and store materials to prevent contamination.
- 1.07 JOB CONDITIONS
- A. Allowable concrete temperatures:
 - 1. Hot weather: Maximum 90 degrees F as per ASTM C-94.
 - B. Do not place concrete during rain, unless protection is provided.

Exhibit B
Technical Specifications

03010 - 2

**SECTION 03010
CONCRETE****PART 2 - PRODUCTS****2.01 FORM MATERIALS**

- A. Materials shall conform to ACI 301, latest edition.
- B. Plywood forms: Douglas Fir Species, solid one side, form grade, sound undamaged sheets.
- C. Lumber: Southern Pine Species, No. 2 Grade, with grade stamp clearly visible.
- D. Form Ties: Removable, snap-off metal, of fixed and adjustable length, cone ends.
- E. Tubular Column Type: Round, spirally wound laminated fiber material, clearly visible.

2.02 REINFORCING STEEL

- A. Reinforcing steel shall conform to ASTM A615, 60 ksi yield grade billet steel reformed bars; uncoated finish.
- B. Welded steel wire fabric shall conform to ANSI/ASTM A185, plain type; coiled rolls, uncoated finish.

2.03 CONCRETE MATERIALS

- A. Cement: shall conform to ASTM C150, normal Type II Portland, gray color.
- B. Fine and coarse aggregate shall conform to ASTM C33.
- C. Water: clean and not detrimental to concrete.

2.04 ADMIXTURES

- A. Air Entraining: ASTM C-260
- B. Chemical: Type (as required) ASTM C-494.
- C. Fly Ash and Pozzolans: ASTM C-618
- D. Color - Conditioned Concrete: ASTM C-494 and ASTM C-979

2.05 ACCESSORIES

- A. Non-shrink grout: pre-mixed compound with non-metallic aggregate, cement, water reducing and plasticizing agents; capable of minimum compressive strength of 3500 psi.
- B. Construction joints: locate and install construction joints, which are not shown on drawings, so as not to impair strength and appearance of the structure, as acceptable to the CITY. Place construction joints perpendicular to the main reinforcement, continue reinforcement across construction joints.
- C. Expansion joints: shall be a minimum of 3/4-inch thick asphalt impregnated fiberboard as per ASTM D-1751.

Exhibit B
Technical Specifications

03010 - 3

**SECTION 03010
CONCRETE**

- D. Form release agent shall be a colorless material, which will not stain concrete, absorb moisture or impair natural bonding or color characteristics of coating intended for use on concrete.
- E. Water shall be clear and potable.

2.06 CURING MATERIALS

- A. Water shall be clean and potable.
- B. Absorptive mat shall be burlap fabric of 9 oz./sq. yd. clean, roll goods complying with AASHTO M182, Class 3.
- C. Membrane curing compound shall conform to ASTM C309.
- D. Clear Sealer: "Clear Bond" as manufactured by Guardian Chemical Co., Dayton Day-Chem Cure-W (J-9-A) or approved equal.
- E. Color curing compound shall be liquid membrane-forming conforming to ASTM C 309 two-component Lithochrome Colorwax by L.M. Scofield Company, or approved equal, color to match admixture for color-conditioned concrete.

2.07 CONCRETE MIX

- A. Mix concrete in accordance with ASTM C94.
- B. Concrete:
 - 1. Compressive strength (28 days): 3000 psi.
 - 2. Slump: 4(±) 1 inch.
- C. Concrete / Flowable fill for grouting and plugging:
 - 1. Compressive strength (28 days) 2000 psi.
 - 2. Slump: as required to grout and plug.

PART 3 - EXECUTION**3.01 FORMWORK ERECTION**

- A. Verify lines, levels, and measurement before proceeding with formwork.
- B. Hand trimmed sides and bottom of earth forms; remove loose dirt.
- C. Align form joints.
- D. Do not apply form release agent where concrete surfaces receive special finishes or applied coatings, which may be affected by agent.
- E. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors and other inserts.

Exhibit B
Technical Specifications

03010 - 4

**SECTION 03010
CONCRETE****3.02 REINFORCING**

- A. Place, support and secure reinforcement against displacement.

3.03 PLACING CONCRETE

- A. Color Conditioned concrete, when batching, shall not be less than one-third of the capacity of the mixing drum (a minimum of four yards for a ten yard mixer) and will be in full cubic yard increments.
- B. Notify CITY minimum 24-hours prior to commencement of concreting operations.
- C. Scratch, float, trowel, broom or belt finish surfaces, as scheduled or indicated on the Drawings.
- D. Place 2000 psi concrete for pugging and grouting pipelines and structures in-place as required after proper connection to new service and function of system is complete.

3.04 TOLERANCES

- A. Provide Class B tolerance to floor slabs according to ACI 301. Pitch to drains 1/4 inch per foot.

3.05 FINISHES FOR EXPOSED SURFACES

- A. Provide exposed surfaces with finishes as called for on the Drawings.

3.06 CONCRETE CURING

- A. Curing for standard grey work after finishing, cure concrete by keeping moist for one (1) week after placement. Floors and vertical surfaces may be sprayed with an approved curing compound to retard evaporation of water, if spraying is not objectionable because of future finishing requirements. Begin curing operations as soon as concrete has attained its initial set. Keep exposed concrete surface moist for at least one (1) week.
- B. Apply a liquid membrane-forming compound, conforming with ASTM C 309, color to match that of the color condition concrete. Apply on flat work immediately after the finishing operation pursuant to the manufacturers recommendations.

3.05 MEASUREMENT AND PAYMENT

- A. No separate measurement and payment is provided for work covered by this Section. All costs in connection with concrete work shall be included in the bid price of any item in the Bid Schedule for which concrete products, materials, or appurtenances are required.

END OF SECTION 03010

**SECTION 03100
CONCRETE FORM WORK**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. Formwork for Cast-In-Place Concrete, with shoring, bracing, and anchorage.
- B. Openings for other affected work.
- C. Form accessories.
- D. Stripping forms.

1.03 RELATED WORK

- A. Section 03010 - Concrete.
- B. Section 03300 - Cast-In-Place Concrete.

1.04 SYSTEM DESCRIPTION

- A. Design, engineer and construct formwork, shoring and bracing to meet design code requirements, so that resultant concrete conforms to required shapes, lines, and dimensions.

1.05 QUALITY ASSURANCE

- A. Construct and erect concrete formwork in accordance with ACI 301 and 347.

1.06 SUBMITTALS

- A. Indicate pertinent dimensions, materials, and arrangement of joints and ties.
- B. Prepare shop drawings under seal of Professional Structural Engineer registered in the State of Florida.
- C. Manufacturers certification that materials meet specification requirements.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle materials in accordance with manufacturers recommendations.
- B. Deliver form materials in manufacturer's packaging with installation instructions.
- C. Store off ground in ventilated and protected area to prevent deterioration from moisture or damage.
- D. Remove packaging from void forms.

Exhibit B
Technical Specifications

03100 - 1

**SECTION 03100
CONCRETE FORM WORK**

PART 2 - PRODUCTS

2.01 FORM MATERIALS

- A. Plywood: Douglas Fir Species; medium density overlaid one side grade; sound, undamaged sheets with straight edges.
- B. Lumber: Southern Pine Species; No. 2 grade; with grade stamp clearly visible.
- C. Tubular Column: Round, of spirally wound laminated fiber type; surface treated with release agent; of size required.

2.02 FORMWORK ACCESSORIES

- A. Form Ties: Snap-off metal of adjustable length; cone type; 1 1/2 inch break back dimension; free of defects that will leave holes no larger than 1-1/4 inches diameter in concrete surface.
- B. Form Release Agent: Colorless material which will not stain concrete, absorb moisture, or impair natural bonding in color characteristics of coating intended for use on concrete.
- C. Fillets for Chamfered Corners: Wood strips or rigid PVC plastic in maximum possible lengths.
- D. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required; or strength and character to maintain formwork in place while placing concrete.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Verify lines, levels, and measurements before proceeding with formwork.

3.02 PREPARATION

- A. Hand-trim sides and bottoms of earth forms; remove loose dirt prior to placing concrete.
- B. Minimize form joints. Symmetrically align joints and make weathertight to prevent leakage of mortar.
- C. Arrange and assemble formwork to permit dismantling, stripping, so that concrete is not damaged during its removal.
- D. Arrange forms to allow stripping without removal of principal shores, where required to remain in place.

3.03 ERECTION

- A. Provide bracing to ensure stability of formwork. Strengthen formwork liable to be overstressed by construction loads.
- B. Camber slabs and beams to achieve ACI 301 tolerances.

Exhibit B
Technical Specifications

03100 - 2

**SECTION 03100
CONCRETE FORM WORK**

- C. Provide temporary ports in formwork to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain. Close ports with tight fitting panels, flush with inside face of forms, neatly lifted so that joints will be apparent in exposed concrete surfaces.
- D. Provide expansion strips on external corners of beams and columns, where exposed.
- E. Install void forms. Protect from moisture before concrete placement. Protect from crushing during concrete placement.
- F. Construct formwork to maintain tolerances in accordance with ACI 301.

3.04 APPLICATION OF FORM RELEASE AGENT

- A. Apply form release agent on formwork in accordance with manufacturer's instructions. Apply prior to placing reinforcing steel, anchoring devices, and embedded items.
- B. Do not apply form release agent where concrete surfaces are scheduled to receive special finishes or applied coverings, which may be affected by agent. Soak contact surfaces of untreated forms with clean water. Keep surfaces wet prior to placing concrete.

3.05 INSERTS, EMBEDDED PARTS, AND OPENINGS

- A. Provide formed openings where required for work embedded in or passing through concrete.
- B. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.
- C. Install accessories in accordance with manufacturer's instructions, level and plumb. Ensure items are not disturbed during concrete placement.

3.06 FORM REMOVAL

- A. Notify CITY prior to removing formwork.
- B. Do not remove forms and shoring until concrete has sufficient strength to support its own weight, and construction and design loads which may be imposed upon it. Remove load-supporting forms when concrete has attained 75 percent of required 28-day compressive strength, provided construction is reshored.
- C. Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 degrees F for 24-hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained.
- D. Formwork supporting weight of concrete, such as beam soffits, joints, slabs and other structural elements, may not be removed in less than 14 days and until concrete has attained design minimum compressive strength at 28-days. Determine potential compressive strength of in place concrete by testing field-cured specimens representative of concrete location of members.
- E. Reshore structural members due to design requirements or construction conditions to permit successive construction.
- F. Remove formwork progressively so no unbalanced loads are imposed on structure.

Exhibit B
Technical Specifications

03100 - 3

**SECTION 03100
CONCRETE FORM WORK**

- G. Do not damage concrete surfaces during form removal.
- H. Store reusable forms for exposed architectural concrete to prevent damage to contact surfaces.
- I. Remove formwork in same sequence as concrete placement to achieve similar concrete surface coloration.

3.07 CLEANING

- A. Clean forms to remove foreign matter as erection proceeds.
- B. Ensure that water and debris drain to exterior through clean-out ports.

3.08 MEASUREMENT AND PAYMENT

- A. No separate measurement and payment is provided for work covered by this Section. All costs in connection with concrete formwork shall be included in the bid price of any item in the Bid Schedule for which concrete formwork is required.

END OF SECTION 03100

**SECTION 03300
CAST-IN-PLACE CONCRETE**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All applicable provisions of the Bidding and Contract Requirements, and Division 1-General Requirements shall govern the WORK under this section.

1.02 WORK INCLUDED

- A. Provide all labor, materials, necessary equipment and services to complete the Cast-In-Place Concrete Work, as indicated on the drawings, as specified herein or both except as for items specifically indicated as "NIC ITEMS".
- B. Including but not necessarily limited to the following:
 - 1. Cast-In-Place concrete walls, footings, foundation walls, paving, walks, slabs, formwork, reinforcing and all other components as indicated on the Drawings.

1.03 RELATED WORK

- A. Section 03010 - Concrete.
- B. Section 03100 - Concrete Form work.
- C. Section 03370 - Concrete Curing.
- D. Section 02510 - Concrete Sidewalk

1.04 QUALITY ASSURANCE

- A. Applicator Qualifications: Minimum of five years' experience on 5 comparable concrete projects.
- B. Requirements of Regulatory Agencies: Perform work in accordance with local building codes.
- C. Allowable Tolerances: Flat work true to plane 1/8 inch in 10 feet.
- D. Slump tests as per ASTM C-143, and test cylinders as per ASTM C-39.

1.05 TESTS

- A. Submit proposed mix design of each class of concrete to appointed firm for review prior to commencement of work.
- B. Testing firm will take cylinders and perform slump and air entrainment tests in accordance with ACI 301.
- C. Tests of cement and aggregates will be performed to ensure conformance with requirements stated herein.
- D. Three (3) concrete test cylinders will be taken for every 75 cubic yards. or less of each class of concrete placed each day.
- E. One (1) slump test will be taken for each set of test cylinders taken.

Exhibit B
Technical Specifications

03300 - 1

**SECTION 03300
CAST-IN-PLACE CONCRETE**

F. All testing shall be at the expense of the DBF.

1.06 SUBMITTALS

A. Provide product data for specified products.

B. Test Reports: Reports of concrete compression, yield, air content, and slump tests.

C. Certificates:

1. Manufacturer's certification that materials meet specification requirements.

2. Material content per cubic yard of each class of concrete furnished.

- a. Dry weights of cement.
- b. Saturated surface-dried weights of fine and coarse aggregate.
- c. Quantities, type and name of admixtures.
- d. Weight of water.

3. Ready-mix delivery tickets, ASTM C-94.

D. Shop Drawings:

1. Show sizes and dimensions for fabrication and placing of reinforcing steel and bar supports.

2. Indicate bar schedules, stirrup spacing, and diagrams of bend bars.

3. Detail items of form systems affecting appearance of architectural concrete surfaces such as joints, tie holes, liners, patterns and textures. Show items in relation to entire form system.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver reinforcement to project site in bundles marked with metal tags indicating bar size and length.

B. Handle and store materials to prevent contamination.

1.08 ENVIRONMENTAL REQUIREMENTS

A. Allowable concrete temperatures:
- Hot Weather: Maximum 90° F as per ASTM C-94.

B. Do not place concrete during rain, unless protection is provided.

**SECTION 03300
CAST-IN-PLACE CONCRETE**

PART 2 - PRODUCTS

2.01 MATERIALS & MANUFACTURERS

- A. Concrete Ready-Mix concrete ASTM C-94.
1. Cement:
 - a. ASTM C 150, Type II
 2. Admixtures:
 - a. Air entraining: ASTM C-260
 - b. Chemical: Type (as required) ASTM C-494.
 - c. Fly ash and pozzolans: ASTM C-618
 - d. Vapor Barrier: 6-mil thick film of type recommended for below grade application.
 3. Coarse aggregate: Not less than 50% clean, hard, crushed stone conforming to requirements of Table 2, size number 467 ASTM C-33.
 4. Slump 4 inch maximum; plus tolerance 0, minus tolerance 1 inch.
 5. Air content: 5% + 1%.
 6. Mix proportioning:
 - a. In accordance with ASTM C-94.
 - b. 28 day compressive strength of moist cured laboratory samples 3,000 PSI.
 - c. Use set retarding admixtures during hot weather only when approved by CITY.
 - d. Minimum cement contents 5 sacks/cubic yards.
 - e. Add air-entraining agent to concrete work exposed to exterior.
 7. Curing Material: Liquid membrane, ASTM C-309, Type 1.
 8. Mixes:
 - a. ASTM C-94.
 - b. Mix concrete only in quantities for immediate use.
 - c. Do not retemper or use set concrete.
- B. Bars.
1. Deformed billet steel: ASTM A 615, Grade 60.
- C. Wire Fabric:
1. Welded Wire Fabric Steel: ASTM A 185
- D. Tie Wire: FS QQ-W-461-G, annealed steel, black 16ga. minimum.
- E. Bar supports: Conform to "Bar Support Specification," CRSI Manual of Standard Practice.

Exhibit B
Technical Specifications

03300 - 3

**SECTION 03300
CAST-IN-PLACE CONCRETE**

F. Forms:

1. Conform with ACI 347, Chapter 3, Material and Form Work.
2. Lumber:
 - a. Softwood framing lumber: Kiln dried, PS-20.
 - b. Boards less than 1 1/2 inch thick and 2 inch wide, used for basic forms and form liners: Kiln dried.
 - c. Grade marked by grading rules agency approved by American Lumber Standards Committee.
 - d. Light framing or studs for board or plywood forms, 2 inch to 4 inch width and thickness Construction Standard grade.
 - e. Boards for basic forms Construction Standard grade.
 - f. Board surface: Smooth.
3. Plywood:
 - a. Exterior type softwood plywood, PS 1-66.
 - b. Each panel stamped or branded indicating veneer grades, species, type and identification.
 - c. Wood faced plywood for architectural concrete surfaces.
 - (1). Panel veneer grades: B - C.
 - (2). Mill-oiled sides and mill-sealed edges of panels.
4. Ties:
 - a. Materials: Stainless Steel.
 - b. Type: Snap Ties.
 - c. Depth of breakback: 1 inch.
 - d. Maximum diameter 1/4 inch.
5. Form coatings:
 - a. Non-staining type.
 - b. Agent: Pine oil derivative.

G. Water: Clean and potable.

**SECTION 03300
CAST-IN-PLACE CONCRETE**

PART 3 - EXECUTION

3.01 FORMWORK

- A. Conform to ACI 347, Chapter 2, Construction; and Article 4.2, architectural Concrete.
- B. Framing, Bracing and Plywood Form Liners: APA Form V 345-72.
- C. Provide temporary openings in framework for concrete placement.
- D. Fill voids of plywood joints with sealant and tool smooth.
- E. DBF is responsible for the design, construction, removal and complete safety of formwork and shoring.
- F. Form construction shall be provided to shape, lines dimensions of members shown; substantial, tight enough to prevent leakage, and properly braced or tied to maintain position and size, form sides and bottoms of members unless specifically excepted.

3.02 REINFORCING

- A. Fabrication shall be provided to latest ACI Manual of Practice ACI-315.
- B. Reinforcing free from excessive rust, scale or coating reducing bond. Bars bent cold in fabrication plant. Chairs, support bars, and other accessories furnished to carry and provide coverage as required by ACI Manual.
- C. Unless otherwise indicated the minimum coverage is 3 inch for footings (slabs to have 3/4 inch minimum). Call any "crowding" of reinforcement to CITY's attention during placing.
- D. Splices shall be Mesh 6 inch lap, bars 30 X diameter minimum.
- E. Conduit or pipes embedded in concrete must have specific approval and be located to avoid cracking or reduction in strength. Provide extra strong pipe sleeves where pipes are allowed to pierce concrete beams or walls.
- F. Placement:
 - 1. Bar supports: CRSI 65.
 - 2. Reinforcing bars: CRSI 63.
- G. Steel Adjustment:
 - 1. Move within allowable tolerances to avoid interference with other reinforcing steel, conduits, expansion joints, or embedded items.
 - 2. Do not move bars beyond allowable tolerances without concurrence of CITY.
 - 3. Do not heat, bend or cut bars without concurrence of CITY.

Exhibit B
Technical Specifications

03300 - 5

**SECTION 03300
CAST-IN-PLACE CONCRETE**

- H. Splices:
1. Lap splices: Tie securely with wire to prevent displacement of splices during placement of concrete.
 2. Splice devices: Install in accordance with manufacturer's written instructions.
 3. Welding: Perform in accordance with AWS Standards.
 4. Do not splice bars except at locations shown on drawings without concurrence of CITY.
- I. Wire Fabric:
1. Install in longest practicable length.
 2. Lap adjoining pieces one full mesh minimum, and lay splices with 16-gauge wire.
 3. Offset end laps in adjacent widths to prevent continuous laps.
- J. Cleaning: Remove dirt, grease, oil, loose mill scale, excessive rust, and foreign matter that will reduce bond with concrete.
- K. Protection During Concreting: Keep reinforcing steel in proper position during concrete placement.

3.03 JOINTS

- A. Construction pours shall be continuous pours except where joints are indicated. No additional joints except by special acceptance in writing by the CITY. Allow no construction or interrupted pour joints in any exposed surface, unless treated as part of design.
1. Where indicated and as detailed, provide saw cut type construction joints of sizes as called for on the drawings.
- B. Expansion joints shall be constructed as shown on drawings.
1. Expansion material shall be ½ inch continuous full depth strips set ½ inch below finish surface with ½ inch x ½ inch joint sealant filler above.

3.04 BUILT-IN ANCHORING DEVICES, FIXTURES, PIPE SLEEVES AND OTHER INSERTS

- A. Build-in and coordinate as required and called for on the drawings all items to be constructed into concrete such as anchoring devices, fixtures, piping, sleeves and other inserts and items as required for a complete installation.

3.05 INSPECTION

- A. Assure that excavation and formwork are completed, with smooth rubbed finish, and that excess water is removed.
- B. Check that reinforcement is secured in place.
- C. Verify that expansion joint material, anchors, and other embedded items are secured in position.

Exhibit B
Technical Specifications

03300 - 6

**SECTION 03300
CAST-IN-PLACE CONCRETE**

- D. Verify anchors, seats, plates, reinforcement, and other items to be cast into concrete are accurately placed, held securely, and will not cause hardship in placing concrete.

3.06 CONCRETE QUALITY

- A. Design of mix shall be a laboratory designed mix to satisfy the following requirements and shall be approved by the CITY.
1. Ready mixed concrete as per ASTM C-94 with 28 day strength 3,000 PSI minimum, for all standard grey concrete work.
 2. Proportion the concrete to work readily into forms and around reinforcement, without excessive manipulation, segregation or water gain. Approved additives may be used to achieve the above results.
 3. Slump shall be maximum 3 inch for footings, and for all other concrete shall be 3 inch to 5 inch.
 4. Submit for approval representative test results by independent laboratory to substantiate proposed mix design.

3.07 PREPARATION FOR POURS

- A. Notify the OWNER's Representative, CITY and other inspectors at least 36 hours prior to inspection.
- B. Equipment forms, and reinforcing shall be clean and wet down, reinforcing firmly secured in place, runways set up and not resting on or displaying reinforcing.
- C. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Apply bonding agent in accordance with manufacturer's instruction.
- D. At locations where new concrete is dowelled to existing work, drill holes in existing concrete, insert steel dowels, and pack solid with non-shrink grout.

3.08 PLACING

- A. Mixing and conveying shall be as per ASTM C-94 and as follows:
1. Maximum elapsed time from addition of water to placing in forms -60 minutes, (total mixing time).
 2. Concrete handled and placed by methods, which keep concrete plastic, prevent separation of materials, and do not displace reinforcement.
- B. Deposit as close as possible to final position to avoid segregation of materials. Restrict drop to 3 foot maximum (less for exposed concrete), using tremie if necessary.
1. Compact by mechanical vibration to thoroughly work around reinforcing and eliminate honeycomb.

Exhibit B
Technical Specifications

03300 - 7

**SECTION 03300
CAST-IN-PLACE CONCRETE**

- C. Place concrete in accordance with ACI 301.
- D. Hot Weather Placement: ACI 301.
- E. Cold Weather Placement: ACI 301.
- F. Ensure reinforcement, inserts, embedded parts and formed joints are not disturbed during concrete placement.
- G. Maintain concrete cover around reinforcing as follows:

<u>Item</u>	<u>Coverage</u>
Beams	1 1/2 inch
Supported Slabs	3/4 inch
Column Ties	1 1/2 inch
Walls (exposed to weather or backfill)	2 inch
Footings and Concrete Formed Against Earth	3 inch
Slabs on Fill	2 inch

- H. Place concrete continuously between predetermined construction and control joints. Do not break or interrupt successive pours such that cold joints occur.
- I. Saw cut control joints at an optimum time after finishing. Use 3/16 inch thick blade, cutting 1/3 depth of slab thickness.
- J. Separate exterior slabs on fill from vertical surfaces with joint filler. Extend joint filler from bottom of slab to within 1/2 inch of finished slab surface.
- K. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify CITY upon discovery.

3.09 CONCRETE CURING

- A. Curing for standard grey work after finishing, cure concrete by keeping moist for one (1) week after placement. Floors and vertical surfaces may be sprayed with an approved curing compound to retard evaporation of water, if spraying is not objectionable because of future finishing requirements. Begin curing operations as soon as concrete has attained its initial set. Keep exposed concrete surface moist for at least one (1) week.
- B. Apply a liquid membrane-forming compound, conforming to ASTM C 309, color to match that of the color condition concrete. Apply on flat work immediately after the finishing operation pursuant to the manufacturers recommendations.

3.10 CONCRETE FINISHING

- A. Unexposed concrete work shall be patched and repaired immediately after removal of forms.
 - 1. Cut off metal ties a minimum of 1 inch back from surface of concrete.
 - 2. Moderate honeycomb cut out and prepared for patching. Severe honeycomb with exposed steel reinforcing is to be removed or "united" at the discretion of the CITY.

Exhibit B
Technical Specifications

03300 - 8

**SECTION 03300
CAST-IN-PLACE CONCRETE**

3. Wet areas for patching and pack carefully with rich mortar rubbed to match surface.
- B. Provide concrete surfaces to be left exposed, walls, columns, beams, with smooth rubbed finish.
- C. Provide Class B tolerances to floor slabs and toppings according to ACI 301.
- D. Pitch to drains 1/4 inch per foot.
- E. Exposed concrete work shall be patched and repaired as accepted by CITY after consultation. Patching and rubbing will be kept to a minimum if possible, but when necessary will be done with great care to obtain maximum degree of matching in color and texture to adjacent finished concrete surfaces.
- F. Monolithic finish using care to obtain a level surface; floors out of level or with variation greater than 1/8 inch in 10 feet shall be corrected.
- G. All finishes shall be as called for on the drawings.
- 3.11 SEPARATE FLOOR TOPPINGS
- A. Prior to placing, roughen concrete base course and remove foreign materials. Broom and vacuum clean.
- B. Place dividers, edge strips, reinforcing and other items to be cast in.
- C. Apply bonding agent on base course in accordance with manufacturer's instructions. Apply sand and cement slurry coat on base course immediately prior to placing toppings.
- D. Place concrete floor toppings to required lines and levels.
- 3.12 PATCHING
- A. Notify CITY immediately upon removal of forms.
- B. Patch imperfections.
- 3.13 DEFECTIVE CONCRETE
- A. Modify or replace concrete not conforming to required levels and lines, details, and elevations.
- B. Repair or replace concrete not properly placed or of the specified type.
- 3.14 FIELD QUALITY CONCRETE
- A. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.
- 3.15 PROTECTION
- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

SECTION 03300
CAST-IN-PLACE CONCRETE

- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
 - C. During curing period, protect concrete from damaging mechanical disturbances, water flow, loading, shocking, and vibration.
- 3.16 APPLICATION OF BOND COAT FOR CONCRETE LEVELING COAT FOR PAVERS AND TEXTURED SURFACES
- A. Provide installation as per manufacturer's standard printed specifications, instructions and recommendations.
- 3.17 MEASUREMENT AND PAYMENT
- A. No separate measurement and payment is provided for work covered by this Section. All cast in place concrete shall be included in the bid price of the relevant item in the Bid Schedule.

END OF SECTION 03300

ATTACHMENT "A"
PROJECT AND COMMUNITY COORDINATION REQUIREMENTS

DBF RESPONSIBILITIES

Notification to Residents

- **Construction Activity Notices** regarding start up dates for each segment of work shall be sent by the DBF to property owners a minimum of two weeks in advance. The CITY shall always be provided with a copy of this notification. The notice must include, if applicable, information regarding removal of items in the right of way and the type and length of time work will be taking place. **If DBF leaves the work area for more than 5 days, the DBF is responsible for re-notifying the residents of construction activity.**
- **Traffic Impact Report (TIRs)** are due to the CITY no later than 12:00 noon on Wednesday for the upcoming week, to be sent to multiple entities working/doing business in the project area.
- **Weekend Work Notices** - If weekend work is planned and approved, the DBF must provide notice to the CITY, no later than noon on the Wednesday preceding the weekend that the work will be done. Said notice shall indicate the exact location of work and type of work that is to be performed (e.g. installing cleanout, drainage, installing sod, etc.). The DBF will be responsible for insuring property owners are notified.
- **Notifications to Commercial Properties** - DBF is responsible for notifying businesses at least 30 working days prior to commencing any work on the road in the vicinity of the business or any road that is used to access the business. When construction work is being performed in light industrial or commercial areas, DBF must use extra care to minimize impact on business operations making every effort to ensure that no loss of income results and specifically that access is provided to business clientele.
- **Sidewalk Notices** - DBF shall send notifications to residents advising them when sidewalks will be installed allowing them to remove vehicles located on private property and advising them that a minimum of 3 days is needed for newly poured sidewalk to cure before they can be driven or walked on.
- **Sod Responsibility Notices** – DBF has the responsibility for watering newly installed sod for 30-days after the sod is accepted by the CITY. At the end of the 30-day period, the responsibility is transferred to the property owner. To facilitate the transfer the DBF must provide the CITY with a map illustrating the street locations of the newly installed sod for each area, as well as the time and date the sod had been installed. The DBF must notify the property owners that they are required to maintain the new sod two weeks prior to the end of the 30-day watering period.

Community Coordination

- **Special needs registration** is available for those residents who require special attention when construction is ongoing. A copy of the form provided by residents requiring special needs will be provided to the DBF.

Attachment A
Project and Community Coordination Requirements

ATTACHMENT A - 1

ATTACHMENT "A"
PROJECT AND COMMUNITY COORDINATION REQUIREMENTS

- **Identification of Safety Officers** - The CITY shall be provided with the names and phone numbers of designated safety officers, an emergency contact person, and the claims specialist for the DBF.
- **Public School Transportation** – DBF shall obtain school bus schedule from Broward County Traffic Engineering's, School Liaison Program, at (954) 484-9600, and coordinate work activities to accommodate the school bus schedule.
- **Uninterrupted Water Services to Special Facilities** – DBF shall ensure water service is available to hospitals, nursing homes and schools at all times.
- DBF shall be aware of the **Waste Management schedules** for regular garbage and bulk pick up. Report all violations of dumping to Waste Management.
- **Location of Sewer Lateral Cleanouts & Septic Tanks** – DBFs are expected to be accommodating to property owners when locating sewer lateral cleanouts. Lateral cleanouts are to be located as close to existing lateral as possible without violating requirements to maintain five feet of separation between cleanout and water meter.

Quality Control and Maintenance

- **Safety of Children** – DBF shall cease running machinery when school buses are loading and unloading children and when children are present in the area during posted school zone hours. There should be a designated walk zone for school children at all times.
- **Property Owners Access to Properties** – Property owners shall always be provided access for ingress and egress to properties. However, it may occasionally be necessary to provide property owners with parking in a safe location away from their homes and a route provided to allow them to walk safely to their homes for a period no longer than 24 hours.
- **Emergency Access to Properties** – The DBF shall provide emergency access to all adjacent properties at all times during construction. If road is closed to vehicular traffic the DBF is then responsible for providing an access-way capable of supporting a fire truck. Proper signage in accordance with the TIR permit approved by the City of Fort Lauderdale shall be displayed indicating that the access-way to be used for emergency vehicles only.
- **Access Ways in Trenched Areas** – The access-ways in trenched areas shall be lighted with barricades or other such devices that have been approved by regulatory agencies. Barricades need to be checked frequently to ensure that they are still standing and are working properly.
- **Survey of Right-of-Ways** – After the area is staked out by the DBF's surveyor for right of way location, walk throughs shall be scheduled by the DBF to identify items in the right of way that may require removal or special attention.
- **Private Property Damages** – DBF must be extra careful when performing work on or near private property. Any damage to private property as a result of the construction should be handled immediately (the same day if possible) to avoid on-going complaints related to the same problem.

Attachment A
Project and Community Coordination Requirements

ATTACHMENT A - 2

ATTACHMENT "A"
PROJECT AND COMMUNITY COORDINATION REQUIREMENTS

- **30 Days to Resolve Private Property Issues** – DBF required restoration work shall be completed on private property within 30-days as per the contract.
- **Excavated Driveways and Walkways** – DBF is responsible for leaving excavated driveways and walkways leveled and in safe condition at all times.
- **Decorative Driveways and Walkways** – Special attention should be given to properties with decorative blocks and custom-made driveways and owners notified immediately of any impact anticipated.
- **Mailbox Relocations** – If mailboxes are to be relocated, when they are replaced, they must conform to postal standards of 18 inches from the road and 42 inches high. They must also be constructed using break away material.
- **Lot Rentals** – DBF is required to enter into written agreements for use of private lots in the work areas. DBF must provide the CITY with copies of any such agreements. DBF must always obtain owner's permission to erect a retention pond or to utilize any areas of private property, for example, for storage purposes.
- **Lot Restorations** – DBF is responsible for cleaning storage lots regularly in an effort to discourage lots being used for dumping by residents or outsiders. Berm shall be constructed where appropriate as determined by all applicable Building Code Services, Code Enforcement. All storage lots shall be completely fenced for the duration of their use.
- **Reasonable Driving Surfaces** – DBF must always provide a reasonable driving surface in construction zone (e.g., fill potholes, level extended maintenance access structure covers, driveways, etc.) to minimize potential vehicle damage.
- **The rainy season** can cause delays in construction and increase danger as a result of standing water, potholes, and mud. Therefore, DBF is responsible for monitoring construction sites and surrounding areas at all times.
- **Dust Pollution** – Water truck shall be running sufficiently to alleviate on going dust problems. Water truck shall be on site at all times.
- **Retention ponds** must be fenced in to prevent unauthorized dumping and for safety purposes. The retention pond shall be monitored continuously, properly maintained, and properly secured, especially during the summer months when school is out, and retention ponds become very attractive to children.
- **Use of Vibratory Machines** – When vibratory machines are being used in older neighborhoods, it is recommended that the use be subject to the review of the CITY, in accordance with the specifications. This should reduce the number of structural damage claims reported to the CITY.

Attachment A
Project and Community Coordination Requirements

ATTACHMENT A - 3

ATTACHMENT "A"
PROJECT AND COMMUNITY COORDINATION REQUIREMENTS

- **Vandalism** – In the event DBF experiences vandalism to construction equipment they should work specifically with the Broward Sheriff's Office for increased patrols to minimize further problems. In addition, CITY staff should be advised of this at progress meetings.
- **Storage of Materials** – Material shall not be stored outside of the designated areas, in compliance with specifications.

Worker Misconduct

- **Private Water Use** – DBF, Subcontractors, and laborers shall not use private water or water hoses located on private properties with or without the property owner's permission.
- **Fruit Theft** – DBF, Subcontractors, and laborers shall not take fruit from trees on private property.

END

Attachment A
Project and Community Coordination Requirements

ATTACHMENT A - 4

ATTACHMENT "A"
PROJECT AND COMMUNITY COORDINATION REQUIREMENTS

The following forms and notices shall serve as examples of forms and notices to be used on the project by the DBF.

NOTICE NO.	DESCRIPTION
1	Traffic Impact Report Requirements
2	Construction Commencement Letter
3	Fence Encroachment Notice
4	Business Construction Notice
5	Weekend Work Notice
6	Tree Removal Notice
7	Sod Installation Notice
8	Vehicle Relocation Notice
9	Construction Advisory Notice

Attachment A
Project and Community Coordination Requirements

ATTACHMENT A - 5

ATTACHMENT "A"
PROJECT AND COMMUNITY COORDINATION REQUIREMENTS

TRAFFIC IMPACT REPORT (TIR)

PURPOSE: To inform the general public and those whom operations will be impacted by any road closures resulting from construction. Furthermore, the information will ensure that the health, safety, and welfare of those who live and conduct business in the construction area not jeopardized; to provide the types of work the DBF is expected to perform (i.e. sewage, drainage, roadwork, etc.), and the duration in which the expected work is to occur.

TIMELINESS: TIRs for the incoming work week are to be provided to the CITY no later than 12 noon on Wednesday for distribution.

DISTRIBUTION: Upon receipt of the TIR's, they will be distributed by the consultant to a previously identified list of entities, i.e., inter/intra offices, public agencies (i.e. gas companies, fire department, police departments, etc.) via email.

Who provides Email Information:

During pre-construction phase the CITY, prepares a list of affected agencies and companies working in the project areas, including but not limited to, schools, government agencies, cable, utilities, Home Owner Associations, etc.

How are the TIR's Generated:

The TIR's are generated by the DBF and submitted to the Consultant/CITY, the Office of Water and Wastewater Services Scheduler, and the CITY Project Manager for review and approval. The DBF is responsible for submitting the TIR's to each agency mentioned for review. Once approved, the TIR is sent out for distribution to TIR contact list.

END OF EXHIBIT A

Attachment A
Project and Community Coordination Requirements

ATTACHMENT A - 6

Exhibit "C"
Conceptual Layouts
P12389

DRAWING INDEX



DESIGN CRITERIA PACKAGE
NOT FOR CONSTRUCTION



CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DEAN J. TRANTALIS	MAYOR
HEATHER MORAITIS	COMMISSIONER - DISTRICT I
STEVEN GLASSMAN	COMMISSIONER - DISTRICT II
ROBERT L. MCKINZIE	COMMISSIONER - DISTRICT III
BEN SORENSEN	COMMISSIONER - DISTRICT IV

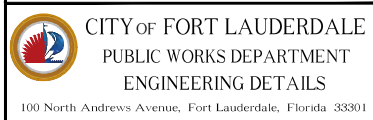
PROJECT MANAGER	JOB TITLE	PHONE NO.
-----------------	-----------	-----------

DCP - NOT FOR CONSTRUCTION

12389-MULTI-NOTE File: November 15, 2019

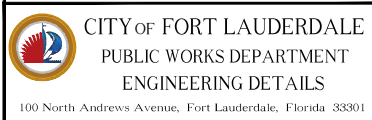
GENERAL NOTES:

- CONTRACTOR SHALL MAINTAIN ACCESS TO PRIVATE PROPERTIES AT ALL TIMES.
- SITE INFORMATION HAS BEEN PROVIDED BY SITE SURVEY PREPARED BY LONGITUDE SURVEYORS, LLC DATED JULY 2018.
- HORIZONTAL CONTROL IS REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, BASED ON THE NORTH AMERICAN DATUM OF 1983 (NAD 83). VERTICAL CONTROL IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
- RECORD DRAWING MAY BE OBTAINED FROM THE OWNER UPON REQUEST.
- CONTRACTOR SHALL VERIFY FIELD CONDITIONS BEFORE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS AND DIMENSIONS WHERE NEW WORK WILL MATCH EXISTING. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION PRIOR TO THE COMMENCEMENT OF WORK.
- CONTRACTOR SHALL OBTAIN ALL THE NECESSARY PERMITS FROM THE APPROPRIATE AUTHORITIES, DEPARTMENTS, AND/OR AGENCIES HAVING JURISDICTION PRIOR TO COMMENCING WORK.
- ALL PRACTICAL AND NECESSARY EFFORTS SHALL BE TAKEN DURING CONSTRUCTION TO PREVENT UNNECESSARY TREE REMOVAL AND/OR DAMAGE.
- THE LOCATION OF EXISTING UTILITIES HAS BEEN PREPARED FROM THE MOST RELIABLE INFORMATION AVAILABLE TO THE ENGINEER. THE INFORMATION IS NOT GUARANTEED. THEREFORE THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES IN THE FIELD PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES.
- UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEY INFORMATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THEIR EXACT LOCATION AND TO AVOID DAMAGE TO THEM. THE CONTRACTOR SHALL CONTACT SUNSHINE 811 AT PHONE NUMBER 811 OR 1-800-432-4770 TO REQUEST UNDERGROUND UTILITY LOCATION MARK-OUT AT LEAST TWO (2) WORKING DAYS BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO BEGINNING EXCAVATION, INCLUDING SOIL DRILLING. THE CONTRACTOR SHALL ALSO CONTACT AND REQUEST UTILITY LOCATION MARK-OUT FROM BURIED UTILITY OWNERS WITH UTILITIES ON THE PROJECT SITE THAT ARE NOT PARTICIPANTS OF SUNSHINE 811.
- THE CONTRACTOR SHALL EXERCISE CAUTION WHEN WORKING IN OR AROUND EXISTING CITY-OWNED UTILITIES. THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST TWO BUSINESS DAYS IN ADVANCE OF ANY EXCAVATION WITHIN TEN FEET OF A CITY-OWNED UTILITY SO THAT A CITY REPRESENTATIVE MAY BE PRESENT.
- CONTRACTOR SHALL TAKE CARE TO AVOID DAMAGE TO EXISTING PAVEMENT, STRUCTURES, AND UTILITIES THAT ARE NOT INDICATED TO BE DEMOLISHED OR REMOVED. ANY DAMAGE TO EXISTING PAVEMENT, STRUCTURES, AND UTILITIES NOT INDICATED TO BE DEMOLISHED OR REMOVED SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- WHERE PROPOSED WORK IS IN THE VICINITY OF UTILITY POLES, SUCH THAT SUPPORT OF THE POLE(S) WILL BE REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE UTILITY OF THE WORK. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE UTILITY FOR SUPPORT OF THE POLE.

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301GENERAL NOTES
SHEET 1GNRL
001
2017/07/19

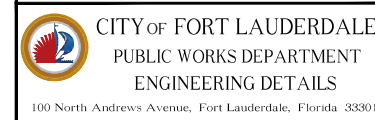
12389-MULTI-NOTE File: November 15, 2019

- DURING EXCAVATION AND PLACEMENT OF UTILITIES THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY REGULATIONS AND SHALL SUBMIT TO THE ENGINEER FOR APPROVAL SHEET PILING, SHORING AND/OR BRACING DESIGNS AS MAY BE NECESSARY TO COMPLY WITH THESE REGULATIONS.
- GROUNDWATER FROM ALL DEWATERING OPERATIONS SHALL BE DISCHARGED TO AN ENVIRONMENTALLY ACCEPTABLE LOCATION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, OR AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL DEBRIS GENERATED DURING THE PROJECT OFF SITE AT A PROPERLY PERMITTED DISPOSAL FACILITY.
- FOR REFERENCE MONUMENTS, SEE DRAWING (EX. CONDITIONS DWG # THAT SHOWS MONUMENTS).
- THE CONTRACTOR IS REQUIRED TO OBTAIN WRITTEN APPROVAL FROM THE ENGINEER FOR ANY DEVIATIONS FROM THE PLANS AND/OR SPECIFICATIONS.
- THE UNDERGROUND CONTRACTOR SHALL MINIMIZE THE WORK AREA AND WIDTH OF TRENCHES TO AVOID DISTURBANCES OF NATURAL VEGETATION. SPOIL FROM TRENCHES SHALL BE PLACED ONLY ON PREVIOUSLY CLEARED AREAS. EXISTING RIGHT-OF-WAY OR APPROVED EASEMENT. THE CONTRACTOR SHALL NOT REMOVE OR DISTURB ANY TREES OR SHRUBS WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ALL RESTORATION SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE AGENCIES HAVING JURISDICTION OVER THE RIGHT-OF-WAY WHERE THE PROJECT IS CONSTRUCTED.
- ALL LOOP DETECTORS, COMMUNICATION CABLES AND CONDUITS, IF DAMAGED BY THE CONTRACTOR'S ACTIVITIES, SHALL BE REPAIRED AND/OR REPLACED IN ACCORDANCE WITH BCTED AND FDOT REQUIREMENTS.
- PIPING, FITTINGS, AND APPURTENANCES FOR DUCTILE IRON PIPE SHALL BE RESTRAINED JOINT WHERE SHOWN ON THE PLANS.
- RESILIENT SEATED GATE VALVES WITH BEVEL TYPE GEAR SHALL BE INSTALLED IN HORIZONTAL ORIENTATION WHEN LESS THAN 7-FEET OF COVER FROM TOP OF PIPE IS PRESENT.
- NO CONNECTIONS FOR THE PURPOSE OF OBTAINING WATER SUPPLY DURING CONSTRUCTION SHALL BE MADE TO ANY FIRE HYDRANT OR BLOW-OFF STRUCTURE WITHOUT FIRST OBTAINING PERMISSION AND A CONSTRUCTION METER FROM THE CITY OF FORT LAUDERDALE.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING, MOVING AND RELOCATING OR REPLACING ALL WATER SERVICES OR SEWER LATERALS WHICH ARE ENCOUNTERED DURING EXCAVATION. THE CONTRACTOR SHALL SUBMIT A WRITTEN PLAN FOR WATER SERVICE AND WASTEWATER SERVICE DISRUPTION FOR APPROVAL 7 (SEVEN) CALENDAR DAYS PRIOR TO THE ANTICIPATED DISRUPTION. THE CONTRACTOR SHALL NOTIFY THE PROPERTY OWNERS 48 HOURS IN ADVANCE OF ANY WORK ON THEIR SERVICES. THIS WORK SHALL BE CONSIDERED INCIDENTAL.
- THE CONTRACTOR MUST INFORM THE CITY AT LEAST 48-HOURS IN ADVANCE OF CONSTRUCTION, IN WRITING IF ANY CONFLICT IS DISCOVERED DURING POT HOLE OPERATIONS FOR CLARIFICATION BY THE CITY.
- IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE UTILITIES DEPARTMENT OF THE CITY OF FORT LAUDERDALE AT LEAST TWO (2) BUSINESS DAYS IN ADVANCE TO COORDINATE ANY ACTIVITY TO BE PERFORMED BY THE CITY'S UTILITIES DEPARTMENT.
- CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE EXISTING RIGHTS-OF-WAY.

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301GENERAL NOTES
SHEET 2GNRL
001
2017/07/19

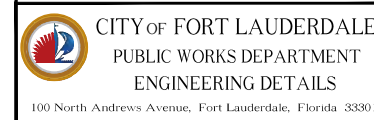
12389-MULTI-NOTE File: November 15, 2019

- ALL WORK WITHIN STATE DEPARTMENT OF TRANSPORTATION (FDOT) RIGHT-OF-WAYS SHALL BE IN CONFORMANCE WITH FDOT SPECIFICATIONS AND PERMIT REQUIREMENTS.
- ALL WORK WITHIN BROWARD COUNTY RIGHT-OF-WAYS SHALL BE IN CONFORMANCE WITH THE BROWARD COUNTY MINIMUM STANDARDS AND/OR REQUIREMENTS.
- CONTRACTOR SHALL COMPLY WITH ALL LOCAL CITY, COUNTY AND STATE REGULATIONS PERTAINING TO THE CLOSING OF PUBLIC STREETS FOR USE OF TRAFFIC DURING CONSTRUCTION.
- CONTRACTOR SHALL PREPARE AND SUBMIT MAINTENANCE OF TRAFFIC (MOT) PLANS TO FDOT, CITY OF FORT LAUDERDALE, BROWARD COUNTY AS REQUIRED FOR WORK TO BE DONE WITHIN THEIR R/W PRIOR TO COMMENCEMENT OF WORK. SPECIFIC AGENCY MOT REQUIREMENTS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL SUBMIT MOT PLANS FOR APPROVAL BY THE CITY WHEN WORKING WITHIN THE PUBLIC RIGHT-OF-WAY.
- STATIONS SHOWN ON THE DRAWINGS ARE BASED ON THE ESTABLISHED BASELINE AND SHALL NOT BE CONSIDERED AS DISTANCES OR AS A MEASURE OF THE LINEAR FOOTAGE OF PIPE TO BE INSTALLED.
- THE GENERAL INTENT IS TO PROVIDE SEWER SERVICE LATERALS FOR EACH PROPERTY. ALL LATERAL LOCATIONS SHALL BE FIELD ADJUSTED.
- ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAY OR WALKWAY SHALL BE PROPERLY MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.
- TRENCHES OR HOLES NEAR WALKWAYS, IN ROADWAYS OR THEIR SHOULDERS SHALL NOT BE LEFT OPEN DURING NIGHT TIME HOURS WITHOUT ADEQUATE PROTECTION.
- CONTRACTOR SHALL PROMPTLY REPAIR AND RESTORE EXISTING PAVEMENT, SIDEWALKS, CURBS, DRIVEWAYS, PIPES, RESIDENTIAL AND COMMERCIAL SPRINKLER LINES, CONDUIT, CABLES, ETC. AND LANDSCAPE AREAS DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL PROVIDE TEMPORARY FENCING AS REQUIRED BY AGENCIES HAVING JURISDICTION OVER THE PROJECT AND/OR WHEN REQUIRED FOR PUBLIC SAFETY.
- THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION AND UNTIL ACCEPTANCE OF WORK, FOR THE PROTECTION OF EXISTING AND NEWLY INSTALLED UTILITIES FROM DAMAGE OR DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING SUCH MEASURES AS NECESSARY TO PROTECT THE HEALTH, SAFETY AND WELFARE OF THOSE PERSONS HAVING ACCESS TO THE WORK SITE.
- LOCATION OF AIR RELEASE VALVES MAY BE FIELD ADJUSTED BY THE ENGINEER OR CITY OF FORT LAUDERDALE AS NECESSARY.
- CONTRACTOR SHALL ADJUST TO GRADE ALL EXISTING UTILITY CASTINGS INCLUDING VALVE BOXES, MANHOLES, HAND HOLES, PULL BOXES, INLETS AND SIMILAR STRUCTURES IN CONSTRUCTION AREA TO BE OVERLAPPED WITH ASPHALT.
- EXISTING TRAFFIC SIGNS SHALL BE RESET UPON COMPLETION PER BROWARD COUNTY TRAFFIC ENGINEERING STANDARDS. COST SHALL BE CONSIDERED INCIDENTAL. CONTRACTOR SHALL REPAIR OR REPLACE DAMAGED TRAFFIC SIGNAL LOOPS PER BROWARD COUNTY TRAFFIC ENGINEERING SPECIFICATIONS. COST SHALL BE INCIDENTAL.

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301GENERAL NOTES
SHEET 3GNRL
001
2017/07/19

12389-MULTI-NOTE File: November 15, 2019

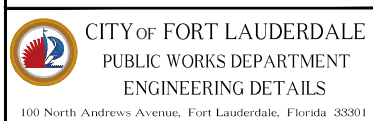
- CONTRACTOR SHALL RESTORE EXISTING PAVEMENT AND PAVEMENT MARKINGS/SIGNAGE TO ORIGINAL PRE-CONSTRUCTION CONDITION OR AS OTHERWISE SPECIFIED IN CONTRACT DOCUMENTS. THIS WORK SHALL BE CONSIDERED INCIDENTAL.
- ALL CONSTRUCTION WITHIN FDOT R/W MUST CONFORM WITH FDOT SPECIFICATIONS, STANDARDS, AND PERMIT REQUIREMENTS. NO WORK SHALL COMMENCE WITHIN FDOT R/Ws WITHOUT AN FDOT PERMIT. FULL LANE WIDTH RESTORATION TO MATCH EXISTING PAVEMENT SECTION IS REQUIRED IN ACCORDANCE WITH FDOT STANDARDS FOR PROPOSED WORK WITHIN FDOT R/W.
- THE CONTRACTOR SHALL SUBMIT ALL REQUIRED SHOP DRAWINGS FOR CITY APPROVAL PRIOR TO ORDERING MATERIALS AND INSTALLATION.
- EXISTING GAS MAINS SHALL BE IDENTIFIED BY THE APPROPRIATE UTILITY, PRIOR TO START OF CONSTRUCTION.

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301GENERAL NOTES
SHEET 4GNRL
001
2017/07/19

12389-MULTI-NOTE File: November 15, 2019

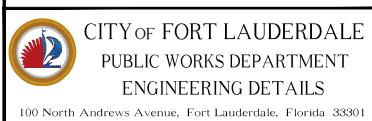
GENERAL DEMOLITION SPECIFICATIONS:

- THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES SHOWN ON THE DRAWINGS HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY.
- PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL VERIFY THE LOCATION, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES AND OTHER FEATURES AFFECTING THE WORK. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES THAT MIGHT IMPACT THE WORK.
- CHAPTER 553.851 OF THE FLORIDA STATUTES REQUIRES THAT AN EXCAVATOR NOTIFY ALL UTILITIES A MINIMUM OF TWO (2) WORKING DAYS PRIOR TO EXCAVATING.
- THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES BEFORE EXCAVATION.
- THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, SUPERVISION, AND EQUIPMENT REQUIRED FOR THE ORDERLY DEMOLITION AND REMOVAL OF EXISTING STRUCTURES, PAVEMENT AND UTILITIES AS SHOWN ON THE DRAWINGS AND DESCRIBED HEREIN.
- THE CONTRACTOR IS REQUIRED TO FAMILIARIZE HIMSELF WITH THE STRUCTURES TO BE DEMOLISHED.
- THE FOLLOWING LIST OF STRUCTURES REQUIRING DEMOLITION IS INCLUDED FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE DRAWINGS INDICATE THE SCOPE OF DEMOLITION WHERE DEMOLITION IS REQUIRED.
 - DEMOLITION AND REMOVAL OF A 5' MIN.± STRIP OF EXISTING ON-SITE ASPHALT, CONCRETE AND CURBING AROUND THE PERIMETER OF THE EXISTING STRUCTURES AND UTILITIES BEING DEMOLISHED.
 - REMOVAL OF EXISTING ON-SITE ABOVEGROUND AND UNDERGROUND UTILITIES, INCLUDING REMOVAL OR PLUGGING OF EXISTING UTILITIES AS SHOWN ON PLANS.
- PRIOR TO REMOVAL OF ANY UNDERGROUND TANK AND OTHER COMPONENT, CONTRACTOR MUST COMPLETELY DRAIN THE SYSTEMS TO AN APPROVED SANITATION TANK FOR DISPOSAL TO AN APPROVED LOCATION, AS REQUIRED BY DISPOSAL PERMIT.
- PROTECT ALL UTILITIES, UNLESS OTHERWISE NOTED.
- ALL THE CONCRETE AND PAVEMENT TO BE REMOVED MUST BE SAW CUT CLEAN PRIOR TO REMOVAL.
- WET DOWN MASONRY WALLS AND DEBRIS DURING DEMOLITION AND LOADING OPERATIONS TO PREVENT THE SPREAD OF DUST (AS APPLICABLE TO PROJECT).
- ALL EXISTING STRUCTURES, PAVEMENTS, SLABS, FOUNDATIONS, STEPS AND OTHER ON-SITE EXISTING FEATURES INDICATED ON THE DRAWINGS TO BE REMOVED SHALL BE DEMOLISHED AND REMOVED BY THE CONTRACTOR (AS APPLICABLE TO PROJECT).

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301DEMOLITION NOTES
SHEET 1GNRL
009
2017/07/19

12389-MULTI-NOTE File: November 15, 2019

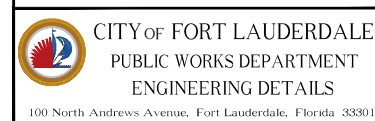
- ALL EXISTING SEWERS, PIPING AND UTILITIES SHOWN ON THE DRAWINGS ARE NOT TO BE INTERPRETED AS THE EXACT LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK.
- THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE UTILITY COMPANY PRIOR TO REMOVAL OR RELOCATION OF ANY ELECTRICAL, TELEPHONE, CABLE AND/OR GAS LINES. SUFFICIENT TIME SHALL BE PROVIDED FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE.
- CONTRACTOR MUST STOP OPERATION AND NOTIFY THE OWNER/ENGINEER FOR PROPER DIRECTION IF ANY ENVIRONMENTAL OR HEALTH RELATED CONTAMINANT IS ENCOUNTERED DURING THE DEMOLITION/EXCAVATION PROCESS.
- FILL FOR LOWER LEVELS OF DEMOLISHED STRUCTURES MAY INCLUDE CONCRETE OR MASONRY RUBBLE RESULTING FROM DEMOLITION, SUBJECT TO THE ENGINEER'S/ARCHITECT'S APPROVAL. RUBBLE SHALL PASS THROUGH A THREE-INCH RING.
- REMOVE AND LEGALLY DISPOSE OF ALL OTHER RUBBISH, RUBBLE, AND DEBRIS. COMPLY WITH ALL APPLICABLE LAWS AND REGULATIONS GOVERNING DISPOSAL OF WASTES AND DEBRIS.
- MAINTAIN ACCESS TO SURROUNDING PROPERTIES AND BUILDINGS.
- PRIOR TO DEMOLITION OCCURRING ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED.
- ALL TRAFFIC SIGNS OUTSIDE THE DEMOLITION AREA ARE TO REMAIN UNLESS OTHERWISE SPECIFIED.
- ANY MUCK ENCOUNTERED UNDER PROPOSED STRUCTURES SHALL BE REMOVED TO FIVE-FEET BEYOND THE FOOTPRINT OF THAT STRUCTURE. BACKFILL WITH APPROVED FILL MATERIAL SATISFYING ALL COMPACTION REQUIREMENTS.
- ALL EXISTING UTILITIES WITHIN THE DEMOLITION SITE AREA SHALL BE ADJUSTED, REMOVED OR RELOCATED AT THE CONTRACTOR'S EXPENSE. WORK SHALL BE COORDINATED BY THE CONTRACTOR DIRECTLY WITH THE APPROPRIATE UTILITY COMPANY. ALL EXPENSES SHALL BE INCLUDED IN THE CONTRACTOR'S BID.
- ALL TRASH, DEBRIS AND OTHER MATERIAL REMOVED FROM THE SITE SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301DEMOLITION NOTES
SHEET 2GNRL
009
2017/07/19

12389-MULTI-NOTE File: November 15, 2019

PRE-DEMOLITION RESPONSIBILITIES:

- UPON RECEIPT OF NOTICE OF AWARD, THE CONTRACTOR SHALL ARRANGE A PRE-DEMOLITION CONFERENCE TO INCLUDE ALL INVOLVED GOVERNMENTAL AGENCIES, ALL AFFECTED UTILITY OWNERS, THE OWNER, THE ENGINEER AND THE CONTRACTOR.
- PRIOR TO DEMOLITION, THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT A DEMOLITION SCHEDULE DEPICTING EACH PHASE OF THE WORK.
- PRIOR TO DEMOLITION, CONTRACTOR TO PROVIDE FOR THE OWNER A LISTING OF THE FACILITIES THE CONTRACTOR SHALL UTILIZE FOR RECYCLING AND DISPOSAL OF SPECIFIC MATERIALS. CONTRACTOR TO INDICATE THE MATERIALS INTENDED FOR RECYCLING AND THE MATERIALS INTENDED FOR DISPOSAL FOR OWNER'S APPROVAL.
- PRIOR TO DEMOLITION, CONTRACTOR TO PROVIDE THE OWNER SKETCHES SHOWING PROPOSED HAULING ROUTES TO RECYCLING AND DISPOSAL FACILITIES FOR APPROVAL.
- PRIOR TO DEMOLITION, THE CONTRACTOR SHALL VERIFY THE SIZE, LOCATION, ELEVATION, AND MATERIAL OF ALL EXISTING UTILITIES WITHIN THE AREA OF DEMOLITION.
- EXISTING UTILITY LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE. THE CITY AND THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF EXISTING UTILITIES SHOWN OR FOR ANY EXISTING UTILITIES NOT SHOWN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ANY EXISTING UTILITIES FOR WHICH IT FAILS TO REQUEST LOCATIONS FROM THE UTILITY OWNER. THE CONTRACTOR IS RESPONSIBLE AS WELL FOR DAMAGE TO ANY EXISTING UTILITIES WHICH ARE PROPERLY LOCATED.
- THE LOCATIONS OF EXISTING UTILITIES AND STORM DRAINAGE SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. ENGINEER ASSUMES NO RESPONSIBILITY FOR INACCURACY.
- PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL FIELD LOCATE EXISTING UNDERGROUND UTILITIES WITH THE UTILITY OWNERS.
- THE CONTRACTOR IS RESPONSIBLE FOR RELOCATION'S OF THE VARIOUS EXISTING UTILITIES WITH THE UTILITY OWNERS, WHICH SHALL BE DONE IN A TIMELY MANNER TO MINIMIZE IMPACT ON DEMOLITION SCHEDULE. ANY DELAY CAUSED BY THE CONTRACTOR BY THE RELOCATION OF UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT AND NO EXTRA COMPENSATION WILL BE ALLOWED.
- SUNSHINE STATE ONE CALL OF FLORIDA, INC. REQUIRES THE CONTRACTOR TO CALL TWO (2) FULL BUSINESS DAYS (BUT NOT MORE THAN FIVE) PRIOR TO BREAKING GROUND TO FIND OUT WHERE BURIED FACILITIES (ELECTRICAL, GAS, TELEPHONE, CABLE, WATER) ARE LOCATED.

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301DEMOLITION NOTES
SHEET 3GNRL
009
2017/07/19

LEGEND:

SYMBOL DESCRIPTION

	WATER METER BOX
	EXISTING VALVE
	PROPOSED FORCE MAIN PLUG VALVE
	PROPOSED AIR RELEASE VALVE
	EXISTING FIRE HYDRANT
	EXISTING CLEANOUT
	EXISTING SANITARY FORCE MAIN VALVE
	EXISTING STORM FORCE MAIN VALVE
	EXISTING AIR RELEASE VALVE MANHOLE
	EXISTING POWER POLE / LIGHT POLE
	EXISTING STORM INLET
	EXISTING COMMUNICATION BOX
	EXISTING GAS VALVE BOX
	EXISTING MAIL BOX
	EXISTING UNIDENTIFIED UTILITY UNDERGROUND LINE
	EXISTING TREE / PALM TREE
	NAIL IN ASPHALT
	EXISTING GAS LINE
	EXISTING WATER MAIN
	EXISTING BURIED TELEPHONE
	EXISTING TELEPHONE
	EXISTING UNDERGROUND ELECTRIC CABLE, 12 COUNT
	EXISTING FORCE MAIN
	PROPOSED 30" PVC (C905) FORCE MAIN
	EXISTING OVERHEAD WIRES
	EXISTING CABLE TELEVISION
	EXISTING CHAIN LINK FENCE
	EXISTING SYSTEMS DATA COMMUNICATIONS CABLE, UNDERGROUND - BCTEDCO
	EXISTING SYSTEMS FIBER OPTIC CABLE, 12 COUNT
	EXISTING WOOD FENCE
	EXISTING ELEVATION
	EXISTING PAVED DRIVEWAY
	EXISTING CONCRETE SURFACE
	PROPOSED PAVED DRIVEWAY REPAIR
	PROPOSED GRAVEL SURFACE REPAIR
	PROPOSED ASPHALT PAVEMENT REPAIR
	PROPOSED MILL AND RESURFACE
	PROPOSED GRASS REPAIR

NOTE: THIS LEGEND IS INTENDED FOR MOST SANITARY SEWER AND STORM SEWER PROJECTS, HOWEVER, THERE ARE PROJECTS USING ADDITIONAL SYMBOLS. THESE SYMBOLS WILL BE LOCATED ON OTHER SHEETS.

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
CONVERSION FACTOR
NAVD88 + 1.60 = NGVD29 IN THIS AREA



CHEN-MOORE & ASSOCIATES
500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 IC2600425

DESIGNED BY: JH
CHECKED BY: DC
DATE: 01/11/19

DRAWN BY: JH
DESIGNED BY: DC
CHECKED BY: DC
DATE: 01/11/19

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS
NO. DATE BY CHKD DESCRIPTION

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS
THE N. RIVER FROM
NE 9TH ST. TO N. BIRCH RD.
GENERAL NOTES

DRAWING # GN-1
SHT # 02
TOTAL: 19
CAD FILE: 12389-MULTI-NOTE
DRAWING FILE NO. 4-XXX-XX

Filename: 12389-MULTI-NOTE.dwg

Plot Date: 11/15/2019 1:46:29 PM User Name: Jtomo Layout Name: GN-1 Folder Path: V:\Projects\2018\18-047\040 - Bayshore dr intracoast crossing fm to 2\Design\CAD\Plans

Plot Date: 11/15/2019 1:46:31 PM Layout Name: GN-2 Filename: 12389-MULTI-NOTE.dwg
Folder Path: V:\Projects\2018\18-047\040 - Boyshore dr Intracoast crossing fm to 2\Design\CAD\Plans

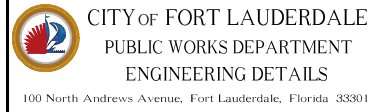
12389-MULTI-NOTE Title: November 15, 2019

DEMOLITION SAFETY:

1. ALL DEMOLITION SHALL BE DONE IN A SAFE MANNER, SPECIFICALLY, THE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SHALL BE STRICTLY OBSERVED.
2. PROVIDE ADEQUATE PROTECTION FOR PERSONS AND PROPERTY AT ALL TIMES. EXECUTE THE WORK IN A MANNER TO AVOID HAZARDS TO PERSONS AND PROPERTY AND PREVENT INTERFERENCE WITH THE USE OF AND ACCESS TO ADJACENT BUILDINGS, STREETS AND SIDEWALKS SHALL NOT BE UNNECESSARILY BLOCKED BY DEBRIS AND EQUIPMENT.
3. BUILDING MATERIALS TO BE REMOVED SHALL BE TESTED FOR ASBESTOS AND LEAD PAINT.
4. IF PETROLEUM PRODUCTS ARE FOUND WHILE DEMOLISHING, DISPOSE OF PETROLEUM WASTE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

PAVEMENT DEMOLITION:

1. WHERE EXISTING PAVEMENT IS TO BE REMOVED, SAW-CUT THE SURFACING LEAVING A UNIFORM AND STRAIGHT EDGE WITH MINIMUM DISTURBANCE TO THE REMAINING ADJACENT SURFACING. IF DEMOLITION RESULTS IN RAVELING OF SAW CUT SURFACE, RE-CUT BACK FROM THE RAVELED EDGE PRIOR TO RESTORATION.
2. WHERE EXISTING PAVEMENT, CURB, CURB AND GUTTER, SIDEWALK, DRIVEWAY, OR VALLEY GUTTER IS REMOVED FOR INLETS, MANHOLES, APPURTENANCES, FACILITIES OR STRUCTURES, SAID PAVEMENT, ETC., SHALL BE REPLACED WITH NEW PAVEMENT, ETC. CONTRACTOR SHALL PROVIDE ALL NECESSARY LABOR, MATERIALS, EQUIPMENT, TOOLS, SUPPLIES, AND OTHER EQUIPMENT AS REQUIRED.
3. CONTRACTOR MAY LIMIT SAW-CUT AND PAVEMENT REMOVAL TO ONLY THOSE AREAS WHERE IT IS REQUIRED AS SHOWN ON THE DRAWINGS. HOWEVER, IF ANY DAMAGE IS INCURRED ON ANY OF THE SURROUNDING PAVEMENT, SIDEWALK, BUILDINGS, UTILITIES, ETC., THEN THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS REMOVAL AND REPLACEMENT. REPLACEMENT PAVEMENT, SIDEWALK, ETC., SHALL BE NEW.



CITY of FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DEMOLITION NOTES
SHEET 4



GNRL
009
2017/07/13

12389-MULTI-NOTE Title: November 15, 2019

DEMOLITION PERMITTING:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ANY REQUIRED PERMITS FOR DEMOLITION FROM RESPONSIBLE REGULATORY AGENCIES WHILE FULLY ACKNOWLEDGING AND COMPLYING WITH ALL REQUIREMENTS PRIOR TO COMMENCING DEMOLITION WORK.
2. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE THE EXTENT OF DEMOLITION, RECYCLING OR REUSE REQUIRED TO PERFORM THE CONTRACT WORK FOR THIS PROJECT. THE CONTRACTOR SHALL CONDUCT SITE VISITS AND SHALL EXAMINE ALL THE INFORMATION WITHIN THESE DOCUMENTS. ALL DISCREPANCIES AND/OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BID SUBMITTAL.
3. THE CONTRACTOR SHALL COORDINATE WITH OWNER PRIOR TO COMMENCEMENT OF ANY WORK. ACTUAL REMOVAL AND/OR RELOCATION OF ALL EXISTING LANDSCAPING WITHIN DEMOLITION AREAS TO BE CONDUCTED BY A LANDSCAPE CONTRACTOR. IT IS THE RESPONSIBILITY OF THE SITEWORK DEMOLITION CONTRACTOR TO COORDINATE DEMOLITION ACTIVITIES WITH THE LANDSCAPE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING AND PRESERVING TREES AS INDICATED ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TREE REMOVAL PERMIT OR ANY OTHER APPLICABLE PERMIT TO REMOVE, RELOCATE, OR PRESERVE EXISTING LANDSCAPE AND TREES.
4. ANY TREES FOR REMOVAL FOUND TO BE GREATER THAN OR EQUAL TO THREE (3) INCHES IN DIAMETER AT BREAST HEIGHT (DBH) SHALL REQUIRE A PERMIT WITH THE BROWARD COUNTY ENVIRONMENTAL PROTECTION AND GROWTH MANAGEMENT DEPARTMENT (BCEP/GMD).
5. SHOULD REMOVAL AND/OR RELOCATION ACTIVITIES DAMAGE THE LIGHTING, STORM INLET STRUCTURES, OR OTHER STRUCTURES DESIGNATED TO BE SAVED, THEN THE CONTRACTOR SHALL PROVIDE NEW MATERIALS/STRUCTURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.



CITY of FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DEMOLITION NOTES
SHEET 5



GNRL
009
2017/07/13

12389-MULTI-NOTE Title: November 15, 2019

DEMOLITION EROSION AND SEDIMENT CONTROL NOTES:

1. THE SCHEDULING, SEQUENCING AND CONTROL MEASURES, ARE SUBJECT TO THE FINAL DEFINITION BY THE CONTRACTOR WHO SHALL BE SELECTED TO PERFORM THE WORK AND SHALL BE RESPONSIBLE FOR IMPLEMENTATION AND COMPLIANCE.
2. PRIOR TO DEMOLITION, THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT A DEMOLITION SCHEDULE DEPICTING EACH PHASE OF THE WORK. THE CONTRACTOR SHALL ALSO BE REQUIRED TO SUBMIT AN EROSION AND SEDIMENT CONTROL PLAN ENCOMPASSING THE PRINCIPALS AND THE REQUIREMENTS DESCRIBED HEREIN AND A SCHEDULE FOR THEIR IMPLEMENTATION AND MAINTENANCE FOR THE PROJECT DURATION.
3. DURING DEMOLITION, THE CONTRACTOR SHALL TAKE ALL REASONABLE MEASURES TO ENSURE AGAINST POLLUTING, SILTATION OR DISTURBANCE TO SUCH AN EXTENT AS TO CAUSE AN INCREASE IN TURBIDITY TO THE EXISTING DRAINAGE SYSTEMS AND ADJACENT WATER BODIES AND WETLANDS, IN COMPLIANCE WITH ALL PERMIT REQUIREMENTS RELATED TO SUCH MEASURES.
4. METHODS MAY INCLUDE TEMPORARY EROSION AND SEDIMENT CONTROLS SUCH AS SEDIMENT BASINS, SEDIMENT CHECKS, SILT BARRIERS, SILT SCREENS, TURBIDITY BARRIERS OR THE BEST MANAGEMENT PRACTICES AVAILABLE TO THE INDUSTRY.
5. EROSION AND SEDIMENT CONTROL INSTALLATIONS SHALL BE MAINTAINED THROUGHOUT THE DEMOLITION PERIOD AND UNTIL NEW VEGETATIVE GROWTH HAS BEEN ESTABLISHED.
6. THROUGHOUT THE DEMOLITION PERIOD, THE CONTRACTOR SHALL INSPECT DAILY THE EROSION AND SEDIMENT CONTROL INSTALLATIONS FOR FAILURE OR SIGNS OF FAILURE OR MALFUNCTION. REPAIR OR REPLACE THE EROSION AND SEDIMENT CONTROL INSTALLATIONS IMMEDIATELY UPON DISCOVERY OF FAILURE OR MALFUNCTION.
7. INLETS AND CATCH BASINS, EXISTING ON-SITE AND OFF-SITE, SHALL BE PROTECTED FROM SEDIMENT STORM RUNOFF.
8. THE CONTRACTOR SHALL PROMPTLY REMOVE ALL MUD, DIRT OR OTHER MATERIALS TRACKED OR SPILLED ONTO EXISTING PUBLIC ROADS AND FACILITIES DUE TO DEMOLITION.
9. DEWATERING ACTIVITIES SHALL NOT RESULT IN ANY DISCHARGE OF TURBID WATER FROM THE PROJECT SITE WITHOUT PROPER EROSION AND SEDIMENT CONTROL AND APPROVAL FROM ENGINEER.
10. PHASING OF EROSION CONTROL DEMOLITION SHALL BE RECOMMENDED AS FOLLOWS:
 - 10.1. PLACEMENT OF PERIMETER PROTECTIVE MEASURES (SILT FENCE, HAY BALES, TURBIDITY BARRIERS, ETC.) AROUND ON-SITE FEATURES TO BE RETAINED, AT POINTS OF OFF-SITE DISCHARGE AND AROUND WORK AREAS TO BE EXCAVATED OR FILLED.
 - 10.2. REROUTE RUNOFF FROM AREAS OUTSIDE OF THE DEMOLITION AREA TO MINIMIZE FLOW THROUGH AREAS TO BE DISTURBED BY DEMOLITION. BERMS, SWALES AND OTHER MEANS USED FOR SUCH CONVEYANCE SHALL BE VEGETATED AND MEASURES TAKEN TO PROVIDE PROTECTION UNTIL STABILIZATION OCCURS (AS APPLICABLE TO THE PROJECT).



CITY of FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DEMOLITION NOTES
SHEET 6



GNRL
009
2017/07/13

12389-MULTI-NOTE Title: November 15, 2019

- 10.3. SELECT LOCATIONS FOR PLACEMENT OF EXCAVATED MATERIAL, WHERE SUITABLE FOR FILL OR UNSUITABLE MATERIAL, AND CONSTRUCT CONTAINMENT BERMS AROUND THE AREA. THE USE OF STRIPING FOR THIS PURPOSE MAY ACCELERATE BERM REVEGETATION. CONSTRUCT TEMPORARY OUTLETS FOR CONTAINMENT AREAS WITH SCREENS, HAY BALES, SETTLING BASINS OR OTHER MEASURES TO PREVENT SILT TRANSPORT.
- 10.4. SELECT / DESIGNATE ACCESS ROUTING FOR DEMOLITION EQUIPMENT AND VEHICLES AND PROVIDE PERIMETER PROTECTIVE MEASURES WHERE EXISTING TERRAIN SHALL BE SUBJECT TO DISRUPTION BY SUCH TRAFFIC.
- 10.5. CONSTRUCT ABOVE GROUND OR OTHER CONTAINMENT AREAS FOR DEMOLITION AREA RUNOFF. PROVIDE SCREENS, HAY BALES, ETC. TO FILTER DISCHARGE FROM THOSE AREAS.
- 10.6. SPOIL MOUNDS SHALL NOT BE LEFT FOR MORE THAN ONE WEEK PRIOR TO REPLACEMENT UNLESS PROTECTIVE CONTAINMENT MEASURES IN THE WORK AREA ARE APPLIED.
- 10.7. GRASSING, SODDING, ETC. SHALL BE IN PLACE IMMEDIATELY UPON COMPLETION OF REGRADING, SWALE SLOPES AND THE CONSTRUCTED OR DISTURBED AREAS.
11. THE CONTRACTOR IS REQUIRED TO ADHERE TO THE REQUIREMENT OF THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES). THE CONTRACTOR SHALL INSTITUTE BEST MANAGEMENT PRACTICES (BMPs) TO ENSURE COMPLIANCE WITH THE NPDES PROGRAM AND TO MINIMIZE THE IMPACT TO PUBLIC STORMWATER FACILITIES. A NOTICE OF INTENT (NOI) SHALL BE FILED BY THE CONTRACTOR PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
12. THE CONTRACTOR SHALL PREPARE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND MAINTAIN ALL RECORDS REQUIRED BY ITS NPDES STORMWATER PERMIT FOR ITS CONSTRUCTION ACTIVITIES.
13. PRIOR TO CONSTRUCTION, A SILT FENCE IN ACCORDANCE WITH CITY'S DETAIL SHALL BE ERECTED AS NOTED ON PLANS. ALL PROPOSED CATCH BASINS SHALL HAVE THEIR INLETS PROTECTED BY THE INSTALLATION OF FILTER INLET INSERTS INTO THE FRAME AND GRATE. SILT FENCES AND FILTER INLET INSERTS SHALL REMAIN IN PLACE DURING THE ENTIRE DURATION OF CONSTRUCTION.
14. CONTRACTOR SHALL BRACE ALL EXISTING LANDSCAPING TO REMAIN PRIOR TO BEGINNING ANY WORK AND SHALL ENSURE ITS STABILIZATION THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS. EXISTING SOD DISTURBED BY CONSTRUCTION THAT IS NOT AFFECTED BY PROPOSED GRADING SHALL BE RESTORED TO NEW CONDITION UPON COMPLETION OF CONSTRUCTION. SODDED SLOPES STEEPER THAN FOUR HORIZONTAL TO ONE VERTICAL SHALL BE PEGGED.
15. ALL WASTE GENERATED FROM THE CONSTRUCTION SHALL BE DISCARDED IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL AND FEDERAL REGULATIONS. CONTRACTOR SHALL OBTAIN ALL APPLICABLE CODES AND BECOME FAMILIAR WITH STATE, LOCAL AND FEDERAL REGULATIONS PRIOR TO BEGINNING CONSTRUCTION.
16. TO ENSURE THAT OFF-SITE VEHICLE TRACKING OF SEDIMENTS AND THE GENERATION OF DUST IS MINIMIZED, CONTRACTOR SHALL PUT INTO PRACTICE THE METHODS DETAILED IN FLORIDA DEPARTMENT OF TRANSPORTATION INDEX 106 (2010 DESIGN STANDARDS) AND BMPs.



CITY of FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

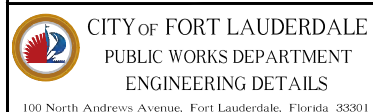
DEMOLITION NOTES
SHEET 7



GNRL
009
2017/07/13

12389-MULTI-NOTE Title: November 15, 2019

17. DUST GENERATED FROM CONSTRUCTION SHALL BE MINIMIZED BY DAILY WATERING OF THE SITE.
18. AT ANY TIME DURING CONSTRUCTION THAT THE SILT FENCING IS DISTURBED, THE SILT FENCING SHALL BE RESTORED TO ITS ORIGINAL STATE WITHIN 24 HOURS. AT NO TIME DURING CONSTRUCTION SHALL WORK BE PERFORMED WITHOUT THE INTEGRITY OF THE SILT FENCING SECURED.
19. A QUALIFIED INSPECTOR, PROVIDED BY THE CONTRACTOR, SHALL INSPECT ALL POINTS OF DISCHARGE INTO NEARBY SURFACE WATER. THE INSPECTION SHALL OCCUR AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER. INSPECTION INCLUDES THE WRITTEN RECORDING OF THE CONDITION OF ALL DISCHARGE POINTS, INTEGRITY OF SILT FENCING, DAILY DUST CONTROL MEASURES, VEHICULAR TRAFFIC AND CONSTRUCTION MATERIAL STORAGE AND DISPOSAL. WRITTEN RECORD OF ALL INSPECTIONS SHALL BE STORED BY THE CONTRACTOR.
20. THE INSPECTION REPORT SHALL INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING INFORMATION: NAME AND QUALIFICATION OF PERSONNEL MAKING THE INSPECTION, DATE OF INSPECTION, RAINFALL DATE, MAJOR OBSERVATIONS RELATING TO THE SWPPP, ACTIONS TAKEN BY CONTRACTOR AND ANY INCIDENT OF NONCOMPLIANCE WITH PERMIT. WHERE AN INSPECTION DOES NOT IDENTIFY ANY INCIDENT OF NONCOMPLIANCE, THE REPORT SHALL CONTAIN A CERTIFICATION THAT THE FACILITY IS IN COMPLIANCE WITH THE SWPPP AND THE PERMIT.
21. THE CONTRACTOR SHALL RETAIN A COPY OF THE SWPPP AND ALL REPORTS, RECORDS AND DOCUMENTATION REQUIRED BY THE PERMIT AT THE CONSTRUCTION SITE, OR AN APPROPRIATE ALTERNATIVE LOCATION AS SPECIFIED IN THE NOTICE OF INTENT, FROM THE DATE OF PROJECT INITIATION TO THE DATE OF FINAL STABILIZATION.
22. THE CONTRACTOR SHALL RETAIN THE SWPPP, NOI AND ALL RECORDS ASSOCIATED THEREWITH FOR A PERIOD OF AT LEAST THREE (3) YEARS FROM THE DATE THAT THE SITE IS FINALLY STABILIZED.
23. SEE LANDSCAPE PLANS FOR TREE REMOVAL AND LANDSCAPE DEMOLITION.
24. CONTRACTOR SHALL COORDINATE THROUGH CITY'S CONSTRUCTION DIVISION AND CITY'S PARKS DEPARTMENT ON HOW TO STOCK AND RE-USE EXCAVATED SOIL FROM SITE (AS APPLICABLE TO THE PROJECT).



CITY of FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DEMOLITION NOTES
SHEET 8



GNRL
009
2017/07/13

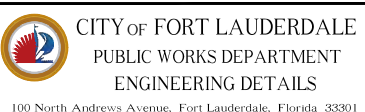
12389-MULTI-NOTE Title: November 15, 2019

INTERRUPTION OF EXISTING UTILITIES:

1. ANY DEMOLITION WORK THAT REQUIRES INTERRUPTION OF SERVICE TO ANY CUSTOMER SHALL BE DONE SO WITH A MINIMUM OF SEVENTY-TWO (72) HOUR WRITTEN NOTICE TO, AND WRITTEN APPROVAL BY, THE APPROPRIATE UTILITY COMPANY.
2. THE CONTRACTOR SHALL ARRANGE A MEETING WITH THE LOCAL JURISDICTIONAL AGENCIES AND OTHER GOVERNING AGENCIES, AND OTHER AFFECTED UTILITIES PRIOR TO SCHEDULING THE SHUT DOWN TO ASSESS THE SCOPE OF WORK.
3. ALL SYSTEM SHUT DOWNS SHALL BE SCHEDULED BY THE CONTRACTOR AT SUCH TIME THAT SYSTEM DEMAND IS LOW. THIS GENERALLY REQUIRES NIGHT TIME WORK BY THE CONTRACTOR AND REQUIRES FULL-TIME INSPECTION BY A REPRESENTATIVE OF THE UTILITY. ALL COST FOR OVERTIME WORK BY THE REPRESENTATIVE OF THE UTILITY SHALL BE BORNE BY THE CONTRACTOR.
4. EACH CUSTOMER AFFECTED BY THE SHUT-DOWN SHALL BE PROVIDED, MINIMUM, FORTY-EIGHT (48) HOURS WRITTEN NOTIFICATION BY THE CONTRACTOR.

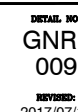
TEMPORARY DEMOLITION FACILITIES:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE OR SUPPLY TEMPORARY WATER SERVICE, SANITARY FACILITIES AND ELECTRICITY TO ITS EMPLOYEES AND SUBCONTRACTORS FOR THEIR USE DURING DEMOLITION.
2. MAINTENANCE OF TRAFFIC (MOT) IN THE PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS.
3. ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAYS OR WALKWAYS SHALL BE PROPERLY MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.
4. NO TRENCHES OR HOLES NEAR WALKWAYS OR IN ROADWAYS OR THEIR SHOULDERS ARE TO BE LEFT OPEN DURING NIGHTTIME HOURS WITHOUT EXPRESS WRITTEN PERMISSION OF THE CITY OR RESPECTIVE GOVERNING AGENCY.



CITY of FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DEMOLITION NOTES
SHEET 9



GNRL
009
2017/07/13

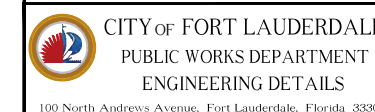
12389-MULTI-NOTE Title: November 15, 2019

WASTE MANAGEMENT PLAN:

1. IMPLEMENT A WASTE MANAGEMENT PLAN FOR APPROVAL BY THE OWNER. PROVIDE HANDLING, CONTAINERS, STORAGE, SIGNAGE, TRANSPORTATION AND OTHER ITEMS AS NEEDED TO IMPLEMENT THE WASTE MANAGEMENT PLAN DURING THE ENTIRE DURATION OF THE CONTRACT.
2. DESIGNATE A WASTE MANAGEMENT COORDINATOR TO BE RESPONSIBLE FOR IMPLEMENTING, MONITORING AND REPORTING STATUS OF WASTE MANAGEMENT WORK PLAN. COORDINATOR SHALL BE PRESENT AT PROJECT SITE FULL-TIME FOR DURATION OF PROJECT.
3. TRAIN WORKERS, SUBCONTRACTORS AND SUPPLIERS ON PROPER WASTE MANAGEMENT PROCEDURES, AS APPROPRIATE FOR THE WORK AT THE PROJECT SITE.
4. DISTRIBUTE A WASTE MANAGEMENT PLAN BEFORE WORK BEGINS. REVIEW PLAN PROCEDURES AND LOCATION ESTABLISHED FOR SALVAGE, RECYCLING AND DISPOSAL.

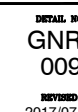
RECYCLING DEMOLITION WASTE:

1. SEPARATE RECYCLABLE WASTE FROM OTHER WASTE MATERIALS, TRASH AND DEBRIS. SEPARATE RECYCLABLE WASTE BY TYPE AT THE PROJECT SITE TO THE MAXIMUM EXTENT PRACTICAL.
2. PROVIDE APPROPRIATELY MARKED CONTAINERS OR BINS FOR CONTROLLING RECYCLABLE WASTE UNTIL THEY ARE REMOVED FROM THE PROJECT SITE. INCLUDE A LIST OF ACCEPTABLE AND UNACCEPTABLE MATERIALS AT EACH CONTAINER AND BIN.
3. INSPECT CONTAINERS AND BINS FOR CONTAMINATION AND REMOVE CONTAMINATED MATERIALS IF FOUND.
4. STOCKPILE PROCESSED MATERIALS ON-SITE WITHOUT INTERMIXING WITH OTHER MATERIALS. PLACE, GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. COVER TO PREVENT WINDBLOWN DUST.
5. STOCKPILE MATERIALS AWAY FROM DEMOLITION AREA. DO NOT STORE WITHIN DRIP LINE OF REMAINING TREES.
6. STORE COMPONENTS OFF THE GROUND AND PROTECT FROM THE WEATHER.
7. REMOVE RECYCLABLE WASTE OFF THE OWNER'S PROPERTY AND TRANSPORT TO RECYCLING RECEIVER OR PROCESSOR.
8. ASPHALTIC CONCRETE PAVING: BREAK UP AND TRANSPORT PAVING TO ASPHALT RECYCLING FACILITY.
9. CONCRETE: REMOVE REINFORCEMENT AND OTHER METALS FROM CONCRETE AND SORT WITH OTHER METALS.
10. MASONRY: MASONRY WASTE SHALL INCLUDE WHOLE OR BROKEN BRICK AND CONCRETE MASONRY UNITS. WHOLE MASONRY UNITS SHALL BE CLEANED AND REUSED OR DONATED. BROKEN MASONRY SHALL BE CRUSHED AND USED AS FILL FOR OFFSITE AREAS. REMOVE METAL REINFORCEMENT, ANCHORS AND TIES FROM MASONRY AND SORT WITH OTHER METALS.



CITY of FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DEMOLITION NOTES
SHEET 10



GNRL
009
2017/07/13

LEGEND

ABBREVIATIONS

C.L.F.	=	CHAIN LINK FENCE
CMP	=	CORRUGATED METAL PIPE
CONC.	=	CONCRETE
F.H.	=	FIRE HYDRANT
GAS	=	GAS MAIN
INV.	=	PIPE INVERT
OHW	=	OVERHEAD WIRES
R/W	=	RIGHT-OF-WAY LINE
RCP	=	REINFORCED CONCRETE PIPE
SAN	=	SANITARY SEWER PIPE
SMH	=	SANITARY MANHOLE
S.V.	=	SEWER VALVE
T.O.P.	=	TOP OF PIPE
UNK.	=	UNKNOWN TREE TYPE
U.T.O.	=	UNABLE TO OBTAIN DATA
U.V.	=	UNKNOWN VALVE
W.V.	=	WATER VALVE
B.C.H.C.E.D.	=	BROWARD COUNTY HIGHWAY CONSTRUCTION AND ENGINEERING DEPARTMENT.

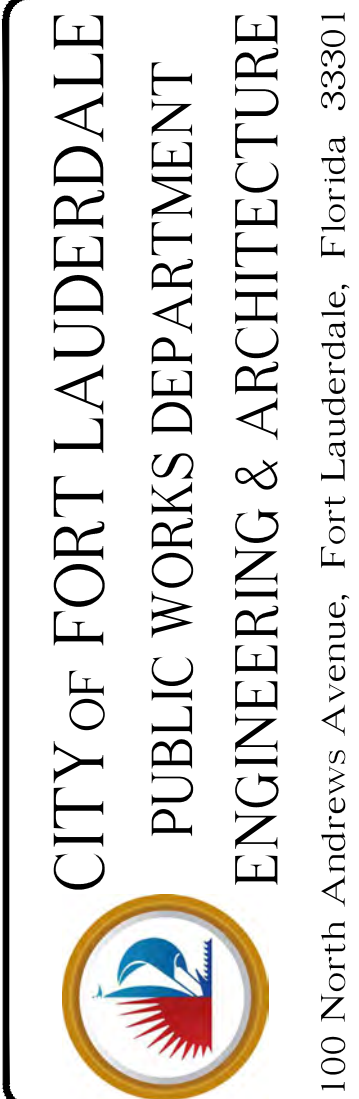
VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH
AMERICAN VERTICAL DATUM OF 1988 (NAV88)
CONVERSION FACTOR:
NAV88 + 1.60 = NGVD29 IN THIS AREA



500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 IC2600425

DESIGNER:
KIMBERLY KANTILA, P.E.
REG. NO. 63014
DATE:

DRAWN BY: DATE: 01/11/19
DESIGNED BY: SCALE:
DC
CHECKED BY: DD
FIELD BOOK:



NO.	DATE	BY	CHKD	DESCRIPTION

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS
THE N. RIVER FROM
NE 9TH ST. TO N. BIRCH RD.
GENERAL NOTES

DRAWING # SHT #
GN-2 03
TOTAL: 19
CAD FILE:
12389-MULTI-NOTE
DRAWING FILE NO:
4-XXX-XX

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

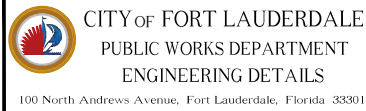
Plot Date: 11/15/2019 1:46:32 PM Username: Jtomo Layout Name: GN-3 Folder Path: V:\Projects\2018\18-047\040 -- boyshore dr. intracoast crossing fm to 2\Design\CAD\Plans Filename: 12389--MULTI--NOTE.dwg

12389-MULTI-NOTE File, November 15, 2019

11. METALS: METALS FROM REINFORCED CONCRETE, REINFORCED MASONRY, STRUCTURAL STEEL MEMBERS, FLASHING AND SHEET METAL, CONDUIT PIPE, SIDING, PIPING AND WIRING SHALL BE SEPARATED BY TYPE.
12. STRUCTURAL STEEL: STACK MEMBERS ACCORDING TO THEIR SIZE, TYPE AND LENGTH.
13. NUTS AND BOLTS: REMOVE BOLTS, NUTS, WASHERS AND OTHER ROUGH HARDWARE.
14. SITE-CLEARING WASTE SHALL BE RECYCLED BY CHIPPING BRUSH, BRANCHES AND TREES, THEN HAUL TO WOOD RECYCLING CENTER.

DISPOSAL OF WASTE:

1. GENERAL: EXCEPT FOR ITEMS OR MATERIALS TO BE SALVAGED, RECYCLED OR OTHERWISE REUSED, REMOVE WASTE MATERIALS FROM PROJECT SITE AND LEGALLY DISPOSE OF THEM IN A LANDFILL OR OTHER PERMITTED DISPOSAL FACILITY.
2. EXCEPT AS OTHERWISE SPECIFIED, DO NOT ALLOW WASTE MATERIALS THAT ARE TO BE DISPOSED OF TO ACCUMULATE ON-SITE.
3. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT SHALL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.
4. BURNING: DO NOT BURN WASTE MATERIALS.
5. DISPOSAL: TRANSPORT WASTE MATERIALS OFF THE OWNER'S PROPERTY AND LEGALLY DISPOSE OF THEM.



DEMOLITION NOTES
SHEET 11

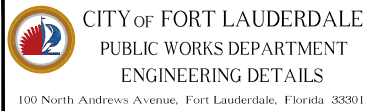


GNRL
009
20170017

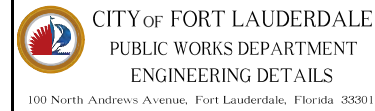
12389-MULTI-NOTE File, November 15, 2019

TRAFFIC CONTROL PLAN NOTES:

1. THE TRAFFIC CONTROL PLANS FOR THE PROJECT SHALL COMPLY WITH THE LATEST EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX NO. 600-660. MUTCD AND THE STANDARD SPECIFICATIONS. THE CONTRACTOR'S RESPONSE TIME TO ALL REPORTED MALFUNCTIONS OF TRAFFIC SIGNALS WITHIN THE PROJECT LIMITS SHALL BE NO MORE THAN TWO (2) HOURS AND SHALL RESTORE ALL MALFUNCTIONING TRAFFIC SIGNAL EQUIPMENT TO ITS LEVEL OF OPERATION PRIOR TO THE MALFUNCTIONING WITHIN TWENTY-FOUR (24) HOURS. DURING THIS TIME THE CONTRACTOR SHALL PROVIDE AT HIS EXPENSE TEMPORARY TRAFFIC CONTROL DEVICES, FLAGGLER PERSONNEL AND LAW ENFORCEMENT PERSONNEL AS NECESSARY TO MAINTAIN A SAFE AND EFFICIENT FLOW OF TRAFFIC AT THE AFFECTED WORK ZONE. THE ENGINEER OR THE CITY OF FORT LAUDERDALE SHALL APPROVE ALL MODIFICATIONS PRIOR TO THEIR IMPLEMENTATION.
2. THE CONTRACTOR SHALL MAINTAIN PROPER OPERATION OF ALL TRAFFIC SIGNAL LOOP ASSEMBLIES AND LOOP DETECTORS WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL CORRECT ALL LOOP ASSEMBLY/DETECTOR MALFUNCTIONS WITHIN 24 HOURS OF NOTIFICATION OF SUCH MALFUNCTIONS BY THE ENGINEER.
3. THE AGENCY RESPONSIBLE FOR MAINTENANCE OF THE TRAFFIC SIGNALS AND RELATED EQUIPMENT IS BROWARD COUNTY TRAFFIC ENGINEERING.
4. A REGULATORY SPEED OF 25 MPH SHALL BE POSTED WITHIN THE LIMITS OF THE WORK ZONE.
5. EXISTING SIGNS AND PAVEMENT MARKINGS THAT CONFLICT WITH CONSTRUCTION SIGNS AND MARKINGS SHALL BE REMOVED DURING CONSTRUCTION. ALL EXISTING SIGNS THAT ARE REMOVED SHALL BE STOCKPILED IN A SECURE PLACE AND REINSTALLED AFTER CONSTRUCTION. REMOVE AND REPLACE ANY GROUND MOUNT SIGN BY USE OF INDEX NO. 611.
6. THE CONTRACTOR SHALL MAINTAIN EXISTING DRAINAGE PATTERNS AND PREVENT ADVERSE FLOODING OF THE TRAVEL LANES DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL OBTAIN WRITTEN AUTHORIZATION FROM THE CITY OF FORT LAUDERDALE FOR ANY AND ALL CONSTRUCTION ACTIVITIES TO BE PERFORMED AT NIGHT. NO LANE CLOSURE SHALL BE ALLOWED BETWEEN THE HOURS OF 6:00 AM TO 9:00 AM AND 4:00 PM TO 7:00 PM, MONDAY THROUGH FRIDAY UNLESS APPROVED BY THE ENGINEER.
8. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANY TWO (2) BUSINESS DAYS IN ADVANCE OF ANY EXCAVATION INVOLVING ITS UTILITIES SO THAT A COMPANY REPRESENTATIVE CAN BE PRESENT. THE LOCATION OF THE UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION. SEE SPECS FOR LIST OF UTILITY COMPANIES.
9. TRAFFIC CONTROL ON ALL COUNTY RIGHTS-OF-WAY SHALL MEET THE ADDITIONAL REQUIREMENTS OF THE BROWARD COUNTY ENGINEERING DEPARTMENT.
10. CONTRACTOR SHALL PREPARE AND SUBMIT MAINTENANCE OF TRAFFIC PLAN (MOT) WHERE REQUIRED BY FEDERAL, STATE, COUNTY, OR LOCAL AGENCIES HAVING JURISDICTION. CONTRACTOR SHALL OBTAIN ALL REQUIRED APPROVALS AND PERMITS ASSOCIATED WITH THE MOT'S. ALL MOT'S TO BE AT'S CERTIFIED.
11. THE CONTRACTOR SHALL ALSO COORDINATE THE CONSTRUCTION SCHEDULE WITH FDOT, BROWARD COUNTY AND THE CITY OF FORT LAUDERDALE TO AVOID LANE CLOSURES WHICH WOULD ADVERSELY AFFECT TRAFFIC DURING RUSH HOUR.



TRAFFIC CONTROL PLAN NOTES



DENSITY TESTING NOTES



GNRL
010
20170013

12389-MULTI-NOTE File, November 15, 2019

MINIMUM DENSITY REQUIREMENTS			
LOCATION	MATERIAL	MINIMUM DENSITY (% OF MAX)	TESTING FREQUENCY
ROADS (INCLUDES SIDEWALKS, ASPHALT PATHS)	BACKFILL	98%	VERTICAL DISTRIBUTION: ONE TEST AT EVERY LIFT STARTING AT TOP OF FIRST LIFT AND PROCEEDING UPWARD TO GRADE.
	SUBGRADE	98%	HORIZONTAL DISTRIBUTION: TESTS SHALL BE PERFORMED AT RANDOMLY SELECTED LOCATIONS WITHIN EACH 300 FOOT INTERVAL (MAXIMUM) ALONG THE LENGTH OF ROADWAY, SIDEWALK OR PATHWAY.
	BASE	98%	
MANHOLES AND VAULTS (IN ROADS AND PARKING AREAS)	IN-PLACE SUBGRADE BENEATH STRUCTURES	95%	VERTICAL DISTRIBUTION: ONE TEST AT EVERY LIFT STARTING AT THE BOTTOM OF THE STRUCTURE AND PROCEEDING UPWARD TO GRADE.
	BACKFILL BENEATH STRUCTURES	98%	HORIZONTAL DISTRIBUTION: PERFORM TESTING AT EACH STRUCTURE.
	BACKFILL AROUND STRUCTURES	98%	
	CRUSHED STONE BENEATH STRUCTURES	NOTE 6	
PARKING AREAS	BACKFILL	98%	VERTICAL DISTRIBUTION: ONE TEST AT EVERY LIFT STARTING AT TOP OF FIRST LIFT AND PROCEEDING UPWARD TO GRADE.
	SUBGRADE	98%	HORIZONTAL DISTRIBUTION: TESTS SHALL BE PERFORMED EVERY 6,000 SQUARE FEET OF PARKING AREA.
	BASE	98%	
UTILITY TRENCH BACKFILL	BEDDING AND BACKFILL	98%	VERTICAL DISTRIBUTION: ONE TEST AT EVERY LIFT STARTING AT THE SPRING LINE AND PROCEEDING UPWARD TO GRADE.
			HORIZONTAL DISTRIBUTION: TESTS SHALL BE PERFORMED AT RANDOMLY SELECTED LOCATIONS WITHIN EACH 300 FOOT INTERVAL (MAXIMUM) ALONG THE LENGTH OF A PIPE INSTALLATION, AND BETWEEN EACH SET OF STRUCTURES SEPARATED BY LESS THAN 300 FEET.
ROADS AND PARKING	ASPHALT	94%	ASPHALT TESTING MAY BE DONE BY CORE SAMPLING OR NUCLEAR GAUGE DENSITY TESTING. ASPHALT TESTING SHALL BE AT MAXIMUM 300 LINEAR FOOT ALONG ROADWAYS AND 6,000 SQUARE FOOT INTERVALS FOR PARKING AREAS.

NOTES:

1. THE DENSITY REQUIREMENTS PRESENTED ASSUME DRY TRENCH CONDITIONS.

2. UNLESS INDICATED OTHERWISE IN THE SPECIFICATIONS, TESTING SHALL COMPLY WITH THE REQUIREMENTS PRESENTED IN THIS TABLE.

3. LIFT THICKNESSES FOR BASE, SUBGRADE AND BACKFILL SHALL BE AS INDICATED ON THE DETAILS OR DESCRIBED IN THE SPECIFICATIONS.

4. MAXIMUM DENSITY SHALL BE DETERMINED BY ASTM D 1557 OR AASHTO T180 (MODIFIED PROCTOR).

5. FIELD DENSITY TESTS SHALL BE PERFORMED IN ACCORDANCE WITH ASTM D 1556 OR D 2922.

6. THE AGGREGATE SHALL BE COMPACTED TO A DEGREE ACCEPTABLE TO THE ENGINEER BY USE OF A VIBRATORY COMPACTOR AND/OR CRAWLER TRACTOR.

GENERAL DEMOLITION SPECIFICATIONS:

1. THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM THE INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL VERIFY THE LOCATION, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES AND OTHER FEATURES AFFECTING THE WORK PRIOR TO DEMOLITION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES WHICH MAY EFFECT THE DEMOLITION WORK.
2. CHAPTER 553.851 OF THE FLORIDA STATUTES REQUIRES THAT AN EXCAVATOR NOTIFY ALL UTILITIES A MINIMUM OF TWO (2) WORKING DAYS PRIOR TO EXCAVATING.
3. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, SUPERVISION, AND EQUIPMENT REQUIRED FOR THE ORDERLY DEMOLITION AND REMOVAL OF EXISTING STRUCTURES, PAVEMENT AND UTILITIES AS SHOWN ON THE DRAWINGS AND DESCRIBED HEREIN.
4. THE CONTRACTOR IS REQUIRED TO FAMILIARIZE HIMSELF WITH THE STRUCTURES TO BE DEMOLISHED.
5. PROTECT AND SAVE ALL UTILITIES, UNLESS OTHERWISE NOTED.
6. ALL THE CONCRETE AND PAVEMENT TO BE REMOVED MUST BE SAW CUT CLEAN PRIOR TO REMOVAL.
7. ALL EXISTING STRUCTURES, PAVEMENTS, SLABS, FOUNDATIONS, STEPS AND OTHER ON-SITE EXISTING FEATURES INDICATED ON THE DRAWINGS TO BE REMOVED SHALL BE DEMOLISHED AND REMOVED BY THE CONTRACTOR (AS APPLICABLE TO PROJECT).
8. ALL EXISTING SEWERS, PIPING AND UTILITIES SHOWN ARE NOT TO BE INTERPRETED AT THE EXACT LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK.
9. THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE UTILITY COMPANY PRIOR TO REMOVAL OR RELOCATION OF ANY ELECTRICAL, TELEPHONE, CABLE AND/OR GAS LINES. SUFFICIENT TIME SHALL BE PROVIDED FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE.
10. CONTRACTOR MUST STOP OPERATION AND NOTIFY THE OWNER/ENGINEER FOR PROPER DIRECTION IF ANY ENVIRONMENTAL OR HEALTH RELATED CONTAMINANT IS ENCOUNTERED DURING THE DEMOLITION/EXCAVATION PROCESS.
11. CONTINUOUS ACCESS AND OPERATION SHALL BE MAINTAINED FOR THE SURROUNDING PROPERTIES AND BUILDINGS AT ALL TIMES DURING DEMOLITION OF THE EXISTING COMPOST FACILITY.
12. PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED.
13. ALL SIGNS OUTSIDE THE DEMOLITION AREA ARE TO REMAIN UNLESS OTHERWISE SPECIFIED.
14. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES BEFORE EXCAVATION.
15. ALL TRASH, DEBRIS AND OTHER MATERIAL REMOVED FROM THE SITE SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

MAINTENANCE OF TRAFFIC SCHOOL/PEDESTRIAN

1. THE "MAINTENANCE OF TRAFFIC" PLAN, PROVIDED BY THE CONTRACTOR, SHALL INCLUDE PROVISIONS FOR PEDESTRIAN AND/OR SCHOOL STUDENT TRAFFIC AS WELL AS VEHICULAR TRAFFIC. THE FOLLOWING ARE MINIMUM REQUIREMENTS.
2. THE SAFE WALK ROUTE FOR ALL SCHOOL STUDENTS WITHIN THE VICINITY OF THE CONSTRUCTION ZONE SHALL BE MAINTAINED DURING THE TIMES STUDENTS ARE ARRIVING AT OR LEAVING SCHOOL. IF THE CURRENT WALKING SURFACE CAN NOT BE MAINTAINED, THEN A TEMPORARY ROAD-ROCK 4' WALK WAY SHALL BE CREATED. THE SAFE WALK ROUTE SHALL BE SEPARATED FROM THE CONSTRUCTION ACTIVITY BY THE 4' HIGH ORANGE CONSTRUCTION FENCE FOR THE ENTIRE LENGTH OF THE PROJECT OR THE LENGTH OF THE WALK ROUTE, WHICHEVER IS LESS.
3. ALL CONSTRUCTION EQUIPMENT AROUND ANY DESIGNATED CROSSWALK SHALL CEASE TO OPERATE DURING THE TIMES STUDENTS ARE ARRIVING AT OR LEAVING SCHOOL. ALL CONSTRUCTION EQUIPMENT ADJACENT TO A DESIGNATED WALK ROUTE SHALL CEASE OPERATING UNLESS SATISFACTORILY BARRICADED FROM THE WALK ROUTE.
4. IN THE CASE THAT A DESIGNATED CROSSING OR ANY PORTION OF THE DESIGNATED WALK ROUTE CANNOT BE MAINTAINED, THEN THE CONTRACTOR SHALL NOTIFY THE SPECIAL PROJECTS COORDINATOR AT BROWARD COUNTY TRAFFIC ENGINEERING DIVISION, (954) 847-2671, A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO CLOSING THAT ROUTE IN ORDER THAT AN ALTERNATE CROSSING/ROUTE CAN BE ESTABLISHED.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL ANY NECESSARY PAVEMENT, ROAD ROCK, PAVEMENT MARKING AND SIGNAGE AND/OR ANY PEDESTRIAN SIGNALIZATION AND/OR MODIFICATION TO ACCOMMODATE AN EXISTING OR ALTERNATE WALK ROUTE.
6. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE STATE CERTIFIED SCHOOL CROSSING GUARDS OR OFF DUTY POLICE OFFICERS TO CROSS STUDENTS AT ANY LOCATIONS OTHER THAN THOSE PREVIOUSLY DESIGNATED. THE CONTRACTOR MAY USE FLAG MEN, ONLY IF THEY ARE STATE CERTIFIED AS A SCHOOL CROSSING GUARD.
7. THIRTY (30) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE SPECIAL PROJECTS COORDINATOR AT BROWARD COUNTY TRAFFIC ENGINEERING DIVISION, (954) 847-2671, TO ARRANGE A PRE-CONSTRUCTION - SCHOOL SAFETY MEETING.
8. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE BROWARD COUNTY SCHOOL BOARD PUPIL TRANSPORTATION DEPARTMENT, (754) 321-4440, TO ARRANGE A PRE-CONSTRUCTION SCHOOL BUS ROUTE MEETING. THIS MEETING IS TO DETERMINE ALL BUS ROUTES AND TO MAKE ANY NECESSARY ARRANGEMENTS FOR ROUTING. THIS MEETING SHALL INCLUDE THE SPECIAL PROJECTS COORDINATOR FROM BROWARD COUNTY TRAFFIC ENGINEERING DIVISION, (954) 847-2671.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SAFE AND ADEQUATE WALKING SURFACE FOR ALL SCHOOL CHILDREN/PEDESTRIANS. THE SAFE WALK ROUTE SHALL BE PART OF THE MAINTENANCE OF TRAFFIC PLAN.
10. ALL VEHICLE DETECTION DEVICES SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT. ANY DEVIATION SHALL REQUIRE PRIOR WRITTEN APPROVAL BY THE TRAFFIC ENGINEERING DIVISION. ALL TRAFFIC ENGINEERING COMMUNICATIONS FACILITIES LOCATED WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED THROUGHOUT THE PROJECT.
11. ALL TRAFFIC CONTROL DEVICES USED WITHIN PUBLIC RIGHT OF WAY SHALL BE ON FDOT APPROVED PRODUCT LIST (APL).

INTERRUPTION OF EXISTING UTILITIES

1. ANY DEMOLITION WORK THAT REQUIRES INTERRUPTION OF SERVICE TO ANY CUSTOMER SHALL BE DONE SO WITH A MINIMUM OF SEVENTY-TWO (72) HOUR NOTICE TO, AND WRITTEN APPROVAL BY, THE APPROPRIATE UTILITY COMPANY. THE CONTRACTOR SHALL ARRANGE A MEETING WITH THE LOCAL JURISDICTIONAL AGENCIES AND OTHER GOVERNING AGENCIES, AND OTHER AFFECTED UTILITIES PRIOR TO SCHEDULING THE SHUT DOWN TO ASSESS THE SCOPE OF WORK. ALL SYSTEM SHUT DOWNS SHALL BE SCHEDULED BY THE CONTRACTOR AT SUCH TIME THAT SYSTEM DEMAND IS LOW. THIS GENERALLY REQUIRES NIGHT TIME WORK BY THE CONTRACTOR AND REQUIRES FULL TIME INSPECTION BY A REPRESENTATIVE OF THE UTILITY. ALL COST FOR OVERTIME WORK BY THE REPRESENTATIVE OF THE UTILITY SHALL BE BORNE BY THE CONTRACTOR. EACH CUSTOMER AFFECTED BY THE SHUT DOWN SHALL BE PROVIDED, MINIMUM, FORTY-EIGHT (48) HOURS WRITTEN NOTIFICATION BY THE CONTRACTOR.

TEMPORARY DEMOLITION FACILITIES

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE OR SUPPLY TEMPORARY WATER SERVICE, SANITARY FACILITIES AND ELECTRICITY TO ITS EMPLOYEES AND SUBCONTRACTORS FOR THEIR USE DURING DEMOLITION.
2. MAINTENANCE OF TRAFFIC (MOT) IN THE PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE MUTCD AND FDOT.
3. ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAYS OR WALKWAYS SHALL BE PROPERLY MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.
4. NO TRENCHES OR HOLES NEAR WALKWAYS OR IN ROADWAYS OR THEIR SHOULDERS ARE TO BE LEFT OPEN DURING NIGHTTIME HOURS WITHOUT EXPRESS WRITTEN PERMISSION OF THE CITY OR RESPECTIVE GOVERNING AGENCY.

VERTICAL DATUM INFORMATION

ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

CONVERSION FACTOR

NAVD88 +1.60 = NGVD29 IN THIS AREA



500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 IC26000425

ENGINEER:
DANIEL BANTILA, P.E.
REG. NO. 63014
DATE:

DRAWN BY: DATE: 01/11/19
DESIGNED BY: SCALE: JH
CHECKED BY: DC
FIELD BOOK: DD

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHK'D

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS
THE N. RIVER FROM
NE 9TH ST. TO N. BIRCH RD.
GENERAL NOTES

DRAWING # GN-3
SHT # 04
TOTAL: 19
CAD FILE: 12389--MULTI--NOTE
DRAWING FILE NO. 4-XXX-XX

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

HORIZONTAL DIRECTIONAL DRILLING (HDD) WITH (HDPE) PIPE

I. WORK INCLUDED

- A. FURNISH ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO INSTALL FORCE MAIN PIPE USING DIRECTIONAL DRILLING METHOD OF INSTALLATION, ALL IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE FORCE MAIN PIPE SIZE, TYPE AND LENGTH SHALL BE AS SPECIFIED HEREIN AND AS SHOWN ON THE DRAWINGS. WORK INCLUDED SHALL INCLUDE AND NOT BE LIMITED TO PROPER INSTALLATION, TESTING, RESTORATION OF UNDERGROUND UTILITIES AND ENVIRONMENTAL PROTECTION AND RESTORATION.
- B. THE DIRECTIONAL DRILL SHALL BE ACCOMPLISHED BY FIRST DRILLING A PILOT HOLE TO DESIGN STANDARDS; THEN ENLARGING THE PILOT HOLE TO SUFFICIENT SIZE TO ACCOMMODATE THE FULL BACK.

II. REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
- ASTM D 3261: BUTT HEAT FUSION POLYETHYLENE PLASTIC FITTINGS
- ASTM F 714-05: SPECIFICATION FOR POLYETHYLENE PIPE
- PIPE
- ASTM F 1055: ELECTRO-FUSION FITTINGS FOR OUTSIDE DIAMETER CONTROLLED PE
- ASTM F 1962: MAXI-HORIZONTAL DIRECTIONAL DRILLING
- ASTM F 2620: HEAT FUSION JOINING OF POLYETHYLENE PIPE AND FITTINGS
- B. AMERICAN WATER WORKS ASSOCIATION (AWWA)
- AWWA C 906: STANDARD FOR POLYETHYLENE PRESSURE PIPE AND FITTINGS, 4 IN. THROUGH 63 IN. FOR WATER DISTRIBUTION

III. GENERAL REQUIREMENTS

- A. DIRECTIONAL DRILLING AND PIPE INSTALLATION SHALL BE DONE ONLY BY AN EXPERIENCED, LICENSED CONTRACTOR SPECIALIZING IN DIRECTIONAL DRILLING TECHNIQUE AND WHOSE KEY PERSONNEL HAVE AT LEAST FIVE (5) YEARS' EXPERIENCE IN THIS WORK. FURTHERMORE, THE SAID CONTRACTOR SHALL HAVE HAD EXPERIENCE IN DIRECTIONAL DRILLING UNDER FLORIDA WATERWAYS. ACCEPTABLE DIRECTIONAL DRILLING CONTRACTORS MUST MEET THESE MINIMUM QUALIFICATIONS PRESENTED IN DOCUMENTATION OF COMPLIANCE WITH MINIMUM STANDARDS IN SECTION 1.05 .A.2.
- B. THE CONTRACTOR SHALL VISIT THE SITE AND DETERMINE THE PROXIMITY OF STRUCTURES ON EITHER SIDE OF THE CROSSINGS. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A DRILLING PLAN OUTLINING PROCEDURES TO PREVENT FRAC-OUT AND DRILLING FLUID OR THE DRILLING PROCESS FROM ADVERSELY AFFECTING THESE STRUCTURES.
- C. PRIOR TO PRE-CONSTRUCTION MEETING CONTRACTOR IS TO SUBMIT FRAC-OUT PLAN PER STATE WATER QUALITY STANDARDS, PURSUANT TO RULE 62-302, WITH DETAILS OF THE NON-TOXIC FLORESCENT TRACKING DYES THAT THE CONTRACTOR WILL USING WITH THE DRILLING LUBRICANT AS A MONITORING METHOD WITH THE BENTONITE.
- D. PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA TO DESIGN A DETAILED PLAN OF BORING AND RECEIVING PITS, INCLUDING EXCAVATION, TOGETHER WITH AN OUTLINE OF THE METHODS TO BE USED AND A TIME SCHEDULE FOR DIRECTIONAL DRILL OPERATIONS. IN ADDITION CONTRACTOR SHALL IDENTIFY AN ENVIRONMENTAL SCIENTIST/BIOLOGIST WITH EXPERIENCE IN WATER QUALITY MONITORING AND HABITAT PROTECTION TO BE USED IN THE EVENT OF A FRAC-OUT.
- E. THREE WORKDAYS WRITTEN NOTICE PRIOR TO START OF THE ACTUAL WORK SHALL BE GIVEN TO THE OWNER AND ENGINEER.
- F. THE CONTRACTOR SHALL INSTALL, MAINTAIN, AND LEAVE IN PLACE ANY SHEETING, UNDERPINNING, CRIBBING, AND OTHER RELATED ITEMS (OTHER THAN THAT REQUIRED FOR THE BORING AND RECEIVING PITS) TO SUPPORT ANY STRUCTURE OR FACILITY AFFECTED BY THE BORING OPERATION. THE ENGINEER, DEPENDING UPON EXISTING CONDITIONS, MAY REQUIRE THAT ADDITIONAL SHEETING FOR THE EXCAVATION BE LEFT IN PLACE.
- G. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR THE METHODS AND MEANS OF CONSTRUCTION, THE STABILITY AND ACCURACY OF THE DRILLED AND REAMED HOLE AND CONSTRUCTED PITS, AND ALL COST RESPONSIBILITY FOR THE SAFETY OF THE PITS AND RELATED STRUCTURES, AND PERSONNEL ENGAGED IN CONSTRUCTION THROUGHOUT THE DURATION OF WORK.
- H. ALL WORK UNDER THIS SPECIFICATION AFFECTING THE RIGHT-OF-WAY, OR MUNICIPAL FACILITIES SHALL BE CARRIED OUT TO THE FULL SATISFACTION OF THE AUTHORIZED REPRESENTATIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FULLY INFORMED OF ALL REQUIREMENTS AND PERMIT CONDITIONS AS IT PERTAINS TO THE SPECIFIC PROJECT AND SHALL CONDUCT ALL WORK ACCORDINGLY.
- I. ALL EQUIPMENT USED BY THE CONTRACTOR ON OWNER'S PROPERTY AND RIGHTS-OF-WAY MAY BE INSPECTED BY THE OWNER OR THE OWNER'S REPRESENTATIVES.
- J. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL DAMAGES ARISING FROM THE FAILURE OF THE CONTRACTOR OR SUBCONTRACTORS TO COMPLY WITH THE REGULATIONS AND THE REQUIREMENTS OF THESE SPECIFICATIONS.
- K. THE CONTRACTOR'S METHODS AND SCHEDULE SHALL COMPLY WITH THE OVERALL PROJECT REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE WORK WITHIN THE LOCAL SUBSURFACE CONDITIONS. THE CONTRACTOR'S SELECTION OF INADEQUATE, INAPPROPRIATE, OR INEFFICIENT EQUIPMENT AND METHODS WILL NOT BE CAUSE FOR ADJUSTMENTS TO THE CONTRACT PRICE OR CONTRACT TIME.
- L. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CLEAN UP OF PROJECT SITE, DEBRIS, MATERIALS AND EQUIPMENT AND SHALL CLEAR THE SITE OF AND DISPOSE OF THEM IN ACCORDANCE WITH CONTRACT DOCUMENTS.

IV. SUBMITTALS

- A. THE CONTRACTOR SHALL SUBMIT FOR THE OWNER'S AND ENGINEER'S APPROVAL THE QUALIFICATIONS OF THE DIRECTIONAL DRILLING SPECIALTY PROVIDER INDICATING COMPLIANCE WITH THE FOLLOWING MINIMUM EXPERIENCE CRITERIA:
1. DESCRIPTIONS OF SUCCESSFULLY COMPLETED SIMILAR PROJECTS USING THE GUIDED DIRECTIONAL DRILL TECHNIQUE, WHICH SHALL INCLUDE A LISTING OF THE FOLLOWING INFORMATION.
- a. PROJECT NAME AND LOCATION
- b. YEAR OF PROJECT
- c. OWNER/CLIENT
- d. CLIENT CONTACT INFORMATION
- e. DIAMETER AND MATERIAL OF PIPE
- f. LENGTH OF DIRECTION DRILLING INSTALLATION
- g. OTHER INFORMATION RELEVANT TO THE SUCCESSFUL COMPLETION OF THE PROJECT
2. DOCUMENTATION OF COMPLIANCE WITH THE FOLLOWING MINIMUM STANDARDS:
- a. THE DIRECTIONAL DRILLING SPECIALTY PROVIDER SHALL BE AN EXPERIENCED, LICENSED CONTRACTOR SPECIALIZING IN GUIDED DIRECTIONAL DRILLING AND WHOSE KEY PERSONNEL ASSIGNED TO THIS WORK SHALL HAVE A MINIMUM OF FIVE (5) YEARS OF RELATED DIRECTIONAL DRILLING EXPERIENCE.
- b. THE DIRECTIONAL DRILLING SPECIALTY PROVIDER SHALL HAVE INSTALLED UTILITIES UNDER MAJOR WATERWAYS VIA DIRECTIONAL DRILL TECHNIQUE.
- B. TWO (2) WEEKS PRIOR TO THE START OF THE DIRECTIONAL DRILLING WORK, THE CONTRACTOR SHALL SUBMIT THE DIRECTIONAL DRILLING WORK PLAN FOR THE OWNER'S AND ENGINEER'S REVIEW. THE WORK PLAN SHALL INCLUDE THE FOLLOWING INFORMATION.

1. A PLAN SHOWING DETAILS OF THE PROPOSED METHOD OF CONSTRUCTION, SEQUENCE OF OPERATIONS TO BE PERFORMED, NUMBER AND SIZE OF CONSTRUCTION CREW, HOURS TO BE WORKED, PILOT HOLE DRILLING PROCEDURE, REAMING PROCEDURE, PULLBACK PROCEDURE, METHOD OF MONITORING THE DRILLING HEAD AND METHOD OF VERIFYING PIPE LOCATION FOR AS-BUILT DRAWINGS.
2. A DRILLING FLUID PLAN WHICH DETAILS TYPES OF DRILLING FLUIDS, INCLUDING THE NON-TOXIC FLORESCENT TRACKING DYES, CLEANING AND RECYCLING EQUIPMENT, ESTIMATED FLOW RATES, AND PROCEDURES FOR MINIMIZING DRILLING FLUID ESCAPE.

3. A PLAN IN THE EVENT OF DRILLING FLUID ESCAPE INCLUDING, BUT NOT LIMITED TO, STOPPAGE OF WORK, NOTIFICATION OF APPLICABLE PERMITTING AUTHORITIES WHOSE RIGHT-OF-WAY IS IMPACTED BY THE ESCAPE OF DRILLING FLUID, PROCEDURE TO CONFINE DRILLING FLUIDS/MUDS, AND PROCEDURE FOR REPAIR/PLUGGING OF FISSURES AT NO ADDITIONAL COST TO THE OWNER.
4. A PLAN AND PROFILE DRAWING SHOWING THE CONTRACTOR'S PROPOSED PILOT BORE HOLE ROUTING AND LOCATION OF OTHER UNDERGROUND UTILITIES. THE PLAN DRAWING SHALL BE AT A 1" = 20' SCALE AND THE PROFILE DRAWING AT A 1" = 20' SCALE HORIZONTAL AND 1" = 2' SCALE VERTICAL.
5. A 1" = 20' SCALE DRAWING OF THE PROPOSED SETUP OF MAJOR EQUIPMENT AT THE ENTRY POINT AND THE PROPOSED LAYOUT PIPE AT THE EXIT POINT.
- C. THE CONTRACTOR SHALL FURNISH SHOP DRAWINGS SHOWING ALL FABRICATION AND CONSTRUCTION DETAILS FOR THE DIRECTIONAL DRILLED CROSSINGS.
- D. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING DRILLING LOGS THAT PROVIDE DRILL BIT LOCATIONS AT LEAST 30 FEET ALONG THE DRILL PATH. IN ADDITION, LOGS WILL BE KEPT THAT RECORD THE FOLLOWING ON AN HOURLY BASIS THROUGHOUT EACH DRILL PASS, BACKREAM PASS OR PIPE INSTALLATION PASS:
1. DRILL FLUID PRESSURE
2. DRILLING FLUID FLOW RATE
3. DRILL THRUST PRESSURE
4. DRILL PULLBACK PRESSURE
5. DRILL HEAD TORQUE
6. HORIZONTAL DISTANCE OF DRILL HEAD FROM ENTRY POINT

- E. UPON COMPLETION OF THE PILOT HOLE PHASE OF THE OPERATION, A COMPLETE SET OF AS-BUILT RECORDS SHOWING THE ACTUAL HORIZONTAL AND VERTICAL ALIGNMENT OF THE PILOT BORE AT INTERVALS NOT EXCEEDING 30 FEET SHALL BE SUBMITTED IN DUPLICATE TO THE ENGINEER ALONG WITH ONE ELECTRONIC AUTOCAD AS-BUILT DRAWING FILE. THESE RECORDS SHALL INCLUDE THE PLAN DRAWING AT A 1" = 20' SCALE, AND A PROFILE DRAWING AT A 1" = 20' SCALE HORIZONTAL AND A 1" = 2' SCALE VERTICAL, AS WELL AS DIRECTIONAL SURVEY REPORTS AS RECORDED DURING THE DRILLING OPERATION.

SAFETY

- A. THE CONTRACTOR SHALL, AT ALL TIMES, CONFORM TO ALL APPLICABLE STATE AND FEDERAL REGULATIONS.
- B. CONTRACTOR IS TO ADHERE TO REQUIREMENTS OF UNITED STATES ARMY CORP OF ENGINEERS PERMIT. SEE ACQUIRED PERMITS EXHIBIT FOR PERMIT REQUIREMENTS.
- C. GUIDED DIRECTIONAL DRILLING EQUIPMENT MACHINE SAFETY REQUIREMENTS WILL INCLUDE A COMMON PLAN OUTLINE PREVENT ELECTRICAL SHOCK IN THE EVENT OF HIGH VOLTAGE UNDERGROUND CABLE STRIKE. THE GROUNDING SYSTEM WILL CONNECT ALL PIECES OF INTERCONNECTING MACHINERY: THE DRILL, MUD MIXING SYSTEM, DRILL POWER UNIT, DRILL ROD TRAILER, OPERATOR'S BOOTH, WORKER GROUNDING MATS AND ANY OTHER INTERCONNECTED EQUIPMENT TO A COMMON GROUND. THE DRILL WILL BE EQUIPPED WITH AN "ELECTRICAL STRIKE" AUDIBLE AND VISUAL WARNING SYSTEM THAT WILL NOTIFY THE SYSTEM OPERATORS OF AN ELECTRICAL STRIKE.
- D. OPERATORS OF THE DRILL WILL WEAR ELECTRICAL SHOCK PROTECTION EQUIPMENT AND OPERATE FROM COMMON GROUNDED MATS AS REQUIRED.

MATERIALS

- A. THE CARRIER PIPE SHALL CONFORM TO SECTION 02610; PIPING, GENERAL.
- B. EQUIPMENT (GRADERS, SHOVELS, ETC.) AND MATERIALS (SUCH AS GROUND SHEETS, HAY BALES, BOOMS, AND ABSORBENT PADS) FOR CLEANUP AND CONTINGENCIES SHALL BE PROVIDED IN SUFFICIENT QUANTITIES BY CONTRACTOR AND MAINTAINED AT ALL SITES FOR USE IN THE EVENT OF INADVERTENT LEAKS, SEEPS OR SPILLS.
- C. TECHNICAL CRITERIA FOR BENTONITE SHALL BE AS GIVEN IN API SPECIFICATION 13A. SPECIFICATION FOR DRILLING FLUIDS MATERIALS. ANY MODIFICATION TO THE BASIS DRILLING FLUID INVOLVING ADDITIVES MUST DESCRIBE THE TYPE OF MATERIAL TO BE USED AND BE INCLUDED IN CONTRACTOR'S DRILLING PLAN PRESENTED TO OWNER. THE OWNER RETAINS THE RIGHT TO SAMPLE AND MONITOR THE WASTE DRILLING MUD, CUTTINGS AND WATER.

VII. HDPE PIPELINE IDENTIFICATION

- A. ALL POLYETHYLENE PIPE SHALL BE BLACK, AND SHALL CONTAIN A CONTINUOUS COLORED STRIPE, 2 INCHES WIDE, AT THREE SEPARATE LOCATIONS ALONG THE LENGTH OF THE PIPE. STRIPE COLOR SHALL BE:
1. POTABLE WATER MAINS - BLUE
2. RECLAIMED WATER MAINS - PURPLE
3. FORCE MAINS - RED
4. SANITARY SEWER - GREEN
5. STORM SEWER - NO STRIPES REQUIRED

VIII. DIRECTIONAL DRILLING OPERATION

- A. THE CONTRACTOR SHALL PROVIDE ALL MATERIAL, EQUIPMENT, AND FACILITIES REQUIRED FOR DIRECTIONAL DRILLING AND ELEVATION OF THE OPENING SHALL BE CONSISTENTLY MAINTAINED THROUGHOUT THE DIRECTIONAL DRILLING OPERATION. ENTRANCE AND EXIT ANGLES FOR THE DRILL ARE AT THE CONTRACTOR'S DISCRETION SUCH THAT THE ELEVATION PROFILE MAINTAINS ADEQUATE GROUND COVER TO REASONABLY PRECAUTION AGAINST HYDRAULIC FRACTURES WITH THE DRILLING FLUID AND MAINTAIN THE MINIMUM COVER SHOWN IN THE DRAWINGS AND SPECIFIED HEREIN.
- B. THE POSITION OF THE DRILL STRING SHALL BE MONITORED BY THE CONTRACTOR WITH THE DOWNHOLE SURVEY INSTRUMENTS. THE CONTRACTOR SHALL COMPUTE THE POSITION IN THE X, EVERY 30 FEET. SERIOUS DEVIATIONS BETWEEN THE DESIGN POSITION WHICH MAY AFFECT THE INSTALLATION OF THE PIPELINE AND ARE BEYOND THE CONTROL OF THE CONTRACTOR TO CORRECT SHALL BE DOCUMENTED AND IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER FOR DISCUSSION AND/OR APPROVAL. THE PROFILE AND ALIGNMENT DEFINED ON THE CONSTRUCTION DRAWINGS ADJACENT STRUCTURES DEFINE THE MINIMUM DEPTH AND RADIUS OF CURVATURE. AT NO POINT IN THE DRILLED PROFILE SHALL THE RADIUS OF CURVATURE OF THE BORE BE LESS THAN 700 FEET. THE CONTRACTOR SHALL MAINTAIN AND PROVIDE TO THE OWNER, UPON REQUEST, THE DATA GENERATED BY THE DOWNHOLE SURVEY TOOLS IN A FORM SUITABLE FOR INDEPENDENT CALCULATION OF THE PILOT HOLE PROFILE.
- C. THE USE OF A SEPARATE STEERING SYSTEM EMPLOYING A GROUND SURVEY GRID SYSTEM, SUCH AS "TRU-TRACKER" OR EQUAL SHOULD BE USED, AT THE CONTRACTOR'S DISCRETION, TO ENSURE PROPER MONITORING OF THE DRILL STRING.
- D. BORING PITS SHALL BE SHORED WITH SHEETING OR SUCH OTHER MATERIALS AS REQUIRED. SHEETING SHALL BE DRIVEN TO A SUFFICIENT DEPTH BELOW THE INVERT OF THE CARRIER PIPE TO RESIST ANY PRESSURE DEVELOPED BY THE SOIL OUTSIDE THE BORING PIT. SHEETING WHEN USED SHALL TERMINATE NOT LESS THAN 3 FEET 6 INCHES ABOVE EXISTING GRADE.
- E. AT THE COMPLETION OF THE DIRECTION DRILLING OPERATIONS, THE CONTRACTOR WILL BE REQUIRED TO REMOVE ALL SHEETING IN PLACE. IF STEEL SHEETING IS USED, IT MAY BE REMOVED AFTER INSTALLATION OF THE CARRIER PIPE IN THE BORE HOLE, BUT PRIOR TO INSTALLATION OF THE JOINING CARRIER PIPE. HOWEVER, SHOULD DAMAGE TO THE ROADWAY, PIPELINE OR ANY OTHER ADJACENT STRUCTURE OCCUR, THE CONTRACTOR SHALL LEAVE ALL REMAINING SHEETING IN PLACE AND REDRIVE AND LEAVE IN PLACE ANY SHEETING WHICH IS REQUIRED TO STABILIZE THE SITE AND PREVENT ADDITIONAL DAMAGE FROM OCCURRING. THE TOP OF ALL SHEETING LEFT IN PLACE SHALL BE CUT OFF 36 INCHES BELOW FINISHED GRADE.
- F. BENTONITE OR OTHER STABILIZING GELS SHALL BE USED TO PREVENT CALVING OF THE UNSUPPORTED BORE HOLE.

IX. DRILLING FLUIDS AND CUTTINGS

- A. TO THE EXTENT PRACTICAL, THE CONTRACTOR SHALL MAINTAIN A CLOSED LOOP DRILLING FLUID SYSTEM AND UTILIZE DRILLING TOOLS AND PROCEDURES WHICH WILL MINIMIZE THE DISCHARGE OF ANY DRILLING FLUIDS.
- B. CONTRACTOR SHALL HAVE DIVERS PRESENT DURING THE DRILLING OPERATIONS IN ORDER TO RESPOND TO POTENTIAL FRAC-OUT RELEASE.
- C. THE GUIDED HORIZONTAL DIRECTION DRILLING OPERATION IS TO BE OPERATED IN A MANNER TO ELIMINATE THE DISCHARGE OF WATER, DRILLING MUD AND CUTTINGS TO THE CANAL OR LAND AREAS INVOLVED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND PROCEDURES TO MAXIMIZE THE RECYCLATION OR REUSE OF DRILLING MUD TO MINIMIZE WASTE. ALL EXCAVATED PITS USED IN THE DRILLING OPERATION SHALL BE LINED BY CONTRACTOR WITH HEAVY DUTY PLASTIC SHEETING WITH SEALED JOINTS TO PREVENT THE MIGRATION OF DRILLING FLUIDS AND/OR GROUND WATER.
- D. PITS CONSTRUCTED AT THE ENTRY OR EXIT POINT AREA SHALL BE SO CONSTRUCTED TO COMPLETELY CONTAIN THE DRILL FLUID AND PREVENT ITS ESCAPE TO THE SURROUNDING LAND OR CANAL.

- E. WASTE CUTTINGS AND DRILLING MUD SHALL BE PROCESSED THROUGH A SOLIDS CONTROL PLANT COMPRISED AS A MINIMUM OF STUMPS, PUMPS, TANKS, DISTILLER/DESANDER, CENTRIFUGES, MATERIAL HANDLERS, AND HAULERS ALL IN A QUANTITY SUFFICIENT TO PERFORM THE CLEANING/SEPARATING OPERATION WITHOUT INTERFERENCE WITH THE DRILLING PROGRAM. THE CUTTINGS AND EXCESS DRILLING FLUIDS SHALL BE DEWATERED AND DRIED BY CONTRACTOR TO THE EXTENT NECESSARY FOR DISPOSAL, AND DISPOSAL IN OFFSITE LANDFILLS AT THE CONTRACTOR'S EXPENSE. WATER FROM THE DEWATERING PROCESS SHALL BE TREATED BY CONTRACTOR TO MEET PERMIT REQUIREMENTS AND DISPOSED OF LOCALLY. THE CUTTINGS AND WATER FOR DISPOSAL ARE SUBJECT TO BEING SAMPLED AND TESTED. THE CONSTRUCTION SITE AND ADJACENT AREAS WILL BE CHECKED FREQUENTLY FOR SIGNS OF UNPLANNED LEAKS OR SEEPS.
- F. ALL DRILLING MUD SHALL BE REMOVED FROM THE ENTRY AND EXIT AREA SOILS SUCH THAT WATER WILL PERCOLATE. ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL CONDITIONS.

X. DIRECTIONAL DRILL WORK PLAN & CONTINGENCY

- A. AT LEAST, TWO (2) WEEKS PRIOR TO THE START OF THE DIRECTIONAL DRILLING WORK, THE CONTRACTOR SHALL SUBMIT THE DIRECTIONAL DRILLING WORK PLAN FOR THE CITY AND ENGINEER'S REVIEW. THE WORK PLAN SHALL INCLUDE THE FOLLOWING INFORMATION.
1. A PLAN SHOWING DETAILS OF THE PROPOSED METHOD OF CONSTRUCTION, SEQUENCE OF OPERATIONS TO BE PERFORMED, NUMBER AND SIZE OF CONSTRUCTION CREW, HOURS TO BE WORKED, PILOT HOLE DRILLING PROCEDURE, REAMING PROCEDURE, PULLBACK PROCEDURE, METHOD OF MONITORING THE DRILLING HEAD AND METHOD OF VERIFYING PIPE LOCATION FOR AS-BUILT DRAWINGS.
2. A DRILLING FLUID PLAN WHICH DETAILS TYPES OF DRILLING FLUIDS, CLEANING AND RECYCLING EQUIPMENT, ESTIMATED FLOW RATES, AND PROCEDURES FOR MINIMIZING DRILLING FLUID ESCAPE.
3. A FRAC-OUT PLAN IN THE EVENT OF DRILLING FLUID ESCAPE TO ENSURE THAT PREVENTIVE AND RESPONSE MEASURES ARE IMPLEMENTED, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING SECTIONS.
- B. CONTINGENCY PLAN
1. IDENTIFY SENSITIVE ENVIRONMENTAL AREAS AND EXISTING STRUCTURES THAT CAN POTENTIALLY BE AFFECTED.
2. ENSURE THAT EXPERIENCED TECHNICIANS PERFORM THE HORIZONTAL DIRECTIONAL DRILLING TO MAINTAIN SAFE LIMITS OF DRILLING FLUID PRESSURE WHICH SHALL NOT EXCEED 10 PSI.
3. PROVIDE PROTOCOL FOR THE TIMELY DETECTION OF FRAC-OUTS BY CONSTANTLY MONITORING AND RECORDING OBSERVABLE FRAC-OUT CONDITIONS DURING HORIZONTAL DIRECTIONAL DRILLING ACTIVITIES:
- A. DRILLING FLUID PRESSURE (NOT TO EXCEED 10 PSI)
- B. PUMP VOLUME RATE
- C. LOSS OF CIRCULATION
- D. LOCATION OF DRILL HEAD
4. FIELD MEETINGS SHALL BE CONDUCTED FOR THE WORKERS TO IDENTIFY AND LOCATE SENSITIVE AREAS AT THE SITE WHICH INCLUDE THE SOUTH MIDLAND RIVER, ADJACENT RESIDENTIAL AREAS, ADJACENT RECREATIONAL AREAS, EXISTING UTILITIES, ETC.
5. UNDERSTAND RESPONSIBILITIES FOR TIMELY REPORTING ANY FRAC-OUT.
6. IDENTIFY QUALIFIED COMPETENT PERSON TO SERVE AS A SINGLE POINT OF CONTACT ONSITE FOR IMPLEMENTING THE FRAC-OUT PLAN.
- C. PROTOCOL TO IMPLEMENT IN CASE OF FRAC-OUT

1. WORK WILL BE STOPPED IN THE EVENT OF A SPILL, INCLUDING THE RECYCLING OF DRILLING MUD/LUBRICANT.
2. DETERMINE THE AMOUNT OF DRILLING MUD RELEASED AND POTENTIAL FOR THE RELEASE TO REACH WATERBODIES.
3. DETERMINE THE LOCATION AND EXTEND OF THE FRAC-OUT:

- A. IN LAND:
- I. IMPLEMENT AND ENFORCE SWPPP AND ISOLATE THE AREA WITH SAND BAGS, HAY BALES, OR SILT FENCE TO SURROUND AND CONTAIN THE DRILLING MUD.
- II. USE VACUUM TRUCKS FOR ASSISTANCE IN THE REMOVAL OF DRILLING FLUID.
- III. ONCE EXCESS DRILLING MUD IS REMOVED, THE AREA WILL BE REPLANTED USING SPECIES SIMILAR TO THOSE IN THE ADJACENT AREA. VEGETATED AREAS SHALL BE MAINTAINED AND WATERED FOR 30 DAYS AT NO EXTRA COST TO THE CITY.
- B. AQUATIC:
- I. MONITOR FRAC-OUT FOR 4 HOURS TO DETERMINE IF THE DRILLING MUD COAGULS.
- II. IMPLEMENT AND ENFORCE SWPPP AND ISOLATE/CONTAIN AREA, AS NECESSARY, WITH THE USE OF UNDERWATER BOOMS AND/OR CURTAINS.
- III. IF THE FRACTURE BECOMES EXCESSIVELY LARGE, A SPILL RESPONSE TEAM WOULD BE CALLED IN TO CONTAIN AND CLEAN UP EXCESS DRILLING MUD IN THE WATER. PHONE NUMBERS OF SPILL RESPONSE TEAMS IN THE AREA SHALL BE ON SITE AND PROVIDED BY THE CONTRACTOR.
- IV. IF THE SPILL AFFECTS AND AREA THAT IS VEGETATED, THE AREA MUST BE REPLANTED USING SPECIES SIMILAR TO THOSE AREAS THAT ARE VEGETATED. VEGETATED AREAS SHALL BE MAINTAINED AND WATERED FOR 30 DAYS AT NO EXTRA COST TO THE CITY.
- D. CONTRACTOR SHALL IDENTIFY AN ENVIRONMENTAL SCIENTIST/BIOLOGIST WITH EXPERIENCE IN WATER QUALITY MONITORING AND HABITAT PROTECTION TO BE USED IN THE EVENT OF A FRAC-OUT.
- E. NOTIFY THE CITY OF FORT LAUDERDALE AND ENGINEER WITHIN THE FIRST 24 HOURS.
- F. PROVIDE REPORT OF THE INCIDENT NO MORE THAN 15 CALENDAR DAYS AFTER THE INCIDENT WHICH SHALL INCLUDE:
1. PHOTOGRAPHS AFTER CLEANUP CONDITIONS.
2. FRAC-OUT INCIDENT REPORT DESCRIBING TIME, PLACE, ACTIONS TAKEN TO REMEDIATE FRAC-OUT, AND MEASURES IMPLEMENTED TO PREVENT RECURRENT.

1. PHOTOGRAPHS AFTER CLEANUP CONDITIONS.
2. FRAC-OUT INCIDENT REPORT DESCRIBING TIME, PLACE, ACTIONS TAKEN TO REMEDIATE FRAC-OUT, AND MEASURES IMPLEMENTED TO PREVENT RECURRENT.

XI. INSTALLING PIPE

- A. THE PIPE INSTALLED WITHIN THE BORING SHALL BE IN FULL CONFORMITY WITH THESE SPECIFICATIONS AND AS SHOWN ON THE DRAWINGS. THE PIPE SHALL BE INSTALLED, AS TO A REASONABLE DIRECTIONAL DRILLING ABILITY, TO THE EXACT LINES GRADES REQUIRED AFTER HAVING BEEN SATISFACTORILY APPROVED BY THE ENGINEER FROM THE DIRECTIONAL DRILLERS EXPECTED DRILL PATH PLAN AND PROFILE SHEETS PROVIDED IN SECTION 1.5.
- B. THE TYPE AND SIZE OF THE PILOT STRING CUTTING HEAD SHALL BE AT THE CONTRACTOR'S DISCRETION. THE TYPE AND OUTSIDE DIAMETER OF THE DRILL PIPE TO BE USED IN THE PILOT STRING SHALL ALSO BE AT THE CONTRACTOR'S DISCRETION.
- C. A MINIMUM DEPTH REQUIREMENT OF 15 FEET BELOW THE EXISTING CROSSING BOTTOMS SHALL BE MAINTAINED, DEPTHS DEEPER THAN 15 FEET SHALL BE ACCEPTABLE. LATERAL POSITIONING AT EXIT SHALL BE NO FURTHER THAN 5 FEET LEFT OR RIGHT OF PLANNED CENTERLINE, AND HORIZONTAL POSITIONING SHALL BE NO FURTHER THAN 5 FEET SHORT OR LONG OF PROPOSED EXIT LOCATION. ENTRY AND EXIT LOCATIONS, AS WELL AS INTERMEDIATE CENTERLINE STATIONING, SHALL BE STAKED BY THE CONTRACTOR.
- D. UPON APPROVAL OF THE PILOT HOLE LOCATION BY THE ENGINEER, THE HOLE OPENING OR ENLARGING PHASE OF THE INSTALLATION SHALL BEGIN. THE TYPE OF HOLE OPENER OR BACK REAMER TO BE UTILIZED IN THIS PHASE SHALL BE DETERMINED BY THE TYPES OF SUBSURFACE SOIL CONDITIONS THAT HAVE BEEN ENCOUNTERED DURING THE PILOT HOLE DRILLING OPERATION. THE REAMER TYPE SHALL BE AT THE CONTRACTOR'S DISCRETION.
- E. THE OPEN BOREHOLE MAY BE STABILIZED BY MEANS OF BENTONITE DRILLING SLURRY BEING PUMPED THROUGH THE INSIDE DIAMETER OF THE DRILL PIPE AND THROUGH OPENING IN THE REAMER. THE SLURRY WILL ALSO SERVE AS AN AGENT TO CARRY THE LOOSE CUTTING TO THE SURFACE THROUGH THE ANNULUS OF THE BOREHOLE. THESE CUTTINGS AND BENTONITE SLURRY ARE TO BE CONTAINED AT THE EXIT OR ENTRY SIDE OF THE DIRECTIONAL BORE IN PITS OR HOLDING TANKS. THE SLURRY MAY BE RECYCLED AT THIS TIME FOR REUSE IN THE HOLE OPENING OPERATION, OR IT SHALL BE HAULED BY THE CONTRACTOR TO AN APPROVED DUMP SITE AND PROPERLY DISPOSED.
- F. EACH LENGTH OF PIPE SHALL BE INSPECTED AND CLEANED AS NECESSARY TO BE FREE OF DEBRIS IMMEDIATELY PRIOR TO JOINING.

- G. A COMPLETE LIST OF ALL DRILLING FLUID ADDITIVES AND MIXTURES TO BE USED IN THE DIRECTIONAL OPERATION WILL BE SUBMITTED TO THE ENGINEER, ALONG WITH THEIR RESPECTIVE MATERIAL SAFETY DATA SHEETS. ALL DRILLING FLUIDS AND LOOSE CUTTINGS SHALL BE CONTAINED IN PITS OR HOLDING TANKS FOR RECYCLING OR DISPOSAL, NO FLUIDS SHALL BE ALLOWED TO ENTER ANY UNAPPROVED AREAS OR NATURAL WATERWAYS. UPON COMPLETION OF THE DIRECTIONAL DRILL PROJECT, DRILLING FLUID SHALL BE DISPOSED OF BY THE CONTRACTOR AT AN APPROVED DUMP SITE.
- H. A "WEAK-LINK" OR BREAKAWAY DEVICE SHALL BE USED AT THE LEADING END OF THE PIPE TO PROTECT THE PIPE FROM EXCESSIVE PULLING LOADS. THE BREAKAWAY STRENGTH OF THIS DEVICE SHALL BE SET AT OR BELOW THE ALLOWABLE TENSILE LOAD OF THE PIPE.

- I. HDPE PIPE SHALL NOT BE PLACED IN DIRECT SUNLIGHT IMMEDIATELY PRIOR TO INSTALLATION.
- J. HDPE PIPE SHALL HAVE THE BEADS REMOVED FROM THE INTERIOR OF THE FUSED JOINTS.
- K. A SUFFICIENT LENGTH OF HDPE PIPE SHALL BE PULLED PAST THE EXIT POINT AND LEFT BEFORE THE ENTRY POINT TO ALLOW FOR RELAXATION.
- L. HDPE PIPE SHALL HAVE MECHANICAL JOINT ADAPTERS TO CONNECT TO THE PIPE ON EITHER SIDE OF THE DIRECTIONAL DRILLS. MECHANICAL JOINT ADAPTER USED IS TO MATCH HDPE PIPE MANUFACTURER REQUIREMENTS FOR CONNECTION TO DUCTILE IRON PIPE.
- M. HDPE SHALL HAVE SUFFICIENT TIME FOR RELAXATION BEFORE CONNECTING TO THE PIPE ON EITHER SIDE OF THE DIRECTIONAL DRILL.

XII. EXISTING UTILITIES

- A. THE DRAWINGS SHOW EXISTING BURIED UTILITIES THAT ARE BELIEVED TO BE NEAR THE DIRECTIONAL DRILL ALIGNMENT. THERE IS NO GUARANTEE THAT THESE UTILITIES ARE LOCATED AS SHOWN OR THAT OTHER UTILITIES ARE NOT PRESENT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL UTILITIES OR OTHER SUBSURFACE OBSTRUCTIONS THAT MAY INTERFERE WITH THE WORK.
- B. UTILITY LINES AND STRUCTURES INDICATED ON THE DRAWINGS WHICH ARE TO REMAIN IN SERVICE SHALL BE PROTECTED BY THE CONTRACTOR FROM ANY DAMAGE AS A RESULT OF THE OPERATIONS. WHERE UTILITY LINES OR STRUCTURES NOT SHOWN ON THE DRAWINGS ARE ENCOUNTERED, THE CONTRACTOR SHALL REPORT THEM TO THE OWNER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BEAR THE COST OF REPAIR OR REPLACEMENT OF ANY UTILITY LINES OR STRUCTURES WHICH ARE BROKEN OR DAMAGED BY THE CONTRACTOR'S OPERATIONS.
- C. ALL UTILITIES IN CLOSE PROXIMITY TO THE DRILL PILOT BORE, BACK REAM OR CARRIER PIPE INSTALLATION MUST BE EXPOSED THROUGH A "POT-HOLE" OR OTHER OPENING, IN ACCORDANCE WITH STATE UTILITY LOCATE LAWS AND REGULATIONS, TO ENSURE, THROUGH PLACING OF PERMANENT RESURFACING, WHEN LEAKAGE EXCEEDS THE AMOUNT ALLOWED BY THE SPECIFICATIONS, THE CONTRACTOR, AT ITS EXPENSE, SHALL LOCATE THE LEAKS AND MAKE THE NECESSARY REPAIRS OR REPLACEMENTS IN ACCORDANCE WITH THE SPECIFICATIONS TO LOCATE THE LEAKAGE TO THE SPECIFIED LIMITS. ANY INDIVIDUALLY DETECTABLE LEAKS SHALL BE REPAIRED, REGARDLESS OF THE RESULTS OF THE TESTS.
2. HDPE HYDROSTATIC LEAKAGE TESTS: THE LEAKAGE TESTING SHALL BE AS FOLLOWS:
- THIS HYDROSTATIC LEAK TEST PROCEDURE CONSISTS OF FILLING, AN INITIAL EXPANSION PHASE, A TEST PHASE, AND DEPRESSURIZING. THERE ARE TWO ALTERNATIVES FOR THE TEST PHASE. ENSURE THAT THERE IS NO AIR TRAPPED IN THE TEST SECTION. FAILURE WITH ENTRAPPED AIR CAN RESULT IN EXPLOSIVE RELEASE AND RESULT IN DEATH OR SERIOUS BODILY INJURY. USE EQUIPMENT VENTS AT HIGH POINTS TO REMOVE AIR.

- A. INITIAL EXPANSION PHASE
- GRADUALLY PRESSURIZE THE TEST SECTION TO TEST PRESSURE, AND MAINTAIN TEST PRESSURE FOR THREE (3) HOURS. DURING THE INITIAL EXPANSION PHASE, POLYETHYLENE PIPE WILL EXPAND SLIGHTLY. ADDITIONAL TEST LIQUID WILL BE REQUIRED TO MAINTAIN PRESSURE. IT IS NOT NECESSARY TO MONITOR THE AMOUNT OF WATER ADDED DURING THE INITIAL EXPANSION PHASE.
- B. TEST PHASE - ALTERNATE 1
- IMMEDIATELY FOLLOWING THE INITIAL EXPANSION PHASE, REDUCE TEST PRESSURE BY 10 PSI, AND STOP ADDING TEST LIQUID. IF TEST PRESSURE REMAINS STEADY (WITHIN 5% OF THE TARGET VALUE) FOR ONE (1) HOUR, NO LEAKAGE IS INDICATED.
- C. TEST PHASE - ALTERNATE 2
- THIS ALTERNATIVE IS APPLICABLE WHEN THE TEST PRESSURE IS 150% OF THE SYSTEM DESIGN PRESSURE. IMMEDIATELY FOLLOWING THE INITIAL EXPANSION PHASE, MONITOR THE AMOUNT OF MAKE-UP WATER REQUIRED TO MAINTAIN TEST PRESSURE FOR ONE (1), OR TWO (2), OR THREE (3) HOURS. IF THE AMOUNT OF MAKE-UP WATER NEEDED TO MAINTAIN TEST PRESSURE DOES NOT EXCEED THE AMOUNT IN THE ATTACHED, NO LEAKAGE IS INDICATED.

3. POST INSTALLATION CCTV INSPECTION MUST BE CONDUCTED WITH THE CAMERA AT THE APPROXIMATE CENTER OF THE PIPELINE, WHILE TRAVELING NO FASTER THAN 30 FT/MIN WITH ADEQUATE LIGHTING, NO WATER AND 360 DEGREE VIEWS.
- XIV. COMPLETION OF DIRECTIONAL DRILLING
- A. COMPLETION AND SUCCESSFUL TESTING OF THE APPROVED PLAN WILL ENTITLE THE CONTRACTOR TO FULL PAYMENT OF THE APPLICABLE AMOUNTS IN THE CONTRACT.
- B. IN THE EVENT OF FAILURE TO INSTALL THE DIRECTIONAL DRILLED PIPELINES, THE CONTRACTOR SHALL RETAIN POSSESSION OF ANY CONTRACTOR-SUPPLIED PIPE AND REMOVE IT FROM THE SITE. THE BORE HOLES SHALL BE COMPLETELY FILLED WITH GROUT TO PREVENT FUTURE PROBLEMS. IF THE PIPE CANNOT BE REMOVED FROM THE BORE HOLE, IT SHALL BE CUT OFF FIVE FEET BELOW GROUND AND THE PIPE AND ANNULAR SPACE SHALL BE GROUTED.

VERTICAL DATUM INFORMATION

ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

CONVERSION FACTOR

NAVD88 + 1.60 = NGVD89 IN THIS AREA



500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC2600425

Sunshine811

Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.

Check positive response codes before you dig!

ENGINEER: DANIEL ANTILLA, P.E.
PROJECT NO.: 12389
DATE: 11/15/2019

DRAWN BY: JH
DATE: 11/11/19
DESIGNED BY: SCALE: 1"=20'
CHECKED BY: DC
FIELD BOOK: DD

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

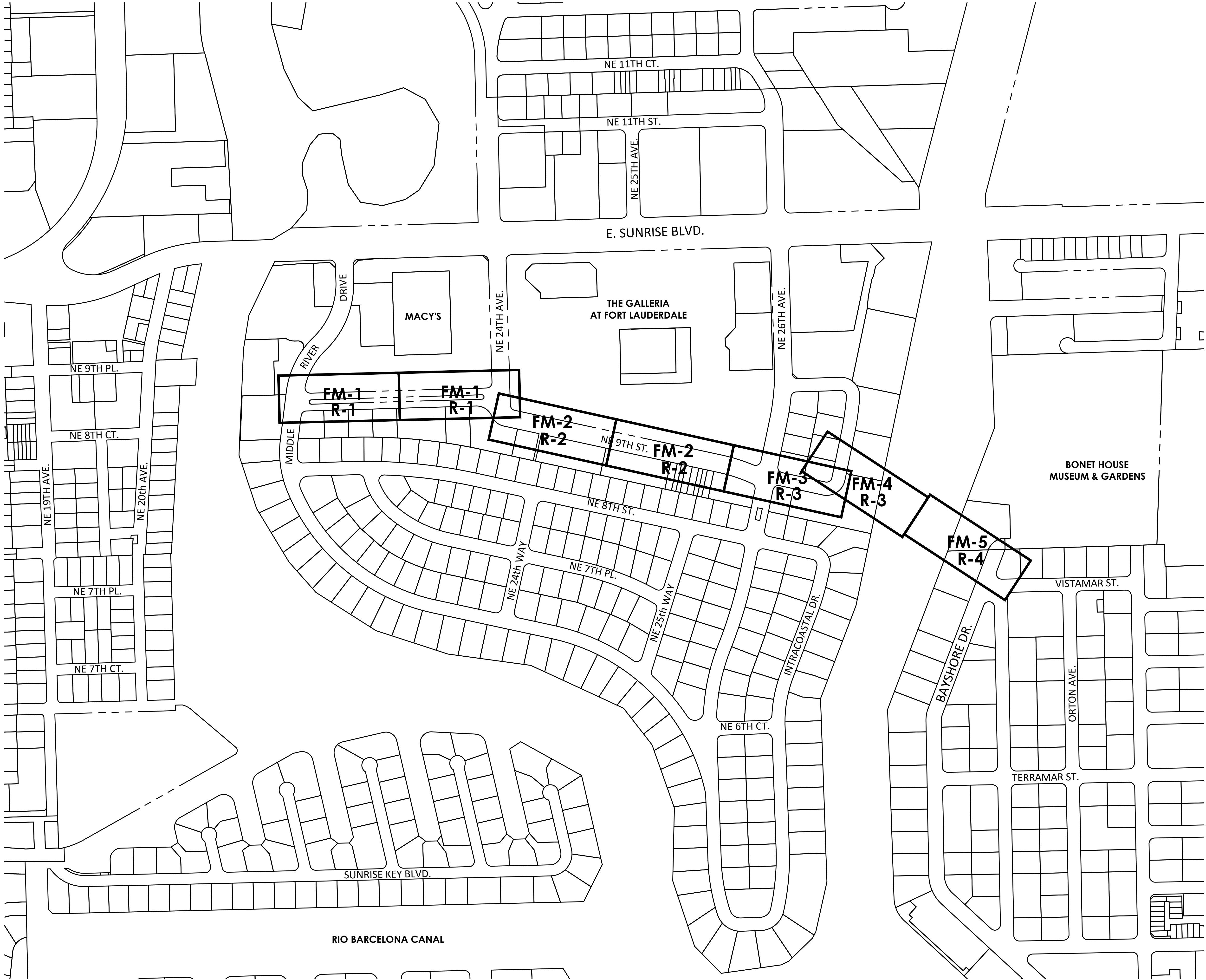
REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHKD

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS THE N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.
GENERAL NOTES

DRAWING # GN-4
SHT # 05
TOTAL: 19
CAD FILE: 12389-MULTI-NOTE
DRAWING FILE NO: 4-XXX-XX

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

Plot Date: 11/15/2019 1:46:41 PM Username: JTommo Layout Name: KEY-1 Folder Path: V:\Projects\2018\18-047\040 - Bayshore dr Intracoastl crossing fm to 2\Design\CAD\Plans Filename: 12389--KMAP.dwg



CHEN-MOORE
& ASSOCIATES
500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com

CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425

0 200' 400'

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH
AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
CONVERSION FACTOR:
NAVD88 = NGVD29 IN THIS AREA

DESIGNED BY: JH
CHECKED BY: DC
DATE: 01/11/19
FIELD BOOK: 33301

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

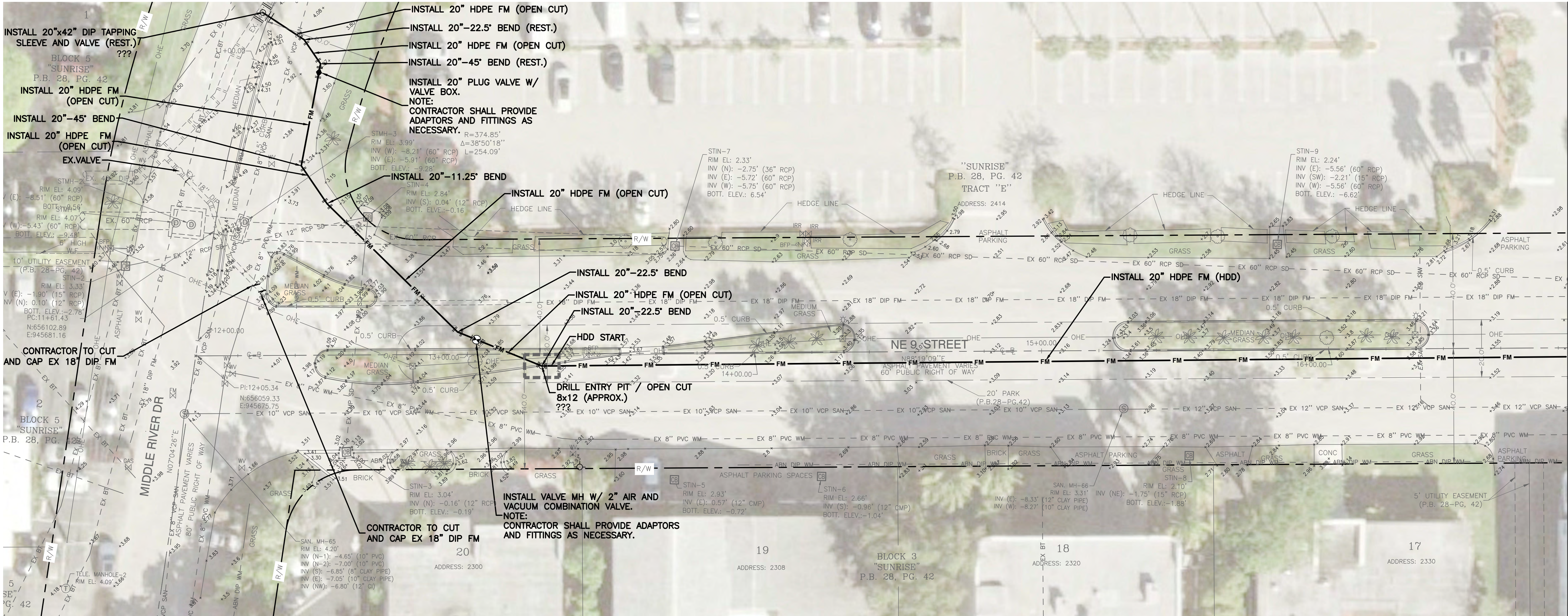
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHKD

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS
THE N. RIVER FROM
NE 9TH ST. TO N. BIRCH RD.
KEY MAP

DRAWING #	SHT #
KEY-1	06
TOTAL:	19
CAD FILE:	12389--KMAP
DRAWING FILE NO.	4-XXX-XX

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION



DESIGNED BY: JH
CHECKED BY: DC
DATE: 01/11/19
SCALE: 1"=40'

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

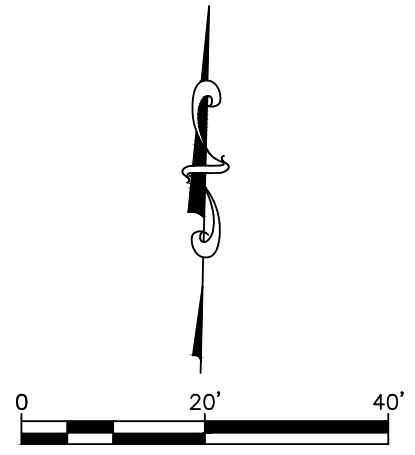
PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS
THE N. RIVER FROM
NE 9TH ST. TO N. BIRCH RD.
FORCE MAIN PLAN

NO.	DATE	BY	CHKD	DESCRIPTION



Sunshine811
Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.
Check positive response codes before you dig!

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
CONVERSION FACTOR:
NAVD88 + 1.58 = NGVD29 IN THIS AREA



- NOTES:
- CONTRACTOR MUST EXERCISE EXTREME CARE TO AVOID DAMAGE OR DISRUPTION TO ANY EXISTING UTILITIES. ALL LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BEFORE STARTING CONSTRUCTION. CONTRACTOR SHALL PROTECT AND SUPPORT ALL EXISTING STRUCTURES AFFECTED BY THE PROJECT. IF UPON EXCAVATION, AN EXISTING UTILITY IS FOUND TO BE IN DISCREPANCY WITH THE PLANS, THE CONTRACTOR SHALL NOTIFY THE CITY, IN WRITING, IF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
 - ALL HDPE PIPE TO BE PE4710 DR 13.5 UNLESS OTHERWISE NOTED.
 - LOCATION AND DIMENSION OF DRILL PITS ARE APPROXIMATE AND SCHEMATIC. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING THE LOCATION OF THE PITS AS NECESSARY FOR THE COMPLETION OF THE PROJECT.

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

DRAWING # FM-1
SHT # 07
TOTAL: 19
CAD FILE: 12389-MULTI-FORC
DRAWING FILE NO: 4-XXX-XX

Filename: 12389-MULTI-FORC.dwg

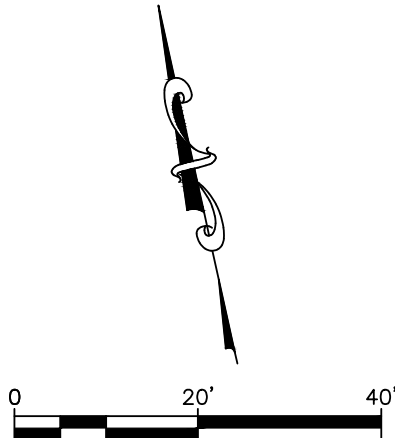
Layout Name: FM-2
Folder Path: V:\Projects\2018\18-047040 - Boyshore dr intracoast crossing fm to 2\Design\CAD\Plans

Plot Date: 11/15/2019 1:47:26 PM
Userame: JTommo
Folder Path: V:\Projects\2018\18-047040 - Boyshore dr intracoast crossing fm to 2\Design\CAD\Plans

MATCHLINE SEE DRAWING NO. FM-1



CHEN-MOORE & ASSOCIATES
500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425

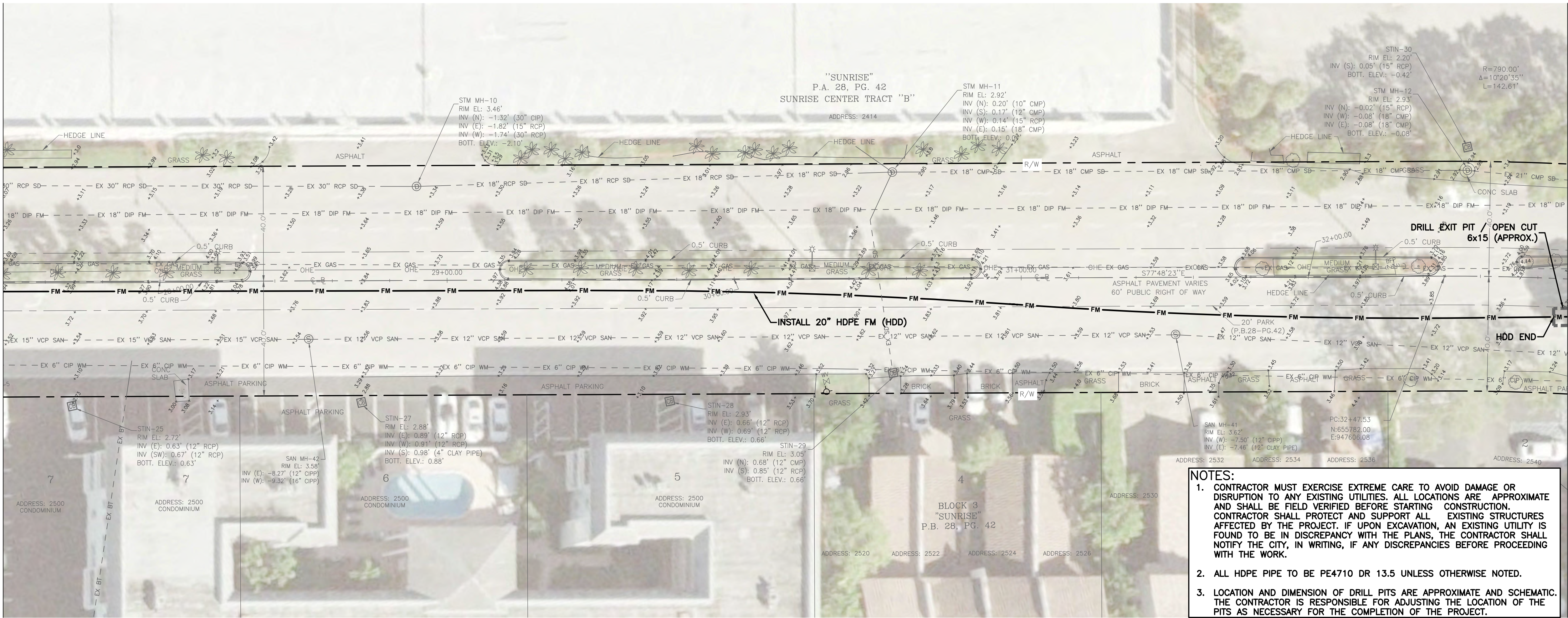


MATCHLINE SEE BELOW

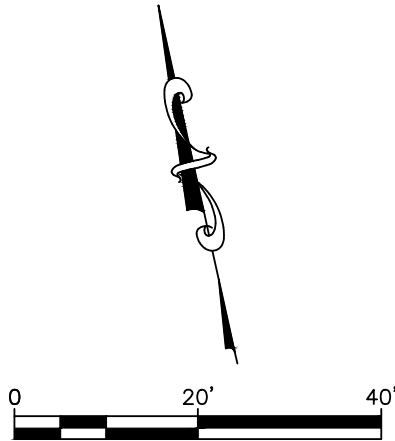


Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.
Check positive response codes before you dig!

MATCHLINE SEE ABOVE



VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
CONVERSION FACTOR:
NAVD88 + 1.58 = NGVD29 IN THIS AREA



MATCHLINE SEE DRAWING NO. FM-3

- NOTES:**
- CONTRACTOR MUST EXERCISE EXTREME CARE TO AVOID DAMAGE OR DISRUPTION TO ANY EXISTING UTILITIES. ALL LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BEFORE STARTING CONSTRUCTION. CONTRACTOR SHALL PROTECT AND SUPPORT ALL EXISTING STRUCTURES AFFECTED BY THE PROJECT. IF UPON EXCAVATION, AN EXISTING UTILITY IS FOUND TO BE IN DISCREPANCY WITH THE PLANS, THE CONTRACTOR SHALL NOTIFY THE CITY, IN WRITING, IF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
 - ALL HDPE PIPE TO BE PE4710 DR 13.5 UNLESS OTHERWISE NOTED.
 - LOCATION AND DIMENSION OF DRILL PITS ARE APPROXIMATE AND SCHEMATIC. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING THE LOCATION OF THE PITS AS NECESSARY FOR THE COMPLETION OF THE PROJECT.

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS
THE N. RIVER FROM
NE 9TH ST. TO N. BIRCH RD.
FORCE MAIN PLAN

DRAWING #	SHT #
FM-2	08
TOTAL:	19
CAD FILE:	12389-MULTI-FORC
DRAWING FILE NO.	4-XXX-XXPPP

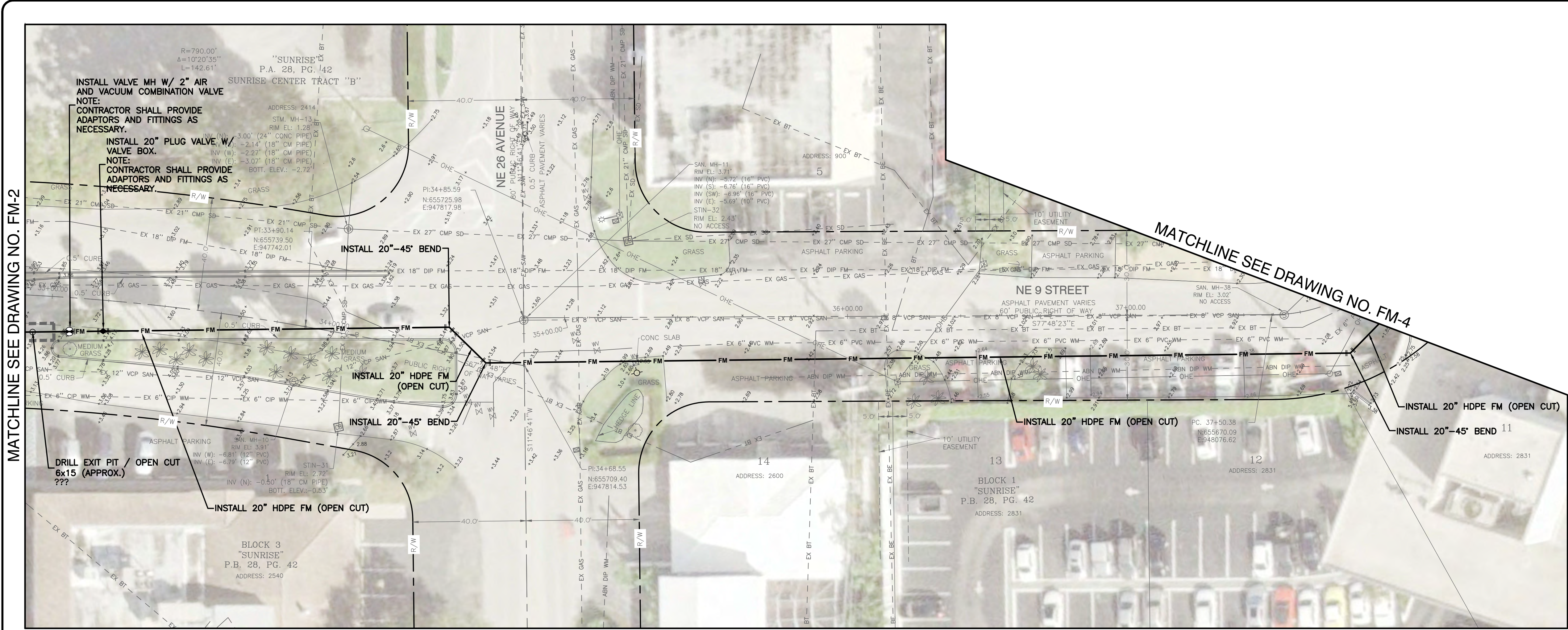
REVISIONS		DESCRIPTION
NO.	DATE	

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DRAWN BY:	DATE:
JH	01/11/19
DESIGNED BY:	SCALE:
DC	
CHECKED BY:	
DD	
FIELD BOOK:	

ENGINEER: DANIEL SANTANA, P.E.
REG. NO. 63014
DATE: _____
TEL: 954.730.0707
FAX: 954.730.2000

Plot Date: 11/15/2019 1:54:37 PM Username: JTommo Layout Name: FM-3 Folder Path: V:\Projects\2018\18-047\040 - boyshore dr intracoast crossing fm to 2\Design\CAD\Plans Filename: 12389-MULTI-FORC.dwg





CHEN-MOORE
& ASSOCIATES
500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425



- NOTES:**
- CONTRACTOR MUST EXERCISE EXTREME CARE TO AVOID DAMAGE OR DISRUPTION TO ANY EXISTING UTILITIES. ALL LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BEFORE STARTING CONSTRUCTION. CONTRACTOR SHALL PROTECT AND SUPPORT ALL EXISTING STRUCTURES AFFECTED BY THE PROJECT. IF UPON EXCAVATION, AN EXISTING UTILITY IS FOUND TO BE IN DISCREPANCY WITH THE PLANS, THE CONTRACTOR SHALL NOTIFY THE CITY, IN WRITING, IF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
 - ALL HDPE PIPE TO BE PE4710 DR 13.5 UNLESS OTHERWISE NOTED.
 - LOCATION AND DIMENSION OF DRILL PITS ARE APPROXIMATE AND SCHEMATIC. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING THE LOCATION OF THE PITS AS NECESSARY FOR THE COMPLETION OF THE PROJECT.



Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.
Check positive response codes before you dig!


VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
CONVERSION FACTOR:
NAVD88 + 1.58 = NGVD29 IN THIS AREA

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS THE N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.
FORCE MAIN PLAN

DRAWING #	SHT #
FM-3	09
TOTAL:	19
CAD FILE:	12389-MULTI-FORC
DRAWING FILE NO.	4-XXX-XX

REVISIONS		NO.	DATE	BY	CHKD	DESCRIPTION

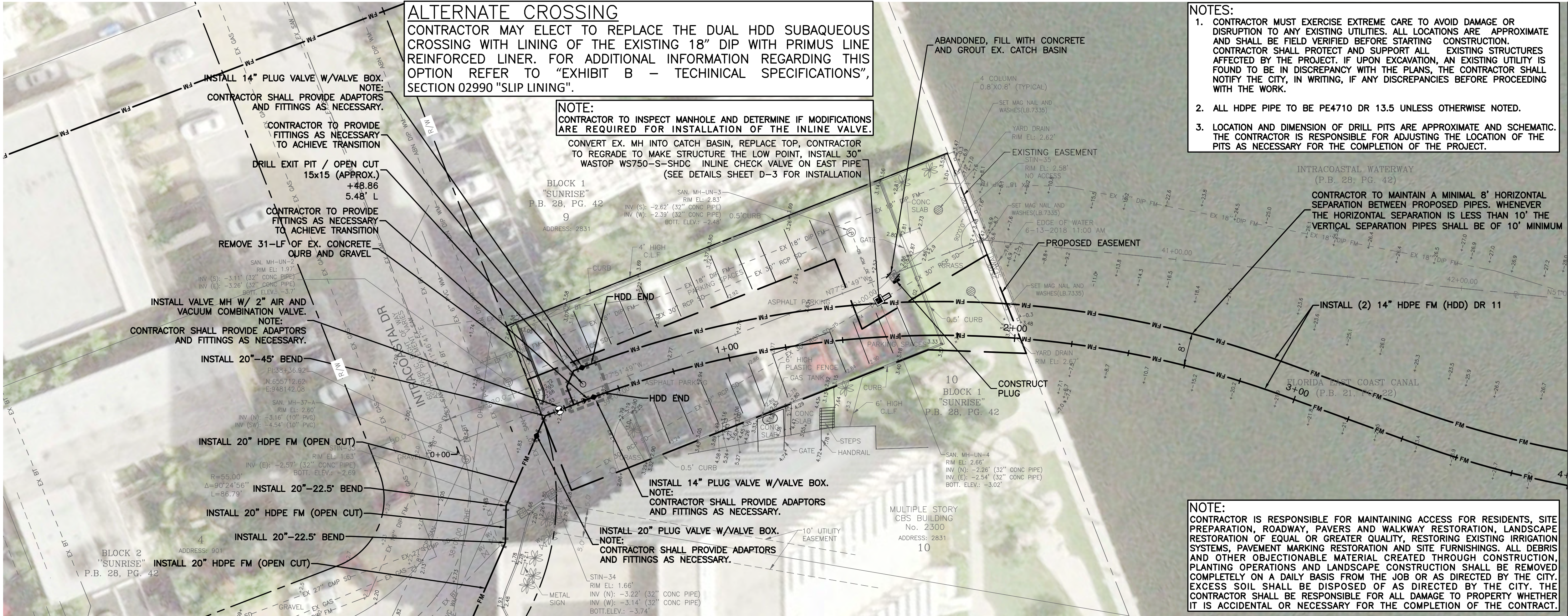


CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

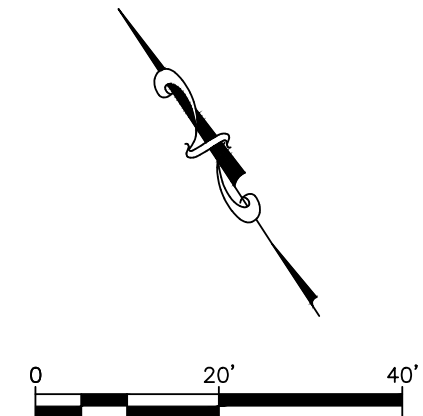
DRAWN BY:	DATE:	DESIGNED BY:	CHECKED BY:	FIELD BOOK:
JH	01/11/19	DC	DD	

ENGINEER:
DANIEL SANTANA, P.E.
REG. NO. 63014
DATE:

TEL: 954.730.0707
FAX: 954.730.2090



MATCHLINE SEE DRAWING NO. FM-5

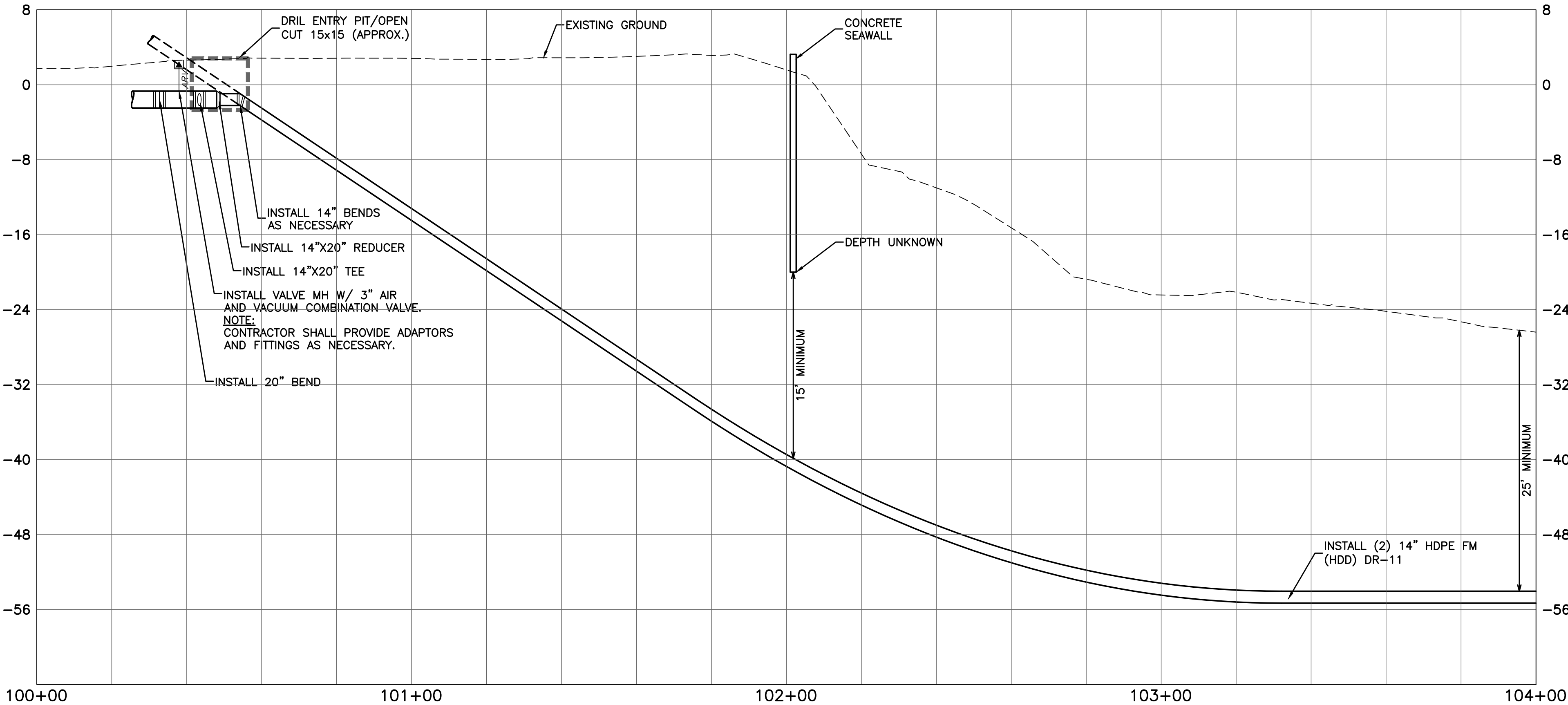


Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.
Check positive response codes before you dig!

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
CONVERSION FACTOR:
NAVD88 + 1.58 = NGVD29 IN THIS AREA

MATCHLINE SEE DRAWING NO. FM-3

Bayshore Crossing
SCALE: 1"=20' HORZ | 1"=8' VERT



DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

OWNER: **CITY OF FORT LAUDERDALE**
DESIGNED BY: **CHEN-MOORE & ASSOCIATES**
DATE: 01/11/19
SCALE: 1"=20' HORZ | 1"=8' VERT
CHECKED BY: **DC**
FIELD BOOK: **33301**

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHKD	DESCRIPTION

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS THE N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.
FORCE MAIN PLAN AND PROFILE

DRAWING #	SHT #
FM-4	10
TOTAL:	19
CAD FILE:	12389-MULTI-FORC
DRAWING FILE NO.	4-XXX-XX

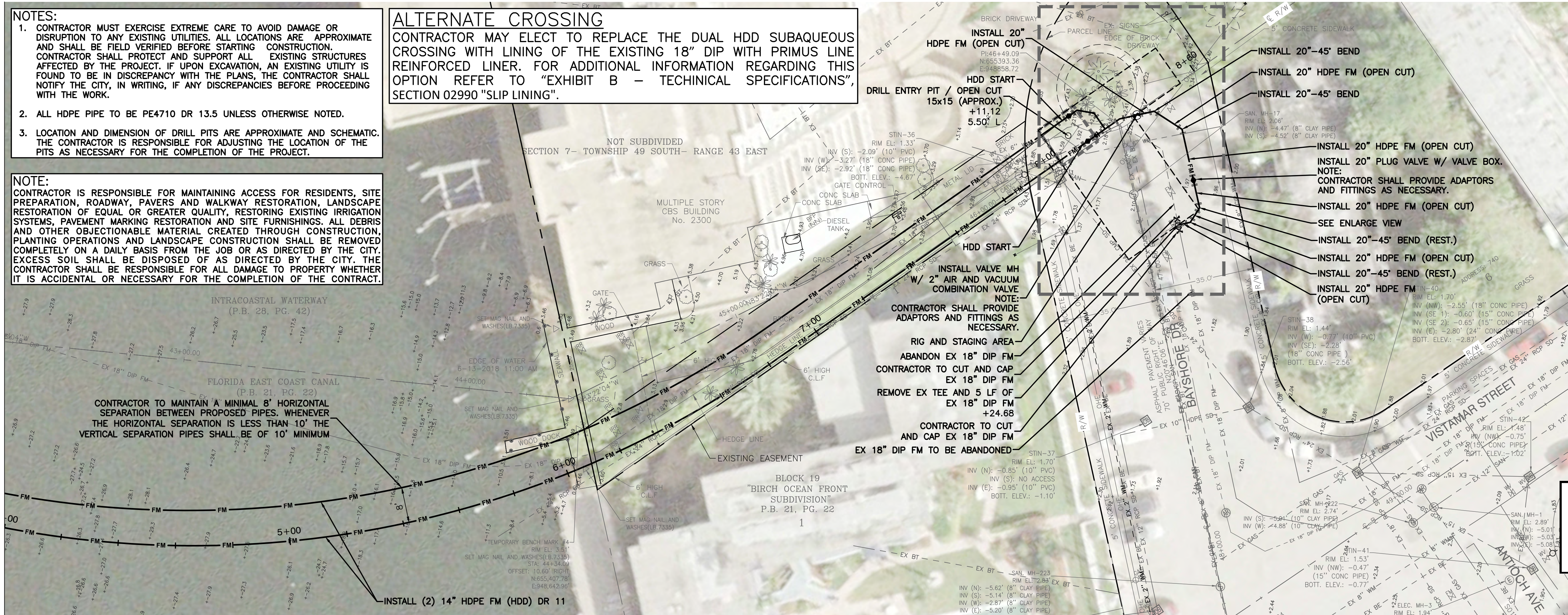
MATCHLINE SEE DRAWING NO. FM-4

- NOTES:
1. CONTRACTOR MUST EXERCISE EXTREME CARE TO AVOID DAMAGE OR DISRUPTION TO ANY EXISTING UTILITIES. ALL LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BEFORE STARTING CONSTRUCTION. CONTRACTOR SHALL PROTECT AND SUPPORT ALL EXISTING STRUCTURES AFFECTED BY THE PROJECT. IF UPON EXCAVATION, AN EXISTING UTILITY IS FOUND TO BE IN DISCREPANCY WITH THE PLANS, THE CONTRACTOR SHALL NOTIFY THE CITY, IN WRITING, IF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
 2. ALL HDPE PIPE TO BE PE4710 DR 13.5 UNLESS OTHERWISE NOTED.
 3. LOCATION AND DIMENSION OF DRILL PITS ARE APPROXIMATE AND SCHEMATIC. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING THE LOCATION OF THE PITS AS NECESSARY FOR THE COMPLETION OF THE PROJECT.

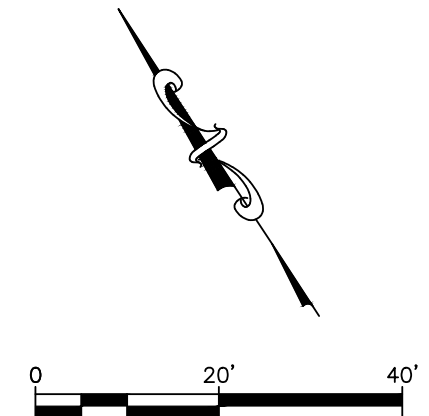
NOTE:
CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS FOR RESIDENTS, SITE PREPARATION, ROADWAY, PAVERS AND WALKWAY RESTORATION, LANDSCAPE RESTORATION OF EQUAL OR GREATER QUALITY, RESTORING EXISTING IRRIGATION SYSTEMS, PAVEMENT MARKING RESTORATION AND SITE FURNISHINGS. ALL DEBRIS AND OTHER OBJECTIONABLE MATERIAL CREATED THROUGH CONSTRUCTION, PLANTING OPERATIONS AND LANDSCAPE CONSTRUCTION SHALL BE REMOVED COMPLETELY ON A DAILY BASIS FROM THE JOB OR AS DIRECTED BY THE CITY. EXCESS SOIL SHALL BE DISPOSED OF AS DIRECTED BY THE CITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO PROPERTY WHETHER IT IS ACCIDENTAL OR NECESSARY FOR THE COMPLETION OF THE CONTRACT.

CONTRACTOR TO MAINTAIN A MINIMAL 8' HORIZONTAL SEPARATION BETWEEN PROPOSED PIPES. WHENEVER THE HORIZONTAL SEPARATION IS LESS THAN 10' THE VERTICAL SEPARATION PIPES SHALL BE OF 10' MINIMUM

ALTERNATE CROSSING
CONTRACTOR MAY ELECT TO REPLACE THE DUAL HDD SUBAQUEOUS CROSSING WITH LINING OF THE EXISTING 18" DIP WITH PRIMUS LINE REINFORCED LINER. FOR ADDITIONAL INFORMATION REGARDING THIS OPTION REFER TO "EXHIBIT B - TECHNICAL SPECIFICATIONS", SECTION 02990 "SLIP LINING".



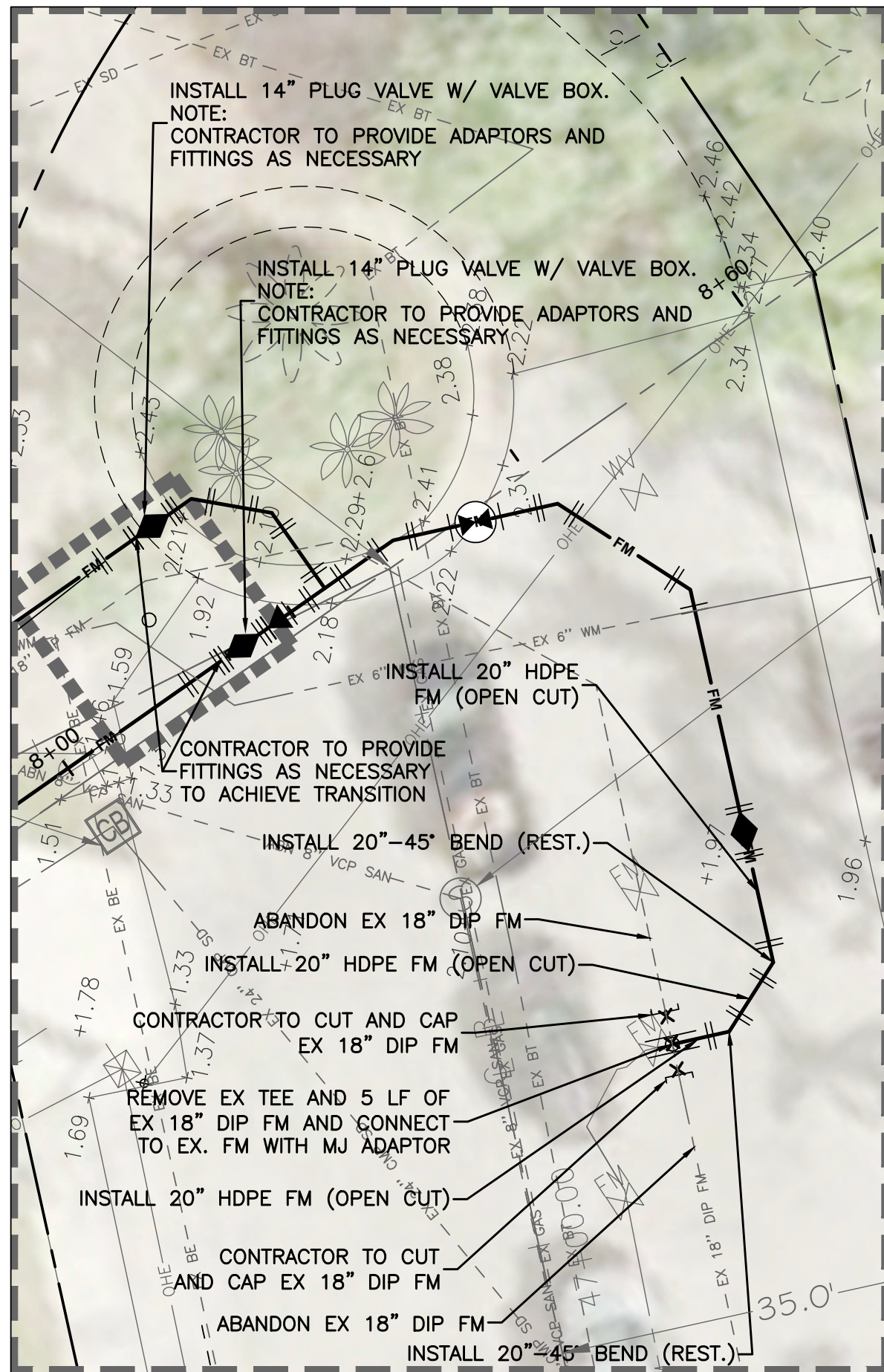
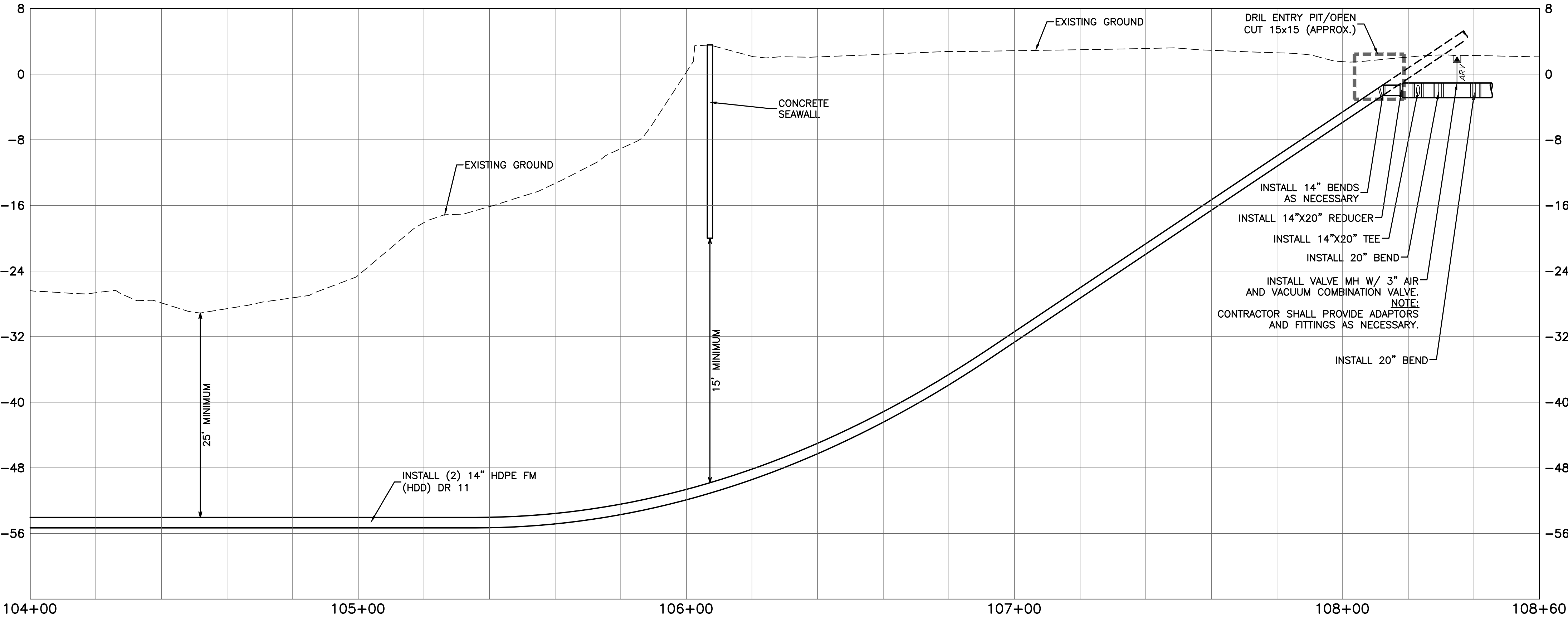
CHEN-MOORE
& ASSOCIATES
500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425



Sunshine811
Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.
Check positive response codes before you dig!

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH
AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
CONVERSION FACTOR
NAVD88 + 1.58 = NGVD29 IN THIS AREA

Bayshore Crossing
SCALE: 1"=20' HORZ | 1"=8' VERT



ENLARGE VIEW
SCALE: 1"=10'

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

DESIGNED BY: JH
CHECKED BY: DC
DATE: 01/11/19
SCALE: AS SHOWN
FIELD BOOK:

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHKD	DESCRIPTION

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS
THE N. RIVER FROM
NE 9TH ST. TO N. BIRCH RD.
FORCE MAIN PLAN AND PROFILE

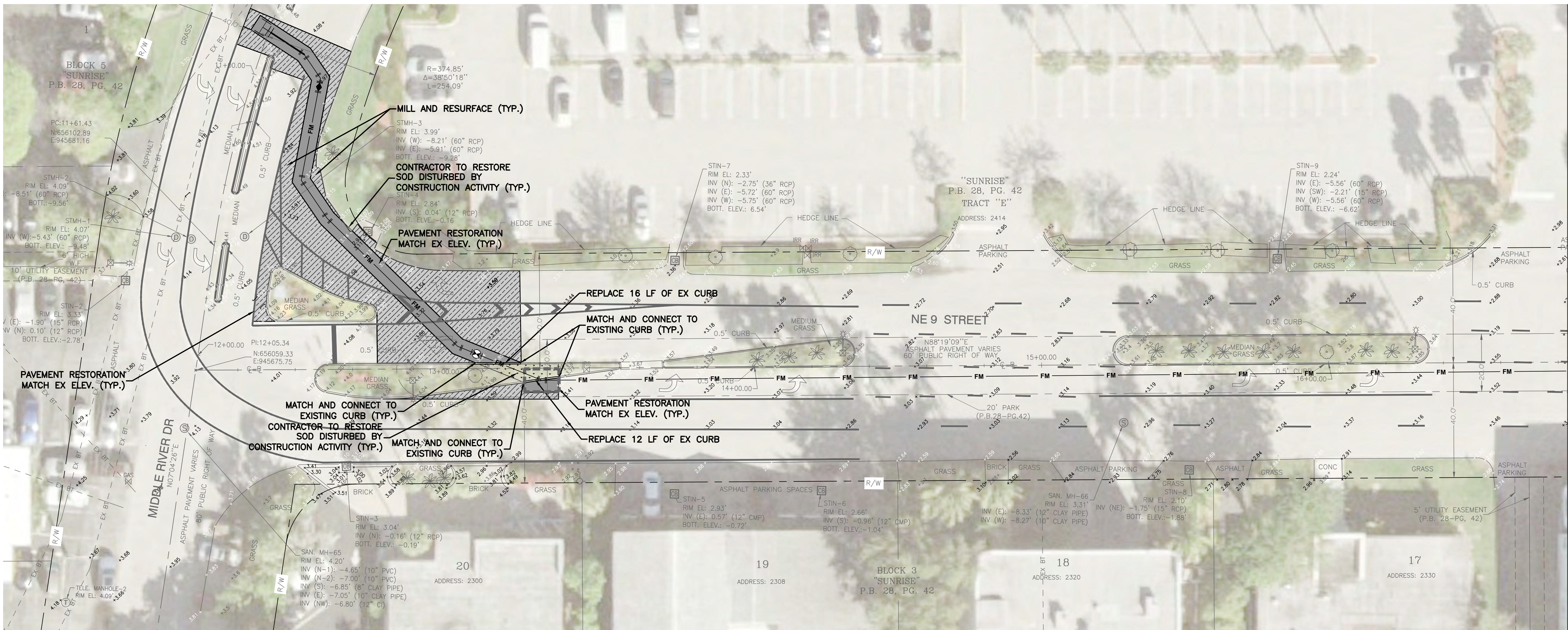
DRAWING # FM-5
SHEET # 11
TOTAL: 19
CAD FILE: 12389-MULTI-FORC
DRAWING FILE NO. 4-XXX-XX

Filename: 12389-MULTI-REST.dwg

Layout Name: R-1

Username: Jtomo

Plot Date: 11/15/2019 1:45:32 PM
Folder Path: V:\Projects\2018\18-047\040 - boyshore dr intracoast crossing fm to 2\Design\CAD\Plans



CHEN-MOORE
& ASSOCIATES
500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

PROJ. # 12389
18" FORCE MAIN REPLACEMENT ACROSS THE N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.
RESTORATION PLAN

NO.	DATE	BY	CHKD	DESCRIPTION

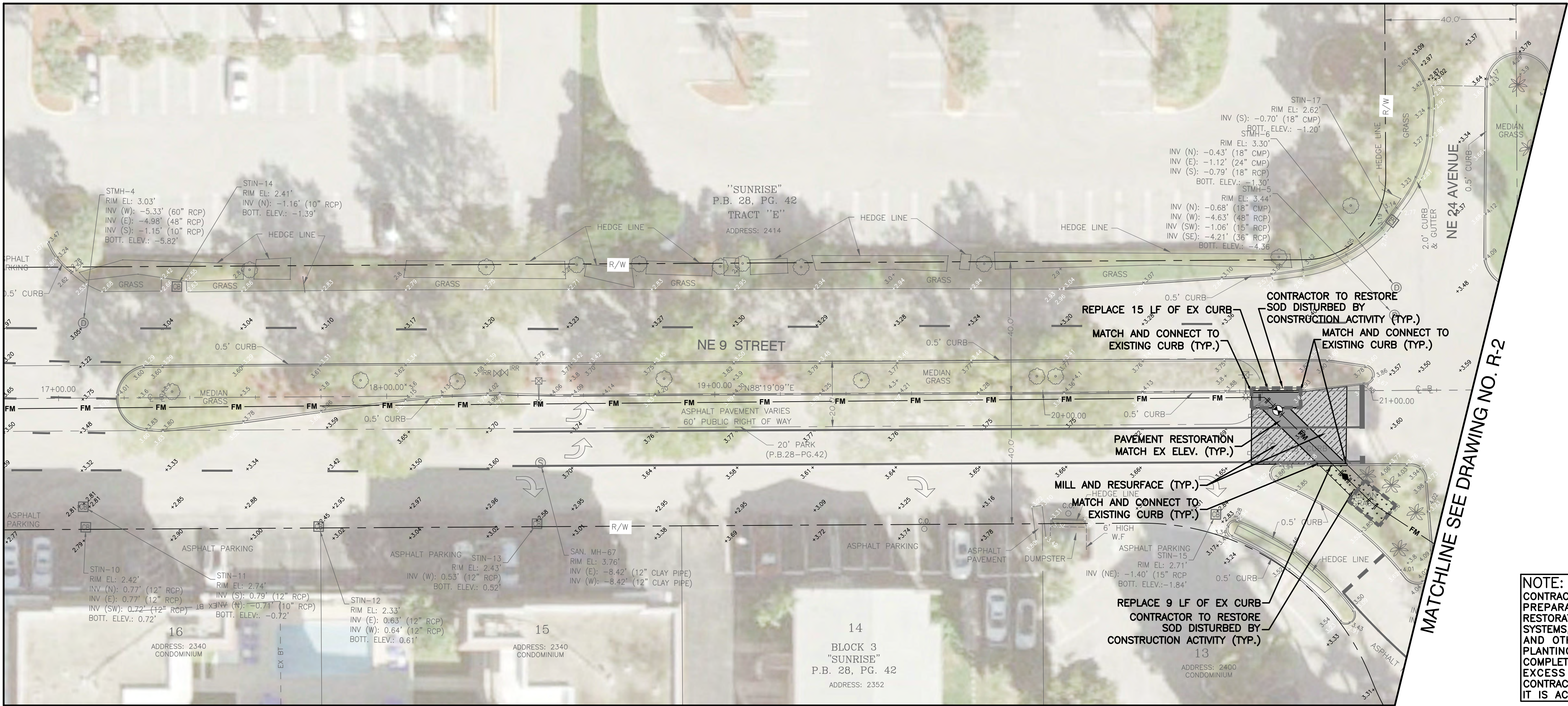
DESIGNED BY: JH	CHECKED BY: DC	DATE: 01/11/19	SCALE: 1"=20'
DRAWN BY: JH		DATE: 01/11/19	SCALE: 1"=20'
FIELD BOOK: 33301		DATE: 01/11/19	

CHEN-MOORE & ASSOCIATES
500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425

PROJ. # 12389
18" FORCE MAIN REPLACEMENT ACROSS THE N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.
RESTORATION PLAN

DRAWING #	SHT #
R-1	12
TOTAL:	19
CAD FILE:	12389-MULTI-REST
DRAWING FILE NO:	4-XXX-XX

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION



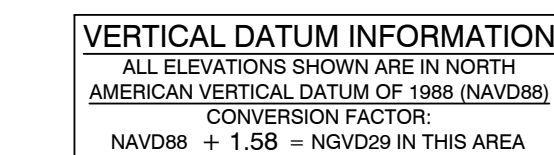
Sunshine811
Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.
Check positive response codes before you dig!

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
CONVERSION FACTOR:
NAVD88 + 1.58 = NGVD29 IN THIS AREA

NOTE:
CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS FOR RESIDENTS, SITE PREPARATION, ROADWAY, PAVERS AND WALKWAY RESTORATION, LANDSCAPE RESTORATION OF EQUAL OR GREATER QUALITY, RESTORING EXISTING IRRIGATION SYSTEMS, PAVEMENT MARKING RESTORATION AND SITE FURNISHINGS. ALL DEBRIS AND OTHER OBJECTIONABLE MATERIAL CREATED THROUGH CONSTRUCTION, PLANTING OPERATIONS AND LANDSCAPE CONSTRUCTION SHALL BE REMOVED COMPLETELY ON A DAILY BASIS FROM THE JOB OR AS DIRECTED BY THE CITY. EXCESS SOIL SHALL BE DISPOSED OF AS DIRECTED BY THE CITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO PROPERTY WHETHER IT IS ACCIDENTAL OR NECESSARY FOR THE COMPLETION OF THE CONTRACT.



VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH
AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
CONVERSION FACTOR:
NAVD88 + 1.58 = NGVD29 IN THIS AREA



NOTE:
CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS FOR RESIDENTS, SITE PREPARATION, ROADWAY, PAVERS AND WALKWAY RESTORATION, LANDSCAPE RESTORATION OF EQUAL OR GREATER QUALITY, RESTORING EXISTING IRRIGATION SYSTEMS, PAVEMENT MARKING RESTORATION AND SITE FURNISHINGS. ALL DEBRIS AND OTHER OBJECTIONABLE MATERIAL CREATED THROUGH CONSTRUCTION, CONSTRUCTION OPERATION AND LANDSCAPE CONSTRUCTION SHALL BE REMOVED COMPLETELY ON A DAILY BASIS FROM THE JOB OR AS DIRECTED BY THE CITY. EXCESS SOIL SHALL BE DISPOSED OF AS DIRECTED BY THE CITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO PROPERTY WHETHER IT IS ACCIDENTAL OR NECESSARY FOR THE COMPLETION OF THE CONTRACT.

MATCHLINE SEE DRAWING NO. R-3


MATCHLINE SEE BELOW

CHEN • MOORE
& ASSOCIATES
 500 West Cypress Creek Road,
 Suite 630
 Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
 EB4593 LC26000425

ENGINEER:
DANIEL DAVILA, P.E.
REG. No: 63014
DATE:

TEL: 954.730.0707
FAX: 954.730.2030

DRAWN BY:	JH	DATE:	01/11/19
DESIGNED BY:	DC	SCALE:	
CHECKED BY:	DD		
FIELD BOOK:			



CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

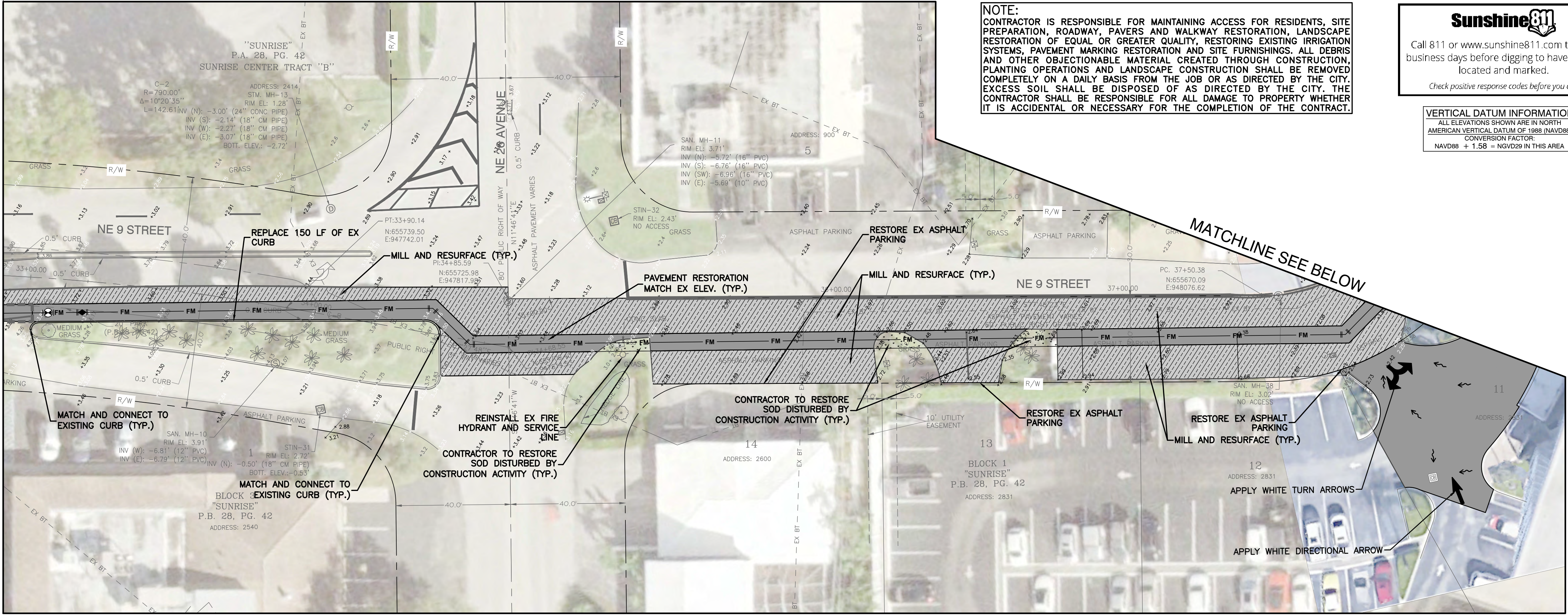
[illegible]

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS
THE N. RIVER FROM
NE 9TH ST. TO N. BIRCH RD.
RESTORATION PLAN

DRAWING #	SHT #
R-2	13
TOTAL: 19	
CAD FILE: 12389-MULTI-REST	
DRAWING FILE NO. 4-XXX-XX	

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

MATCHLINE SEE DRAWING NO. R-2

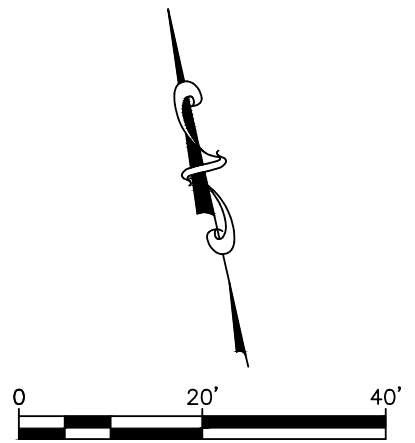


Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.

Check positive response codes before you dig!



500 West Cypress Creek Road, Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425



DESIGNED BY: JH	CHECKED BY: DC	DATE: 01/11/19
SCALE: 1"=20'	FIELD BOOK:	

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

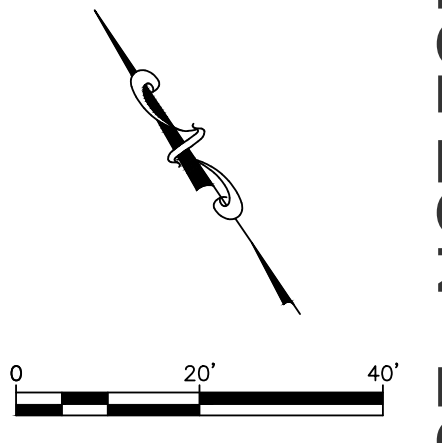
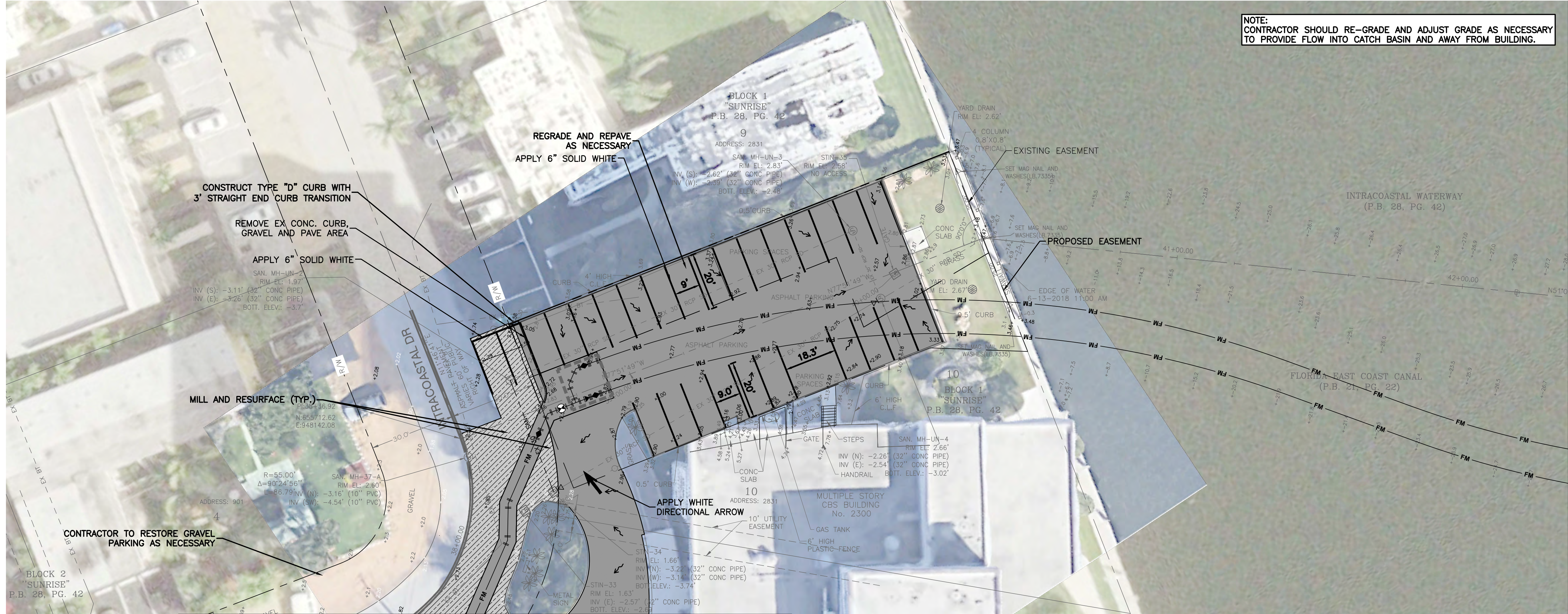
NO.	DATE	BY	CHKD	DESCRIPTION

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS THE N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.
RESTORATION PLAN

DRAWING #	SHT #
R-3	14
TOTAL:	19
CAD FILE:	12389-MULTI-REST
DRAWING FILE NO.	4-XXX-XX

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

MATCHLINE SEE DRAWING NO. R-4



MATCHLINE SEE ABOVE

Plot Date: 11/15/2019 1:49:23 PM Username: JTamo Layout Name: R-4
Folder Path: V:\Projects\2018\18-047.040 - bayshore dr intracoastl crossing fm to 2\Design\CAD\Plans Filename: 12389-MULTI-REST.dwg



CHEN • MOORE
& ASSOCIATES
 500 West Cypress Creek Road,
 Suite 630
 Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
 EB4593 LC26000425

DRAWN BY: JH	DATE: 01/11/19
DESIGNED BY: DC	SCALE: 1"=20'
CHECKED BY: DD	
FIELD BOOK:	

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS
THE N. RIVER FROM
ONE 9TH ST. TO N. BIRCH RD.
RESTORATION PLAN

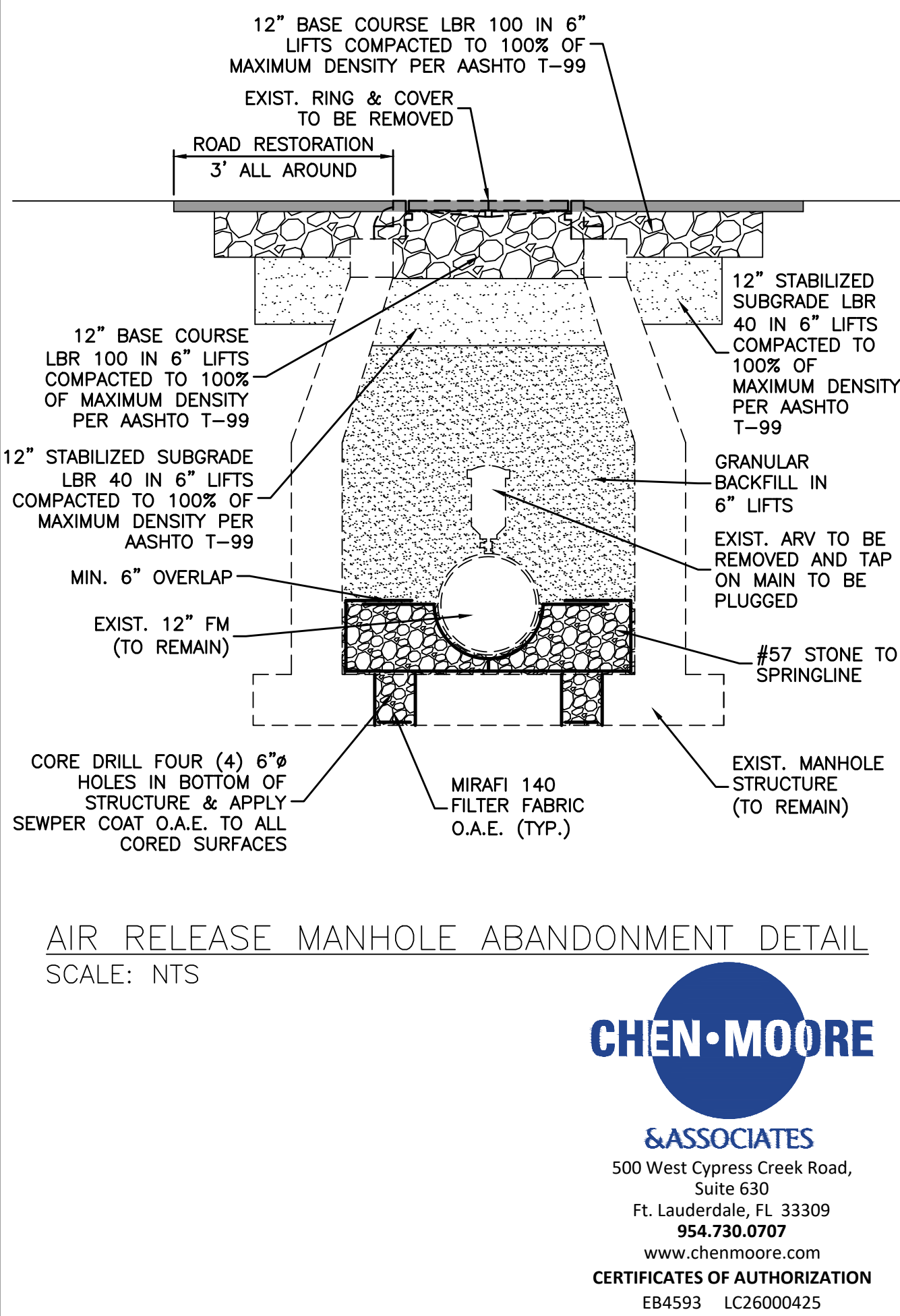
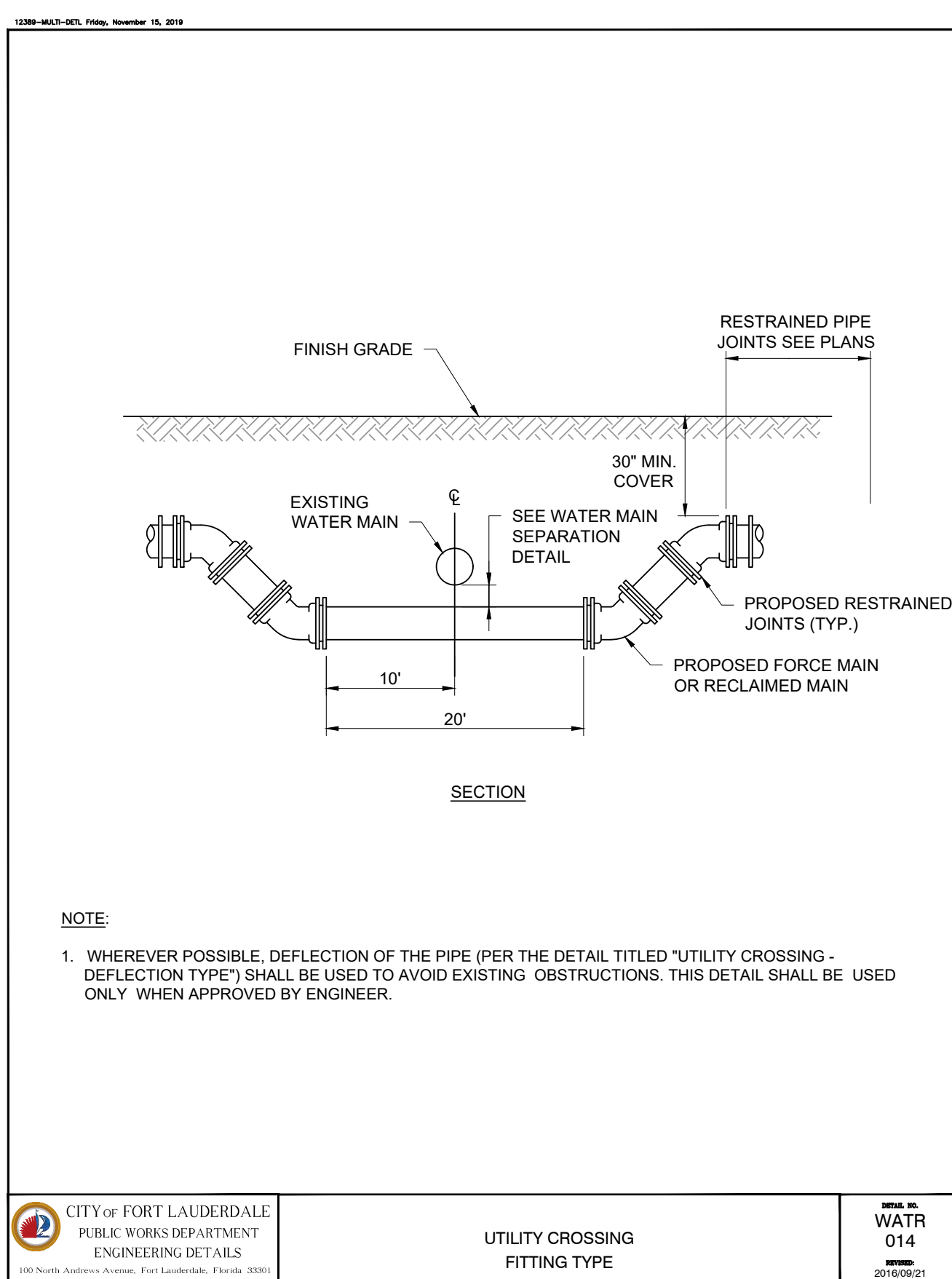
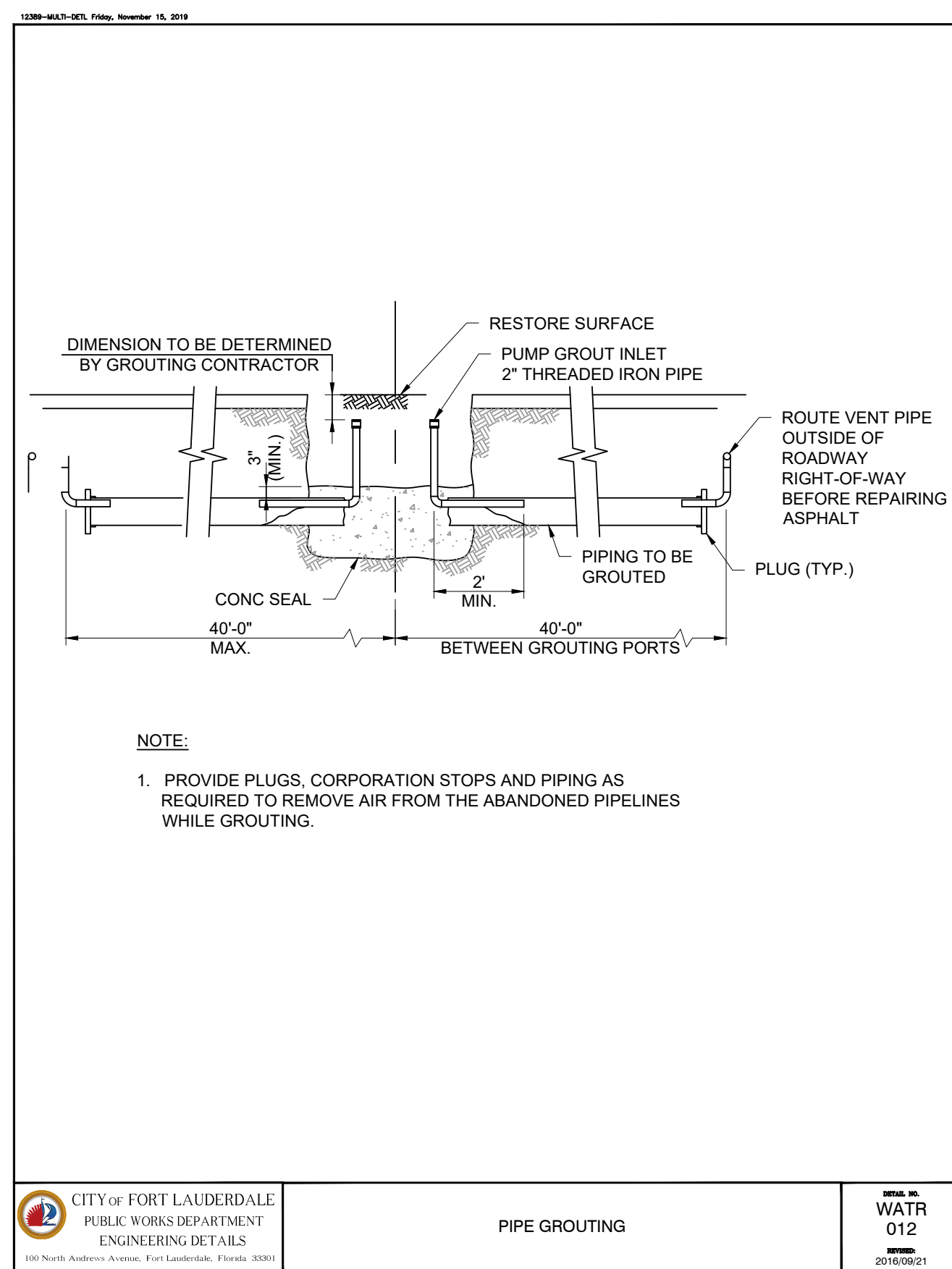
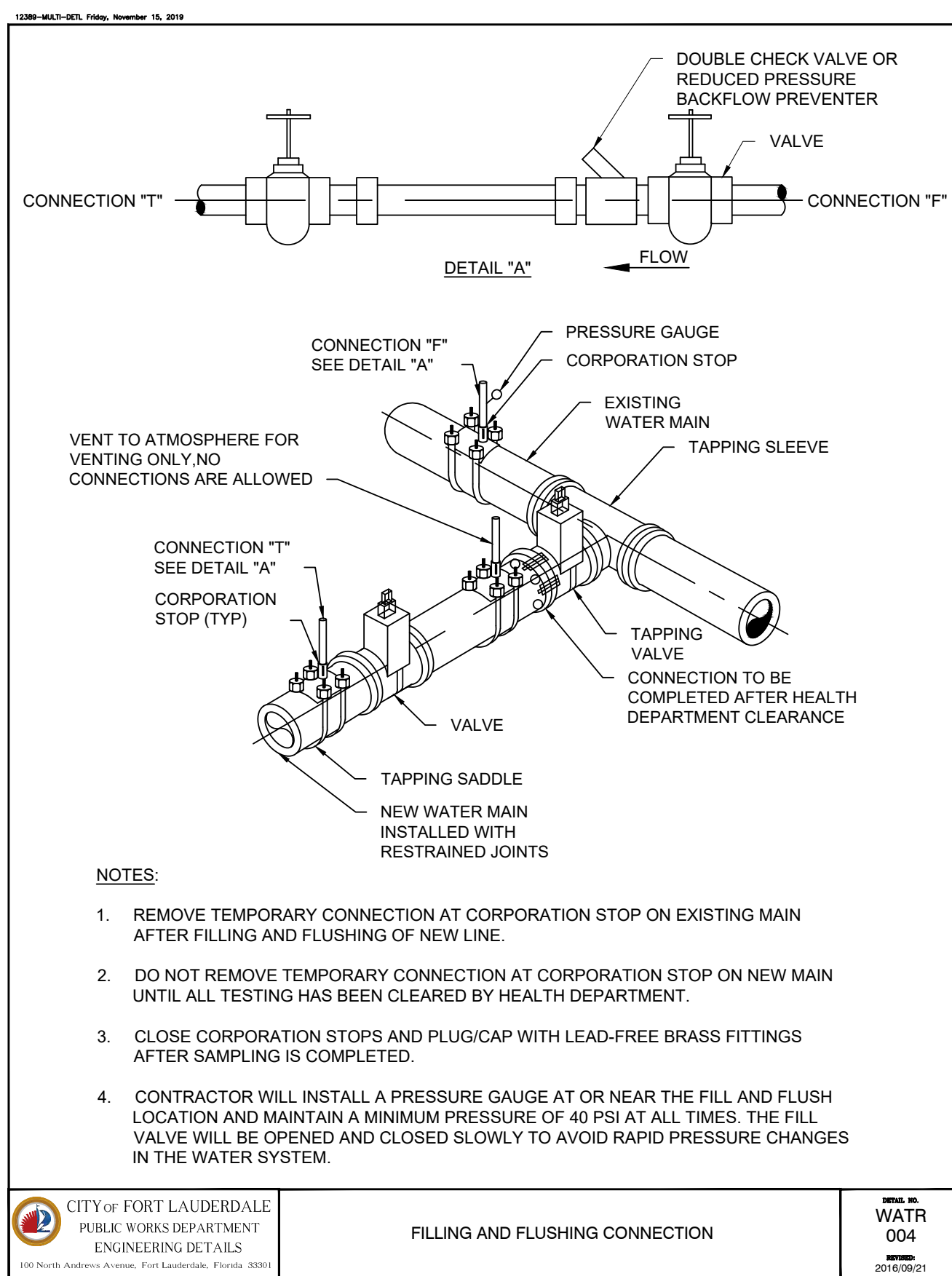
DRAWING #	SHT #
R-4	15
TOTAL: 19	
CAD FILE: 12389-MULTI-REST	
DRAWING FILE NO. 4. x x x x x x	

Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.

Check positive response codes before you dig

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH
AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
CONVERSION FACTOR:
NAVD88 + 1.58 = NGVD29 IN THIS AREA

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION



DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

[illegible]


PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS
THE N. RIVER FROM
NE 9TH ST. TO N. BIRCH RD.
DETAILS

DRAWING #	SHT #
D-1	16
TOTAL: 19	
CAD FILE: 12389-MULTI-DETL	
DRAWING FILE NO. 4-XXX-XX	

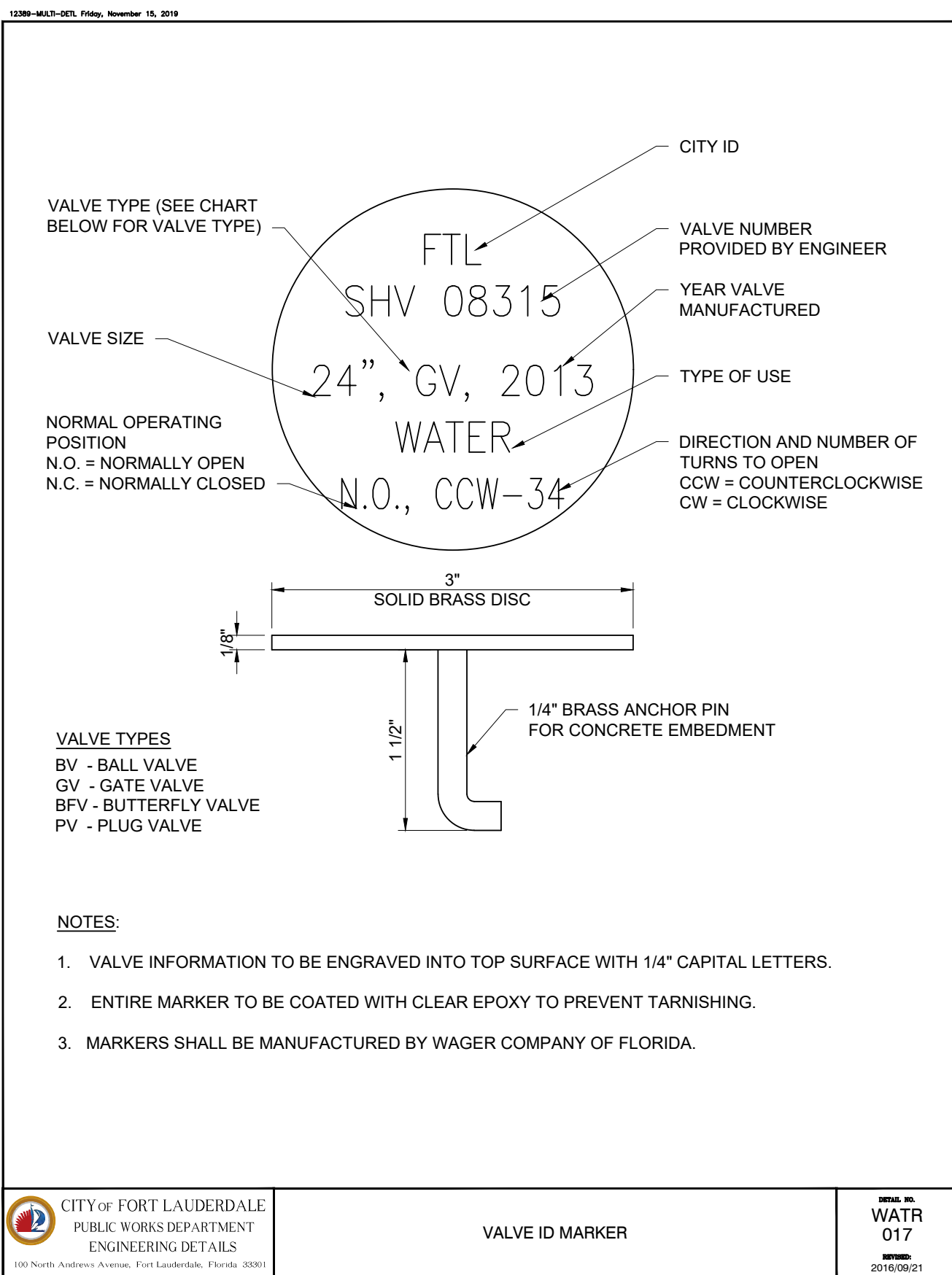
ENGINEER:
DANIEL DAVILA, P.E.
REG. No: 63014
DATE:

TEL: 954.730.0707
FAX: 954.730.2030

DRAWN BY: JH	DATE: 01/11/19
DESIGNED BY: DC	SCALE:
CHECKED BY: DD	
FIELD BOOK:	



CITY of FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301



PVC PIPE SIZE (INCH)	MIN. ALLOWED RADIUS (FT.)	MAX. DEFLECTION (INCH) PER 20' LENGTH
6"	300	8"
8"	400	6"
10"	600	4"
12"	600	4"

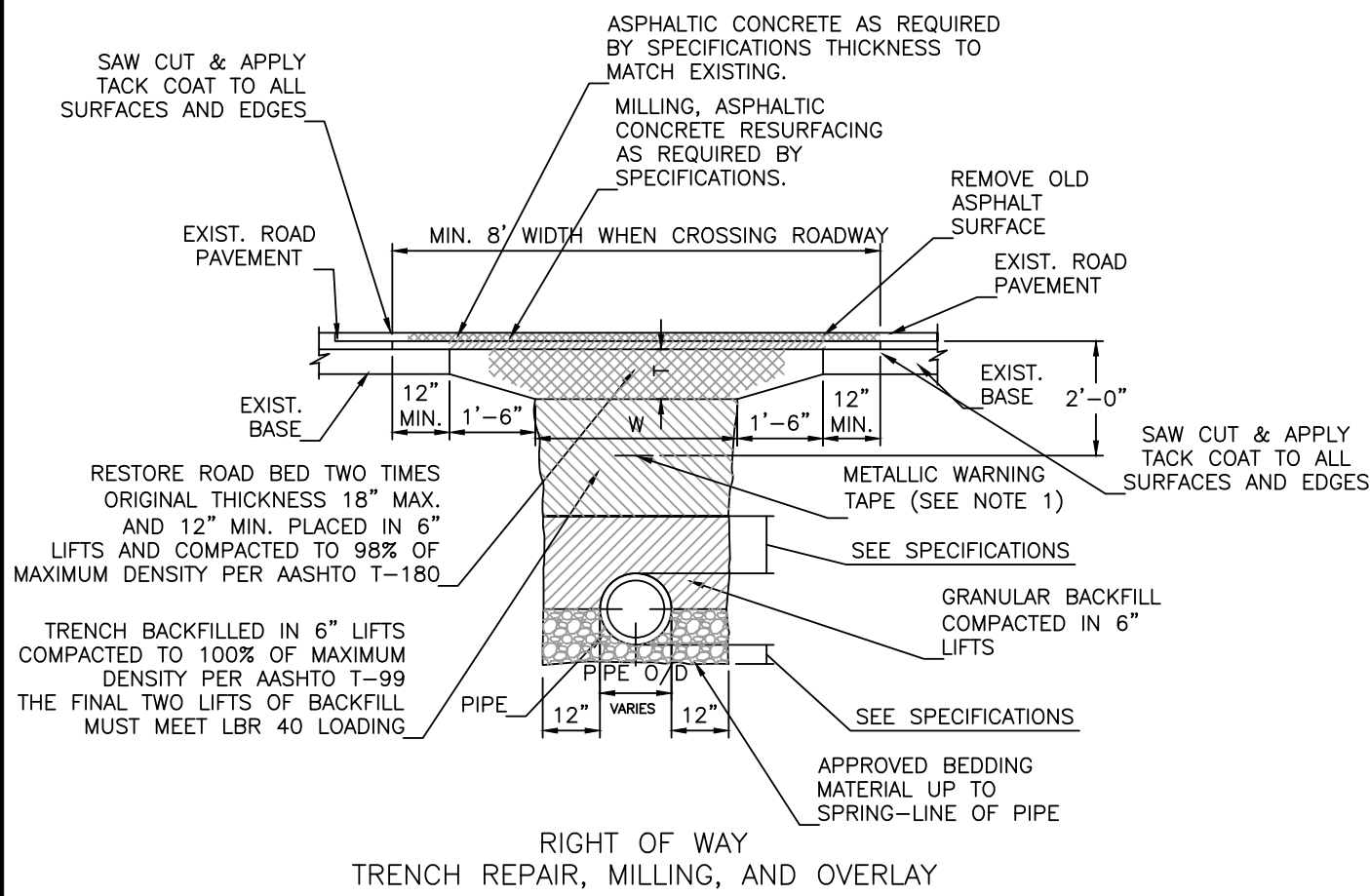
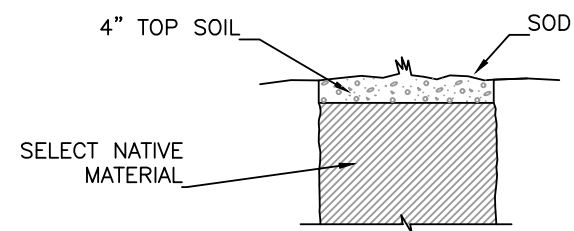
1. PRESSURE TEST: PROCEDURE TO FOLLOW THE CURRENT AWWA C-800-05 STANDARD (150psi, (2) HOUR DURATION). THERE SHALL BE NO PRESSURE DROP IN THE PIPE DURING THE TEST ("ZERO" FILL-UP TOLERANCE).

PRESSURE TEST CRITERIA (403)



DRAWING #	SHT #
D-2	17
TOTAL: 19	
CAD FILE: 12389-MULTI-DETL	
DRAWING FILE NO. 4-XXX-XX	

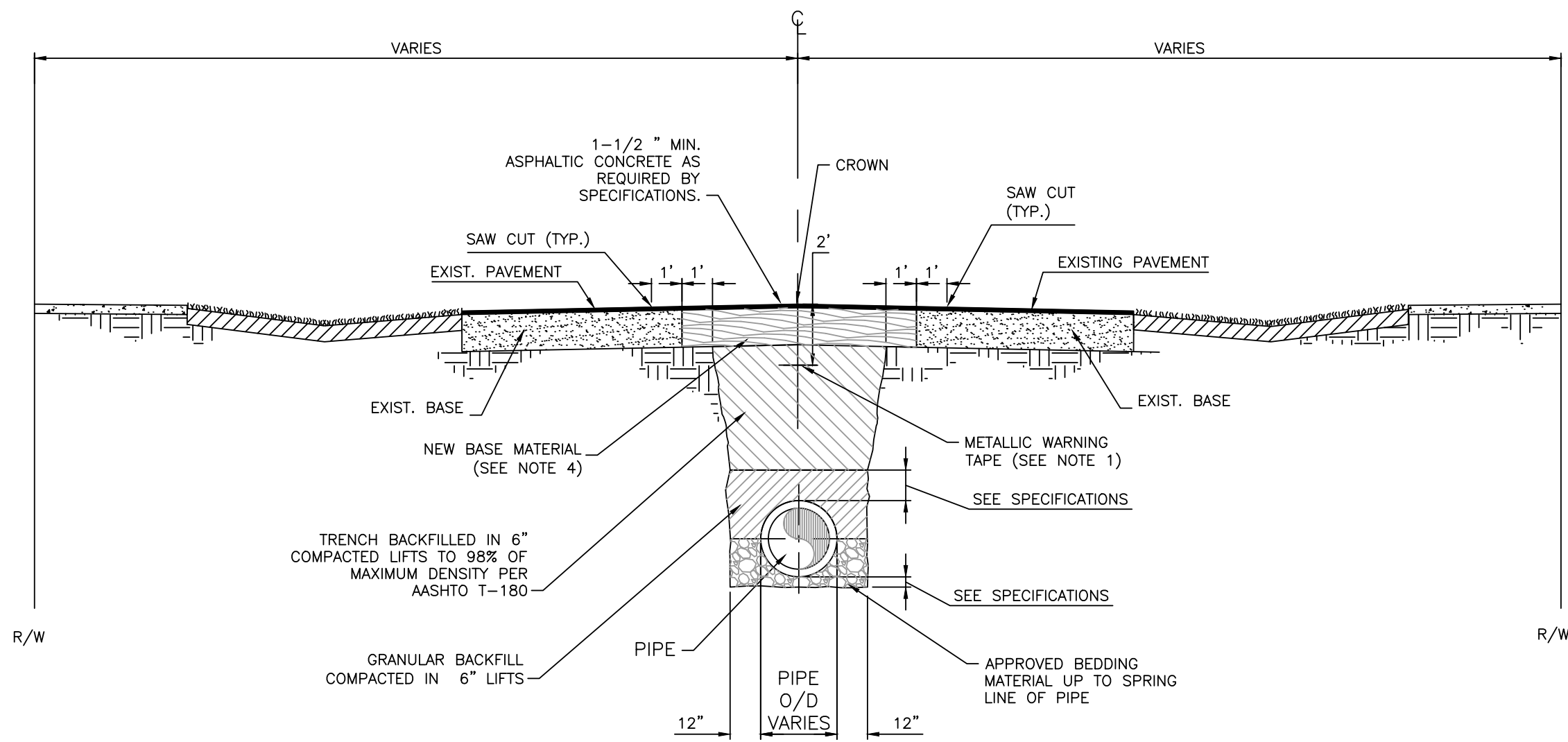
Plot Date: 11/15/2019 1:49:35 PM
Folder Path: V:\Projects\2018\18-047\040 - boyshore dr intracoast crossing fm to 2\Design\CAD\Plans
Layout Name: D-3
Filename: 12389-MULTI-DET.dwg



- NOTES:
1. METALLIC WARNING TAPES SHALL BE INSTALLED 24" BELOW FINISH GRADE ABOVE MAIN. (SEE SPECIFICATION 2320 SECTION 3.6 FOR MARKING TYPE)
 2. UNLESS OTHERWISE SPECIFIED SELECTED MATERIAL SHALL BE FREE OF STONES LARGER THAN 3/8" DIA.
 3. REPLACE ALL LANE MARKINGS AND REFLECTIVE MARKERS.
- T=6" PARKING
T=8" RESIDENTIAL STREETS
T=10" MAJOR STREETS (4 LANE)
T=12" MAJOR STREETS (6 LANE)
2T=18" MAX. 12" MIN.

TYPICAL TRENCH AND PAVEMENT RESTORATION FOR TRANSVERSE CROSSING

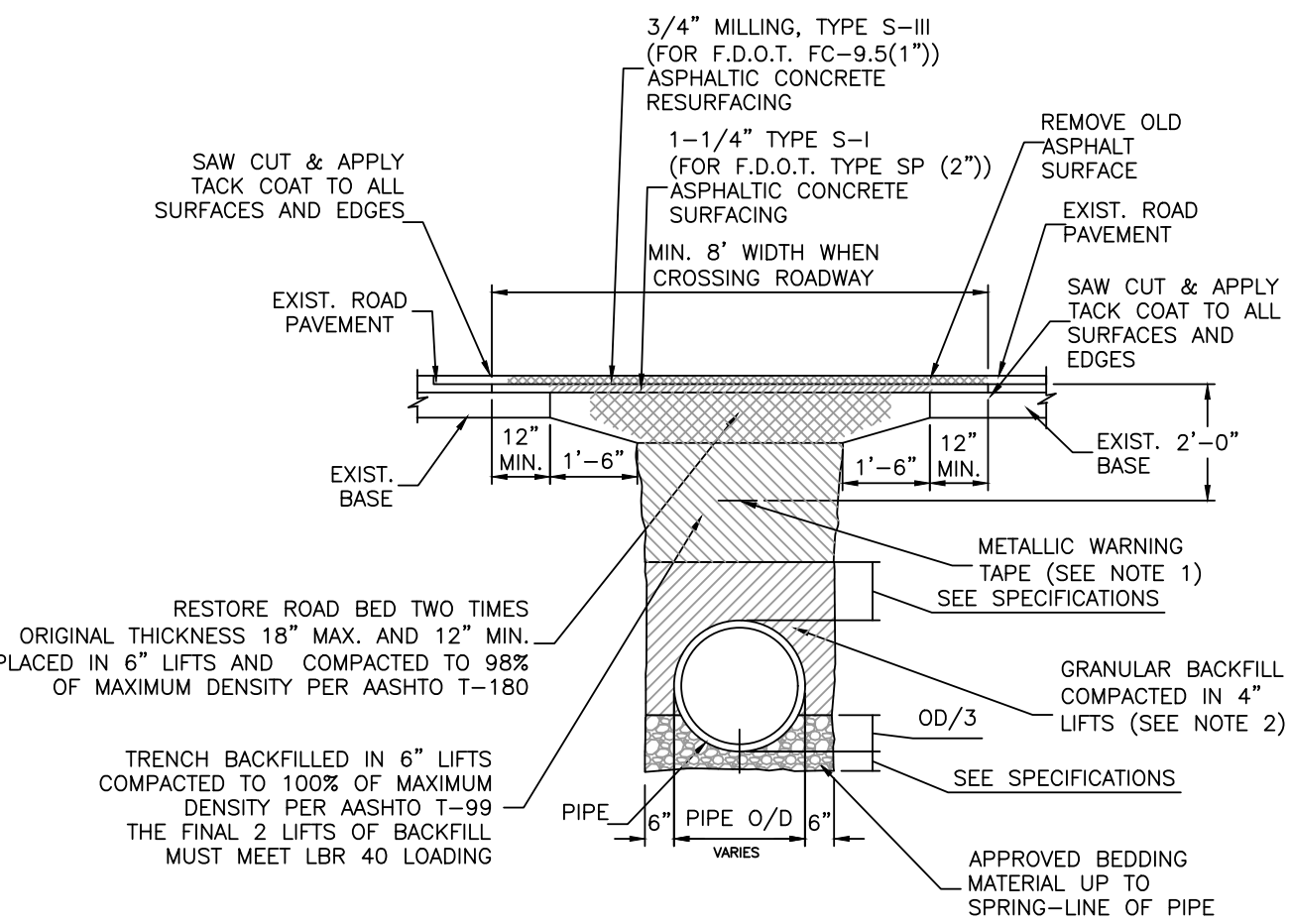
100



- NOTES:
1. 2" WIDE METALLIC WARNING TAPES SHALL BE INSTALLED 24" BELOW FINISH GRADE.
 2. UNLESS OTHERWISE SPECIFIED SELECTED MATERIAL SHALL BE FREE OF STONES LARGER THAN 3/8" DIA.
 3. REPLACE ALL LANE MARKINGS AND REFLECTIVE MARKERS.
 4. 12" MIN. LIMEROCK BASE PLACED IN 6" LAYERS AND COMPACTED TO 98% OF MAXIMUM DENSITY PER AASHTO T-180.

TYPICAL ROAD SECTION, TYPICAL TRENCH AND TRENCH RESTORATION FOR PARALLEL PIPE TRENCH

100A

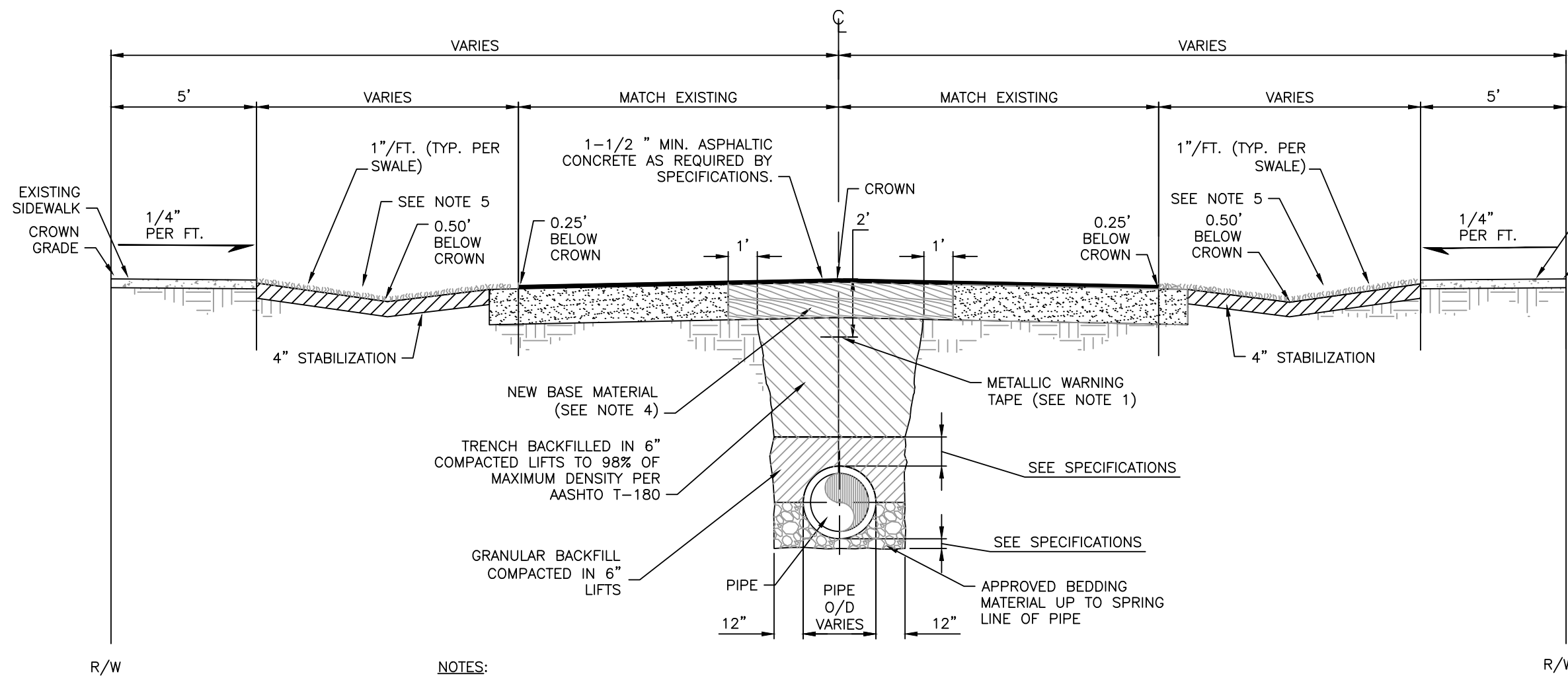


RIGHT OF WAY TRENCH REPAIR, MILLING, AND OVERLAY

- NOTES:
1. 2" WIDE METALLIC WARNING TAPES SHALL BE INSTALLED BETWEEN 6" AND 12" BELOW FINISH GRADE ABOVE MAIN.
 2. UNLESS OTHERWISE SPECIFIED SELECTED MATERIAL SHALL BE FREE OF STONES LARGER THAN 3/8" DIA.
 3. REPLACE ALL LANE MARKINGS, REFLECTIVE MARKERS AND DAMAGED TRAFFIC SIGNS.

F.D.O.T. & BROWARD COUNTY TYPICAL TRENCH AND PAVEMENT RESTORATION

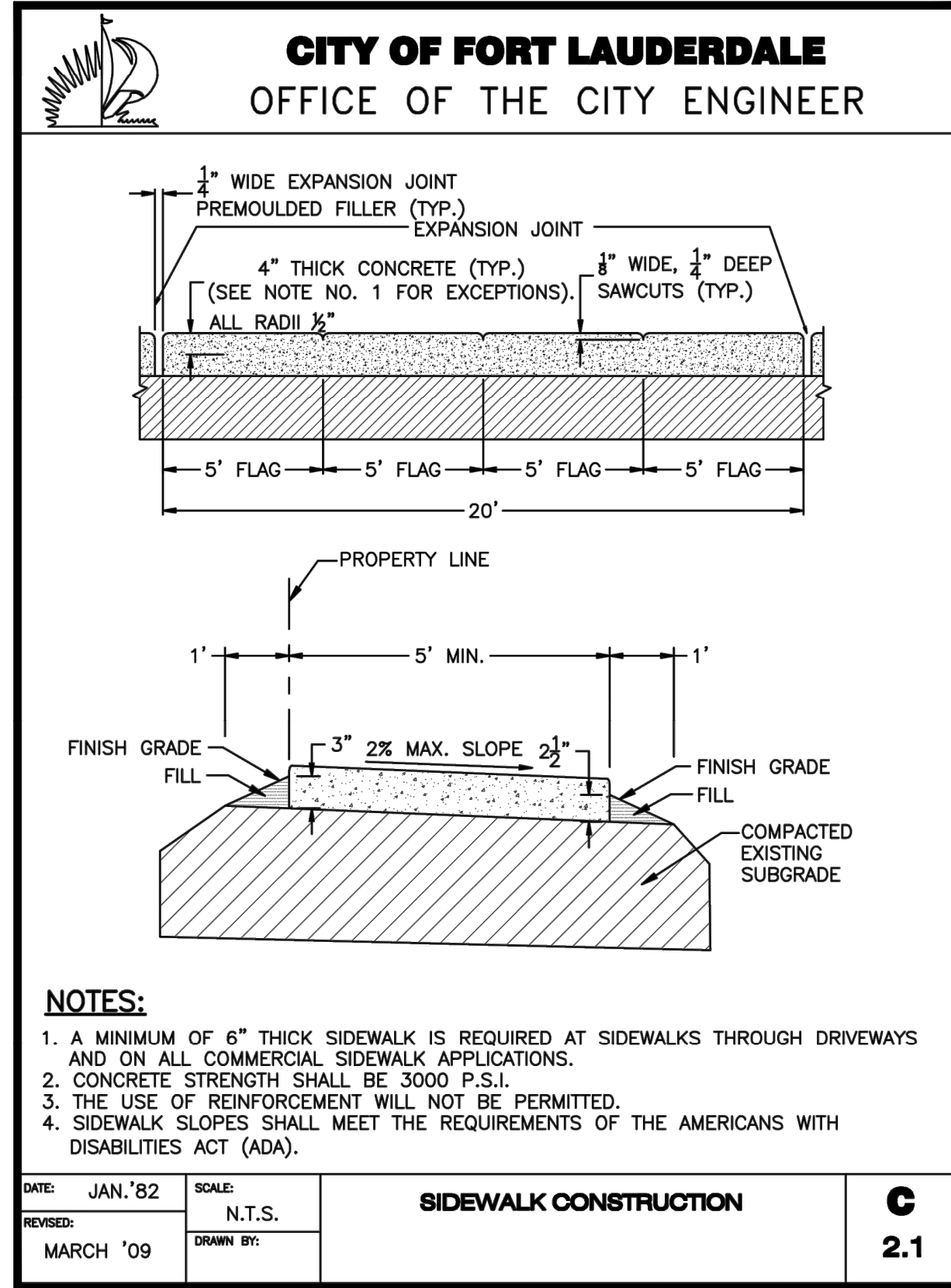
100BC



- NOTES:
1. 2" WIDE METALLIC WARNING TAPES SHALL BE INSTALLED 24" BELOW FINISH GRADE. DOES NOT APPLY TO STORM DRAINAGE PIPE INSTALLATION.
 2. UNLESS OTHERWISE SPECIFIED SELECTED MATERIAL SHALL BE FREE OF STONES LARGER THAN 3/8" DIA.
 3. REPLACE ALL LANE MARKINGS AND REFLECTIVE MARKERS.
 4. 12" MIN. LIMEROCK BASE PLACED IN 6" LAYERS AND COMPACTED TO 98% OF MAXIMUM DENSITY PER AASHTO T-180
 5. BAHIA SOD -OR- ST. AUGUSTINE "FLORITAM" SOD IN PREVIOUSLY SODDED AREAS -OR- REPLACE EXISTING IMPROVED SURFACE (e.g., ROCK OR ASPHALT PAVING TO MATCH EXISTING -IF ASPHALT, MINIMUM 1" ASPHALT OVER MINIMUM 6" COMPACTED LIMEROCK)

TYPICAL ROAD SECTION, TYPICAL TRENCH, PAVEMENT AND SWALE RESTORATION FOR PARALLEL PIPE TRENCH

100B

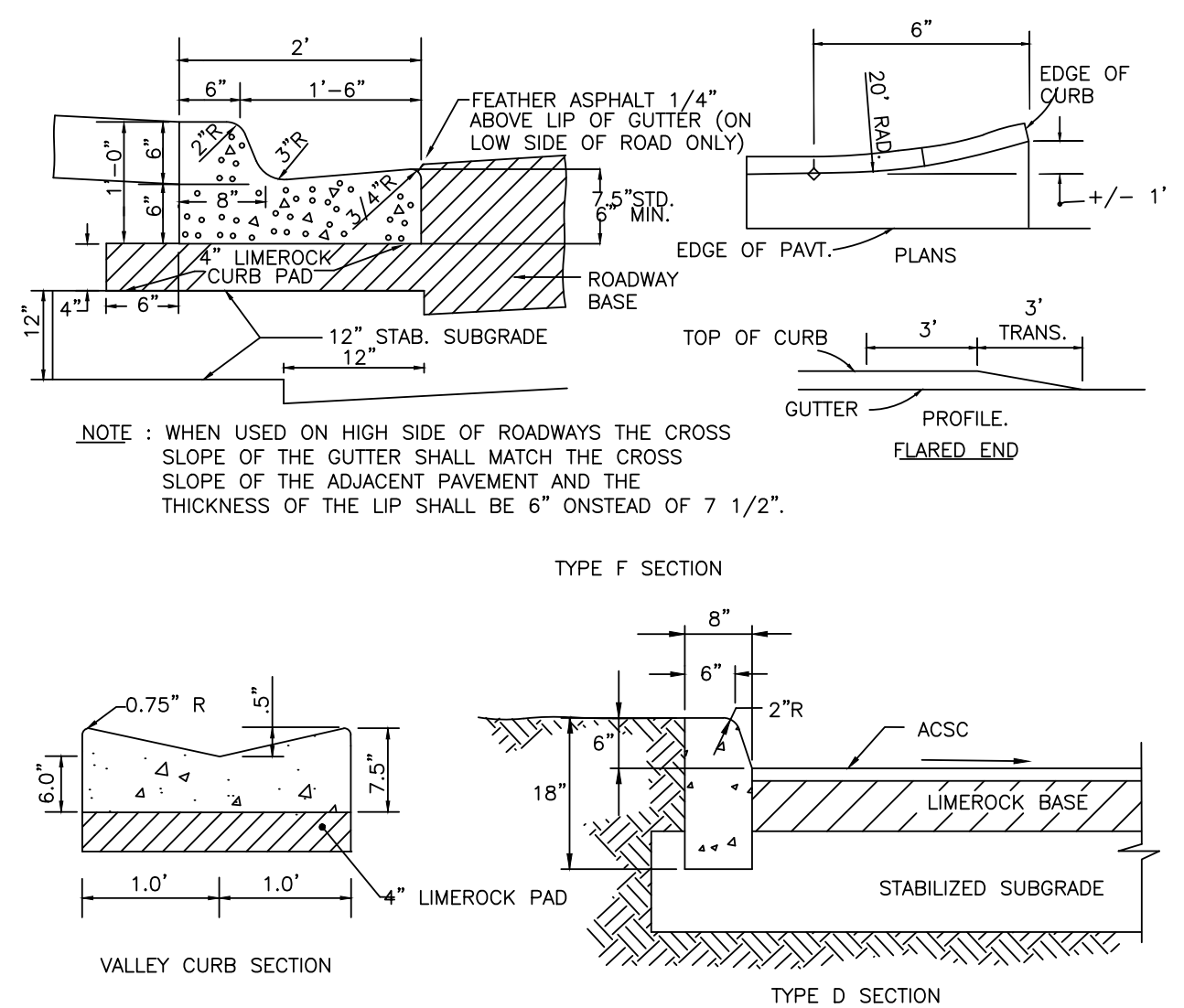


NOTES:

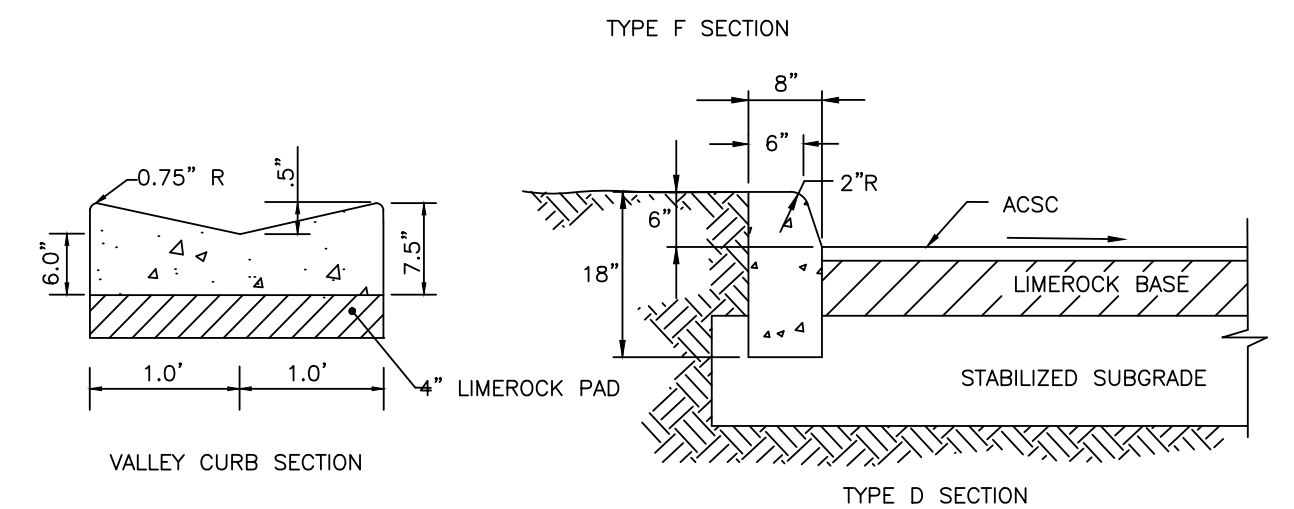
1. A MINIMUM OF 6" THICK SIDEWALK IS REQUIRED AT SIDEWALKS THROUGH DRIVEWAYS AND ON ALL COMMERCIAL SIDEWALK APPLICATIONS.
2. CONCRETE STRENGTH SHALL BE 3000 P.S.I.
3. THE USE OF REINFORCEMENT WILL NOT BE PERMITTED.
4. SIDEWALK SLOPES SHALL MEET THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA).

DATE: JAN. '82	SCALE: N.T.S.	SIDEWALK CONSTRUCTION	C
REVISION: MARCH '09	DRAWN BY:		

P:\eng\INTERNAL\DETAILS\Blue Book Blocks\CFI-BB-C21.dwg, 3/12/2009 1:06:27 AM, RamonC



NOTE : WHEN USED ON HIGH SIDE OF ROADWAYS THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT AND THE THICKNESS OF THE LIP SHALL BE 6" ONSTEAD OF 7 1/2".



NOTE: CONCRETE STRENGTH SHALL BE MIN. 3000 P.S.I. @ 28 DAYS

116 CURB & GUTTER RESTORATION

N.T.S.

CHEN-MOORE

& ASSOCIATES
500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425

ENGINEER: DANIEL SANTILLA, P.E.
REG. NO. 63014
DATE:

DRAWN BY: JH
DATE: 01/11/19
DESIGNED BY: SCALE: 1"=20'
DC
CHECKED BY: DD
FIELD BOOK:

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHKD	DESCRIPTION

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS THE N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.
DETAILS

DRAWING #	SHT #
D-3	18
TOTAL:	19
CAD FILE:	12389-MULTI-DET.dwg
DRAWING FILE NO.	4-XXX-XX

12389-MULTI-DETL, Friday, November 15, 2019

CONCRETE PIPE

8" PIPES TO 60"
12" PIPES 66" TO 108"
16" PIPES ABOVE 108"

MASONRY PLUG

NOTES:

- THE COST OF PLUGGING PIPES TO BE INCLUDED IN CONTRACT UNIT PRICE FOR NEW PIPE.
- EITHER BRICK MASONRY OR CONCRETE BRICK MAY BE USED FOR THE PLUG.

CITY of FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

PIPE PLUG

DETAIL NO.
STRM
011

ISSUED:
2017/07/19

STRM011 - TIDAL BACKFLOW VALVE FLOOD, November 22, 2017

EXISTING BASIN AS INDICATED ON PLAN

TIDAL VALVE MARKER ON GRADE

PROPOSED 5'-0" LENGTH OF PIPE WITH INLINE CHECK VALVE (SEE PLAN FOR DIA)

EXISTING OUTFALL AS INDICATED ON PLANS

EXIST. STABILIZED SUBGRADE

FLOW

FLOW

TO CANAL DOWNSTREAM

INLINE CHECK VALVE

316 STAINLESS STEEL ANCHOR TABS, FURNISHED BY CHECK VALVE MANUFACTURER (NUMBER AND LENGTH VARY BASED ON VALVE DIA)

DRILL IN 316 STAINLESS STEEL FASTENERS AS RECOMMENDED BY VALVE MFR

INLINE CHECK VALVE

RUBBER SEAL (SUPPLIED BY CHECK VALVE MFR)

OUTFALL PIPE

SECTION A-A

NOTES:

- INLINE CHECK VALVE SHALL BE WASTOP ws750 BY WAPRO INC (NO SUBSTITUTION).
- INLINE CHECK VALVE BODY SHALL BE 316 STAINLESS STEEL.
- FOR EXISTING BASINS, THE CONTRACTOR SHALL FIELD MEASURE ALL OPENINGS AND PROVIDE THE MEASUREMENTS TO THE INLINE CHECK VALVE MANUFACTURER SO THAT IT CAN DETERMINED IF A SHORT BODY LENGTH VERSION IS REQUIRED.
- PROVIDE STANDARD BODY LENGTH VALVES UNLESS INSTALLATION SPACE LIMITATIONS INDICATE THAT A SHORT BODY LENGTH VERSION IS REQUIRED.

CITY of FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

INLINE CHECKVALVE
FOR TIDAL FLOOD CONTROL

DETAIL NO.
STRM
016

ISSUED:
2017/12/22

12389-MULTI-DETL, Friday, November 15, 2019

SIDE VIEW

EMBOSSING HEIGHT 0.032"

CORNER RADIUS 0.187"

4"

0.125"

TOP VIEW

4"

RAISED LETTERING (NO FINISH)

BLUE BACKGROUND OR NONE

BLUE LOGO OR ENGRAVING

NO FINISH ON BACKGROUND

BLUE LETTERING OR ENGRAVING

FINISH		
UV BAKED ENAMEL	-	1 COLOR OPTION
MATERIAL	THICKNESS	WEIGHT
304 ANNEALED STAINLESS STEEL	0.062"	0.218 LBS.

NOTES:

- DRAIN MARKER SHALL BE BY LORDON, INC., OR EQUAL.
- SECURE WITH SIKAFLEX IIFC ADHESIVE.

CITY of FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

TIDAL VALVE MARKER

DETAIL NO.
STRM
022

ISSUED:
2017/12/22

CHEN-MOORE
& ASSOCIATES
500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS
THE N. RIVER FROM
NE 9TH ST. TO N. BIRCH RD.
DETAILS

DRAWING #
D-4

SHT #
19

TOTAL: 19

CAD FILE:
12389-MULTI-DETL

DRAWING FILE NO.
4-XXX-XX

REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHKD

CITY of FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DESIGNED BY: JH
CHECKED BY: DC
DATE: 01/11/19
SCALE: 1"=20'

ENGINEER:
DANIEL SANTILA, P.E.
REG. NO. 63014
DATE: _____
FIELD BOOK: _____

TEL: 954.730.0707
FAX: 954.730.2000

Exhibit “D”

Project Area Topographic Survey

[illegible]

LOCATION MAP
(NOT TO SCALE)

All elevations shown hereon are based on the National American Vertical Datum of 1988 (N.A.V.D. 88), and a Benchmark supplied by the Public Works and Waste Management Department of Broward County, Florida.

A C&GS BM DISC, ABOUT 2.85 NORTH ALONG THE FLORIDA/EAST COAST RAILWAY FROM THE STATION AT FT. LAUD - ERDALE, THENCE 1.35 MILES E. ALONG SUNRISE BOUL- VARD, SET ON THE TOP OF SEAWALL OF THE LIBERTY NATIONAL BANK BOAT DOCK ON THE MIDDLE RIVER, (BANKS AT 2242 SUNRISE BOULEVARD), 309' SOUTHWEST OF THE SOUTH CURB OF SUNRISE BOULEVARD, 6.5' NORTH- EAST OF THE SOUTHEAST CORNER OF BOAT DOCK, 6.6' EAST OF THE WEST EDGE OF BOAT DOCK, 1.5' WEST OF A3" IRON PIPE RAIL WHICH IS A PART OF A RAILING FENCE AROUND A PARKING LOT, 226' WEST/SOUTHWEST OFB2 AND ABOVE LEVEL WITH THE PARKING AREA.

For Horizontal Control:

Global Positioning System (G.P.S.). measurements were conducted in the field to acquire said coordinate values, which are based on the following Horizontal Control Station:

Name: North Dade
Code: FLND
Geographic Coordinates:
Latitude: 25° 57' 56.76772" N
Longitude: 80° 10' 02.22301" W
State Plane Coordinates:
Northing: 594119.571 US Feet
Easting: 929757.558 US Feet
Creation Date: 09-10-2014
Receiver Type: Leica AR 20
Satellite System: GPS and GLONASS

Since no other information were furnished other than that is cited under pertinent information, the Client is hereby advised that there may be legal restrictions on the Subject Property that are not shown on the Survey Map that may be found in the Public Records of Broward Dade County.

TEMPORARY BENCHMARK / REFERENCE POINT TABLE						
NAME	NORTHING	EASTING	POINT ELEVATION	STATION	OFFSET	DESCRIPTION
TBM#1	636,038.32	946,053.39	2.95	15+82.19	32.08' RIGHT	SET MAG NAIL & WASHER (L.B. 7335)
TBM#2	656,064.75	947,615.15	3.71	21+67.04	22.14' RIGHT	SET MAG NAIL & WASHER (L.B. 7335)
TBM#3	655,697.57	947,834.63	3.32	35+7.85	24.25' RIGHT	SET MAG NAIL & WASHER (L.B. 7335)
TBM#4	655,407.78	948,642.96	3.51	44+34.09	10.60' RIGHT	SET MAG NAIL & WASHER (L.B. 7335)
TBM#5	655,271.83	949,496.61	3.12	55+59.37	30.99' LEFT	SET MAG NAIL & WASHER (L.B. 7335)

No excavation or determination was made as to how the Subject Property is served by utilities.

PURPOSE OF SURVEY:

CLIENT INFORMATION:

City of Fort Lauderdale

SURVEYOR'S CERTIFICATE:

LONGITUDE SURVEYORS LLC., a Florida Limited Liability Company
Florida Certificate of Authorization Number LB7335

NOTICE: Not valid without the signature and original raised seal of a Florida Licensed Surveyor and Mapper. Additions or deletions to Survey Maps by other than the signing party are prohibited without the written consent of the signing party.

SURVEYOR
EDUARDO SUAREZ
FL PSM NO: 6313
DATE: 12\16\2017

TEL: 305-468-0912
FAX: XXX-XX-XXXX

DRAWN BY: SF-AC	DATE: 07/16/2018
DESIGNED BY: XX	SCALE: 1"=20'
CHECKED BY: DH	
FIELD BOOK:	

**CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE**

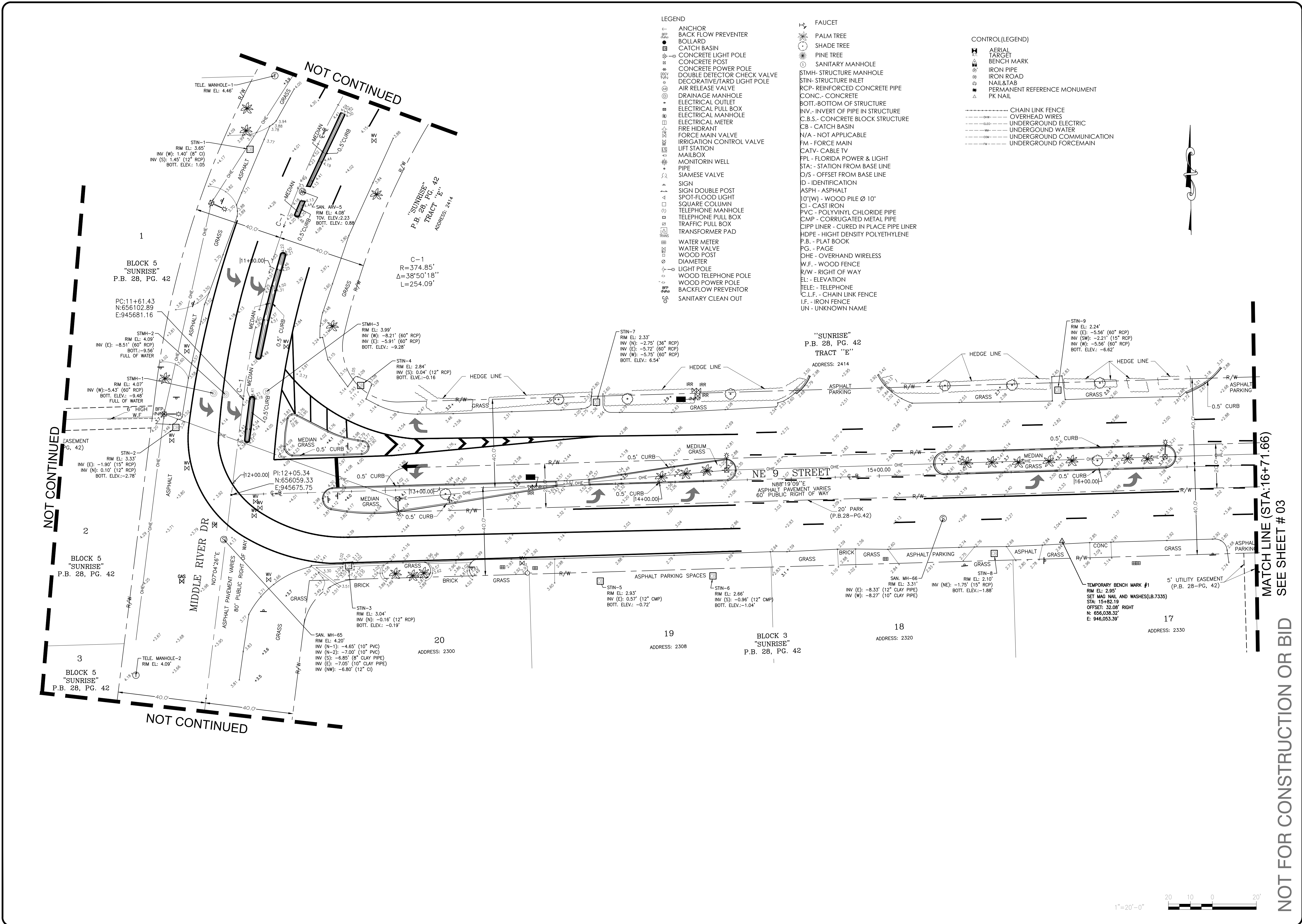
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS					
NO.	DATE	BY	CHK'D	DESCRIPTION	

PROJECT #
BAYSHORE 18-INC FM
NE 19TH STREET

SHEET NO. 01	OF 9
TOTAL: 9	
CAD FILE: 18218.0.00 TOPOGRAPHIC	
DRAWING FILE NO. 18218.0.00	

NOT FOR CONSTRUCTION OR BID



PLOT DATE: 9/24/2018 11:06 AM BY: CSUARKEB

File = L:\18218 18-Inch, Bayshore Ft. Lauderdale FL\Outbound\TOPO - ROUTE SURVEY\09-24-18\18218.0.00 Topographic Survey 88 Saved by AZAHEL Save date = 9/24/2018 10:48 AM

SURVEYOR
EDUARDO SUAREZ
FL FSN NO: 6913
DATE: 07/16/2018

DRAWN BY: SF-AC
DATE: 07/16/2018
DESIGNED BY: XX
SCALE: 1"=20'
CHECKED BY: DH
FIELD BOOK: EFB

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHKD


PROJECT #
BAYSHORE 18-INC FM
NE 19TH STREET

SHEET NO. 02 OF 9

TOTAL: 9

CAD FILE:
18218.0.00 TOPOGRAPHIC

DRAWING FILE NO.
18218.0.00

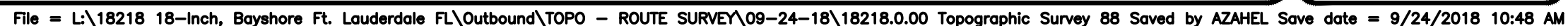


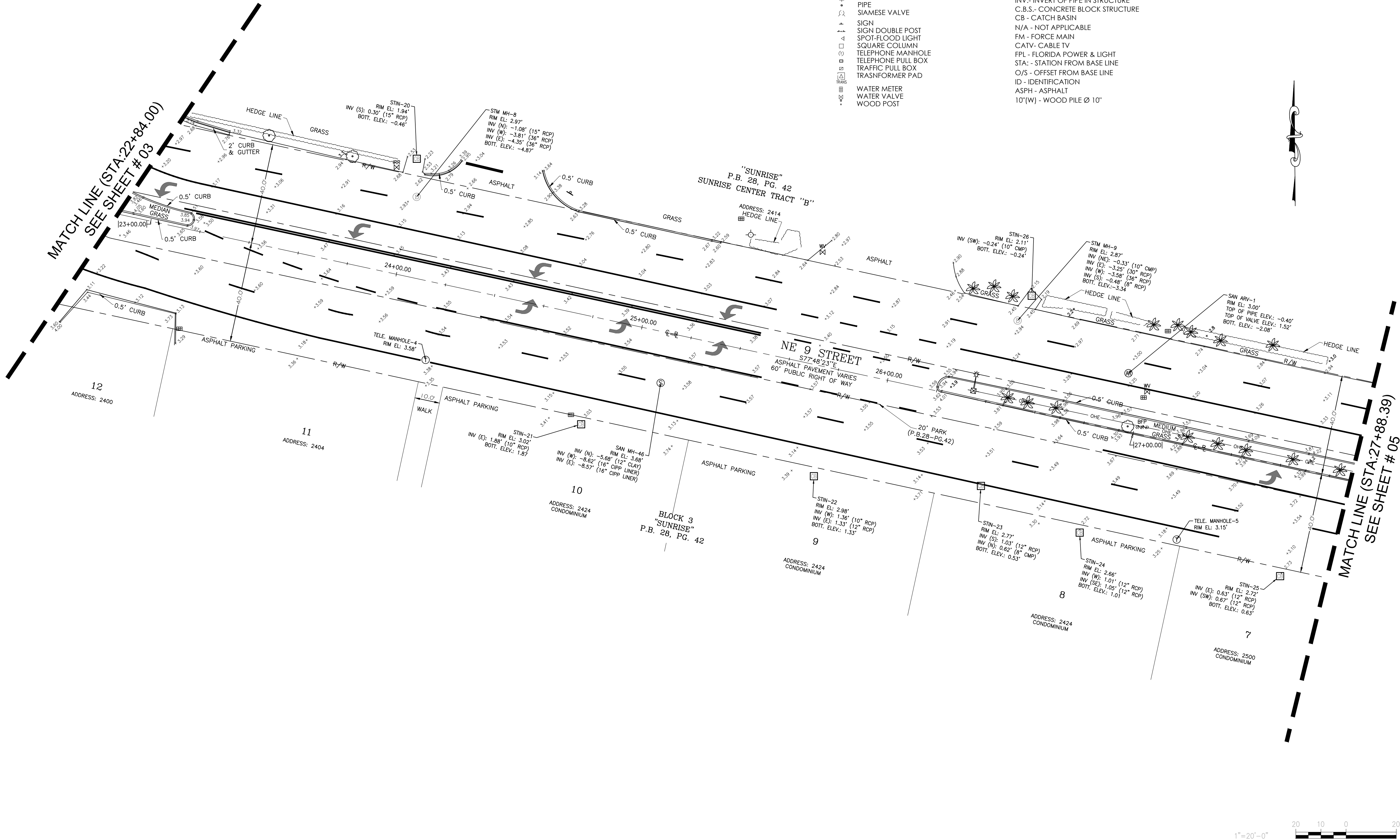
CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

PROJECT #
BAYSHORE 18-INC FM
NE 19TH STREET

CAM 20-0627
Exhibit 3
Page 345 of 556






NOT FOR CONSTRUCTION OR BID

SURVEYOR
EDUARDO SUAREZ
FL REG. NO. 6313
DATE: 07/16/2018

DATE: 07/16/2018
SCALE: 1"=20'
DESIGNED BY: XX
CHECKED BY: DH
FIELD BOOK: EFB

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE



100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHKD

PROJECT #
BAYSHORE 18-INCH FM

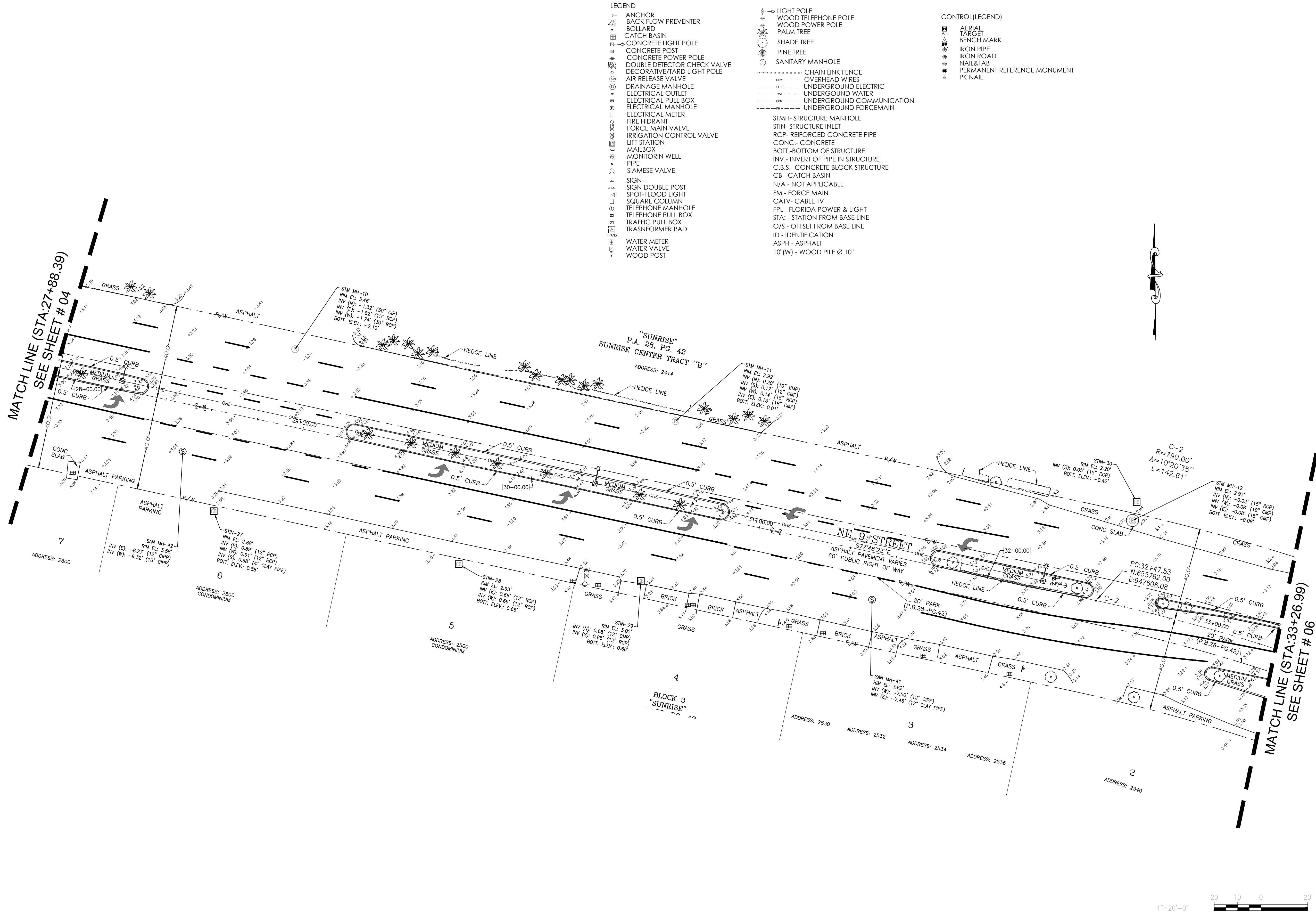
NE 19TH STREET

SHEET NO. 04 **OF** 9

TOTAL: 9

CAD FILE: 18218.0.00 TOPOGRAPHIC

DRAWING FILE NO. 18218.0.00



LEGEND

- ANCHOR
- BACK FLOW PREVENTER
- BOILARD
- CATCH BASIN
- CONCRETE LIGHT POLE
- CONCRETE POST
- CONCRETE POWER POLE
- DOUBLE DETECTOR CHECK VALVE
- DECORATIVE/TARD LIGHT POLE
- AIR RELEASE VALVE
- DRAINAGE MANHOLE
- ELECTRICAL OUTLET
- ELECTRICAL PULL BOX
- ELECTRICAL MANHOLE
- ELECTRICAL METER
- FIRE HYDRANT
- FORCE MAIN VALVE
- IRRIGATION CONTROL VALVE
- LIFT STATION
- MAILBOX
- MONITORIN WELL
- PIPE
- SIAMESE VALVE
- SIGN
- SIGN DOUBLE POST
- SPOT-FLOOD LIGHT
- SQUARE COLUMN
- TELEPHONE MANHOLE
- TELEPHONE PULL BOX
- TRAFFIC PULL BOX
- TRASFORMER PAD
- WATER METER
- WATER VALVE
- WOOD POST

- LIGHT POLE
- WOOD TELEPHONE POLE
- WOOD POWER POLE
- PALM TREE
- SHADE TREE
- PINE TREE
- SANITARY MANHOLE

- CHAIN LINK FENCE
- OVERHEAD WIRES
- UNDERGROUND ELECTRIC
- UNDERGROUND WATER
- UNDERGROUND COMMUNICATION
- UNDERGROUND FORCEMAIN

- STMH- STRUCTURE MANHOLE
- STIN- STRUCTURE INLET
- RCP- REINFORCED CONCRETE PIPE
- CONC.- CONCRETE
- BOTT.-BOTTOM OF STRUCTURE
- INV.- INVERT OF PIPE IN STRUCTURE
- C.B.S.- CONCRETE BLOCK STRUCTURE
- CB - CATCH BASIN
- N/A - NOT APPLICABLE
- FM - FORCE MAIN
- CATV- CABLE TV
- FPL- FLORIDA POWER & LIGHT
- STA- STATION FROM BASE LINE
- O/S - OFFSET FROM BASE LINE
- ID - IDENTIFICATION
- ASPH - ASPHALT
- 10'(W) - WOOD PILE Ø 10"

CONTROL(LEGEND)

- AERIAL TARGET
- BENCH MARK
- IRON PIPE
- IRON ROAD
- NAIL&TAB
- PERMANENT REFERENCE MONUMENT
- PK NAIL

NOT FOR CONSTRUCTION OR BID

SURVEYOR
EDUARDO SUAREZ
FL REG. NO. 6313
DATE: 07/16/2018

DRAWN BY: SF-AC
DATE: 07/16/2018

DESIGNED BY: XX
SCALE: 1"=20'

CHECKED BY: DH

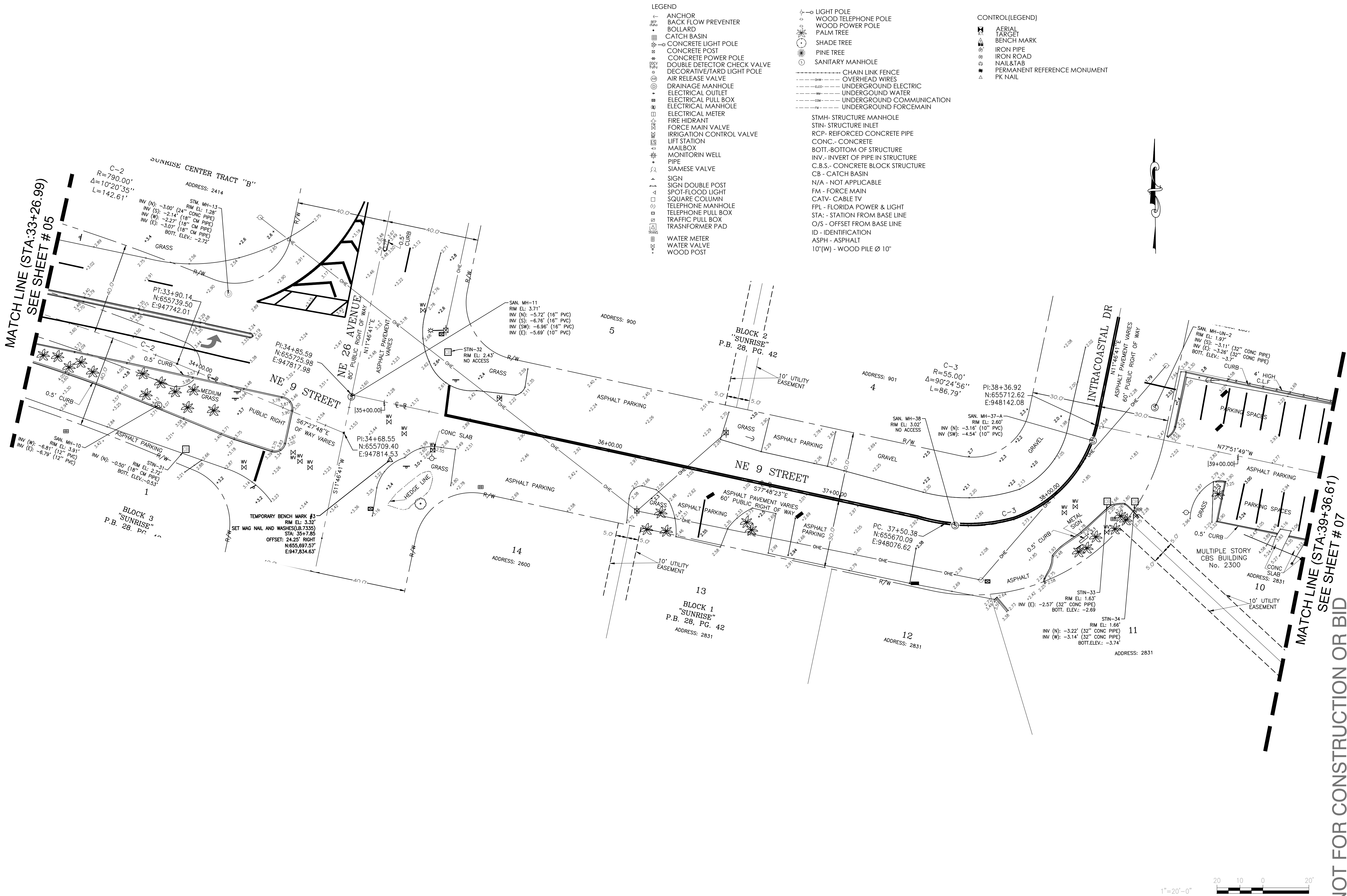
FIELD BOOK: EFB

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS		DESCRIPTION	
NO.	DATE	BY	DESCRIPTION

PROJECT # 18218
STORMWATER IMPROVEMENTS
SOUTHEAST ISLES NEIGHBORHOOD SURVEY
E. LAS OLAS BOULEVARD

SHEET NO.	OF
05	9
TOTAL: 9	
CAD FILE: 18218.0.00 TOPOGRAPHIC	
DRAWING FILE NO. 18218.0.00	



NOT FOR CONSTRUCTION OR BID

SURVEYOR
EDUARDO SUAREZ
FL REG. NO: 6313
DATE: 07/16/2018

DATE: 07/16/2018
DRAWN BY: SF-AC
DESIGNED BY: XX
CHECKED BY: DH
FIELD BOOK: EFB

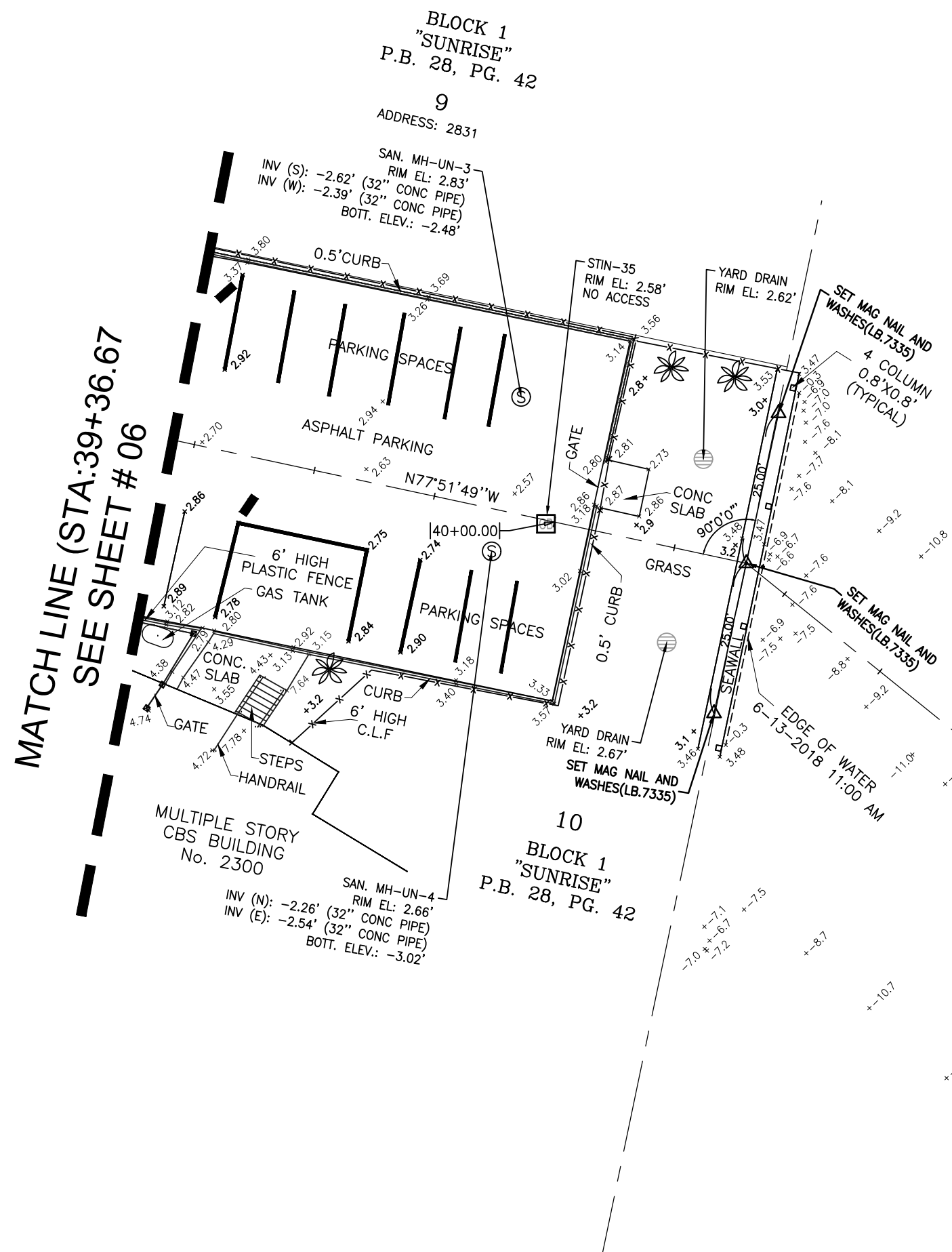
CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHKD

PROJECT #
BYSHORE 18-INC FM
NE 19TH STREET

SHEET NO. 06 **OF** 9
TOTAL: 9
CAD FILE: 18218.0.00 TOPOGRAPHIC
DRAWING FILE NO. 18218.0.00

MATCH LINE (STA:39+36.67)
SEE SHEET # 06



- LEGEND
- ANCHOR
 - BACK FLOW PREVENTER
 - BOLLARD
 - CATCH BASIN
 - CONCRETE LIGHT POLE
 - CONCRETE POST
 - CONCRETE POWER POLE
 - DOUBLE DETECTOR CHECK VALVE
 - DECORATIVE/TARD LIGHT POLE
 - AIR RELEASE VALVE
 - DRAINAGE MANHOLE
 - ELECTRICAL OUTLET
 - ELECTRICAL PULL BOX
 - ELECTRICAL MANHOLE
 - ELECTRICAL METER
 - FIRE HIDRANT
 - FORCE MAIN VALVE
 - IRRIGATION CONTROL VALVE
 - LIFT STATION
 - MAILBOX
 - MONITORIN WELL
 - PIPE
 - SIAMESE VALVE
 - SIGN
 - SIGN DOUBLE POST
 - SPOT-FLOOD LIGHT
 - SQUARE COLUMN
 - TELEPHONE MANHOLE
 - TELEPHONE PULL BOX
 - TRAFFIC PULL BOX
 - TRANSFORMER PAD
 - WATER METER
 - WATER VALVE
 - WOOD POST

- CONTROL(LEGEND)
- CHAIN LINK FENCE
 - OVERHEAD WIRES
 - UNDERGROUND ELECTRIC
 - UNDERGROUND WATER
 - UNDERGROUND COMMUNICATION
 - UNDERGROUND FORCEMAIN

- STMH- STRUCTURE MANHOLE
- STIN- STRUCTURE INLET
- RCP- REINFORCED CONCRETE PIPE
- CONC- CONCRETE
- BOTT- BOTTOM OF STRUCTURE
- INV.- INVERT OF PIPE IN STRUCTURE
- C.B.S.- CONCRETE BLOCK STRUCTURE
- CB- CATCH BASIN
- N/A - NOT APPLICABLE
- FM- FORCE MAIN
- CATV- CABLE TV
- FPL- FLORIDA POWER & LIGHT
- STA- STATION FROM BASE LINE
- O/S - OFFSET FROM BASE LINE
- ID - IDENTIFICATION
- ASPH - ASPHALT
- 10"(W) - WOOD PILE Ø 10"

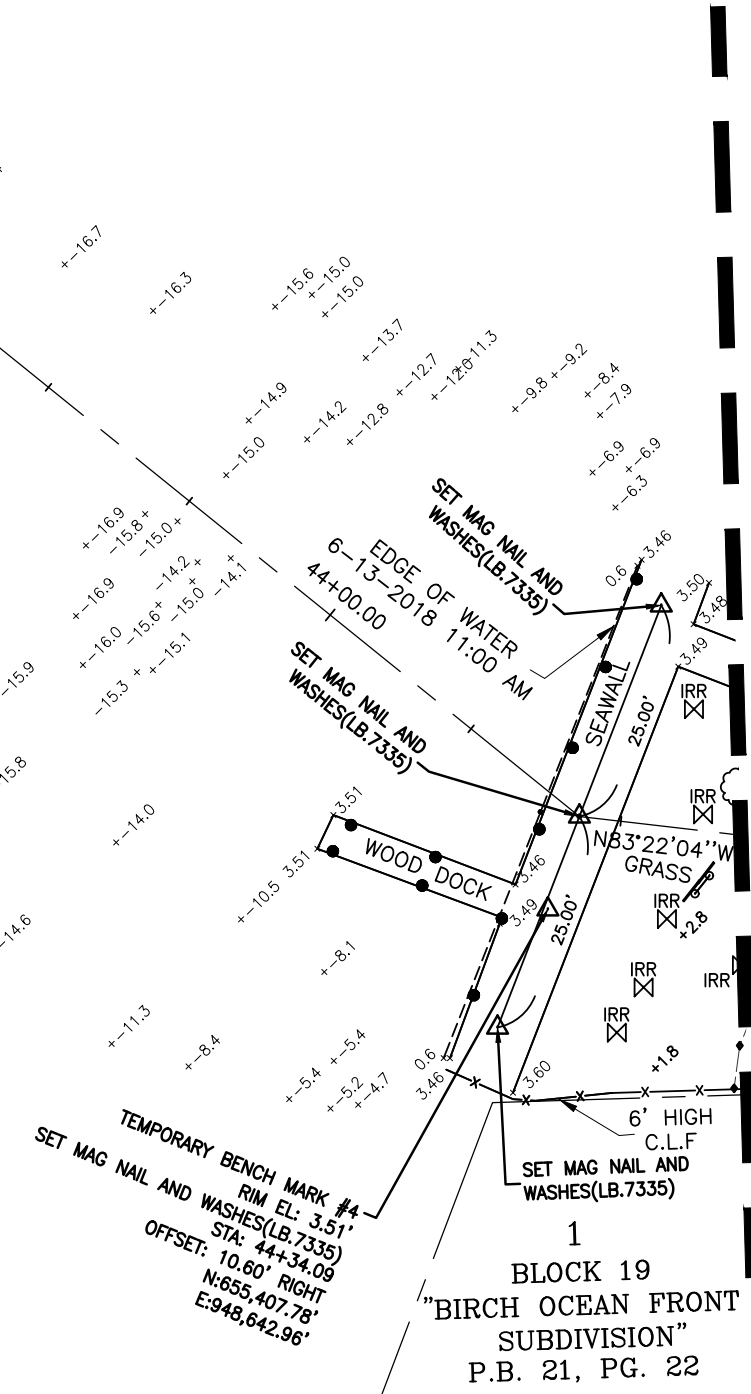
- AERIAL TARGET
- BENCH MARK
- IRON PIPE
- IRON ROAD
- NAIL&TAB
- PERMANENT REFERENCE MONUMENT
- PK NAIL

FLORIDA EAST COAST CANAL
(P.B. 21, PG. 22)

INTRACOASTAL WATERWAY
(P.B. 28, PG. 42)



MATCH LINE (STA:44+54.49)
SEE SHEET # 08



NOT FOR CONSTRUCTION OR BID

SURVEYOR
EDUARDO SUAREZ
P.L. REG. NO: 6313
MAR 07\19\2016

DATE: 07/16/2018
DRAWN BY: SF-AC
DESIGNED BY: XX
CHECKED BY: DH
FIELD BOOK: EFB

TEL: 904-465-0912
FAX: 335-XXX-XXXX

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHKD	DESCRIPTION

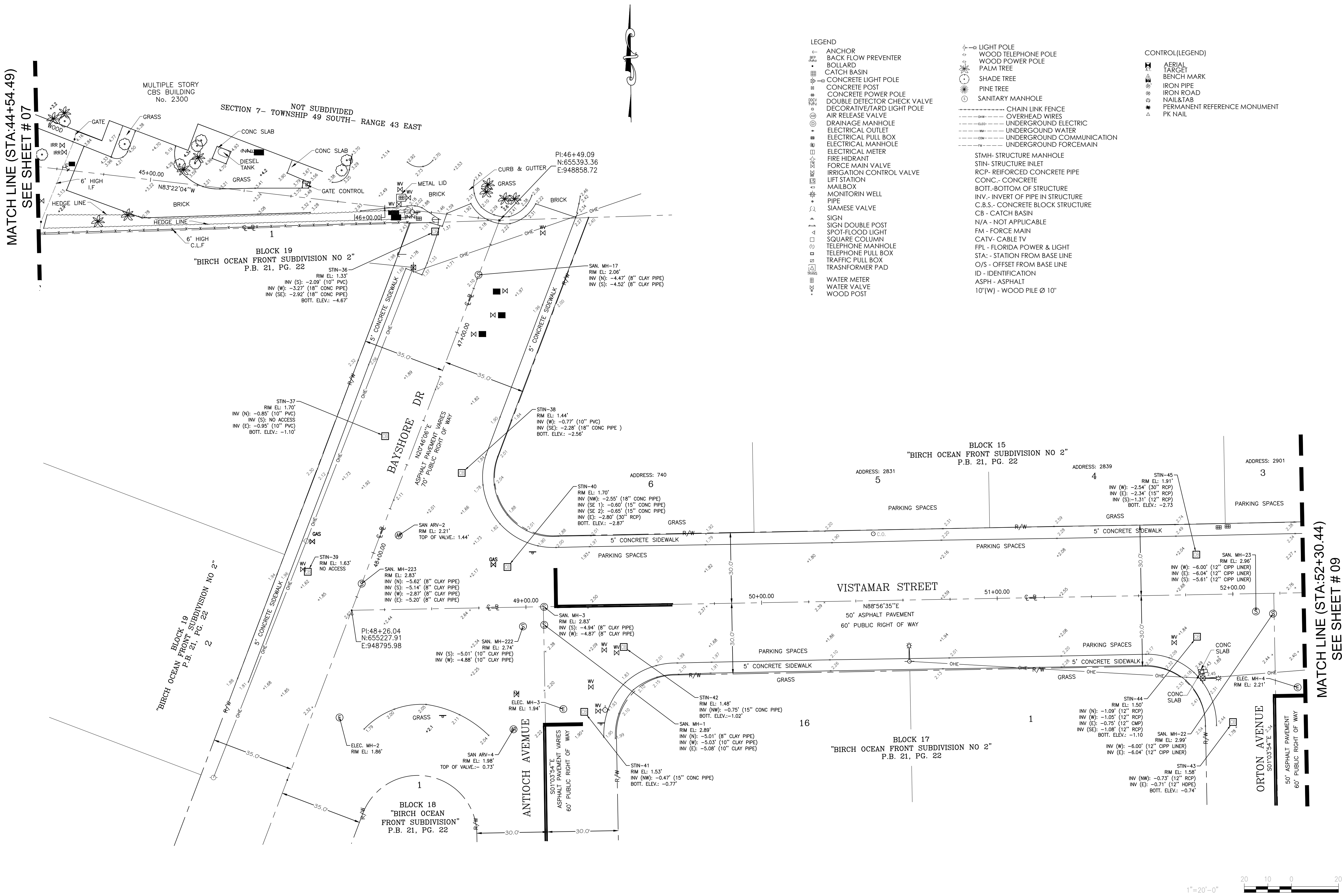
PROJECT #
BAYSHORE 18-INCH FM

NE 19TH STREET

SHEET NO. 07 **OF** 9

TOTAL: 9

CAD FILE: 18218.0.00 TOPOGRAPHIC
DRAWING FILE NO. 18218.0.00



PLOT DATE: 9/24/2018 11:06 AM BY: CSUARZREF=

File = L:\18218 18-Inch, Bayshore Ft. Lauderdale FL\Outbound\TOPO -- ROUTE SURVEY\09--24--18\18218.0.00 Topographic Survey 88 Saved by AZAHEL Save date = 9/24/2018 10:48 AM

- LEGEND
- ANCHOR
 - BACK FLOW PREVENTER
 - BOLLARD
 - CATCH BASIN
 - CONCRETE LIGHT POLE
 - CONCRETE POST
 - CONCRETE POWER POLE
 - DOUBLE DETECTOR CHECK VALVE
 - AIR RELEASE VALVE
 - ELECTRICAL OUTLET
 - ELECTRICAL PULL BOX
 - ELECTRICAL MANHOLE
 - ELECTRICAL METER
 - FIRE HYDRANT
 - FORCE MAIN VALVE
 - IRRIGATION CONTROL VALVE
 - LIFT STATION
 - MAILBOX
 - MONITORIN WELL
 - PIPE
 - SIAMESE VALVE
 - SIGN
 - SIGN DOUBLE POST
 - SPOT-FLOOD LIGHT
 - SQUARE COLUMN
 - TELEPHONE MANHOLE
 - TELEPHONE PULL BOX
 - TRAFFIC PULL BOX
 - TRANSFORMER PAD
 - WATER METER
 - WATER VALVE
 - WOOD POST
- CONTROL(LEGEND)
- AERIAL TARGET
 - BENCH MARK
 - IRON PIPE
 - NAIL&TAB
 - PERMANENT REFERENCE MONUMENT
 - PK NAIL
- STMH- STRUCTURE MANHOLE
STIN- STRUCTURE INLET
RCP- REINFORCED CONCRETE PIPE
CONC.- CONCRETE
BOTT.-BOTTOM OF STRUCTURE
INV.- INVERT OF PIPE IN STRUCTURE
C.B.S.- CONCRETE BLOCK STRUCTURE
CB - CATCH BASIN
N/A - NOT APPLICABLE
FM - FORCE MAIN
CATV- CABLE TV
FPL - FLORIDA POWER & LIGHT
STA- STATION FROM BASE LINE
O/S - OFFSET FROM BASE LINE
ID - IDENTIFICATION
ASPH - ASPHALT
10'(W) - WOOD PILE Ø 10"

SURVEYOR
EDUARDO SUAREZ
P.L. REG. NO: 6313
MAR 07/19/2016

DATE: 07/16/2018
DRAWN BY: SF-AC
DESIGNED BY: SCALE: 1"=20'
CHECKED BY: XX
FIELD BOOK: EFB

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

REVISIONS		DESCRIPTION	
NO.	DATE	BY	DESCRIPTION

PROJECT #
BAYSHORE 18-INC FM
NE 19TH STREET

SHEET NO. 08 OF 9

TOTAL: 9
CAD FILE: 18218.0.00 TOPOGRAPHIC
DRAWING FILE NO. 18218.0.00

NOT FOR CONSTRUCTION OR BID




NOT FOR CONSTRUCTION OR BID

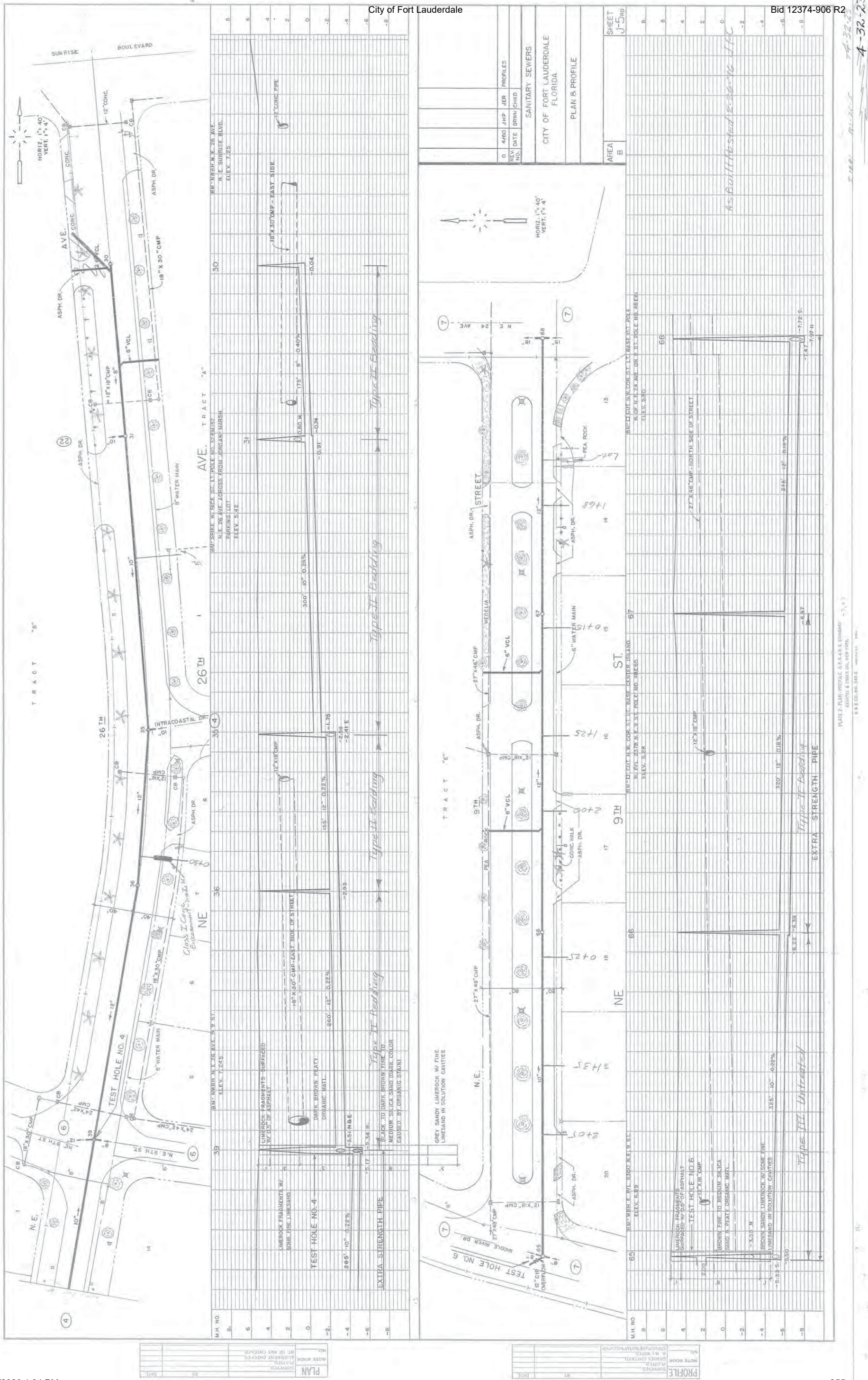
5/8/2020 1:34 PM

EXHIBIT E

EXISTING UNDERGROUND UTILITY INFORMATION



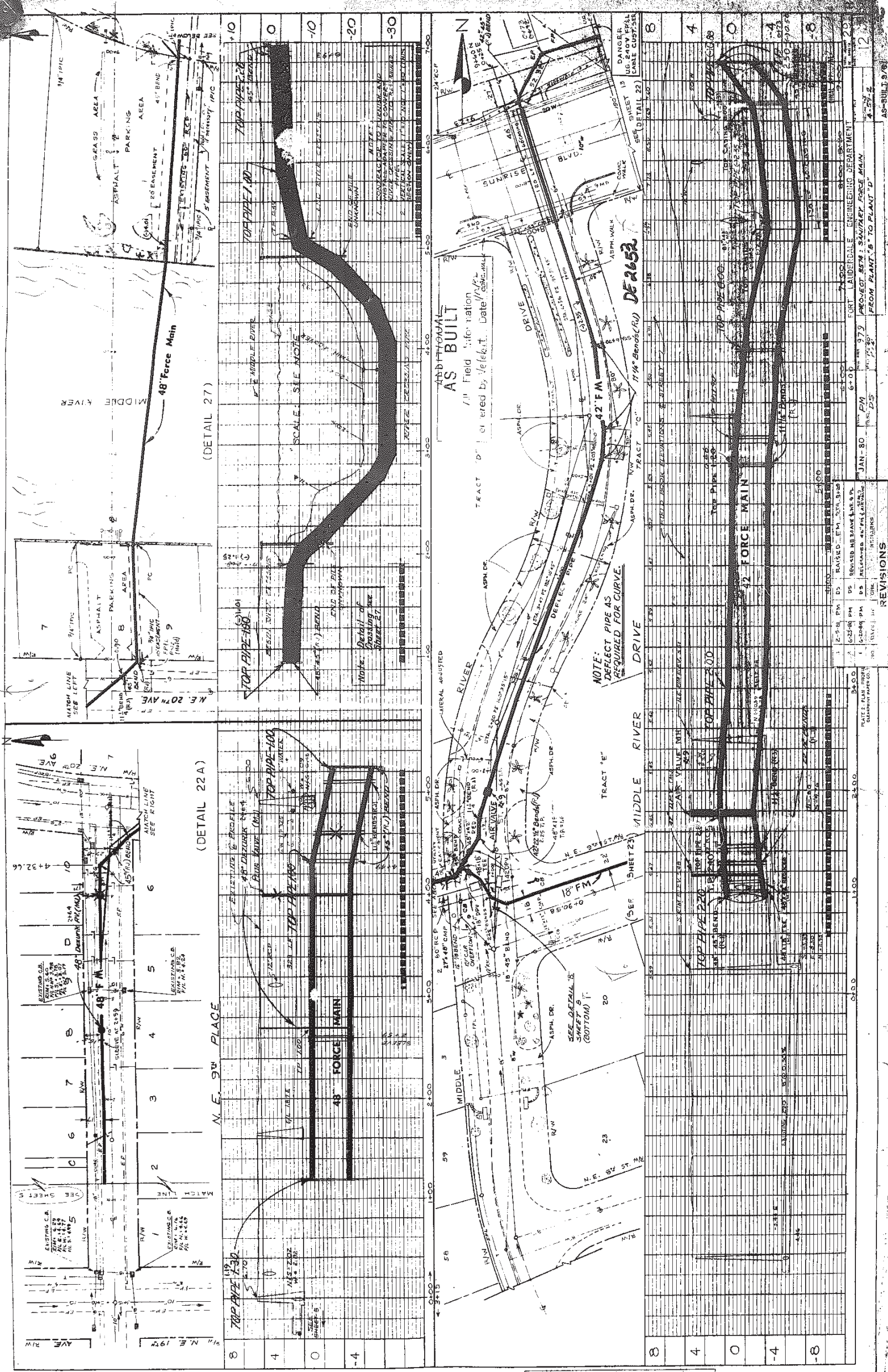
PROJECT #10698						CITY OF FORT LAUDERDALE		DRAWN BY:	SCALE: 1"=20'	FINAL APPROVAL
SUNRISE KEY/INTRACOASTAL INFRASTRUCTURE IMPROVEMENTS WATER MAIN REPLACEMENT PLAN								R.G.		
								DESIGNED BY:	DATE:	FLA. REG. ENG. NO. 50588
								R.G.	02/04/05	
								CHECKED BY:	FIELD BOOK:	
								T.J.H.		







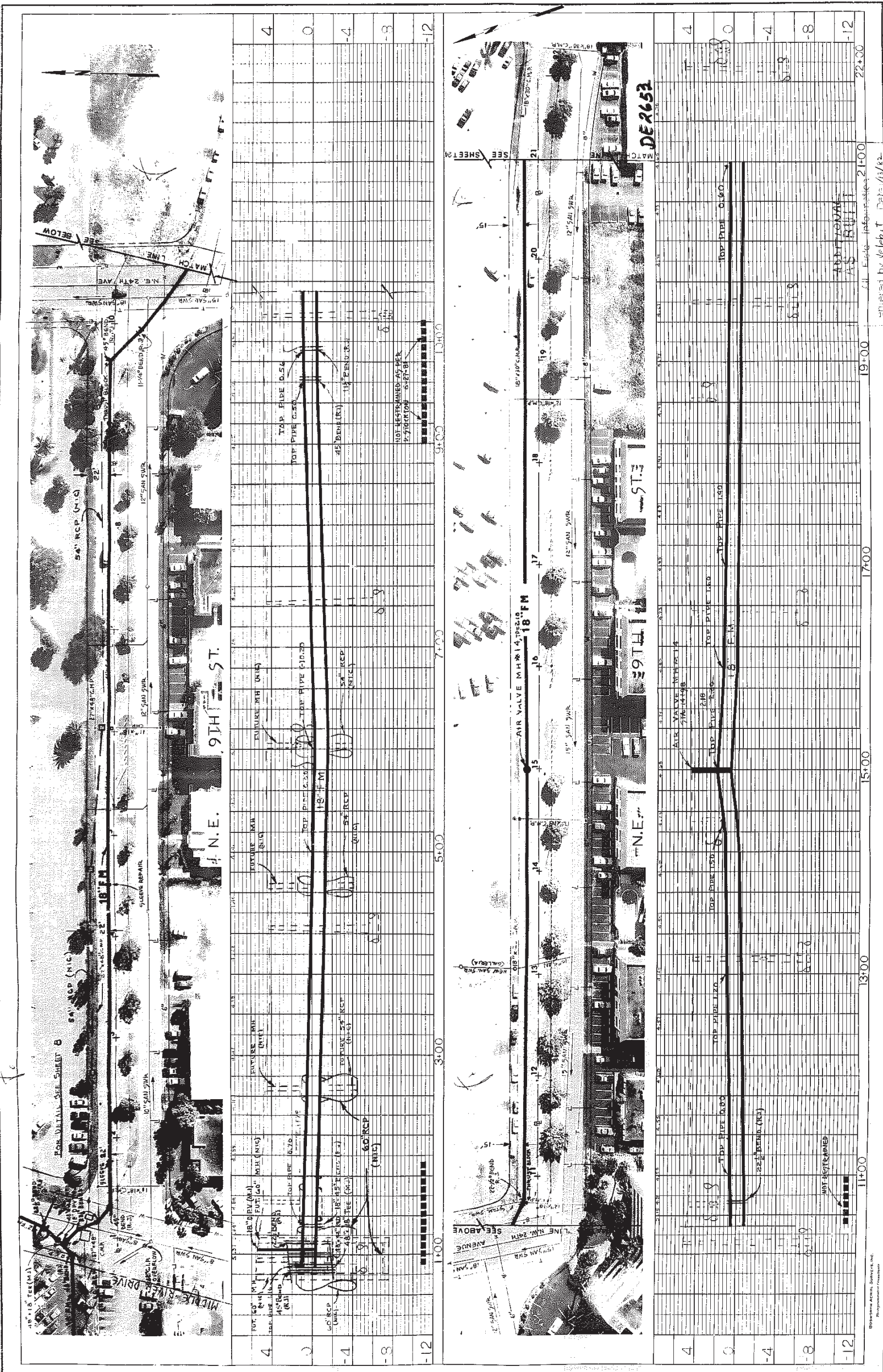
p. 358

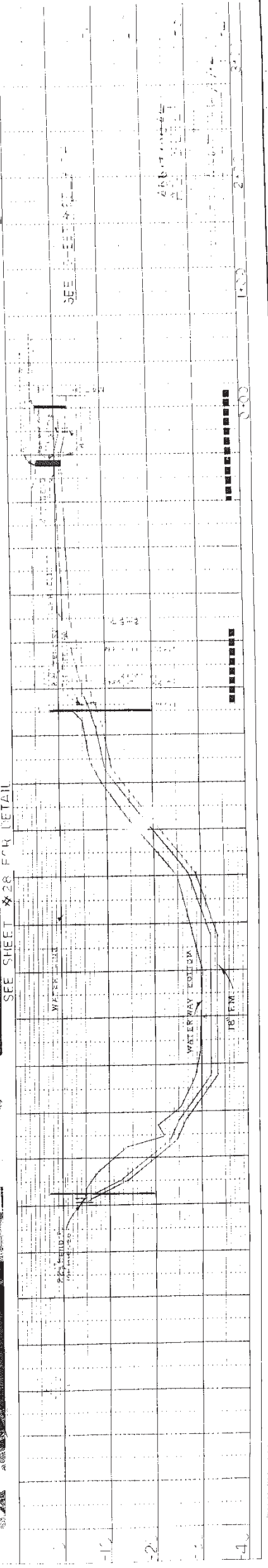
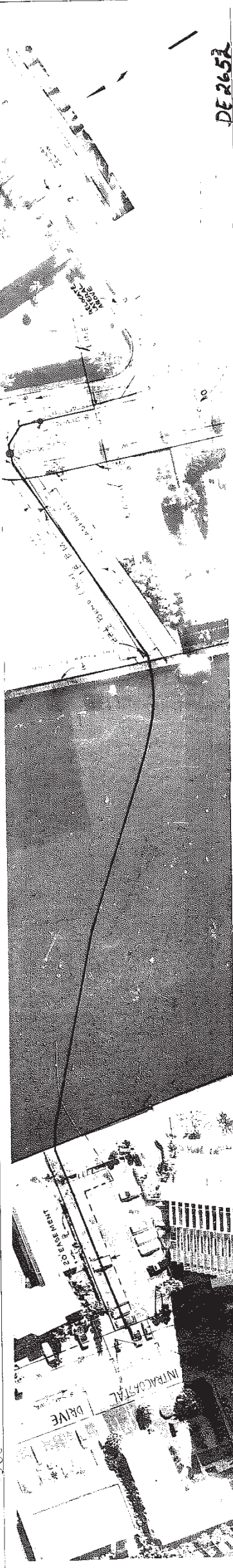
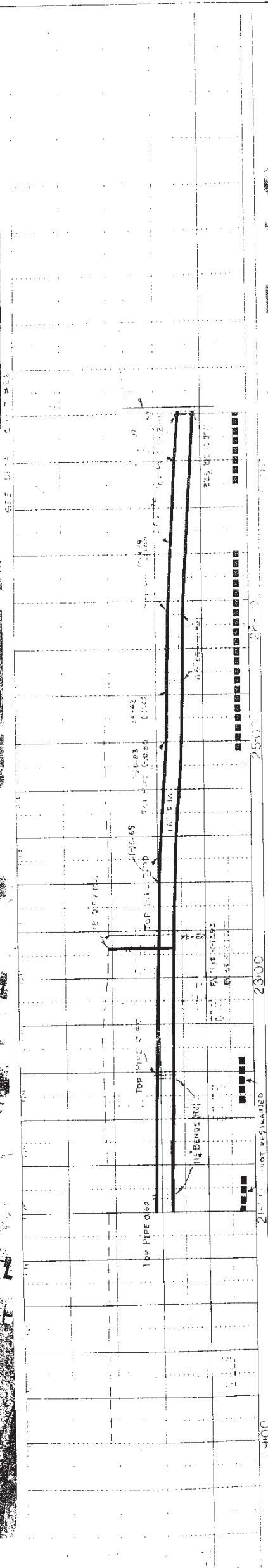
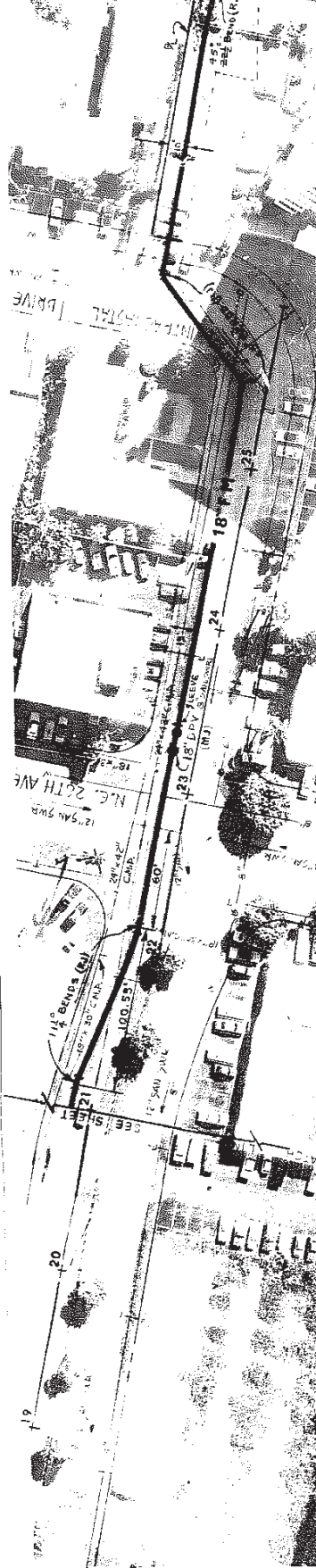




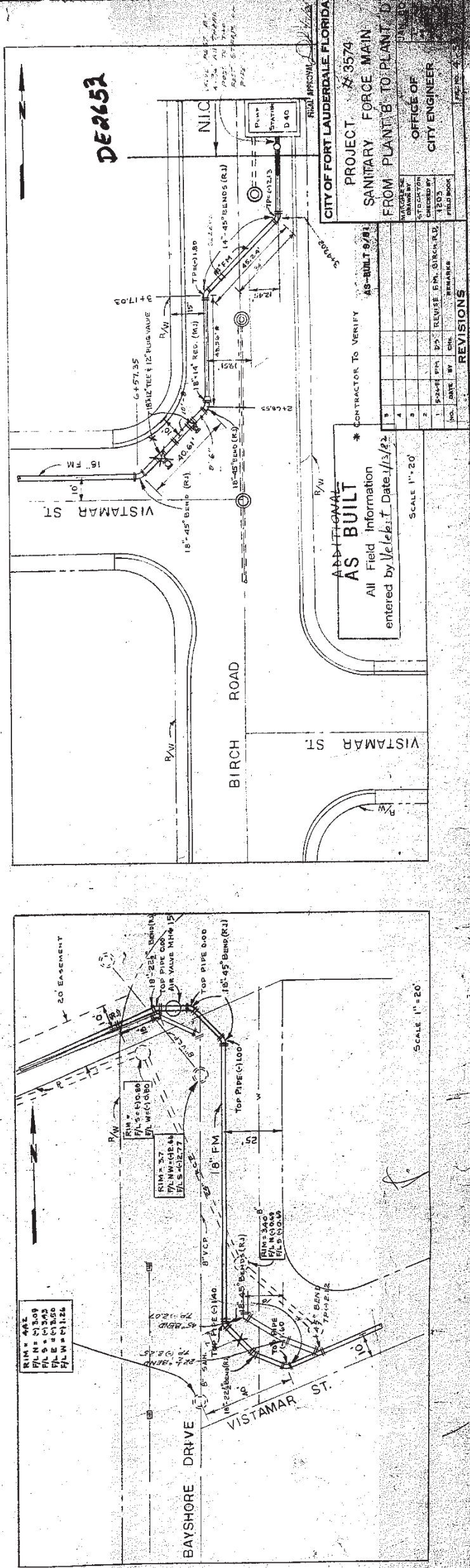
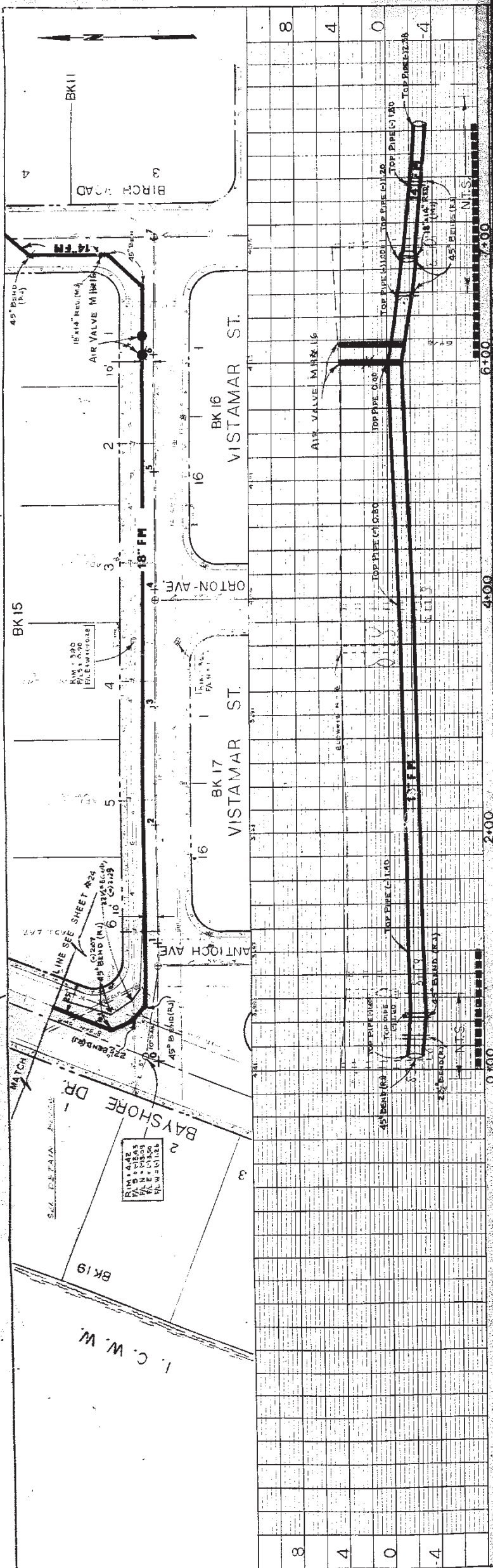
ADDITIONAL
AS BUILT
All Field Information
entered by Vehicle Date 1/13/82

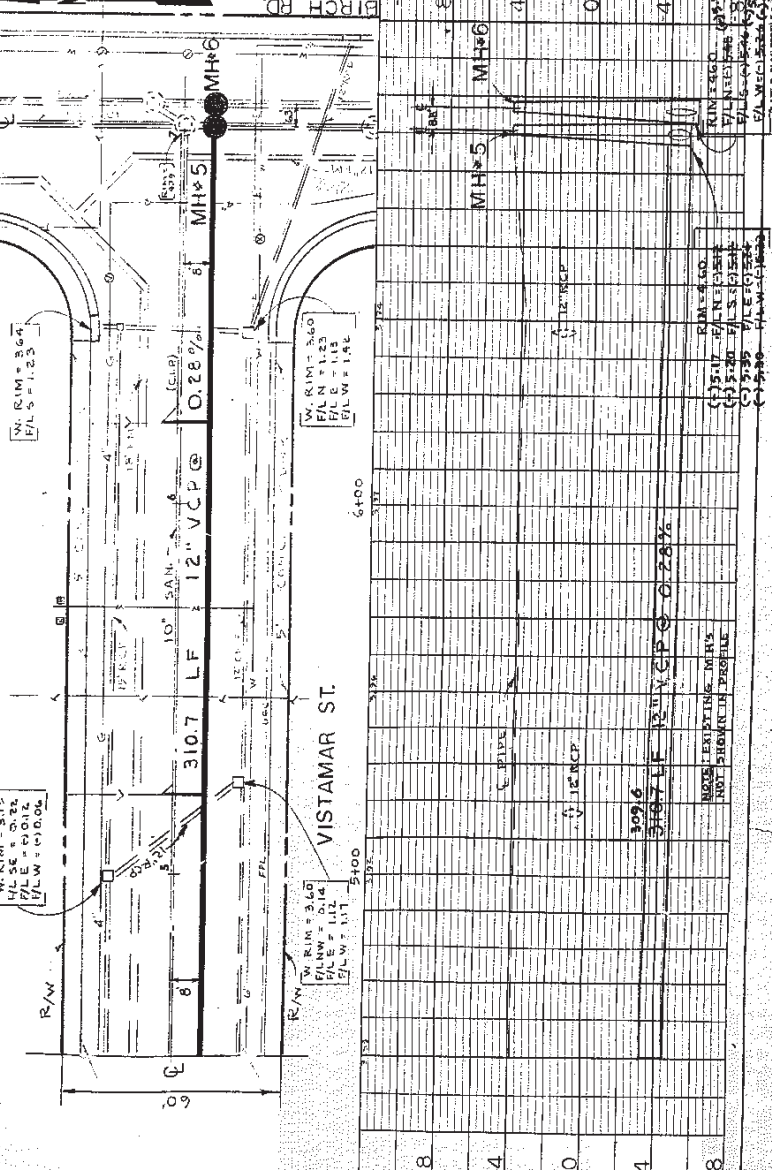
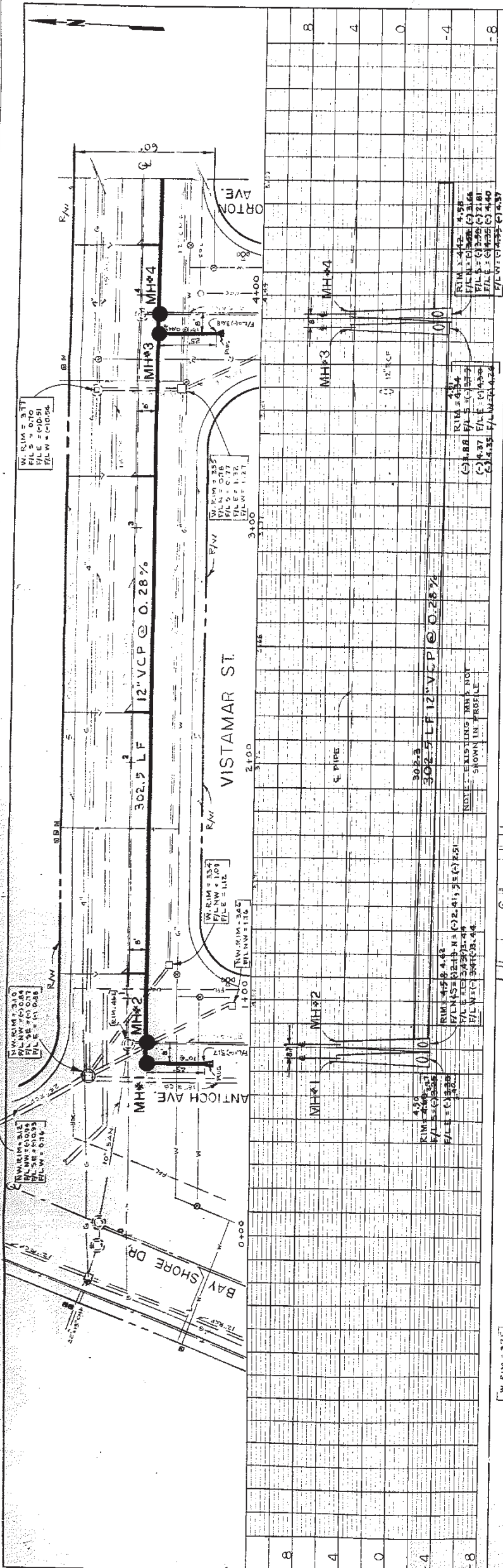
[illegible]





REVISIONS	
NO.	DESCRIPTION
1	1.8 HRS. T.M. D.S. ALIGNED WITH ELEVATION
2	2.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
3	3.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
4	4.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
5	5.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
6	6.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
7	7.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
8	8.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
9	9.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
10	10.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
11	11.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
12	12.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
13	13.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
14	14.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
15	15.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
16	16.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
17	17.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
18	18.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
19	19.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
20	20.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
21	21.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
22	22.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
23	23.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION
24	24.0 HRS. T.M. D.S. ALIGNED WITH ELEVATION





DE2652

AS BUILT

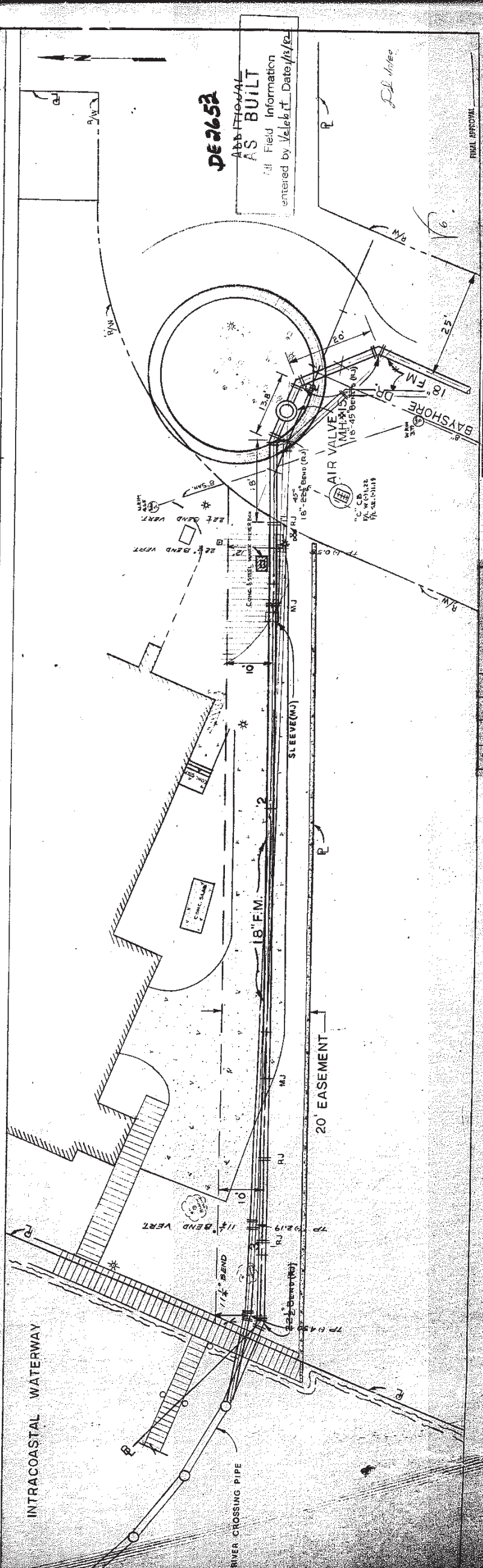
Entered by: [Name] Date: [Date]

W. BUILT: 9/1/92 E. B. 1252

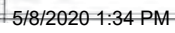
CITY OF FORT LAUDERDALE ENGINEERING DEPARTMENT

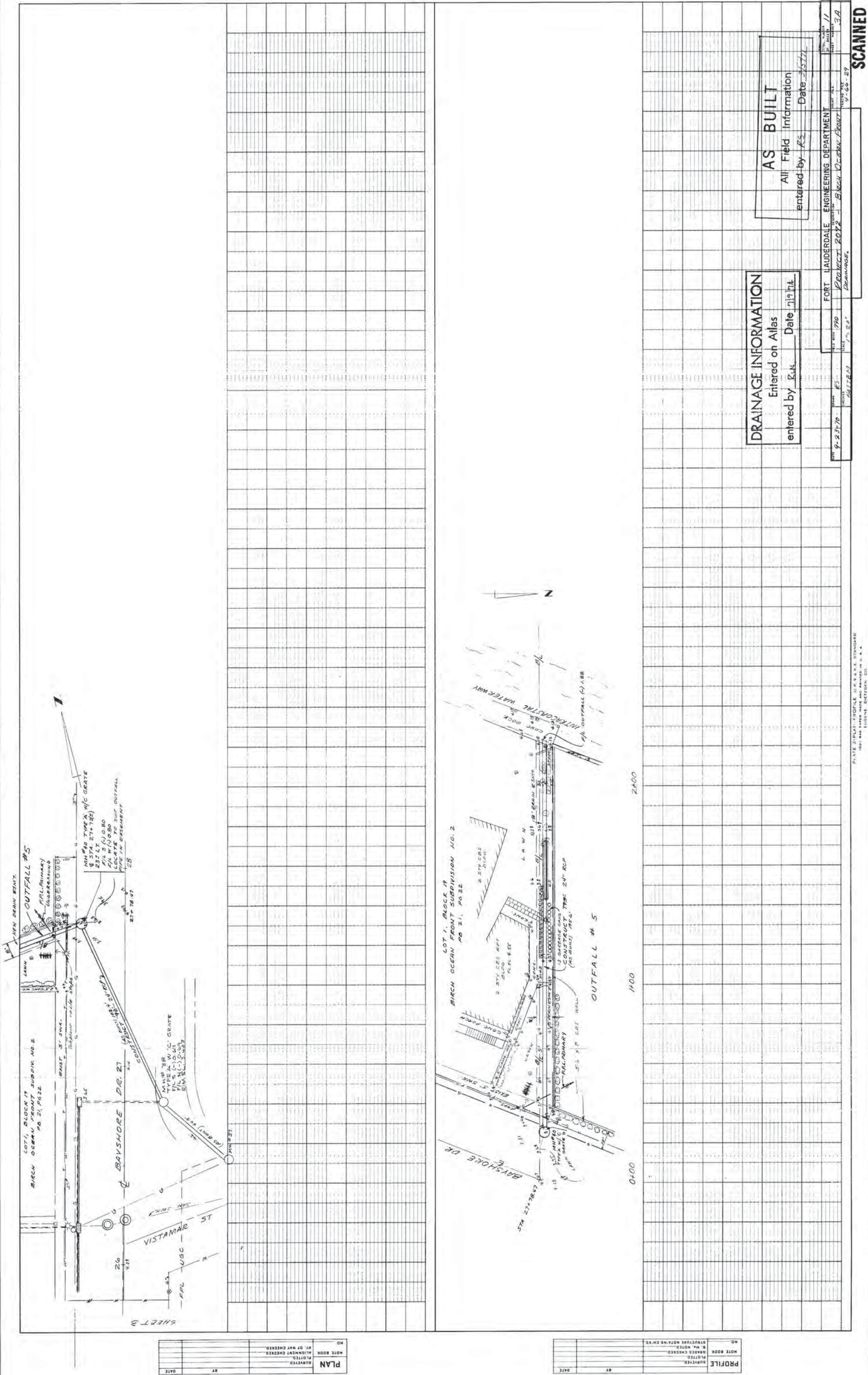
PLANT B TO PLAN D

DESIGNED BY: DAVE STANTON, P.E.

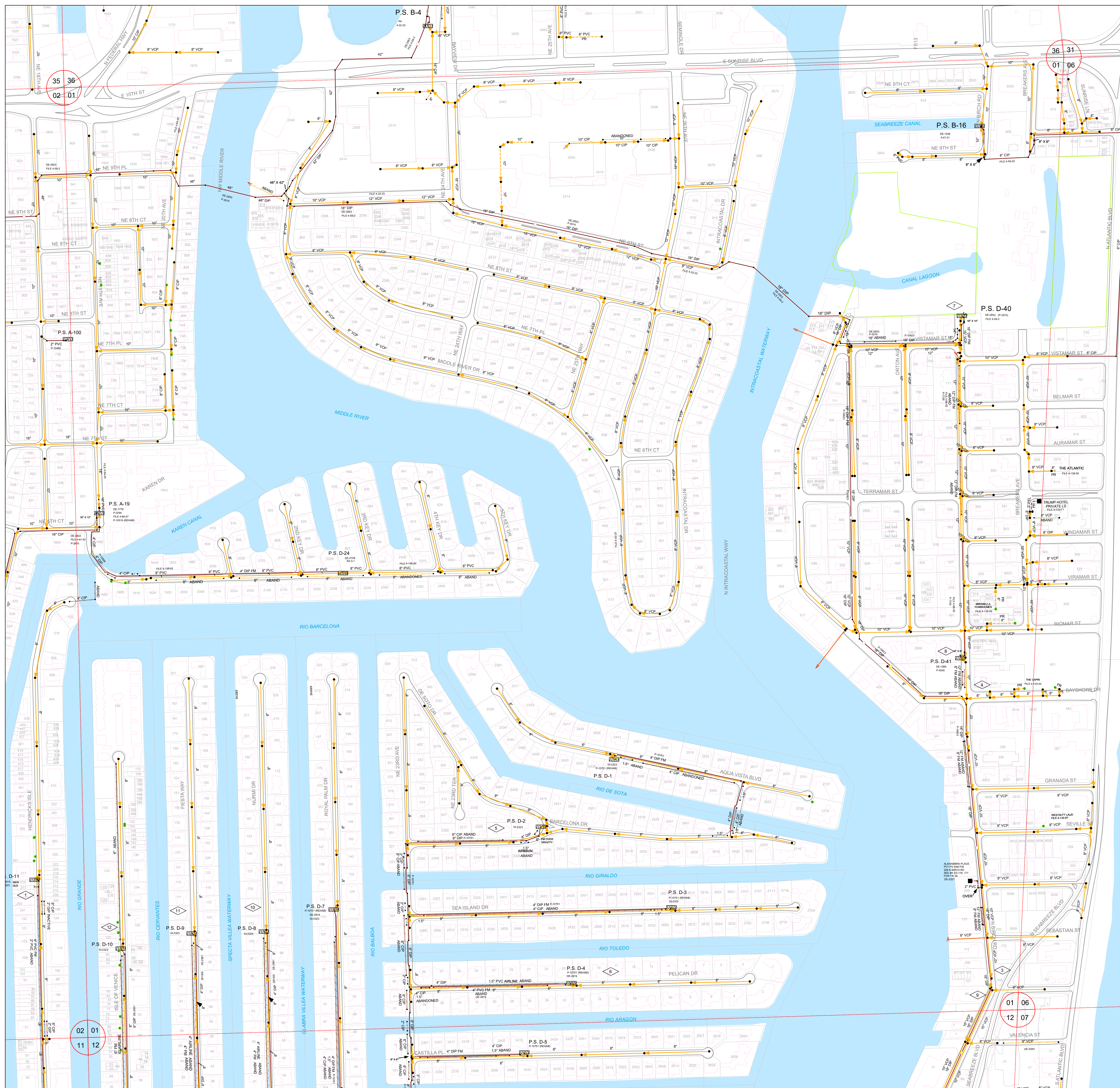


1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
										JAN - 20										MARCH 15										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3										SEPT 5										NOV 7										JAN 9										MAR 11										MAY 13										JULY 15										SEPT 17										NOV 19										JAN 21										MAR 23										MAY 25										JULY 27										SEPT 29										NOV 31										JAN 3										MAR 5										MAY 7										JULY 9										SEPT 11										NOV 13										JAN 15										MAR 17										MAY 19										JULY 21										SEPT 23										NOV 25										JAN 27										MAR 29										MAY 31										JULY 3									

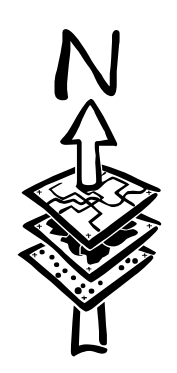




EXISTING UNDERGROUND UTILITY INFORMATION: CITY ATLAS



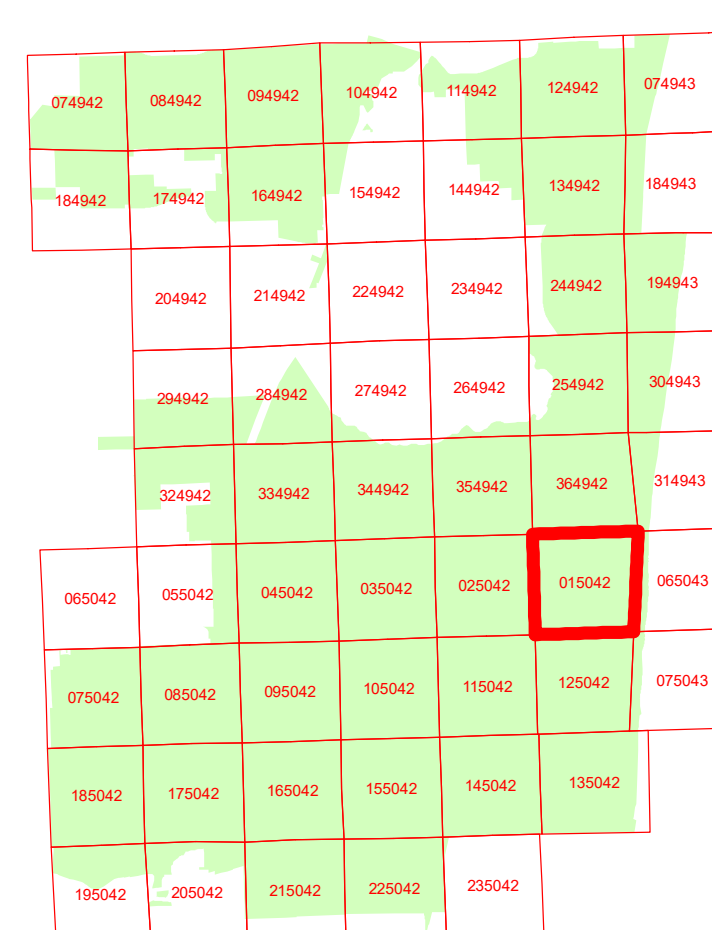
City of Fort Lauderdale Sewer Atlas Sheet



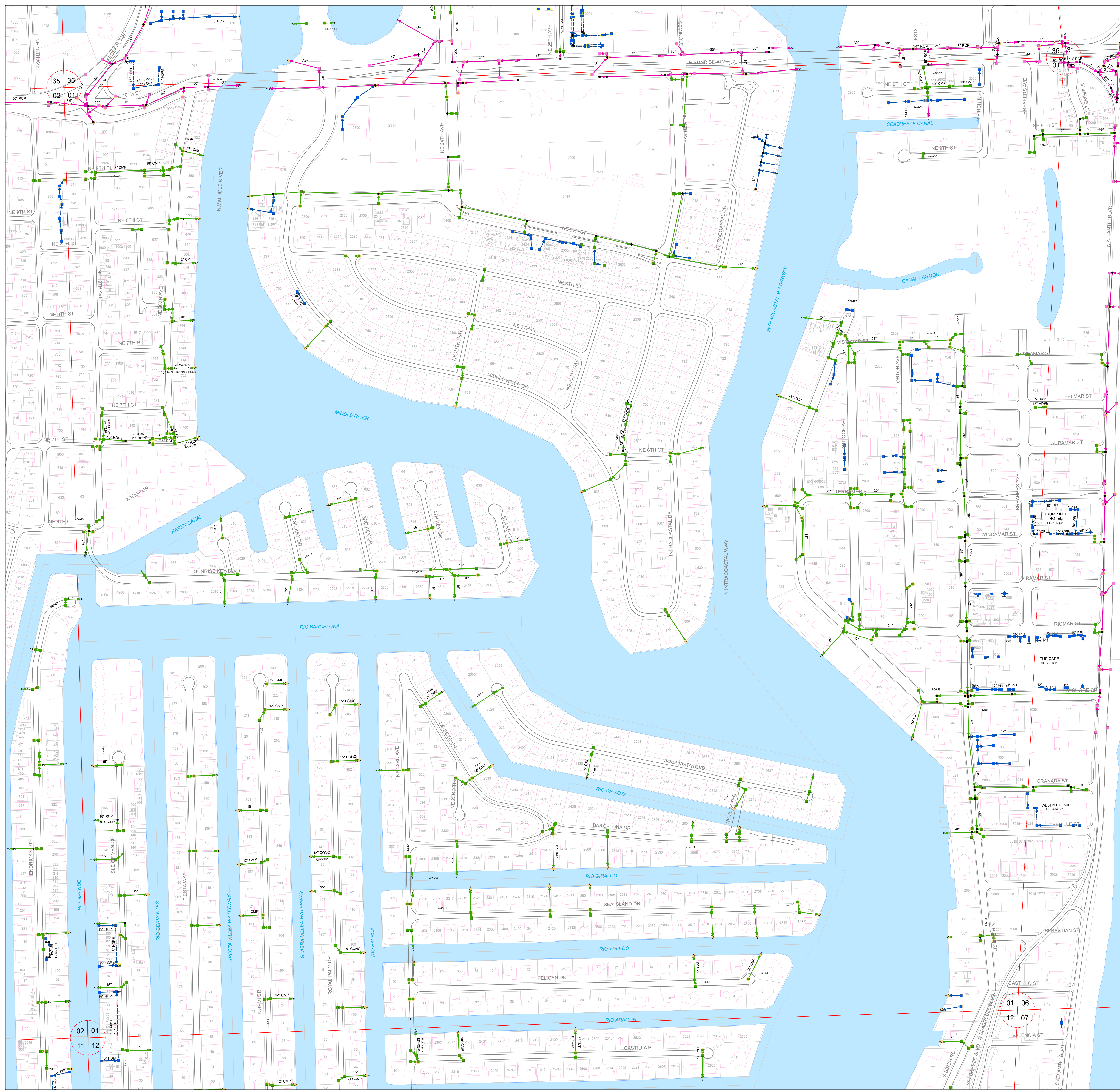
0 200 feet

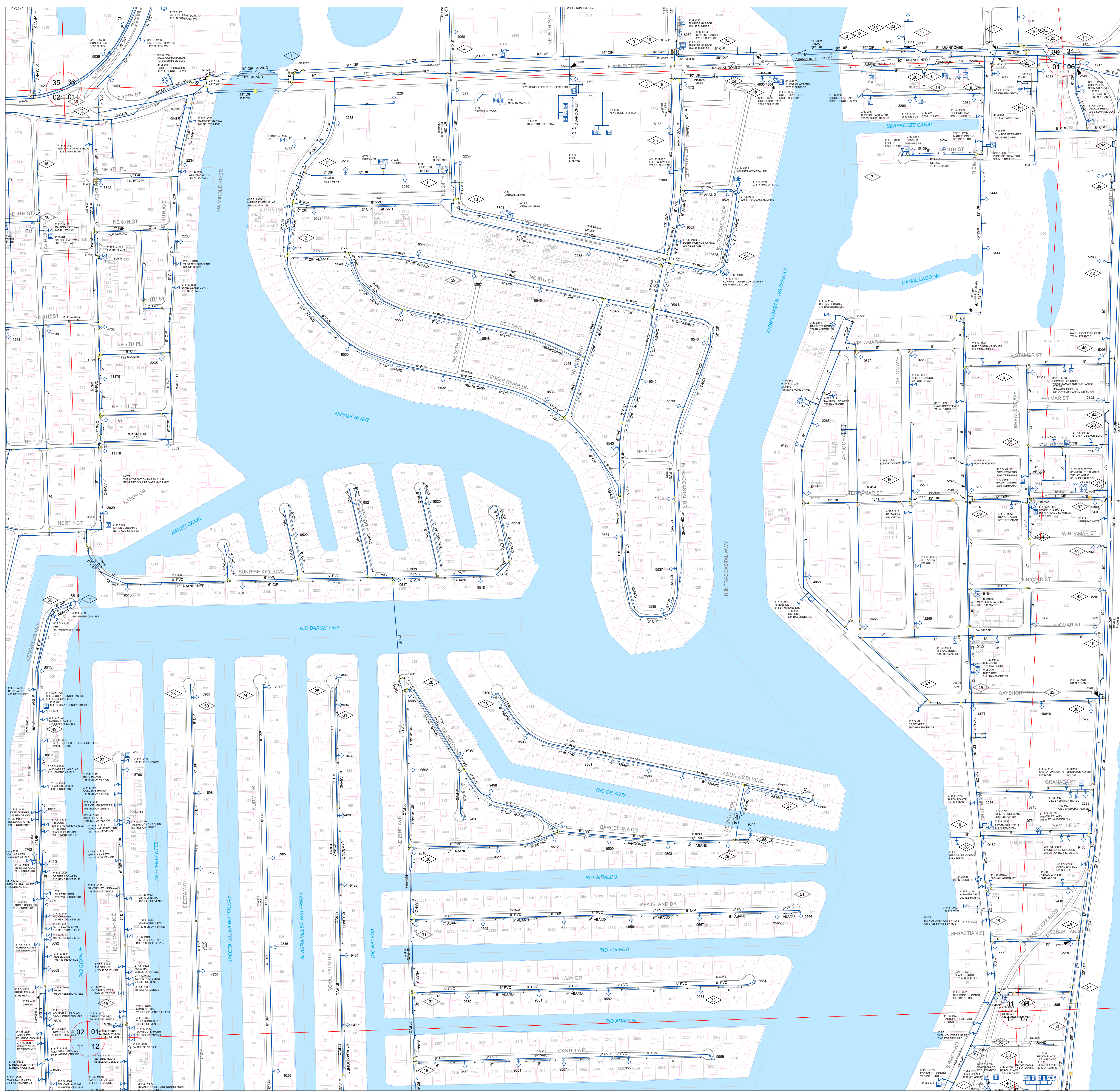
LEGEND

- | | | | | | |
|--|-------------------------|--|------------------------------|--|--|
| | Gravity Main | | Valve | | Emergency Overflow Point |
| | Private Gravity Main | | Meter | | Reducer |
| | Force Main | | Air Release Manhole | | Fitting |
| | Private Force Main | | Plant | | Cleanout |
| | Effluent Line | | Manhole | | Offset |
| | Air Line | | Pump Station | | Plug |
| | Emergency Overflow Line | | Private Pump Station | | Casing |
| | Sludge Line | | Well | | Detail |
| | Abandoned | | GPS Captured Halo (Woolpert) | | Broward County
Sewer Service |
| | | | GPS Captured Halo (City) | | Tamarac
Sewer Service |
| | | | | | Sewer Areas
Eligible for Connection |

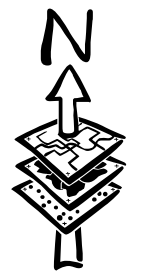


Section 015042





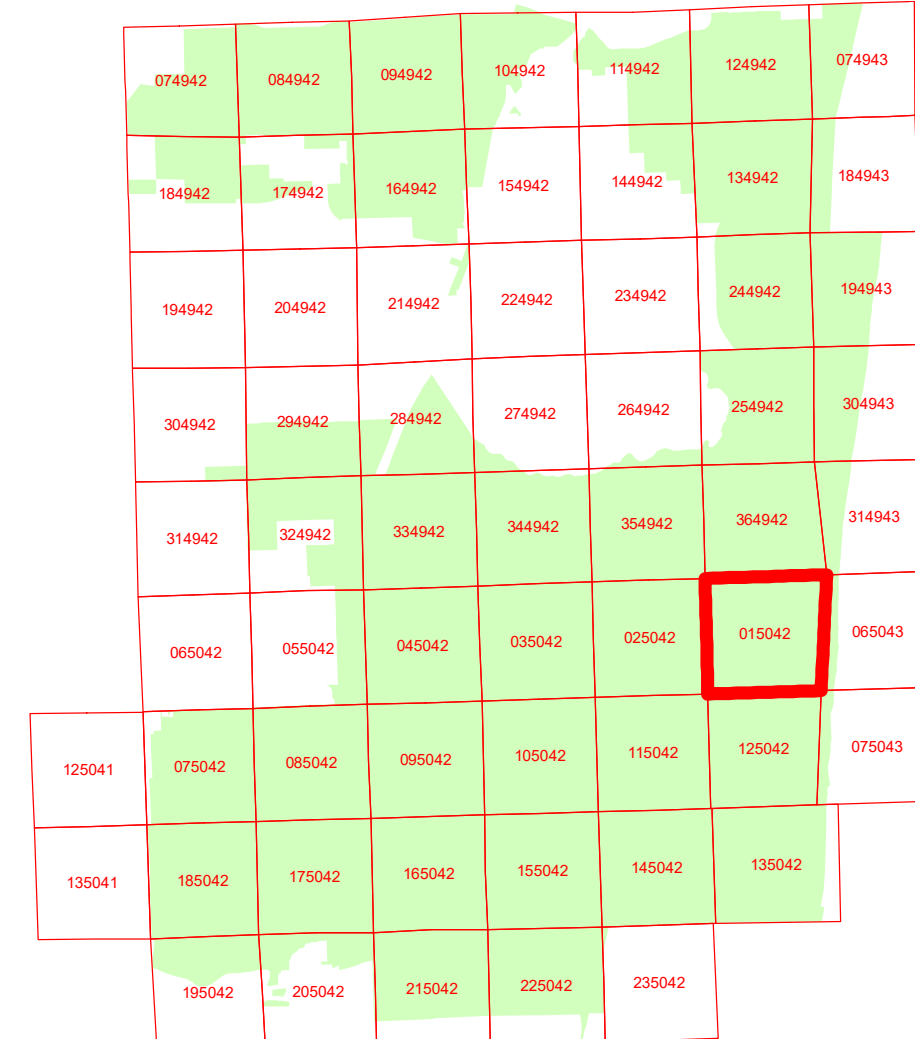
City of Fort Lauderdale Water Atlas Sheet



0 200 feet

LEGEND

- | | | |
|--------------------------------|-------------------------|-------------------|
| ✕ Valve | Water Distribution Main | ■ Production Well |
| ⊠ Meter | Raw Water Main | ● Monitoring Well |
| ⚡ Fire Service | Abandoned | □ Plant |
| ○ Air Release Valve Manhole | Proposed | ➤ Reducer |
| ⚡ Fire Hydrant | Inactive | ■ Fitting |
| ○ Storage Tank | Owner Other than City | ⤵ Offset |
| ⚡ Flushing Device | Casing Exists | — Plug |
| ● GPS Captured Halo (Woolpert) | | ◇ Detail |
| ● GPS Captured Halo (City) | | |
| ■ Broward County Water Service | | |



Section 015042

EXISTING UNDERGROUND UTILITY INFORMATION: SUNSHINE 811 DESIGN TICKETS

Ticket : 142812637 Rev:000 Taken: 05/22/18 16:14ET

State: FL Cnty: BROWARD GeoPlace: FORT LAUDERDALE
 CallerPlace: FORT LAUDERDALE
 Subdivision:

Address :
 Street :

Locat: LOCATE WITHIN THE RIGHT OF WAY AND EASEMENTS.

:

Remarks : IN RESPONSE TO RECEIPT OF A DESIGN TICKET, SSOCOF PROVIDES THE ORIGINATOR OF THE DESIGN TICKET WITH A LIST OF SSOCOF MEMBERS IN THE VICINITY OF THE DESIGN PROJECT. SSOCOF DOES NOT NOTIFY SSOCOF MEMBERS OF THE RECEIPT BY SSOCOF OF A DESIGN TICKET. IT IS THE SOLE RESPONSIBILITY OF THE DESIGN ENGINEER TO CONTACT SSOCOF MEMBERS TO REQUEST INFORMATION ABOUT THE LOCATION OF SSOCOF MEMBERS' UNDERGROUND FACILITIES. SUBMISSION OF A DESIGN TICKET WILL NOT SATISFY THE REQUIREMENT OF CHAPTER 556, FLORIDA STATUTES, TO NOTIFY SSOCOF OF AN INTENT TO EXCAVATE OR DEMOLISH. THAT INTENT MUST BE MADE KNOWN SPECIFICALLY TO SSOCOF IN THE MANNER REQUIRED BY LAW. IN AN EFFORT TO SAVE TIME ON FUTURE CALLS, SAVE YOUR DESIGN TICKET NUMBER IF YOU INTEND TO BEGIN EXCAVATION WITHIN 90 DAYS OF YOUR DESIGN REQUEST. THE DESIGN TICKET CAN BE REFERENCED , AND THE INFORMATION ON IT CAN BE USED TO SAVE TIME WHEN YOU CALL IN THE EXCAVATION REQUEST.

*** LOOKUP BY MANUAL ***

:

Grids : 2607A8006B 2607A8006C 2608D8006A 2608D8006B 2608D8006C
 Grids : 2608D8007D

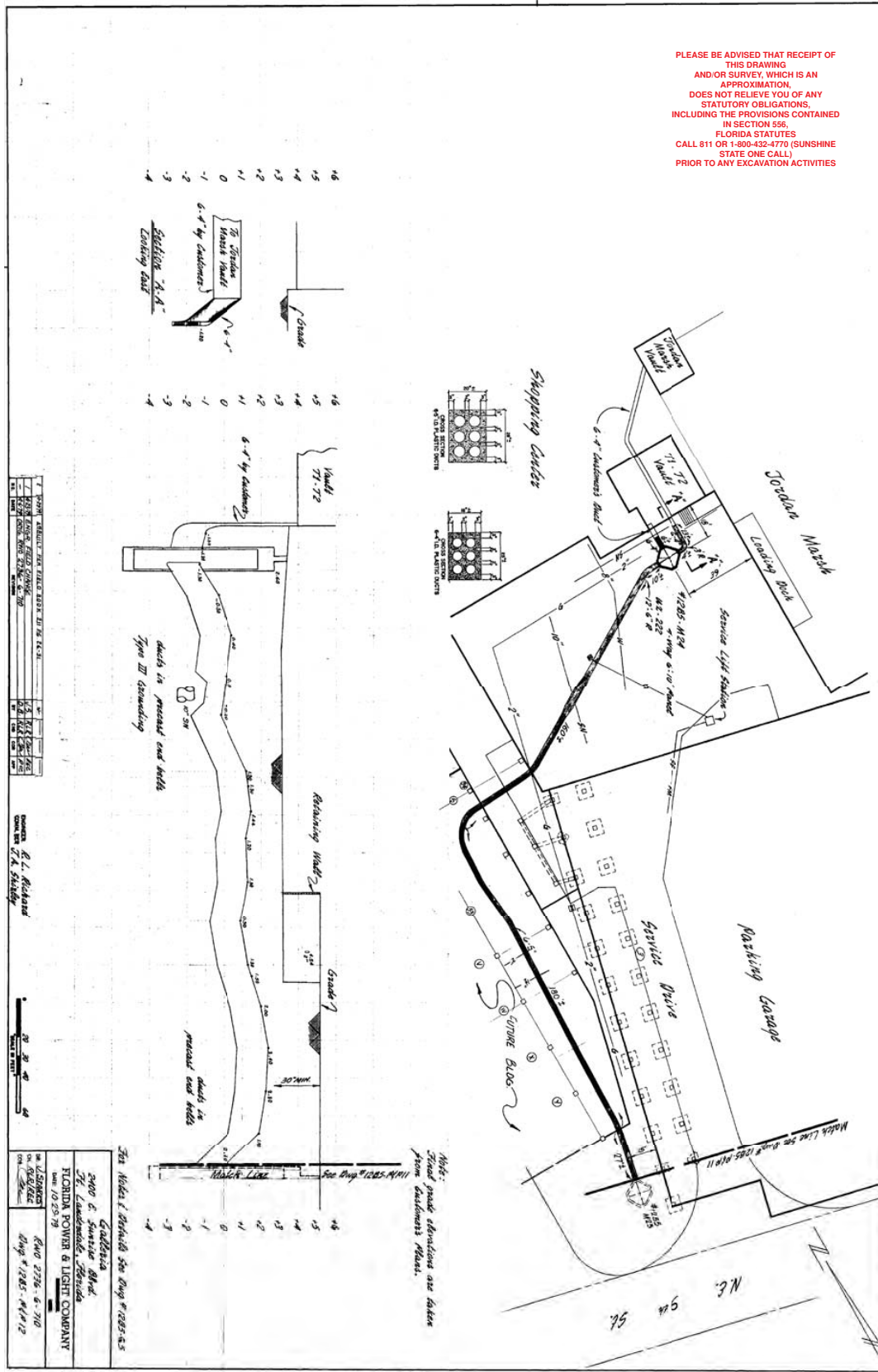
Work date: 05/22/18 Time: 17:07ET Hrs notc: 000 Category: 6 Duration: 04 MONS
 Due Date : 05/24/18 Time: 23:59ET Exp Date : 06/21/18 Time: 23:59ET
 Work type: WATER / FORCE MAIN INSTALLATION Boring: Y White-lined: U
 Ug/Oh/Both: U Machinery: Y Depth: 50 Permits: Y N/A
 Done for : FORT LAUDERDALE PUBLIC WORKS DEPARTMENT

Company : CHEN MOORE AND ASSOCIATES Type: OTHR
 Co addr : 500 W CYPRESS CREEK RD
 Co addr2: SUITE 630
 City : FT LAUDERDALE State: FL Zip: 33309
 Caller : DAVID CASTRO Phone: 954-730-0707
 Contact : DAVID CASTRO Phone:
 BestTime: 8AM-5PM
 Email : DCASTRO@CHENMOORE.COM

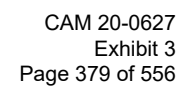
Submitted: 05/22/18 16:14ET Oper: DAV Chan: WEB
 Mbrs : BC1338 CC1279 CFL910 FPLBRO FPLFOB FPLSUB HC1660 LS1104 PGSND SB2186
 Mbrs : SBF23

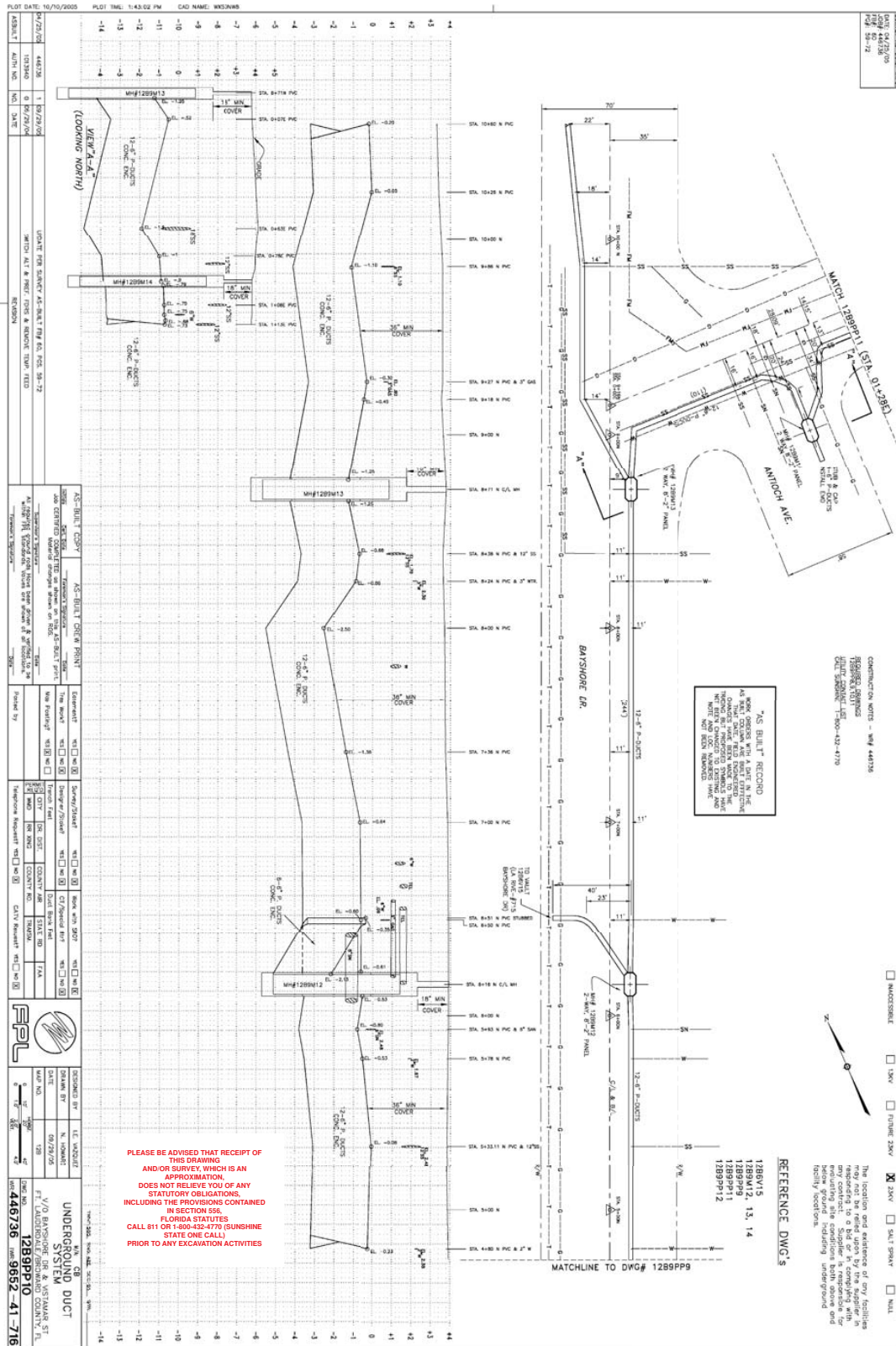
Service Area Code	Service Area Name	Contact	Phone Numbers	Utility Type
BC1338	BROWARD COUNTY TRAFFIC ENGINEERING	ROBERT BLOUNT	Day: (954) 847 - 2745 Alt: (954) 261 - 4427	WATER,SEWER,TRAFFIC
CC1279	COMCAST CABLE	LEONARD MAXWELL-NEWBOLD	Day: (954) 447 - 8405 Alt: (954) 444 - 5113	CATV & FIBER

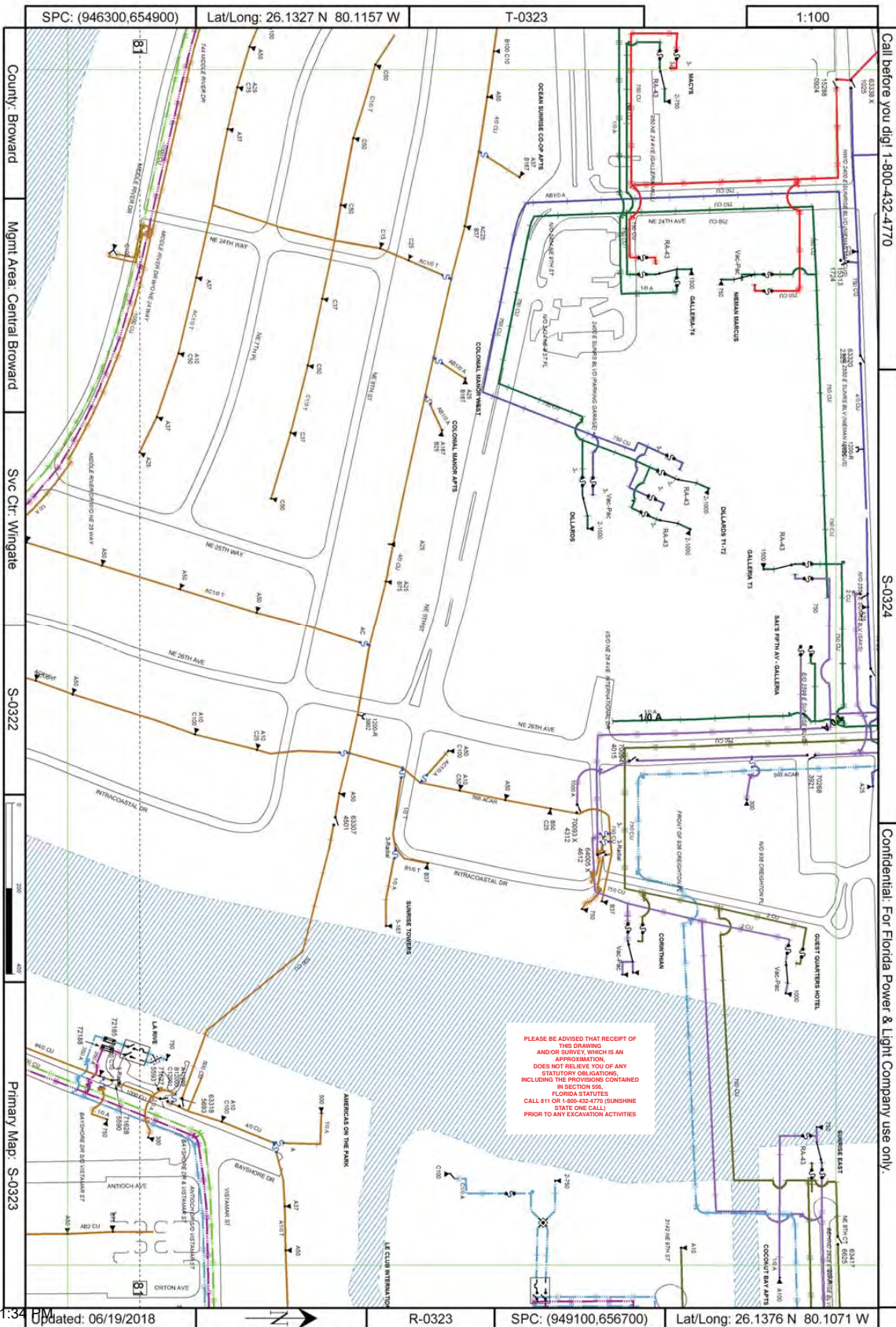
CFL910	CITY OF FT LAUDERDALE	CRAIG BARRETT	Day: (954) 828 - 5875	WATER AND SEWER
FPLBRO	FLORIDA POWER & LIGHT--BROWARD	EDGAR AGUILAR	Day: (386) 586 - 6403	ELECTRIC
FPLFOB	CROWN CASTLE FIBER	DANNY HASKETT	Day: (786) 610 - 7073 Alt: (786) 246 - 7827	FIBER
FPLSUB	FLORIDA POWER & LIGHT - SUBAQUEOUS	JOEL BRAY	Day: (386) 586 - 6403	ELECTRIC
HC1660	HOTWIRE COMMUNICATIONS	WALTER DAVILA	Day: (954) 699 - 0900	FIBER, TELEPHONE, CATV, COAX
PGSND	TECO PEOPLES GAS SOUTH FLORIDA	JOAN DOMNING	Day: (813) 275 - 3783	GAS
SBF23	A T & T/ DISTRIBUTION	DINO FARRUGGIO	Day: (561) 997 - 0240	TELEPHONE

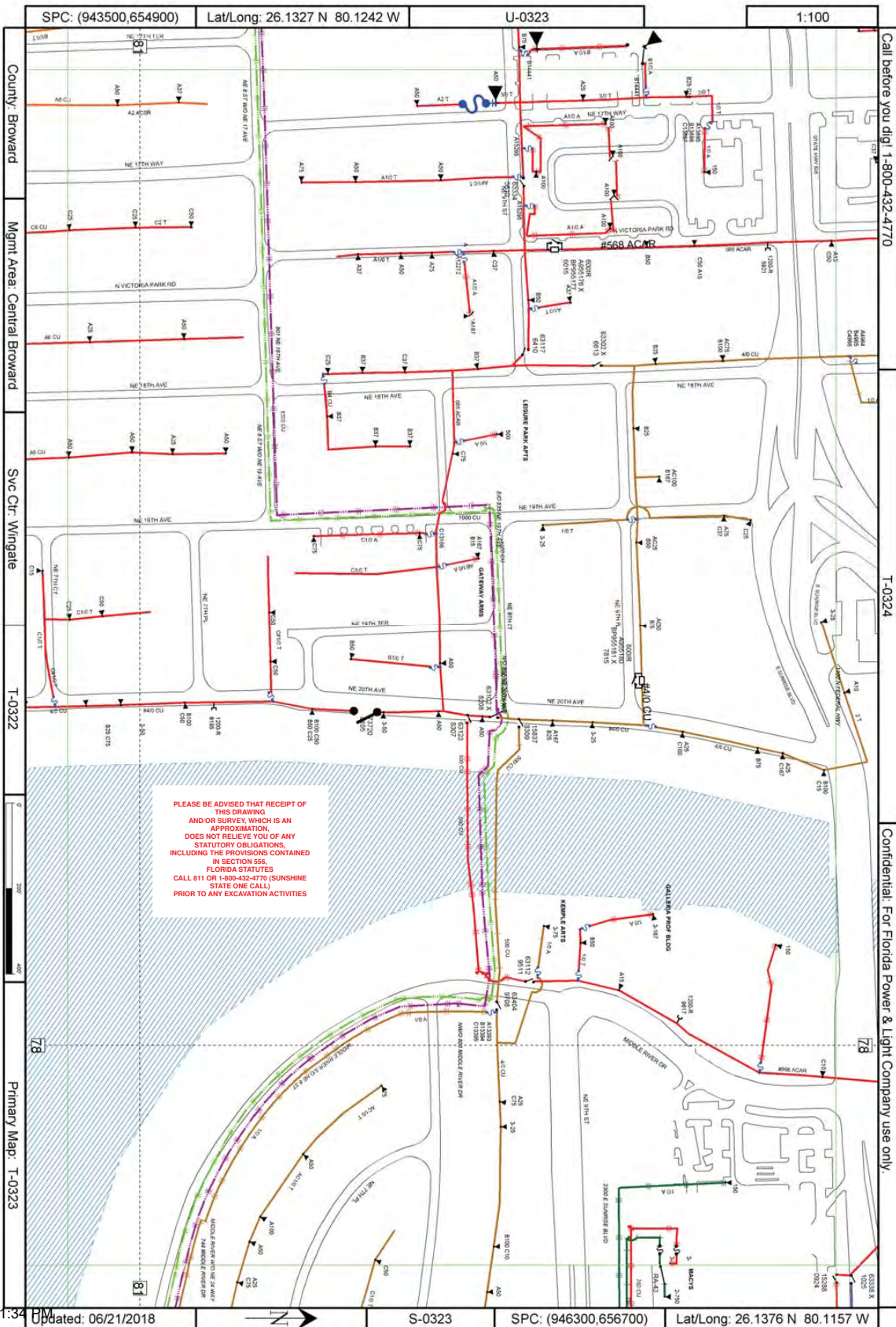








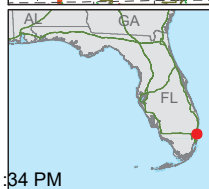
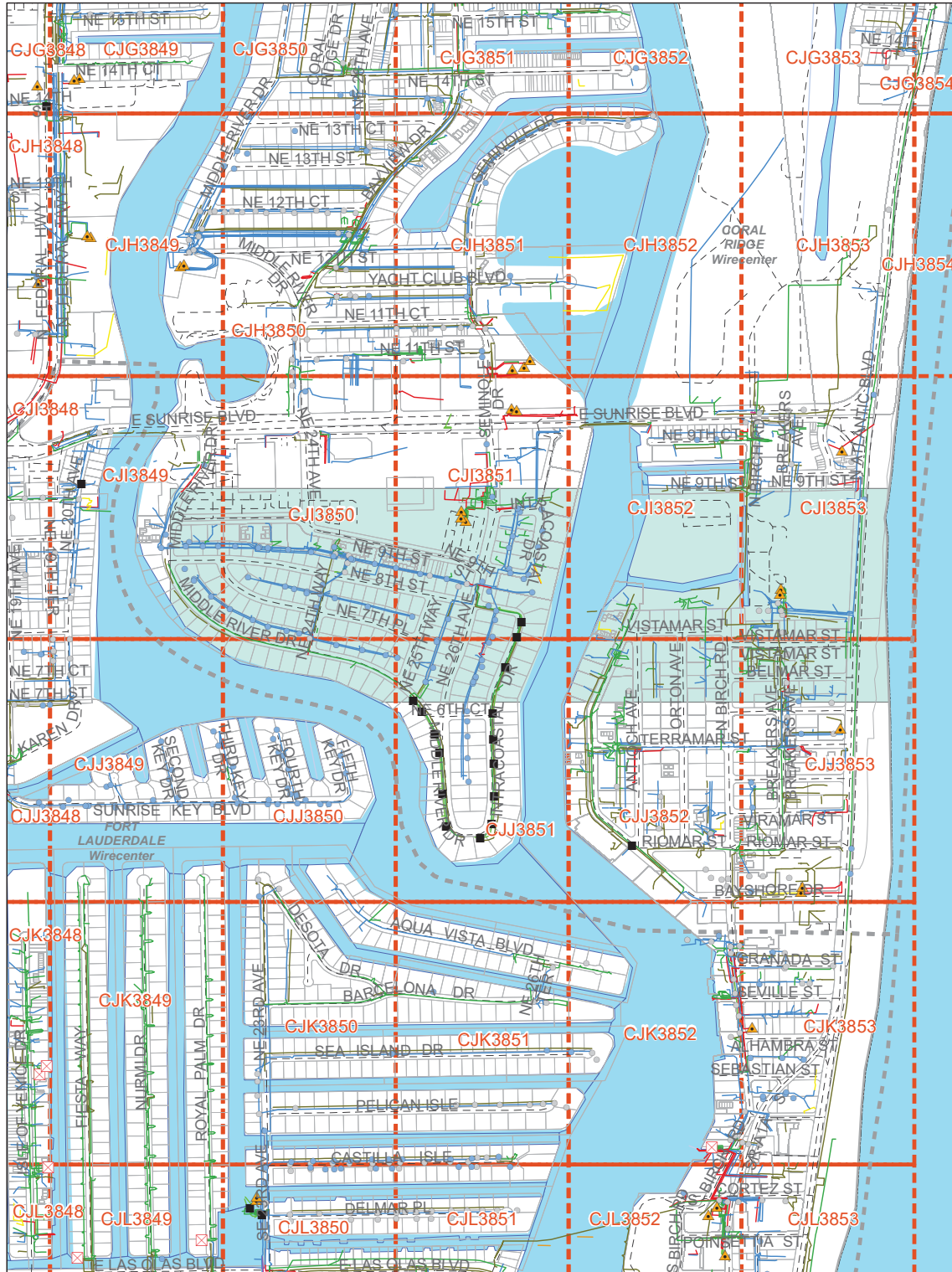








Ok1184 Bayshore Drive Project



Legend

Remote Terminals	Submarine
SAs	Conduit
Manholes	Street Centerlines
Company Poles	Wirecenter Boundary
Foreign Poles	Mapping Index
Aerial	Parcels
Building	JobAOI
Buried	
Underground	



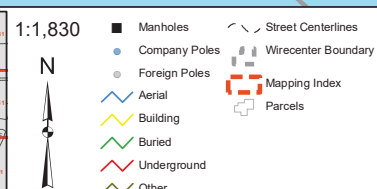
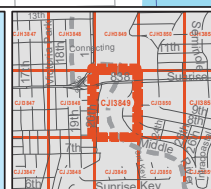
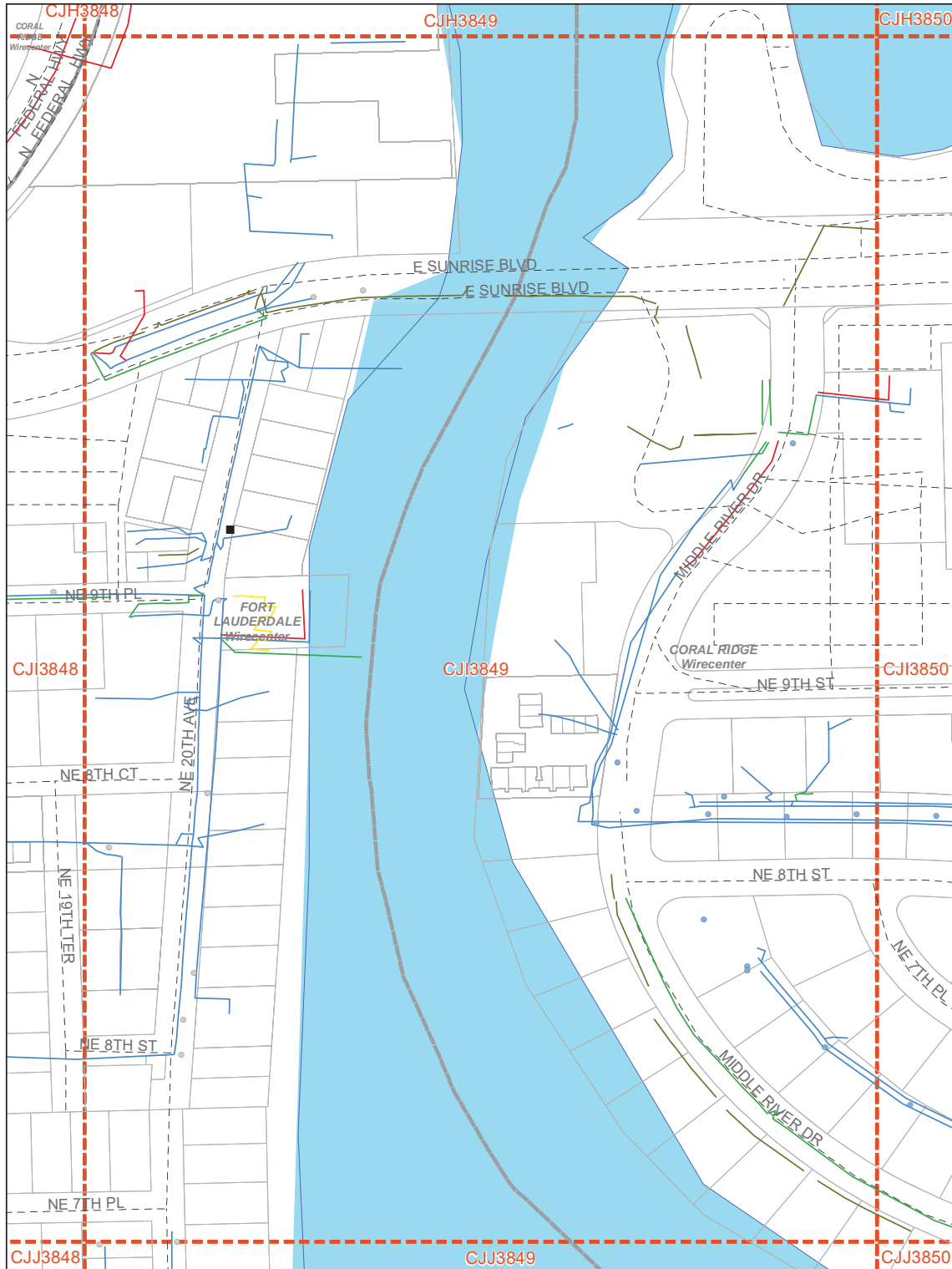
Copyright 2014 AT&T Intellectual Property. All rights reserved. AT&T and the AT&T logo are trademarks of AT&T Intellectual Property. The copying, scanning or other reproduction of this map without prior written permission of AT&T Intellectual Property is strictly prohibited. This map is provided as is, without AT&T Intellectual Property or any of its affiliates shall have any liability whatsoever to any person or entity for or on account of any injury, loss, or damage of any kind of nature sustained by, or any liability incurred by or imposed upon any other person or entity arising out of or in connection with the use of this map.

Location of facilities shown herein are subject to field verification. No liability is assumed by AT&T as to the accuracy of location facilities. Please call USA at 811 two working days in advance of any grading or excavation in vicinity of our underground facilities. AT&T property (internal use only). Not for use or disclosure outside the AT&T companies except under written agreement. Telco proprietary data is not to be disclosed to third parties.

AT&T PROPRIETARY: This information constitutes confidential trade secrets and commercial or financial information owned by AT&T and is shared for Critical Infrastructure Protective purposes only. It is exempt from disclosure under the Freedom of Information Act (5 USC 552). Exemptions (b)(3)(A)(i), and its disclosure is prohibited under the Trade Secrets Act (18 USC 1905), the Critical Infrastructure Information Act of 2002, 4 USC 113, and any State or local law requiring disclosure of information or records. This information must not be copied or distributed to others not agreed upon by AT&T, but in all events do not copy or distribute to such others without notification pursuant to Executive Order 12800.



Ok1184 Bayshore Drive Project

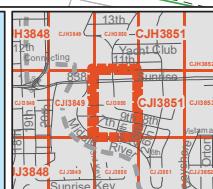
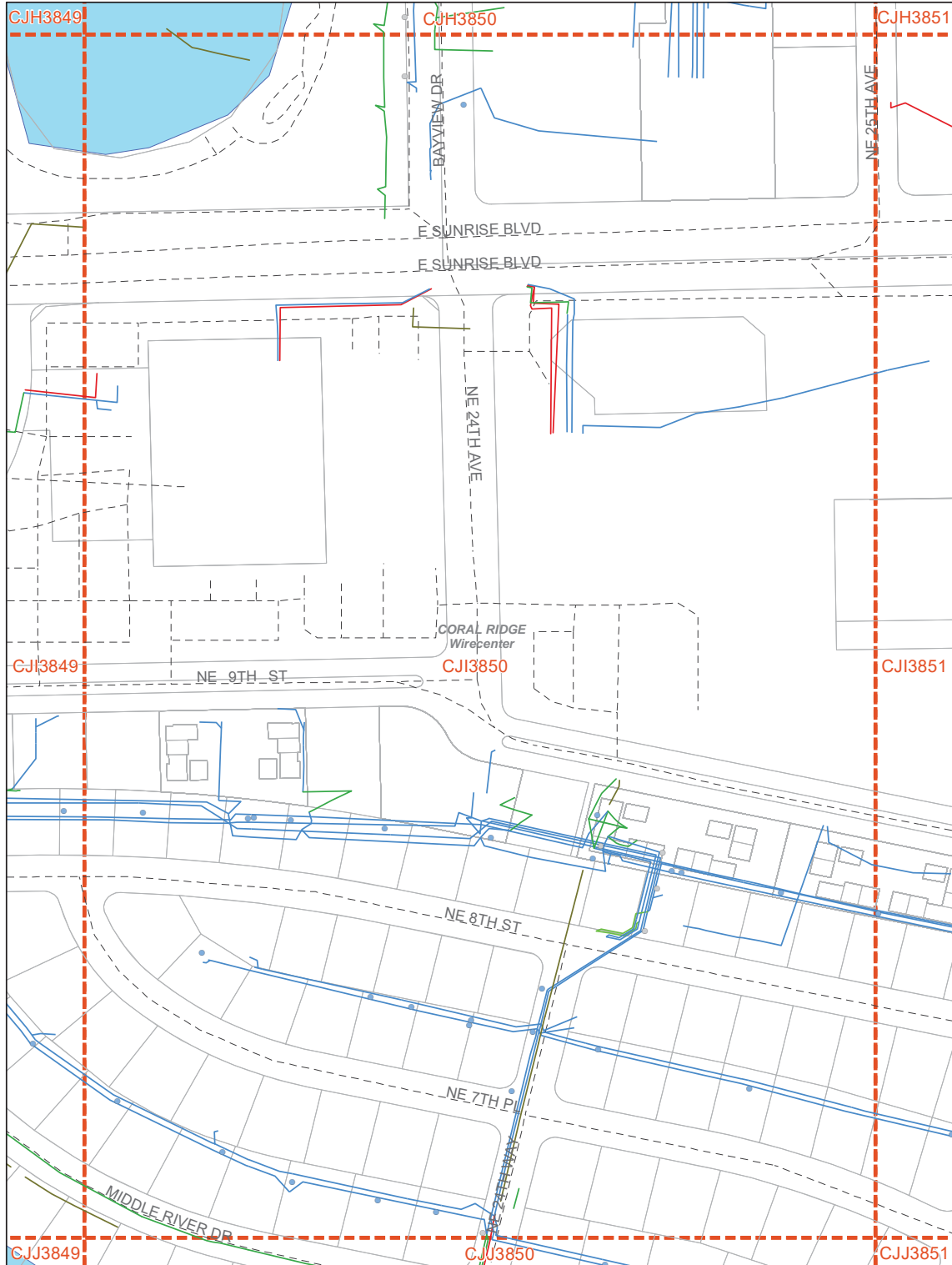


Copyright 2014 AT&T Intellectual Property. All rights reserved. AT&T and the AT&T logo are trademarks of AT&T Intellectual Property. The copying, scanning or other reproduction of this map without prior written permission of AT&T Intellectual Property is strictly prohibited. This map is provided "as is." Neither AT&T Intellectual Property nor any of its affiliates shall have any liability whatsoever to any person or entity for or on account of any injury, loss, or damage of any kind of nature sustained by or any liability incurred by or imposed upon any other person or entity arising out of or in connection with or resulting from the use of this map. Location of facilities shown herein are subject to field verification. No liability is assumed by AT&T as to the accuracy of location facilities. Please call USA at 811 two working days in advance of any grading or excavation in vicinity of our underground facilities. AT&T property (internal use only). Not for use or disclosure outside the AT&T companies except under written agreement. Telco proprietary data is not to be disclosed to third parties.

AT&T PROPRIETARY: This information constitutes confidential trade secrets and commercial or financial information owned by AT&T and is shared for Critical Infrastructure Protection purposes only. It is exempt from disclosure under the Freedom of Information Act (5 USC 552). Exemptions (b)(3)(A), (b)(3)(C), and its disclosure is prohibited under the Trade Secrets Act (18 USC 1905). The Critical Infrastructure Information Act of 2002, 6 USC 153, and any State or local law requiring disclosure of information or records. This information must not be copied or distributed to others not agreed upon by AT&T, but in all events do not copy or distribute to such others without notification pursuant to Executive Order 12860.



Ok1184 Bayshore Drive Project



1:1,830



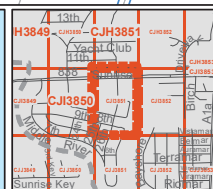
- Company Poles
- Foreign Poles
- Aerial
- Buried
- Underground
- Other
- Street Centerlines
- Wirecenter Boundary
- Mapping Index
- Parcels

Copyright 2014 AT&T Intellectual Property. All rights reserved. AT&T and the AT&T logo are trademarks of AT&T Intellectual Property. The copying, scanning or other reproduction of this map without prior written permission of AT&T Intellectual Property is strictly prohibited. This map is provided "as is." Neither AT&T Intellectual Property nor any of its affiliates shall have any liability whatsoever to any person or entity for or on account of any injury, loss, or damage of any kind of nature sustained by, or any liability incurred by or imposed upon any other person or entity arising out of or in connection with or resulting from the use of this map. Location of facilities shown herein are subject to field verification. No liability is assumed by AT&T as to the accuracy of location facilities. Please call USA at 811 two working days in advance of any grading or excavation in vicinity of our underground facilities. AT&T property (internal use only). Not for use or disclosure outside the AT&T companies except under written agreement. Telco proprietary data is not to be disclosed to allied employees.

AT&T PROPRIETARY: This information constitutes confidential trade secrets and commercial or financial information owned by AT&T and is shared for Critical Infrastructure Protection purposes only. It is exempt from disclosure under the Freedom of Information Act (5 USC 552). Exemptions (b)(3)(A)(4), and its disclosure is prohibited under the Trade Secrets Act (18 USC 1905), the Critical Infrastructure Information Act of 2002, 6 USC 133, and any State or local law requiring disclosure of information or records. This information must not be copied or distributed to others not agreed upon by AT&T, but in all events do not copy or distribute to such others without notification pursuant to Executive Order 12800.

5/8/2020 1:34 PM

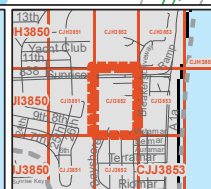
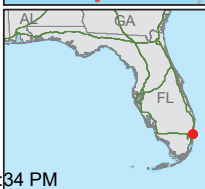
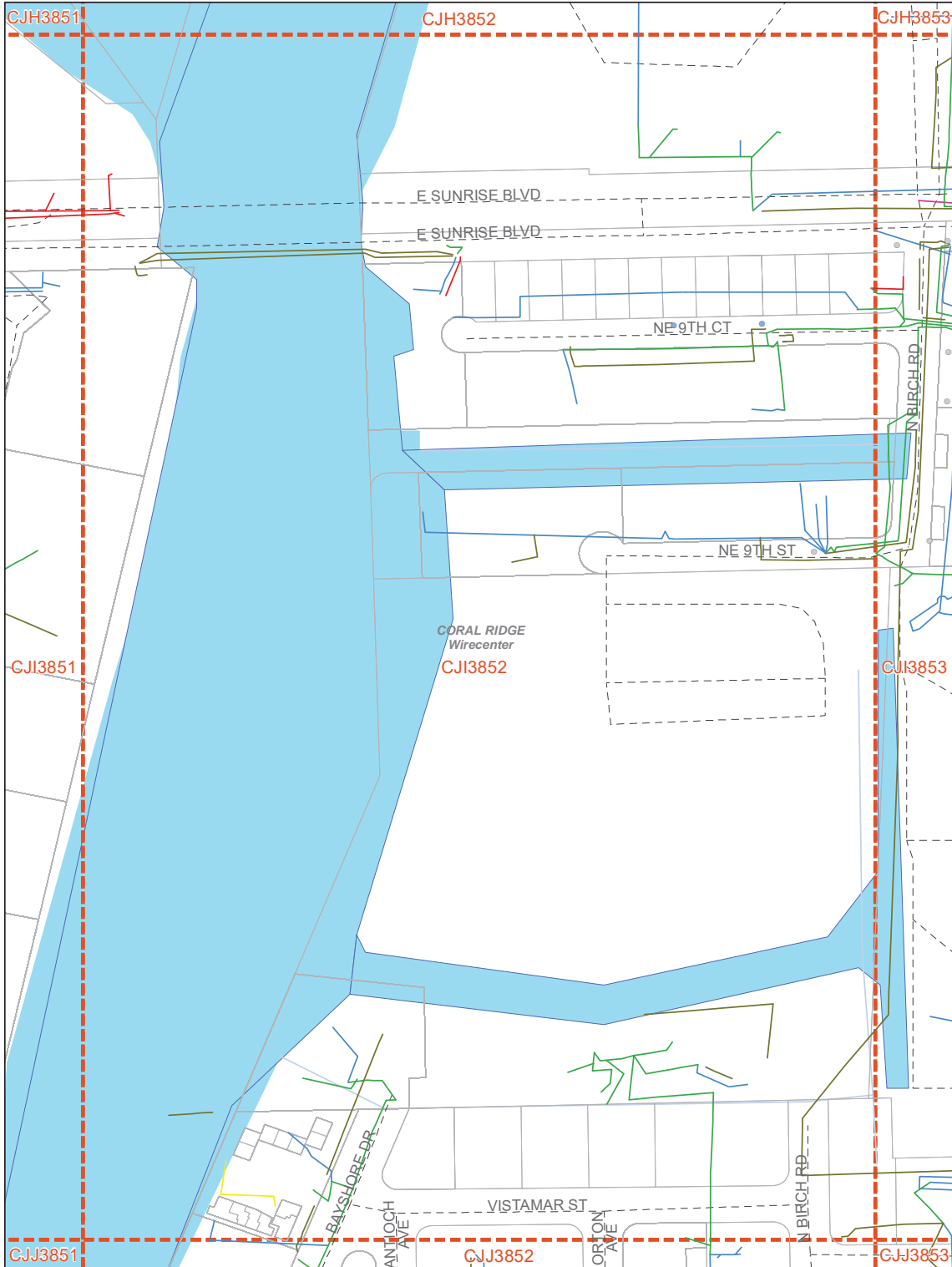
p. 387



- Copyright 2014 AT&T Intellectual Property All rights reserved AT&T and the AT&T logo are trademarks of AT&T Intellectual Property. The copying, scanning or other reproduction of this map without the prior written permission of AT&T Intellectual Property is strictly prohibited. This map is provided as a courtesy and does not constitute an offer of insurance coverage. No agent or broker whoever is by present or former employer or on account of any injury, loss, or damage of any kind of nature sustained by, or any liability incurred by or imposed upon any other person or entity, shall be held responsible for the accuracy or completeness of the information contained herein.
- Location of facilities shown herein are subject to field verification. No liability is assumed by AT&T Intellectual Property for any errors or omissions in the location of facilities shown herein.
- No grading or excavation in view of our underground facilities AT&T intellectual property use only. Not for use or disclosure outside the AT&T companies except under written agreement. Felix
- AT&T PROPRIETARY:**This information contains confidential trade secrets and commercial and financial information owned by AT&T and is shared for field infrastructure protection purposes only. It is exempt from disclosure under the Freedom of Information Act (5U.S.C 552).
- Critical Data is classified, and its disclosure is prohibited under the Trade Secrets Act (18 USC 1905), and Critical Data is also protected under the Freedom of Information Act (5U.S.C 552). Any unauthorized disclosure of information or records. This information must not be copied or distributed to others not agreed upon by AT&T, but in all events do not copy or distribute to such others without written approval.



Ok1184 Bayshore Drive Project



1:1,830



Copyright 2014 AT&T Intellectual Property. All rights reserved. AT&T and the AT&T logo are trademarks of AT&T Intellectual Property. The copying, scanning or other reproduction of this map without prior written permission of AT&T Intellectual Property is strictly prohibited. This map is provided "as is". Neither AT&T Intellectual Property nor any of its affiliates shall have any liability whatsoever to any person or entity for or on account of any injury, loss, or damage of any kind of nature sustained by, or any liability incurred by or imposed upon any other person or entity arising out of or in connection with or resulting from the use of this map. Location of facilities shown herein are subject to field verification. No liability is assumed by AT&T as to the accuracy of location facilities. Please call USA at 811 two working days in advance of any grading or excavation in vicinity of our underground facilities. AT&T property (internal use only). Not for use or disclosure outside the AT&T companies except under written agreement. Telco proprietary data is not to be disclosed to allied employees.

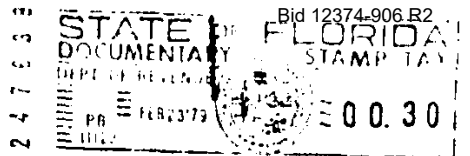
AT&T PROPRIETARY: This information constitutes confidential trade secrets and commercial or financial information owned by AT&T and is shared for Critical Infrastructure Protection purposes only. It is exempt from disclosure under the Freedom of Information Act (5 USC 552). Exemptions (b)(3)(A), (b)(3)(C), and its disclosure is prohibited under the Trade Secrets Act (18 USC 1905). The Critical Infrastructure Information Act of 2002, 6 USC 153, and any State or local law requiring disclosure of information or records. This information must not be copied or distributed to others not agreed upon by AT&T, but in all events do not copy or distribute to such others without notification pursuant to Executive Order 12860.



EXISTING UNDERGROUND UTILITY INFORMATION: EXISTING EASEMENT

79- 59707

Easement



THIS INDENTURE, Made this 1st day of February, A.D. 1979.

by and between Sunrise Tower Association, Inc.
a corporation existing under the laws of the State of Florida having its principal
place of business in the County of Broward and State of Florida
party of the first part, hereinafter called the Grantor, and CITY OF FORT LAUDERDALE, a municipal corpora-
tion of Florida, City Hall, Fort Lauderdale, Broward County, Florida, hereinafter called the Grantee;

WITNESSETH: That for and in consideration of the sum of ONE DOLLAR (\$1.00) paid by the Grantee
to the Grantor, receipt of which is hereby acknowledged, and other good and valuable considerations, the Grantor
hereby grants unto the Grantee the successors and assigns, full and free right and authority to lay, operate and
maintain such Utilities
as Grantee may deem necessary along, through, in and under that certain strip or parcel of land situate, lying and
being in Fort Lauderdale, Broward County, Florida, described as follows:

A utilities easement over, under and across the northerly
portion of Lot 10, Block 1, according to the Plat of
"SUNRISE" as recorded in Plat Book 28, at Page 42, of the
public records of Broward County, Florida, more particularly
described as follows:

BEGIN at the northwest corner of said Lot 10; thence 165.00
feet S 77°51'30" E on the north lot line of said Lot 10; thence
37.92 feet S 12°08'30" W on the east lot line of said Lot 10;
thence 50.67 feet N 87°10'19" W; thence 26.12 feet N 12°08'30"
E; thence 115.00 feet N 77°51'30" W on a line 20 feet south
of and parallel to the north lot line of said Lot 10 to the
east right of way of Intracoastal Drive; thence 20.00 feet
N 12°08'30" E on said right of way to the POINT OF BEGINNING.
TO HAVE AND TO HOLD the same unto the said Grantee, its successors and assigns forever.

IN WITNESS WHEREOF the said Grantor has caused these presents to be signed in its name by its Presi-
dent, and its corporate seal to be affixed, attested by its President and Vice President the day and
year first above written.

Attest: Harry Kisch
Secretary
Vice President

By Rupert D. Morrill
President

Signed, sealed and delivered
in the presence of:

Rubén Chappin
Jessie Buckton
STATE OF FLORIDA
COUNTY OF BROWARD

(SEAL)

RECORDED IN THE OFFICIAL RECORDS BOOK
OF BROWARD COUNTY, FLORIDA
GRAHAM W. WATT
COUNTY ADMINISTRATOR

I HEREBY CERTIFY that on this 1ST day of FEBRUARY, A.D. 1979
before me personally appeared RUPERT D. MORRILL and HARRY KISCH
respectively President and VICE PRESIDENT of SUNRISE TOWER ASSOCIATION,
Inc., a corporation under the laws of the State of Florida
to me known to be the individuals and officers described in and who executed the foregoing easement, and
severally acknowledged the execution thereof to be their free act and deed as such officers thereunto duly author-
ized; and that the official seal of said corporation is duly affixed thereto, and the said easement is the act and
deed of said corporation.

WITNESS my hand and official seal at FORT LAUDERDALE in the State and County
aforesaid, this 1ST day of FEBRUARY, A.D. 1979
My Commission Expires: Don Abramson
Notary Public

NOTARY PUBLIC STATE OF FLORIDA AT
MY COMMISSION EXPIRES FEB. 28 1981
BONDED TEN THOUSAND DOLLARS

79 FEB 23 PM 12:00

DEF REC 8061 PAGE 261



Return to:
CITY ATTORNEY
P.O. Box 4484-18250
Fort Lauderdale, Florida

61- 59933

Easement

OFF. 2199 PAGE 942
REC

THIS INDENTURE, Made this 8th day of March, A. D. 19 61,
by and between M. & M. LAND COMPANY, INC.
a corporation existing under the laws of the State of Florida having its principal
place of business in the County of Dade and State of Florida
party of the first part, hereinafter called the Grantor, and CITY OF FORT LAUDERDALE, a municipal corpora-
tion of Florida, City Hall, Fort Lauderdale, Broward County, Florida, hereinafter called the Grantee;

WITNESSETH: That for and in consideration of the sum of ONE DOLLAR (\$1.00) paid by the Grantee
to the Grantor, receipt of which is hereby acknowledged, and other good and valuable considerations, the Grantor
hereby grants unto the Grantee the successors and assigns, full and free right and authority to lay, operate and
maintain such storm sewer drainage pipe

as Grantee may deem necessary along, through, in and under that certain strip or parcel of land situate, lying and
being in Fort Lauderdale, Broward County, Florida, described as follows:

A 10 foot drainage easement through Lot 10, Block 1, SUNRISE, according
to the Plat thereof recorded in Plat Book 28, at page 42, of the public
records of Broward County, Florida, lying 5 feet on both sides of the
following described line, and being more particularly described as follows:
Commence at the Northwest corner of said Lot 10; thence run South 12 de-
grees 08 minutes 30 seconds West along the Westerly line of said Lot 10
for 31.47 feet to a point of curvature; thence run along a circular curve
to the right, still along the Westerly line of said Lot 10, having for its
component parts a radius of 85 feet and a central angle of 20 degrees 10
minutes 01 seconds for an arc distance of 29.92 feet to the Point of Be-
ginning, said point bearing South 57 degrees 41 minutes 29 seconds East
of the center point of the last described curve; thence run South 87 de-
grees 10 minutes 19 seconds East for 172.48 feet to the point of termina-
tion, said point of termination lying on the East line of said Lot 10,
32.86 feet South of the Northeast corner of said Lot 10, lying in the
City of Fort Lauderdale, Broward County, Florida.

TO HAVE AND TO HOLD the same unto the said Grantee, its successors and assigns forever.

IN WITNESS WHEREOF the said Grantor has caused these presents to be signed in its name by its Presi-
dent, and its corporate seal to be affixed, attested by its Secretary
the day and
year first above written.

Attest: Gerald Markoe
Secretary

M. & M. LAND COMPANY, INC.

By Seymour Markoe
President

Signed, sealed and delivered
in the presence of:

V. J. De Law

STATE OF FLORIDA:

COUNTY OF DADE:

RECORDED IN OFFICIAL RECORDS BOOK
OF BROWARD COUNTY, FLORIDA
FRANK H. MARKS
CLERK OF CIRCUIT COURT

I HEREBY CERTIFY that on this 8th day of March, A. D. 19 61

before me personally appeared SEYMOUR MARKOE and GERALD MARKOE
respectively President and Secretary of M. & M. Land Company, Inc.

a corporation under the laws of the State of Florida
to me known to be the individuals and officers described in and who executed the foregoing easement, and
severally acknowledged the execution thereof to be their free act and deed as such officers thereunto duly author-
ized; and that the official seal of said corporation is duly affixed thereto, and the said easement is the act and
deed of said corporation.

WITNESS my hand and official seal at Fort Lauderdale, Florida
aforesaid, this 8th day of March, A. D. 1961

Notary Public, State of Florida at Large
My Commission Expires Nov. 21, 1964
Bonded by American Ind. & Casualty Co.

Frank H. Marks
Notary Public

RETURN TO CITY ATTORNEY
P. O. DRAWER 1181
FORT LAUDERDALE, FLORIDA

1961 JUN 26 PM 3:54

EXHIBIT F

CADD STANDARDS

**CITY OF FORT LAUDERDALE PUBLIC WORKS
ENGINEERING & ARCHITECTURAL DEPARTMENT
CADD SPECIFICATIONS FOR PROJECT DRAWINGS**



CITY OF FORT LAUDERDALE

OCTOBER 2015

*THIS DOCUMENT WAS PREPARED IN THE CITY OF FORT LAUDERDALE ENGINEERING &
ARCHITECTURAL DEPARTMENT BY THE CADD STANDARDS COMMITTEE*

*THIS DOCUMENT MAY BE DOWNLOADED FROM
[HTTP://WWW.FORTLAUDERDALE.GOV/ENGINEERING/INDEX.HTM](http://www.fortlauderdale.gov/engineering/index.htm)*



CONTENTS

1. Purpose	3
2. Version	3
3. Cover Sheets and Title Blocks.....	3
4. Scales.....	4
5. X-REFS.....	4
6. Base Drawing.....	5
7. Units	6
8. Symbols & Entities.....	7
9. Paperspace	7
10. Colors and Line weights	7
11. Fonts	8
12. Layers	8
13. General Issues before Submittal	9
14. Miscellaneous	10
15. DWG File Names	10
16. PDF File names	13
17. Standards Specific to Architectural Projects	14
Architectural and Landscaping Text Fonts and Heights.....	15



1. PURPOSE

The Engineering division provides engineering, architectural, landscaping and project management services; and has put together a set of drafting standards to be used in all computer-aided drawings. The intent is to standardize the way electronic drawing files are produced and to make all drawing files regardless of who produced them, familiar in look and content to all the production staff in the division.

Consultants are encouraged to familiarize themselves with recent existing City project files prior to commencing a project for the City of Fort Lauderdale, in order to achieve true conformity with the way drawing files are to be produced. Below are some of the criteria, **which must be followed**. This document may not cover all circumstances; therefore it is up to the consultant to secure the pertinent information to any situation that may arise in a particular case that is not covered here. All files submitted to the City shall be free of passwords or any other impediment to their free use. The City of Fort Lauderdale's Engineering Division reserves the right to direct a consultant as to the desired manner to proceed when a situation is not addressed here.

2. VERSION

- 2.1. All drawings shall be produced in an AutoCAD® based product and saved in AutoCAD® 2013 format. Software included but, not limited to:
 - 2.1.1. AutoCAD
 - 2.1.2. AutoCAD LT
 - 2.1.3. AutoCAD Civil 3D
 - 2.1.4. AutoCAD Map 3D
 - 2.1.5. Revit

Please see CADD Coordinator prior to creating drawings with software not listed.

- 2.2. Drawing files submitted will be 100% AutoCAD (dwg) format and 100% editable.
- 2.3. The current version of AutoCAD at the time these standards are established is AutoCAD 2016. These standards can only address those issues pertaining to that version of AutoCAD. If a new version of AutoCAD is released prior to revising these standards, projects shall still be submitted in AutoCAD 2013. Once the City upgrades to the newer version of AutoCAD, that version shall be the official version and at the time the City shall determine if submittals in earlier versions are acceptable. All drawing files in a project shall be saved in the same version of AutoCAD.

3. COVER SHEETS AND TITLE BLOCKS

- 3.1. The City's title block/sheet border symbol shall be used on all drawings except the cover sheet. No modifications shall be made except for values of the attributes present in the block.
- 3.2. All projects shall have a cover sheet. For the cover sheet, consultants shall use the City's cover sheet symbol. Consultants shall not make any modifications to the city's cover sheet, including renaming the block. The cover sheet shall be inserted at an XYZ scale of 1; and plotted with a final size of 36"X24" at scale 1:1, in PAPERSPACE.
- 3.3. The standard title block/sheet border shall be inserted in "paper space" and shall be inserted at an XYZ scale of 1. The viewports can be zoomed to produce the desired final scale within the viewport and will be plotted with a final size of 36X24 at scale 1:1.
- 3.4. All projects will be made to plot in a standard ARCH D 36" X 24" sheet. The City's standard title block/sheet border SHALL NOT be inserted with dissimilar 'x' and 'y' scales in order to plot in a final size other than the standard.



4. SCALES

- 4.1. All drawing plan-views and horizontal scale of profiles and cross-sections will be drawn in scale 1:1 in model space, and drawing accuracy shall be 0.01' or better. That is, on a 'DIST' inquiry between consecutive 100-foot stations on a baseline, the result should be 100.00'.
- 4.2. Details will be drawn 1:1 and then scaled in a paper space window. Certain details need to be drawn with different horizontal and vertical scales for clarity (e.g. typical roadway cross-section). There are however very few instances where it is not practical to draw details to any scale e.g. where drawings are intended to be diagrammatic or schematic; and for those instances only, a scale will not be required. Such drawings will be noted "NOT TO SCALE" or "NO SCALE".
- 4.3. Plots for projects will be produced at a scale commonly used by the engineering/architectural profession; (e.g. 1" = 20', 1" = 30', 1/4" = 1', etc). Following are examples of unacceptable scales: 1" = 27', 1" = 70', etc.
- 4.4. Vertical scale for cross-sections and profiles will be drawn to a scale in the same ratio as the final plotted product i.e.: if the final plot is horizontal 1" = 20', and the vertical 1" = 2', then the vertical scale is 10 times that of the horizontal.
- 4.5. Drawing files that are not scale relevant, like index sheet, notes and schedules, shall fill the scale attribute box with the notation "N/A". The notation "NTS" or "NOT TO SCALE" shall be left to those drawing files that are scalable, but are shown in a scale not measurable with a typical engineering or architectural scale, like details, schematics, etc.

5. EXTERNAL REFERENCES

- 5.1. Projects shall make use of external reference files (x-refs) to separate different disciplines and sub-consultants or design teams involved.
 - 5.1.1. X-ref files shall be limited to one per discipline. There shall be no more than one consultant's work into a single x-ref file i.e.: no design shall be placed directly on a survey file, or electrical design on an architectural file, etc.
 - 5.1.1.1. Within each discipline, all entities shall be drawn in the same file: line work, text, notes, dimensions, leaders, etc. shall all be placed in the same file and space (MODELSPACE). Exception: Revision clouds.
 - 5.1.2. In engineering projects, all civil work (demolition, concrete, asphalt, pavers) may be placed in one x-ref per discipline, per consultant, per building (if project is multi building), or at the discretion of the project manager may be further segregated into several x-refs.
 - 5.1.3. Larger projects that involve multiple buildings and/or sites may make use of more than 1 x-ref per discipline upon approval of x-ref list by the city.
 - 5.1.4. Details, general notes, logos, etc. SHALL not be x-referenced.
 - 5.1.5. If during the course of a project design a consultant decides to make use of x-ref for anything other than background support, the final product shall not contain x-ref and layer names with x-ref file name prefixes will not be accepted.
- 5.2. Survey information shall be in its own x-ref's (see **Base Drawing** section in these standards).
 - 5.2.1. The base drawing shall be x-referenced into all x-refs drawings.
 - 5.2.2. There shall be no duplicate base information. Footprints to be used as a base for design shall not be duplicated. Example: Two or more footprints of a building drawn side by side in an x-ref.
- 5.3. Underground utilities (more than one in a project) may be placed in a single x-ref, or each in its own.
 - 5.3.1. In underground utilities where a profile is needed, the area shall be in the same x-ref as the plan view for the profiled area.



- 5.4. Architectural projects shall also be segregated by specialty.
- 5.5. Electrical, mechanical, foundation, plumbing, roof, etc. shall be either in its own x-ref file, or grouped by sub-consultant, or design group at the discretion of the project manager.
- 5.6. X-ref files shall have no paths. Project drawing files, which contain x- refs with paths, will not be accepted. Consultants will have to strip all paths from x-refs, or initially x-ref with no paths.
- 5.7. If an x-ref is "bound" it shall be "insert" and not "bind" type of x-ref thereby no extraneous layer names are created.
- 5.8. Profiles shall be drawn in the same file as the plan view and all entities of a profile shall remain together in the same file. Line work, grid, all text, notes, leaders, etc. shall be all together.

6. BASE DRAWING

- 6.1. The base survey shall be made of 4 base files:

- #####SURV.DWG
- #####BSLN.DWG
- #####TOPO.DWG
- #####UTIL.DWG

The «#s" are place-holders for the project number. If utility markings are gathered at a later date from the original survey, then this information can be added to the «#####UTIL.DWG"

- 6.1.1. The #####SURV.DWG" file shall be the main file and the others shall be XREFED into it. This shall contain any notes which are not location sensitive, and may be moved modified, rotated to accommodate clearer design drawings.
 - 6.1.2. The #####BSLN.DWG shall contain the baselines of survey, including stationing and descriptions of points set, the lot and block, boundaries and relevant information. All survey markers, found or set.
 - 6.1.3. The #####TOPO.DWG shall contain all topography, elevations and other field collected information, not related to horizontal survey control. All survey benchmarks, descriptions and elevations shall be included in this file. Above ground evidence of utilities and any directly measured utility information, such as inverts and pipe sizes shall be included in this file.
 - 6.1.4. The #####UTIL.DWG shall contain the field location of paint marks, stakes or other utility markings, which indicate the presence of an approximate location of underground utilities. Test holes or borings shall also be included. Any other inferred or extrapolated locations shall also be placed in this file.
 - 6.1.5. Any issues not clearly covered in this paragraph shall be referred to the city surveyor for clarification prior to the commencement of any survey work.
- 6.2. Topographical surveys in AutoCAD format shall not be cut or disseminated into several files in order to create individual sheets.
- 6.3. Topographic survey files shall not have parts deleted because proposed project does not cover those portions. In that case open a paper space window that will show just the portion of survey needed or use XCLIP.



- 6.4. Topographic surveys SHALL NOT BE MOVED SPATIALLY within the drawing file, nor shall the consultant or city staff, change the coordinate system to anything other than what was received from survey, UNDER ANY CIRCUMSTANCE. If a consultant furnished the survey it shall be in 'WCS' and the survey shall have the north at 12 o'clock.
- 6.5. Files of topographic survey shall only have topographic information. These files shall be x-referenced into a new file where the proposed project will be designed.
- 6.6. The base topographical survey file shall be produced in several files, x-referenced, one within the other. This will make possible to make adjustments to some aspects of the file without the possibility of making changes to the more critical parts of the survey. The following paragraph is a description of what each file holds and a procedural explanation on how to create such a file. It is not intended directly to the designer, but to the survey personnel responsible for creating the survey base file.
- 6.7. In projects that use a base drawing other than a survey, like an architectural project of plant facility, all disciplines shall make use of a common base drawing, inserted as an x-ref. If there is an update then it is simple to update drawings from all disciplines. No design group shall take the base drawing and modify it in any manner. Through the use of x-referencing, all permitted changes (layer color, line type, etc.) can be accomplished.

7. UNITS

- 7.1. Engineering projects shall use:
 - 7.1.1. Decimal as linear units at all times.
 - 7.1.2. Angular units shall be surveyor (bearings) units.
 - 7.1.3. Angles shall be measured counter-clockwise and 0 shall be to the east.
- 7.2. Architectural projects shall use:
 - 7.2.1. Architectural units.
 - 7.2.2. Angular units shall be degrees, minutes, seconds.
 - 7.2.3. Angles shall be measured counterclockwise and 0 shall be to the right (east).
 - 7.2.4. 1" grid, and entities snap to the grid.
- 7.3. Dimensions shall:
 - 7.3.1. Have a scale factor of 1
 - 7.3.1.1. The scale factor may be changed to 12 or 1/12 when integrating engineering and architectural line work; example site plans, or architectural details displayed in an engineering drawing with decimal units.
 - 7.3.1.2. The scale factor can also be changed to 1/10 in profiles that are drawn 10 times larger vertically than horizontally. Accuracy for plan view design in water, sewer, storm and site electrical projects can be 0.1'.
 - 7.3.2. Precision of 0.01' for decimal units and 1/8 for architectural units, with the default value displayed.



8. SYMBOLS & ENTITIES

- 8.1. *Blocks will be issued* with the most common symbols used in City projects. From time to time these symbols will be revised and/or new symbols will be added. If for any reason there is a need to create a block either for local use or to keep for future projects, that block shall comply with all City CAD standards.
- 8.2. Standard issue symbols shall NOT be exploded, renamed or changed in any way. Objects that are repeated throughout and/or that are depicted in an exaggerated scale for clarity (fire hydrants, power poles, catch basins, street lamps, etc.) shall be represented by a symbol. If a symbol CAN be used it SHALL be used.
- 8.3. Whenever possible, make use of the City's standard symbols and blocks. If a new symbol or block is created, it shall be submitted to the City for approval. Approved symbols and blocks will be made part of the City's symbols library, royalty free. North arrows, graphical scales, logos, location maps and other similar symbols shall be inserted as blocks and left unexploded.
- 8.4. Consultants may insert their company logo or identification information in the form of a block (symbol) and left unexploded. This block can be placed in all sheets including the cover sheet within the drawing area of each sheet.
- 8.5. Dimensions shall be associative at all times and left at their default value, and shall NOT be exploded.
- 8.6. Hatch patterns shall NOT be exploded. Hatch patterns and closed polylines forming the hatch boundary shall be the only entities permitted on hatch layers.

9. PAPERSPACE

- 9.1. Paper space shall be used for title block/sheet border and viewports. No other entities shall be placed there, especially notes that describe parts of model space entities (notes with a leader). Exceptions: logos, captions, legends, general notes and revision clouds.
- 9.2. Title block/sheet borders or cover sheets shall NOT be x-refed.
- 9.3. All drawing entities will be confined within the sheet border. Extents of the drawing files shall be to the edge of title block/sheet border. Multiple layouts are permitted, however only one sheet border per layout is allowed.

10. COLORS AND LINE WEIGHTS

- 10.1. The City will provide a line weight chart (CTB) to be used.
- 10.2. Submitted drawings shall make use of one of the city's templates, which have the "Layout" page setup, configured with the city's configuration files (PC3, CTB and PMP).
- 10.3. All entities shall be located in their appropriate layer, and have a color and line type "BYLAYER". The ONLY exception to this rule is a Utility XREF drawing (e.g.: 10272XREFUTIL) where the color of the layers continues to be "BYLAYER", but different line types may be used in the same layer to identify different utility types and sizes.
- 10.4. Colors are not fixed to layers; they are dependent on the discipline. When entities for a particular discipline need to be displayed in drawing files for other disciplines, colors may be setup differently in



order for features to stand out. E.g. Survey drawings will show survey features solid and stand-out. The same survey features will look dimmed in landscape drawings.

- 10.5. The project manager shall be the final judge of the plotted appearance of the drawings. Consultant shall furnish a printed copy of all drawing files using the City's line weight chart (CTB) file for color approval by the City.
- 10.6. There are certain entities which make use of custom line types, and that rely on the line type to be identified. If the line type is changed, then the entity loses its identity. Examples are fences: they can make use of a custom line type that identifies them. These entities can be placed in a layer with a different line type and the identity of the fence is preserved. For these cases, it is permissible to make these entities non-ByLayer. There are other examples in electrical drawings.

11. FONTS

- 11.1. Since fonts are not carried with the drawing files and depends on the computer that is running AutoCAD to find and use these font files. No third party or proprietary fonts shall be used. Drawing files shall not make use of SHAPE files.
- 11.2. It is possible to automatically substitute fonts not found in the AutoCAD path. The City may (at their discretion) substitute odd fonts with ROMANS.SHX.

12. LAYERS

- 12.1. The engineer or technician working on the project must determine what color to use from the "LINE WEIGHTS AND GREY SCALE CHART" supplied by the City, in order to get the desired effect, and the City will give the final approval.
- 12.2. The list of layer names used in all City of Fort Lauderdale projects is a separate document in the form of a MS Excel spreadsheet.
- 12.3. The City of Fort Lauderdale Engineering Division adheres for the most part (but not totally) to the CAD Layer Guidelines and has adopted the long format; it has up to 16 alphanumeric characters, and is divided in fields or groups.

X-XXXX-XXXX-XXXX

Above is an example of the format, also known as the 1-4-4-4.

- 12.4. The City will provide a list of layer names to be used. If there is a project for which there are no layer names (which pertain to that discipline), the consultant shall provide a list of proposed layer names based on the layer guidelines, for the City's approval, prior to their use. Once approved by the City, those layer names will become part of the City's list of layer names for all projects thereon or until revised.
- 12.5. No layer names, other than those in the City's layer name list, will be present in drawing files. Exceptions are those layer names automatically created by AutoCAD; "0", "DEFPOINTS", "ASHADE".



- 12.6. Layering:**
- 12.6.1.** All text, labels, mtext, etc. that is placed in paper space shall be in layers: #SHBD-TEXT and/or #SHBD-NOTE;
 - 12.6.2.** Consultants' logo shall be placed in layer #SHBD-LOGO;
 - 12.6.3.** Viewports shall be placed in layer: #SHBD-VPRT;
 - 12.6.4.** General line work in paper space like lines to separate areas or viewports, etc. shall be placed in layer: #SHBD.
 - 12.6.5.** All general text shall be placed in a single layer, unless there is a justification for the contrary.
 - 12.6.6.** North arrows and graphic scales shall be placed in layer: #SHBD-NARW.
 - 12.6.7.** Leaders shall be placed in a "TEXT" or "NOTE" layer together with the accompanying text.
- 12.7.** Layer names that duplicate the discipline and the major group shall not be used. Examples are: E-ELEC, D-DEMO, H-HVAC, 1-INST, F-FIRE, Q-EQPM.
- 12.8.** Details, sections elevations, do not in general need layer management. Since there is seldom layer manipulation (on, off), the minor group names that distinguish line weight were created. The City uses the discipline, major group designating the object to draw (DETL, SECT, ELEV, etc) and then the minor group designating the line weight. The minor group names are: XFIN, FINE, MEDM, HEVY AND XHEV.

13. GENERAL ISSUES BEFORE SUBMITTAL

- 13.1.** Complete drawing set (DWG) shall be submitted no later than the 60% project submittal for design review and fully compliant with the City's CAD standards' drawing set shall be submitted prior to submittal to the building department for permit. All drawing files shall have all tabs (layouts) zoomed to EXTENTS, prior to any submittal to the City, whether it is the final or a working submittal; XREF drawing files shall be saved with the model tab active and zoomed to EXTENTS. All other drawing files shall be saved with the first paper space layout tab active. All final files shall be fully purged prior to submittal. All files shall be saved and submitted with the current layer set to "0".
- 13.2.** Consultants shall obtain a file number for the project and make sure that the appropriate information is completed in the title block. File numbers can be obtained from the Project Engineer.
- 13.3.** Consultants shall fill in total number of sheets in the title block, prior to final submittal of drawing files.
- 13.4.** Consultants shall submit a hardcopy (bond, 36" X 24"), DWG and PDF files of the project drawings together with any submittal in electronic format (CD, etc), when making partial and final submittal of drawing files. Prior to all submittals, consultants shall coordinate with the City's file room as to the method of creating PDF files, which will make prints satisfactory to the City. All files submitted to the City shall be free of passwords or any other impediment to their free use. PDFs shall be combined into a single file. Sheets shall be oriented landscape with the title block to the right of the screen, arranged in the order that they are to be printed and the set assembled matching the drawing index order. The PDF binder shall contain bookmarks for all of the sheets, displaying the name of each plot file as described in paragraph 70.
- 13.5.** DWG AutoCAD files shall not be compressed using zip or rar or any other compression scheme when submitting files in an optical media (CD, DVD).



- 13.6. Submittals via FTP sites are not official submittals; and optical media (CD, DVD) is required.
- 13.7. When a project is assigned to a consultant who utilizes the collaboration of other sub-consultants, said prime-consultant shall be responsible for all submittals of drawing files and plot files. Said submittals shall be in the form of a single media (1 CD/DVD) to include the entire project.

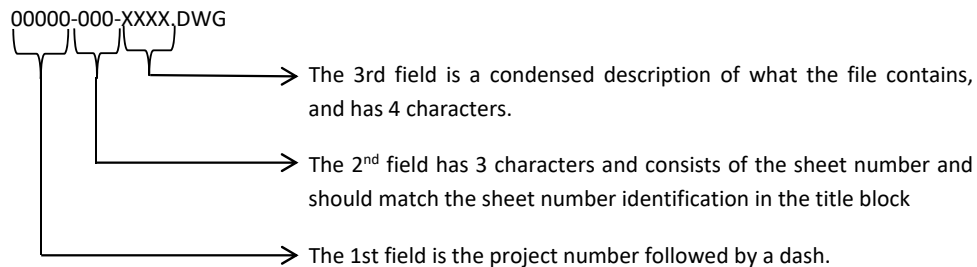
14. MISCELLANEOUS

- 14.1. "MTEXT" (multiline text) shall be used in all cases where more than one line of text occurs and where leaders are used.
- 14.2. These standards are a detailed description of aspects in the creation of drawing files within Engineering. It is by no means the complete description of all the methods used, and it is the consultant's responsibility to alert the City of any point or situation which is not described in these specifications, and which should be addressed. Also if a consultant, after reading these standards and prior to commencing any drafting work, feels that there are points or items in these standards which are not logical, or are onerous to abide by, they should notify the City's Engineering Division at their earliest convenience and their views will be open to discussion.
- 14.3. This document does not address layer colors or line weights. The consultant shall coordinate with the City's project manager on how these items are treated.

15. DWG FILE NAMES

- 15.1. All drawing files shall conform to the City of Fort Lauderdale's file naming convention, as described in the following pages. The names shall be accurate to reflect the desired information as per the naming convention. All file names shall be CAPITALIZED.
- 15.2. The City of Fort Lauderdale Engineering Division has adopted the following file naming convention for project drawings:

15.2.1. The format for single layout drawing files looks like this:



- 15.2.2. The first field represents the project number.
- 15.2.3. The second field represents the sheet number and reflects the sheet number as shown in the title block. If sheet numbers have dashes or dots, they shall be stripped: example for C-11, use C11. Drawing sheets shall not be numbered using the ConDoc system (i.e. A1.01, A1.02, A2.01, A2.02).
- 15.3. The third field is a 4-letter description of what the project drawing file depicts. There is a list of descriptions used in previous projects. Consultant shall check the list prior to creating a new description. The City will need to approve descriptions prior to their use.



15.4. This proposed 3-field format is only for files that contain final drawing with 1 title block/sheet border.

15.5. Examples for this naming format are the following:

- **09585-001-WATR.DWG**
- **10256-021-SEWR.DWG**
- **10855-M10-HVAC.DWG**
- **10325-A01-PLAN.DWG**

15.6. A drawing index should appear on the cover sheet. If there are too many sheets in the set of drawings to fit on the cover sheet, a separate index sheet or sheets shall be included immediately following the cover sheet. When index sheets are utilized the drawing file name shall be 00000-001-INDX.DWG. The first five digits shall be the project number and the next three digits shall be (001), (002), etc. An example is:

- **10325-001-INDX.DWG indicating the first index sheet.**
- **10325-002-INDX.DWG indicating the second index sheet.**

15.7. X-ref files will have a slightly different format. It will have 3 fields, and will look like this:
00000XREFXXXX.DWG

15.7.1. The 1st field (5 characters) will be the project number; the second field shall be the word "XREF". The third field shall be a 4-character description for the file or discipline found in the file. This convention is valid for all XREFS except for the survey XREFS. These shall remain as received by the survey department.

15.7.2. Sheets shall be numbered in a sequential manner and there shall not be any voids in the numbering for any given discipline. All numbering shall start with "1", regardless of the numbering system used, except for the cover sheet which is "0". Example: 1,2,3,4, or A01, A02, A03, BUT NEVER A01, A02, A05.

15.8. The Cover Sheet will follow this drawing naming convention with one small exception. The drawing files will contain additional characters denoting the total number of sheets in a project set, including all disciplines.

15.9. The total number of sheets shall NOT include the cover sheet.

15.10. The format for the coversheet drawing files looks like this:

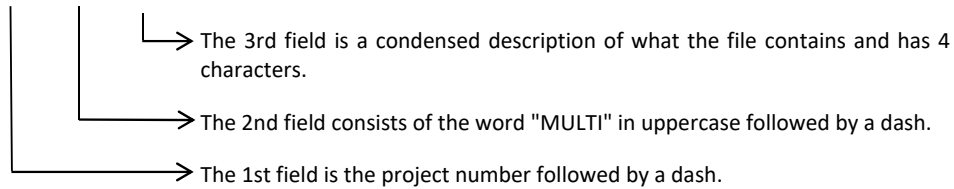
00000-000-000COVR.DWG

-
- The 3rd field is 7 characters, the first three numerals denoting the total number of sheets in the full set, followed by (COVR) indicating that this is the cover sheet.
 - The 2nd field consists of three zeros (000) followed by a dash and the total number of sheets for the project without the cover.
 - The 1st field is the project number followed by a dash.



15.10 For drawing files that contain multiple layouts, the files shall be named as follows:

00000-MULTI-XXXX.DWG



Examples for this naming format are the following:

- **XXXXX-MULTI-DETL.DWG: detail sheets.**
- **XXXXX-MULTI-ELEC.DWG: Electrical sheets.**

15.11. Layout Tab names shall be named with the sheet number and an optional description for the sheet content.

15.12. Additional drawing descriptive information may be placed in comments section of the file "properties" of the drawing file. Access this by right- clicking the file and selecting properties then the "summary" tab.

15.13. Names for sheet description to be used as the third field for file names:

BSRV	Boundary Surveys
COVR	Cover Sheets
DEMO	Demolition
DETL	Details
ELEV	Elevations
EQPM	Equipment
FLOR	Floor Plans
GRAD	Paving and grading
INST	Instrumentation
IRRG	Irrigation
KMAP	Key map
LEGN	Legend, symbols and schedule sheets
LITE	Lighting plans
MOTP	Maintenance of traffic plans
NAID	Navigational Aids
NOTE	General Notes
PILE	Piles
PLAN	Plan and profile sheets
PLNT	Plant material
PLUM	Plumbing
POWR	Power
RISR	Riser diagrams
RNWX	Runway
ROAD	Roadway projects incl. Widening, narrowing, special projects
SECT	Cross Sections
SSWR	Sanitary sewer lines
SGNL	Signalization
SIGN	Sign project files
SITE	Site-plans
STRM	Storm water (drainage)
STRP	Pavement Striping
TSRV	Topographic Surveys
TXWY	Taxiway
WALK	Sidewalk project file (asphalt or concrete or other)
WATR	Potable water lines



16. PDF FILE NAMES

Note: Project Manager: Please refer to Memo No. 11-06 for the new procedure for submitting electronic drawings and documents to the Plans Room. The date format YYYYMMDD shall be used when needed.

XXXXX <- Project number

PERMIT <- Sub Folder

16.1. Permit drawing PDF naming:

- 16.1.1. XXXXX-DRC-BINDER-date.PDF
- XXXXX-P&Z-BINDER-date.PDF
- XXXXX-PERMIT-BINDER-date.PDF

16.2. Bid drawing PDF naming:

- 16.2.1. XXXXX-BID-SPEC-date.PDF
- XXXXX-BID PLANS-BINDER-date.PDF
- XXXXX-BID ADDENDUM1-SPEC-date.PDF
- XXXXX-BID ADDENDUM1-BINDER-date.PDF
- File as many addendums as needed

16.3. Final Permit Construction plan naming:

- 16.3.1. XXXXX-CONSTRUCTION-BINDER-date.PDF
- XXXXX-REV1-CONSTRUCTION-BINDER-date.PDF
- File as many revisions as needed*
- XXXXX-FIELD CHANGE-BINDER-date.PDF
- File as many changes as needed*

16.4. AS BUILT –SETS

- XXXXX-ASBUILT-BINDER-date.PDF

16.5. DRAWING-SETS

- File all the CADD drawings

16.6. ARCHIVES

- File all project files from the Z: drive (Project manager to coordinate with CAD Manager)



17. STANDARDS SPECIFIC TO ARCHITECTURAL PROJECTS

- 17.1. Drawings scales are to be as follows:
 - 17.1.1. LTScale=1
 - 17.1.2. PSLTScale=1=on
 - 17.1.3. Precision=1/8"
- 17.2. Snap Grid settings:
 - 17.2.1. 1/16"=1'-0" scale to 3/8"=1'-0" scale drawings to be drawn with a maximum snap of 1".
 - 17.2.2. 1/2"=1'-0" scale to 3"=1'-0" scale drawings to be drawn with a maximum snap of 1/8".
 - 17.2.3. All drawings shall be created with SNAP ON.
- 17.3. Dimensions:
 - 17.3.1. Associative DIMASSOC=1.
 - 17.3.2. Dimensions shall not be forced without prior approval from the CAD Administrator.
 - 17.3.3. Dimstyles have been established in the "CFLSTDARCH2007.dwt" file. Dimstyles are to be used as defined and are not to be modified under any circumstances.
 - 17.3.4. Dimension Round-off:
 - 17.3.4.1. 3/8" scale and less round off to 1/2"
 - 17.3.4.2. 1/2" scale to 3" scale round off to 1/8"
 - 17.3.4.3. Fractions to be diagonal stacked when used in conjunction with a whole number (i.e. 3") and not stacked when used as a stand-alone fraction (3/4"). The text sizes of diagonal stacked fractions are to be 75%. The text sizes of non-stacked fractions are to be 100%.
- 17.4. Drawings sheets shall be:
 - 17.4.1. Numbered sequentially using the traditional numbering system (i.e. A-1, A-2, A-3).
 - 17.4.2. Drawing sheets shall not be numbered using the ConDoc system (i.e. A1.01, A1.02, A2.01, A2.02). This applies to all engineering disciplines within a set of drawings.
- 17.5. Text heights – see next page:



ARCHITECTURAL AND LANDSCAPING TEXT FONTS AND HEIGHTS

DRAWING SCALE	TEXT HEIGHT					DIMSTYLE
	Notes (Romans)	Room Names (Romans)	Small Title's (Swis721BT)	Large Title's (Swis721BT)	Title Polyline	
1/16"	16"	24"	48"	64"	8"	ARCH 192
3/32"	10 2/3"	16"	32"	42 2/3"	5 1/3"	ARCH 128
1/8"	8"	12"	24"	32"	4"	ARCH 96
3/16"	5 1/3"	8"	16"	21 1/3"	2 2/3"	ARCH 64
1/4"	4"	6"	12"	16"	2"	ARCH 48
3/8"	2 2/3"	4"	8"	10 2/3"	1 1/3"	ARCH 32
1/2"	2"	3"	6"	8"	1"	ARCH 24
3/4"	1 1/3"	2"	4"	5 1/3"	2/3"	ARCH 16
1"	1"	1 1/2"	3"	4"	1/2"	ARCH 12
1 1/2"	2/3"	1"	2"	2 2/3"	1/3"	ARCH 8
3"	1/3"	1/2"	1"	1 1/3"	1/6"	ARCH 4
Paper Space	1/12"	1/8"	1/4"	1/3"	1/24"	ARCH 1

DRAWING SCALE	TEXT HEIGHT					DIMSTYLE
	Notes (Romans)	Room Names (Romans)	Small Title's (Swis721BT)	Large Title's (Swis721BT)	Title Polyline	
1"=10'	10"	15"	30"	40"	5"	ARCH 120
1"=20'	20"	30"	60"	80"	10"	ARCH 240
1"=30'	30"	45"	90"	120"	25"	ARCH 360
1"=40'	40"	60"	120"	160"	20"	ARCH 480
1"=50'	50"	75"	150"	200"	25"	ARCH 600
1"=60'	60"	90"	180"	240"	30"	ARCH 720
Paper Space	1/12"	1/8"	1/4"	1/3"	1/24"	ARCH 1

EXHIBIT G

PERMIT APPLICATION

CAM 20-0627
Exhibit 3
Page 411 of 556

17. DIRECTIONS TO THE SITE

To access Northeast 9th Street, the western portion of the project, from I-95, take the exit toward East Sunrise Boulevard. Continue down East Sunrise Boulevard until approaching the Galleria at Fort Lauderdale shopping mall, then turn right onto Middle River Drive, where the project begins and continues down Northeast 9th street. To access Vistamar Street and Bayshore Drive on the other side of the Atlantic Intracoastal Waterway, continue down East Sunrise Boulevard then make a right on North Fort Lauderdale Beach Boulevard. From here continue down until making a right on Vistamar Street.

18. Nature of Activity (Description of project, include all features)

The project begins on Middle River Drive and proceeds through the entirety of Northeast 9th Street. It will cross the Atlantic Intracoastal Waterway toward Bayshore Drive and proceed through Vistamar Street, ending at a pump station located at the northern end of North Birch Road. The force main will be installed utilizing horizontal directional drilling. The proposed pipe will be placed below the riverbed of the Atlantic Intracoastal crossing and the project will not affect the waters directly.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The City has experienced several pipeline failures over the years and determined the forcemain needs to be rehabilitated and/or replaced. A new 20" HDPE forcemain has been proposed to replace the existing forcemain.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED**20. Reason(s) for Discharge**

N/A

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
N/A	N/A	N/A

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres N/A

or

Linear Feet N/A

23. Description of Avoidance, Minimization, and Compensation (see instructions)

N/A

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- 888 Intracoastal Drive

City - Fort Lauderdale State - Florida Zip - 33304

b. Address- 900 Intracoastal Drive

City - Fort Lauderdale State - Florida Zip - 33304

c. Address- 777 Bayshore Drive

City - Fort Lauderdale State - Florida Zip - 33304

d. Address- 741 Bayshore Drive

City - Fort Lauderdale State - Florida Zip - 33304

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
SFWMD	Dewatering			Pending	
Broward County	Dewatering			Pending	
Broward County	Domestic Wastewater			Pending	
FDEP	Domestic Wastewater			Pending	

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

BROWARD COUNTY

ENVIRONMENTAL RESOURCE LICENSE APPLICATION FORM

SEND APPLICATIONS TO:

**Environmental Licensing & Building Permitting Division
Aquatic & Wetland Resources Program
1 North University Dr, Suite 201, Plantation, Florida 33324**

SECTION I: Application Checklist

The following information is required for works in the surface waters or wetlands of Broward County. Initial application packages that do not include the applicable information below may not be accepted. Upon review of the application, additional information may be required. If you have questions regarding the application form or required information, please call (954) 519-1483 for assistance.

Basic information necessary to be included with all applications

- ☐ **A completed notarized application form with all the requested applicable information**
- ☐ The correct application processing fee (see attached fee schedule revised 12/03)
- ☐ Proof of ownership or sufficient interest in the project property; and,
- ☐ A location / street map with the project site identified;
- ☐ A sketch and legal description of the subject property, preferably sealed, clearly depicting the existing site conditions
- ☐ Four sets of legible plan view and cross-sectional signed and sealed drawings clearly depicting the **existing and proposed** conditions;
- ☐ Accurate dimensions of length and width for **all structures** over water measured from the wet face of the seawall panel (seawall cap, docks, boardwalks, boatlifts, floating docks, etc.);
- ☐ Mean High Water Level (MHW), Mean Low Water Level (MLW), and the elevation of the substrate, (referenced to NGVD or Mean Sea Level);
- ☐ the height of the proposed dock above MHW;
- ☐ width of water body; and
- ☐ rip-rap (if applicable) at a 2H:1V slope; and
- ☐ Benthic resources (seagrasses, oysters, etc) surveys for all projects east of US 1
- ☐ Appropriate application fee according to the Aquatic & Wetland Resources Fee Schedule

SECTION II- Project Information

Project location

Street address: NE 9th Street

City: Fort Lauderdale

Zip Code: 33304

Folio number: 494307000460

Township/Range/Section: 504201

Project name: Bayshore Drive Intracoastal Crossing Forcemain

Total site acreage: 13.4 acres

Provide details of the proposed activities in, on, over surface waters or wetlands: No surface water or wetlands will be affected. The 20" HDPE force main will be installed below the river bed and the excavation pits will be upland within road right of way on either side of the Atlantic Intracoastal Waterway.

List any previous ACOE, Environmental Resource Permits, and/or Environmental Resource Licenses for the site: _____

List times, dates and attendees for any pre-application meetings with regulatory staff: _____

SECTION III- Contact Information

Owner of Land

Name: _____
Title and Company: _____
Street address: _____ City, State, Zip: _____
Telephone: _____ Fax: _____
E-mail Address: _____

Applicant (To be completed if an entity or individual other than the owner is proposing the project)

Name: Paul Berg
Title and Company: Public Works Director/City of Fort Lauderdale
Street address: 100 North Andrews Avenue City, State, Zip: Fort Lauderdale, FL 33301
Telephone: 954-828-5064 Fax: _____
E-mail Address: pberg@fortlauderdale.gov

Note: *Approval from the owner of land is required*

Contractor to do work (Note: If not yet known, this information must be provided prior to commencement)

Name: TBD
Title and Company: _____
Street address: _____ City, State, Zip: _____
Telephone: _____ Fax: _____
E-mail Address: _____

Agent to secure license (if different from contractor)

Name: Daniel Davila, P.E.
Title and Company: Senior Engineer/Chen Moore & Associates, Inc
Street address: 500 West Cypress Creek Road, Suite 630
City, State, Zip: Fort Lauderdale, FL 33309
Telephone: 954-730-0707 ex 1085 Fax: 954-730-2030
E-mail Address: ddavila@chenmoore.com

SECTION IV: Project Specific Information**Part 1: Docks**Not applicable: ✓**A- Provide the following information for the any existing docks at the site:**

Length: _____ Width: _____ Total Area: _____ sq. ft.

Width of structure as measured from the wet face of the seawall panel: _____ feet

Total Area of existing structures over waters and/or wetlands: _____ sq. ft.

Number, Length and Width of finger piers (if applicable): _____

of existing wet slips: _____ # of existing dry slips: _____

of vessels at the site: _____ # of boat trailer parking spaces _____

Draft of vessels at the site _____

B- Provide the following information for any proposed docks at the site:

Length: _____ Width: _____ Total Area: _____ sq. ft.

Width of structure as measured from the wet face of the seawall panel: _____ feet

Total Area of proposed dock on or over surface waters and/or wetlands: _____ sq. ft.

Number, Length and Width of finger piers (if applicable): _____

of proposed wet slips: _____ # of proposed dry slips: _____

Drafts of proposed vessels: _____ # of proposed boat trailer parking spaces _____

Note: Any over-water structure with a width of 8 feet and a length greater than 100 feet requires riprap under the portion of the structure which exceeds 100'. Any over-water structure with a width greater than 8 feet requires riprap under the entire structure.

Additional information necessary for multifamily docking facilities, marinas and dry stacks

- ☐ Documentation of the existing and proposed number of slips at the facility
- ☐ Clearly label and number the existing and proposed number of slips on the plan view drawings
- ☐ If sewage pump-out facilities, fueling facilities, and/or liveaboards are proposed provide detailed containment, maintenance, and management plans for each proposed amenity and include the locations of each on the drawings
- ☐ Total linear feet of shoreline owned by the applicant
- ☐ Proposed upland site plan if upland work is proposed
- ☐ A bathymetric survey of the project area referenced to mean low water.
- ☐ A benthic resources (seagrasses, oysters, etc) surveys performed between April 1 and August 31

Part 2: SeawallsNot applicable: ✓**Type of construction** (check all applicable):

- | | |
|---|---|
| <input type="checkbox"/> Footer | <input type="checkbox"/> Removal and replacement in front of existing |
| <input type="checkbox"/> Batter piles | <input type="checkbox"/> Replacement in same footprint as existing |
| <input type="checkbox"/> New construction | <input type="checkbox"/> New wall where no wall previously existed |
| <input type="checkbox"/> New wall | |

If removal and replacement, the distance of the new wall panel from existing wet face: _____ ft.

Length: _____ ft Width of cap over water: _____ ft Wall Type: _____

Additional information necessary for seawall projects

- ☐ The location of and distance from the existing seawall face in relation to the adjacent seawalls or permanent structures
- ☐ Natural limerock riprap with 1-2 foot diameter at a 2 horizontal: 1 vertical slope ratio beginning at one foot above mean high water is required for projects in tidal waters where no wall previously existed.

**Part 3: Dredging and/or filling of Existing Surface Waters
or Excavation of New Surface Waters**Not applicable: ☒

Fill: _____ acres Fill volume: _____ cu yards
 Dredging/Excavation: _____ acres Dredge/Excavation volume: _____ cu yards
 Maximum depth of dredging: _____ NGVD
 Seasonal HWL (for fresh water projects): _____ NGVD
 Reason for dredging and/or filling: _____

Additional information necessary for dredge and fill projects

- ☐ A detailed description of the methodology and sequencing of dredging activities, turbidity control and monitoring and disposal of spoil material (including locations, volumes, retention plans and locations/dimensions of disposal cells).
- ☐ The required lake slopes of 4 horizontal : 1 vertical to a minimum of 4 feet below the ordinary high water shown on the drawings
- ☐ Detailed and specific description of the baseline bathymetry for the project and adjacent waters

Part 4: Mangrove TrimmingNot applicable: ☒

Note: If ONLY mangrove trimming or alteration is proposed, please use the application provided at:
<http://www.dep.state.fl.us/water/wetlands/forms/mangrove/trimapp.doc>

Number per species of mangroves to be trimmed: [] Red [] Black [] White
 Number per species of mangroves to be removed: [] Red [] Black [] White
Present height: _____ ft _____ inches Diameter (dbh): _____ aerial coverage: _____ acres
Proposed height: _____ ft _____ inches Diameter (dbh): _____ aerial coverage: _____ acres
 Reason for alteration: _____

Part 5: Wetlands**Not applicable:** ✓

Please indicate the boundaries of the jurisdictional wetlands on the drawings and attach a preliminary Unified Wetland Mitigation Assessment Methodology (UMAM) assessment.

Amount of wetlands on site: _____ sq ft _____ acres (please depict wetlands on drawings)

How this was determined: _____

Has THE COUNTY conducted a wetland jurisdictional determination on the property? [] no [] yes

(if yes, attach a copy of the determination)

Wetland Fill: _____ acres

Fill volume: _____ cu yards

Wetlands Excavation: _____ acres

Excavation volume: _____ cu yards

Max. Depth of Excavation: _____ NGVD

Seasonal HWL: _____ NGVD

Additional information necessary for wetland mitigation projects

- ☐ A mitigation plan which, at a minimum, includes details of the mitigation area, proposed grading contours at 1-foot intervals, and monitoring, maintenance and planting plans,
- ☐ Any encumbrances within the Conservation Easement area identified on the plans
- ☐ Preliminary UMAM calculations

Part 6: Voluntarily Created Wetlands**Not applicable:** ✓

Current site conditions: _____

Excavation: _____ sq ft _____ acres

Excavation volume: _____ cu yards Max. depth of excavation: _____ NGVD

Final disposal location of excavated material: _____

Is a connection to existing surface waters proposed? Yes _____ No _____

SECTION V- Certifications and Signatures

Part 1: Owner/ Applicant Certification

By signing below I Paul Berg certify the following:
Printed Name or Owner or Applicant

- a) I understand this is an application and not a license, and that work prior to approval is a violation
- b) I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief, such information is true, complete and accurate.
- c) I further certify that I possess the authority to undertake the proposed activities.
- d) I understand that I may have to provide additional information/data that may be necessary to show that the proposed project will comply with Sections 27-331 through 27-341, titled Aquatic and Wetland Resource Protection, of the Natural Resource Protection Code.
- e) Should the information I provide not be adequate for review, I understand that the Department is not obligated to issue a comprehensive Completeness Summary.

- f) In addition, I agree to provide entry to the project site, for inspectors with proper identification, for the purpose of reviewing the site as covered by the scope of Sections 27-331 through 27-341, titled Aquatic and Wetland Resource Protection, of the Natural Resource Protection Code.
- g) Further, I hereby acknowledge the obligation and responsibility for obtaining all of the required federal, state and local permits before commencement of construction activities.
- h) If a license is issued, I agree, or I agree on behalf of the applicant, to construct and maintain the project in compliance with the license conditions, unless the Department authorizes transfer of the license to another entity
- i) **I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.**
- j) Should a County Environmental Resource License be granted, I hereby certify that I will comply with all general and specific conditions of that license and with the Broward County Natural Resource Protection Code (Chapter 27, Ord. 90-49, as amended.

Signature of Applicant/Owner

Date

Paul Berg

Typed / Printed Name of Applicant

Public Works Director

Corporate Title (if applicable)

Notarization:

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, _____
by _____, who is personally known to me, or who has produced _____
_____ as identification.

My commission expires:

Name
Notary Public, State of Florida
Commission Number: _____

Part 2: Agent/Contractor Authority- The applicant/owner should only sign this section if he/she is authorizing the contractor or consultant to act on his/her behalf.

By signing below I hereby designate

Individual Name (printed): Daniel Davila, P.E.

Company Name: Chen Moore & Associates

as the agent in the processing of this application to furnish supplemental information and support of the application. In addition, I authorized the agent to bind me, or my Corporation, to perform any requirements which may be necessary to procure to license for authorization indicated above.

Signature of Applicant/Owner

Date

Part 3: Authorized Agent Certification – If Part 2 above is completed by the applicant this section should be certified by the agent/contractor authorized in Part 2 above

By signing below I **Daniel Davila, P.E.** certify the following:

Printed Name of Agent

- a) I understand this is an application and not a license, and that work prior to approval is a violation
- b) I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief, such information is true, complete and accurate.
- d) I understand that I may have to provide additional information/data that may be necessary to show that the proposed project will comply with Sections 27-331 through 27-341, titled Aquatic and Wetland Resource Protection, of the Natural Resource Protection Code.
- e) Should the information I provide not be adequate for review, I understand that the Department is not obligated to issue a comprehensive Completeness Summary.
- f) In addition, I agree to provide entry to the project site, for inspectors with proper identification, for the purpose of reviewing the site as covered by the scope of Sections 27-331 through 27-341, titled Aquatic and Wetland Resource Protection, of the Natural Resource Protection Code.
- g) Further, I hereby acknowledge the obligation and responsibility for obtaining all of the required federal, state and local permits before commencement of construction activities.
- h) If a license is issued, I agree on behalf of the applicant, to construct and maintain the project in compliance with the license conditions, unless the Department authorizes transfer of the license to another entity
- i) **I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.**
- j) Should a County Environmental Resource License be granted, I hereby certify that I will comply with all general and specific conditions of that license and with the Broward County Natural Resource Protection Code (Chapter 27, Ord. 90-49, as amended).

Signature of Agent

Date

CHEN MOORE & ASSOCIATES

SENIOR PROJECT MANAGER

Name of Corporation/Business

Corporate Title (if applicable)

Part 4: Contractor Certification – If different from the authorized agent above

By signing below I **TBD** certify the following:

Printed Name of Contractor

- a) I understand this is an application and not a license, and that work prior to approval is a violation
- b) I hereby acknowledge the obligation and responsibility for obtaining all of the required federal, state and local licenses before commencement of construction activities.
- c) If a license is issued, I agree on behalf of the applicant, to construct and maintain the project in compliance with the license conditions, unless the Department authorizes transfer of the license to another entity
- d) **I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.**
- e) Should a County Environmental Resource License be granted, I hereby certify that I will comply with all general and specific conditions of that license and with the Broward County Natural Resource Protection Code (Chapter 27, Ord. 90-49, as amended.)

Signature of Contractor

Date

Name of Corporation/Business

Corporate Title (if applicable)

NOTICE OF INTENT TO USE AN ENVIRONMENTAL RESOURCE GENERAL PERMIT

Instructions: This form is for projects that qualify for a General Permit in accordance with Chapter 62-330 F.A.C. General Permits (GP) are provided for certain activities that have been determined to have minimal impacts to the water resources of the state when conducted in compliance with the terms and conditions of the general permit. Complete and submit this form to appropriate agency as identified in Part 3 below.

If activity is located on, or has the potential to be located on state-owned sovereignty submerged lands (SSL), the reviewing Agency will begin processing the request for state-owned sovereign submerged lands approval. If you know that your project is located on SSL, complete Section F of the Environmental Resource Permit Application.

PART 1: GENERAL INFORMATION

A. Rule section number of the GP or which you are applying: 62-330.____, F.A.C.	
B. APPLICANT <input type="checkbox"/> THIS A CONTACT PERSON FOR ADDITIONAL INFORMATION	
Name: Last:	First: Middle:
Title:	Company:
Address:	
City:	State: Zip:
Home Telephone:	Work Telephone:
Cell Phone:	Fax:
E-mail Address:	
Preferred correspondence method: email US Mail	
C. CONSULTANT/AGENT <input type="checkbox"/> THIS A CONTACT PERSON FOR ADDITIONAL INFORMATION	
Name: Last:	First: Middle:
Title:	Company:
Address:	
City:	State: Zip:
Home Telephone:	Work Telephone:
Cell Phone:	Fax:
E-mail Address:	
Preferred correspondence method: email US Mail	



D. Location of proposed activities:		Tax Parcel Identification Number:		
Address:				
City:		County:		Zip:
Latitude (DMS) ° , 5.44 "		Longitude (DMS) ° , 34.40 "		
E. Date activity is proposed:		To Commence:		To be Completed:

F. Describe in general terms the proposed project, system, or activity:

G. Describe wetland and aquatic habitats to be affected:

H. Construction methods and schedule:

I. Additional information that demonstrates that you qualify for the general permit, addressing all the parameters, thresholds, and conditions required in the general permit.

PART 2: CERTIFICATION

I hereby certify I have read and will conduct the above activities in accordance with the criteria, limitations, and specific conditions of the general permit identified in Part 1 Section A, and in accordance with the general conditions of Rule 62-330.405, F.A.C. Unless otherwise provided in Chapter 62-330, F.A.C., activities conducted pursuant to the above general permit may commence thirty (30) days after providing written notice to the Department of Environmental Protection or the Water Management District, along with any required additional documentation which may be required to fulfill the requirements of the general permit, unless the Agency responds that the proposed work does not qualify for a general permit.

I understand I may have to provide any additional information/data that may be necessary to provide reasonable assurance or evidence that the proposed project will comply with the applicable state water quality standards or other environmental standards both before construction and after the process is completed.

I further acknowledge that work done under this general permit may also require the review and approval of other federal, state, or local agencies, and that commencement of construction before such federal, state, or local agency approvals or permits are obtained may subject me to enforcement action and fines

or penalties by such agencies. Further, the work shall be conducted in a manner that does not violate applicable water quality standards.

In addition, I agree, upon being provided with reasonable notice, to provide entry to the project site for Agency staff with proper identification for the purpose of inspecting the site. Further, I agree to provide entry to the project site for such staff to monitor permitted work.

Typed/Printed Name of Applicant or Agent	Signature of Applicant or Agent	Date
--	---------------------------------	------

An Agent May Sign Above If Applicant Completes the Following:

I hereby designate and authorize the agent listed in Item Part 1 Section C to act on my behalf as my agent in the processing of this permit application and to furnish on request, supplemental information in support of the application.

Typed/Printed Name of Applicant (and Corporate Title, if applicable)	Signature of Applicant	Date
--	------------------------	------

PART 3: SUBMITTAL

In addition to the information described in this form, any Notice of Intent to use a General Permit must also include the following, as described in Section 4.2.2 of the Applicant's Handbook, Volume I:

- Location map(s) of sufficient detail to allow someone who is unfamiliar with the site to travel to and locate the specific site of the activity.
- One set of plans and drawings, calculations, environmental information, and other supporting documents that clearly and legibly depict and describe the proposed activities in sufficient detail to demonstrate that the work qualifies for the specified General Permit.
- The required fee, made payable to the appropriate agency.

Fees for the appropriate agency are established in the rules adopted in subsection 62-330.071(1), F.A.C., as listed below:

Rule 62-4.050, F.A.C. (Department of Environmental Protection or the Northwest Florida Water Management District)

Rule 40B-1.706, F.A.C. (Suwannee River Water Management District)

Rule 40C-1.603, F.A.C. (St. Johns River Water Management District)

Rule 40D-1.607, F.A.C. (Southwest Florida Water Management District)

Rule 40E-1.607, F.A.C. (South Florida Water Management District)

Operating Agreements between the Department and the water management districts specify which agency will process any given application. For copies of the operating agreements, go to <http://www.dep.state.fl.us/water/wetlands/erp/wmd.htm>.

Several agencies now allow this application form to be submitted electronically on the Internet; in those cases, follow the on-line submittal requirements of that agency:

- o **Northwest Florida Water Management District:**
http://www.nwfwmd.state.fl.us/permits/erp/epermit_home.html

- o **St. Johns River Water Management District:**
<https://permitting.sjrwmd.com/epermitting/jsp/AccountOverview.do?command=init>
- o **Southwest Florida Water Management District:**
<http://www.swfwmd.state.fl.us/permits/epermitting/>
- o **South Florida Water Management District:**
<http://my.sfwmd.gov/ePermitting/MainPage.do>

If submitting a paper application, please see Appendix A of Applicant's Handbook, Volume I for submittal locations.

SKETCH OF DESCRIPTION REQUIREMENTS
**For Leases and Private Easements (≤3,000 Square Feet Preempted Area Over
Sovereignty Submerged Lands) and All Public Easements**

INSTRUCTIONS TO APPLICANT

IMPORTANT:

THIS PACKAGE PROVIDES THE SUBMERGED LANDS AND ENVIRONMENTAL
RESOURCES PROGRAM REQUIREMENTS THAT MUST BE MET IF YOUR PROJECT
QUALIFIES FOR A LEASE OR EASEMENT AS DESCRIBED ABOVE

IF YOU CONTRACT WITH A DESIGNATED AGENT/ENTITY TO PROCESS YOUR
SUBMERGED LANDS PUBLIC EASEMENT OR LEASE APPLICATION, YOU MUST PROVIDE
THEM THIS PROFESSIONAL SKETCH OF DESCRIPTION REQUIREMENTS PACKAGE

SKETCH OF DESCRIPTION REQUIREMENTS
**For Leases and Private Easements (≤3,000 Square Feet Preempted Area Over
Sovereignty Submerged Lands) and All Public Easements**

When a project involves an activity on sovereignty submerged lands that requires an easement or lease, an application for a Board of Trustees (BOT) easement or lease must be filed and processed by the appropriate DEP District Office. The information identified below must be submitted to the DEP District Office in order for your application for easement or lease to be processed. The following procedures are specific to sovereign submerged lands leases or private easements that will preempt **less than or equal to 3,000 square feet and** all public easements.

The information must be prepared from the most recent records (i.e., existing rights-of-way maps, existing surveys, deeds). At the minimum, the following will be required:

**SKETCH OF DESCRIPTION (OF THE EASEMENT/LEASE AREA ON SOVEREIGNTY
SUBMERGED LANDS)**

1. Two 8 1/2" x 11" prints of the sketch of description. If the prints are reduced from a larger drawing, a copy of the original drawing must also be submitted for clarity purposes.
2. The sketch of description must be clearly labeled "NOT A FIELD SURVEY."
3. All copies must be dated, signed (original signatures), and sealed by a surveyor registered with the Florida State Board of Professional Surveyors and Mappers stating that the sketch of description (sketch of the easement/lease area) is in compliance with the Minimum Technical Standards pursuant to Rules 5J-17.050 through 5J-17.052 Florida Administrative Code.
4. The size and dimensions of all proposed and existing structures within the right-of-way must be shown on the sketch; or engineering drawings (8 1/2" x 11" prints) including this information must be provided.
5. An *approximate* mean high water line (MHWL) in tidally influenced waters or an *approximate* ordinary high water line (OHWL) in non-tidally influenced waters must be **shown** on the sketch with a note clearly stating that the *approximate* line is not intended to be the legal boundary between private and state ownership. (Note: the **description** must refer to the *actual* mean or ordinary high water line-- see "Boundary Lines" below.)
6. Scaled or surveyed NAD 1927 or 1983 coordinates of the point of beginning (POB) of the easement/lease area must be shown on the sketch. The coordinates may be scaled from a USGS quad sheet or other suitable maps. The method used to determine the coordinates must be noted on the drawing.

LEASE AREA DESCRIPTION

A metes and bounds description of the perimeter of the lease sought must be provided on a separate 8 1/2" x 11" sheet and must include the county, section, township and range, the name of the affected waterbody and the approximate square footage of the lease. The lease description must call for the MHWL or OHWL even though the water boundary may be represented on the sketch by an approximate line or safe upland line.

EASEMENT AREA DESCRIPTION

A metes and bounds description of the perimeter of the easement sought must be provided on a separate 8 1/2" x 11" sheet and must include the county, section, township and range, the name of the affected waterbody and the approximate acreage of the easement. The easement description must call (bearing and distance) for an actual MHWL or OHWL. (A call for the approximate line of MHWL or OHWL will not be accepted in the description (the line must be known), but is acceptable on the sketch.) A centerline description will not be accepted, unless pre-approved by the Division of State Lands.

LOCATION SKETCH / VICINITY MAP

A location sketch (vicinity map) must be provided. For clarity purposes, the location sketch must be provided on a separate 8 1/2" x 11" sheet.

BOUNDARY LINES OF SOVEREIGNTY SUBMERGED LANDS

There are two types of waterbodies that define sovereignty submerged lands: tidally influenced waterbodies and non-tidally influenced waterbodies. The boundary line between sovereignty lands and privately-owned riparian lands along tidally influenced waterbodies is the mean high water line (MHWL), and along non-tidally influenced waterbodies is the ordinary high water line (OHWL).

For both types of waterbodies a safe upland line can be used to approximate the ordinary or mean high water line in lieu of the true water boundary to determine an acceptable easement area. Generally, a safe upland line is sufficient if it runs along the edge of mature upland vegetation. If a safe upland line is used for identification of the lease or easement area, the legal description of the parcel bounded by this line must be preceded by a leader containing: "That part of the sovereign lands of the State of Florida that lie within the following described area: . . ." This will ensure that the area to be under easement will be only that part that is actually sovereign submerged land.

In all cases, contact the Bureau of Survey and Mapping if there are any questions.

Definitions:

Preempted area (18-21.003 and 18-20.003, F.A.C., as applicable) means the area of sovereignty lands from which the traditional public uses have been or would be excluded to any extent by an activity. The area may include, but is not limited to, the sovereignty lands occupied by the docks and other structures, the area between the docks and the shoreline and the area between the docks and out to any mooring pilings (the preempted area would also be extended to include the area for the largest [length and width] vessel(s) to be moored at the site). In Aquatic Preserves the area will also include the docking facility turning basin. If the activity is required to be moved waterward to avoid dredging or disturbance of nearshore habitat, a reasonable portion of the nearshore area that is not impacted by the dredging or structures shall not be included in the preempted area.

Sketch of Description: A sketch of a parcel or parcels of land pursuant to Rules 5J.17.050 through 5J-17.052, F.A.C., and prepared by a Florida professional surveyor and mapper that can be derived from direct observation and measurements, and/or from existing available information sufficient to adequately represent the perimeters of a parcel or parcels

of land. The sketch shall be in complete accord with the property description shown on, or attached and referred to, the survey map.

Property Description or Legal Description: The description of a parcel or real property, in technical terms, that is sufficient to accurately locate the parcel. The property or legal description is incorporated as a part of the survey or sketch of description.

Boundary Survey: A process pursuant to Rules 5J.17.050 through 5J-17.052, F.A.C., which is performed and prepared by a Florida professional surveyor and mapper from direct observation and measurements and presented in map form, the primary purpose of which is to define and document the perimeters of a parcel or parcels of land. The surveyor and mapper shall make a determination of the position of the boundary of real property in complete accord with the property description shown on, or attached and referred to, the survey map.

Metes and Bounds: A method of describing land by boundary lines (bounds) and measures of length and direction (metes). The most common method is to recite the directions and lengths as one would walk around the perimeter of the parcel.

CHECKLIST FOR REVIEW OF “SKETCH” AND EASEMENT AREA DESCRIPTION

Use for reviews of sketches for **all public easements**
(any size) and for **private easements** that preempt $\leq 3,000$
square feet.

Applicant: _____ File No.: _____
Reviewed by: _____ Date: _____
[] ACCEPTABLE [] UNACCEPTABLE

<u>Sketch</u>	<u>Remarks</u>
Two prints of sketch provided on 8½ x 11 sheets	
Sketch clearly labeled "NOT A FIELD SURVEY"	
Surveyor's original signature and original seal	
Surveyor's certification number	
Sketch is dated	
Sketch is drawn to scale	
Location, size and dimensions of existing and proposed structure(s) are shown on the sketch	
Approximate MHWL shown on sketch -OR-	
Approximate OHWL shown on sketch -OR-	
Approximate SUL/Apparent shoreline shown	
Easement boundary abuts MHWL/OHWL/SUL	
North arrow shown on the sketch	
Description matches drawing (must call for an “actual” M/OHWL, vs. “approx.” line as shown on sketch) [see note below]	
Separate location sketch (vicinity map)-8½ x11”	
<u>Description</u>	
Approximate square footage/acreage of easement	
Description of easement area that includes: Section, Township, Range _____	
County _____	
Waterbody _____	
<u>COMMENTS:</u>	[Note: The <i>description</i> must use actual M/OHWL, not “approximate” line, as shown on the <i>sketch</i> . If SUL is used, the description begins with, “That part of the sovereign lands of the State of Florida that lie within the following described area:. . .”]

SURVEY REVIEW CHECKLIST

Applicant: _____ City of Fort Lauderdale

File No. _____

DEP/WMD Reviewer: _____ Date: _____

For: Lease _____ or Private Easement _____ (> 3,000 sq. ft.) Approved: Yes _____ No _____

PLEASE ENSURE THIS CHECKLIST IS COMPLETED PRIOR TO THE SUBMITTAL OF ANY SURVEY

Surveyor Review	Agent or Applicant Review	Survey Requirements	Comments: Please fill in highlighted boxes	DEP/WMD Review
		Surveyor's original signature		
		Surveyor's original seal		
		Surveyors certification number	No.	
		Name and address of surveyor		
		Date of survey	Date:	
		Each submitted	Graphic Scale = X" = XXX'	
		North arrow		
		Location or vicinity map of at least 7.5 minute quad scale		
		Two 8 1/2 by 11 originals		
	[a]	Boundaries of Lease/Easement (preempted area) shown, labeled (structures, mooring, activities)		
	[b]	Size and dimensions shown for all existing and proposed overwater structures and activities		
		All structures, moorings and activities are within the Lease/Easement area		
	[c]	Upland Property (parcel) boundaries shown and labeled. This is not a requirement to survey the upland property; however, the survey must show where the upland property lines intersect the MHWL/OHWL/SUL.		
	[d]	Primary navigation channel(s) or direction to center of affected waterbody shown		
	[e]	Riparian rights line shown and labeled from both sides of property		
	[f]	Distance from structures/moorings/activities to riparian lines shown		
		Distance from docks and waterward pilings to Lease limits		
		Identify each slip and mooring area; provide slip length and width (if needed, cross reference slips to dimensions provided in a table). Identify any staging area.		
]]	Florida Keys Leases: Show water depths referenced to MLW in Lease area & out to navigation channel		
	[h]	Linear footage of applicant's shoreline shown and noted		
	[i]	Location of any existing shoreline vegetation shown and noted		
	[j]	Location of and distance to any structures within 100 feet of Lease/Easement area shown		
	[k]	Legal Description: Section(s) 10 Township_50 South Range 42 East County Broward Water body Tarpon River STR matches survey, Deed, and/or Title Sheet		
	[k]	Legal description on separate page (if not legible on 8 1/2" paper)		

Surveyor Review	Agent or Applicant Review	Survey Requirements	Comments: Please fill in highlighted boxes	DEP/ WMD Review
	[k]	Total square footage and in Legal Description and noted	Sq. ft.	
	[k]	Legal description tied to at least one corner of record (which must be a section corner, subsection corner, or record plat or deed corner; must be labeled on the survey drawing)		
		Legal description has been cross-checked to ensure it matches drawing and the boundary closes.		
	[l]	Point of Beginning (POB) or Point of Commencement (POC) shown (from legal description) surveyed or scaled 1983 or 1927 NAD coordinate		
	[m]	Separate Legal Description for preempted area of non-water dependent structures including roof line on separate page or pages		
	[n]	Privately owned submerged land? Is deed from a private entity _____ or Trustee's Deed _____?	Trustees' Deed No. _____	
	[o]	Survey includes "This is a Field Survey"		
	[o]	Survey is "Certified to the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida" or, "This survey is certified to . . ." It may also be certified to the owner if desired.		
	[p,q,r]	Lease/Easement boundary abuts MHWL/OHWL/SUL (circle which) or is located entirely waterward. Show ECL if applicable.		
	[s]	MHW/OHW/SUL procedure approved by BSM and noted on survey and including date		
	[s]	Lease/Easement boundary abuts seawall: top & bottom seawall elevations and datum (NGVD 29 or NAVD 88) shown and noted	Elevations: Top: Bottom:	
	[s]	Aquatic Preserve: Show and note shoreline condition along Lease shoreline plus 1,000 feet on each side. Total linear feet = _____	Natural= _____% Seawall/bulkhead/riprap = _____%	

[The letters in brackets above correspond to the requirements in the survey instruction package.]

Surveyor's Signature _____

Review Date _____

Applicant's/Agent's Signature _____

Review Date _____

Comments: _____

(DEP 62-071) [Revised 9/21/2006, 2.12.2013, 1.28.2014]

EXHIBIT H

PERMITS

Via E-mail (jkenney@fortlauderdale.gov)

City of Fort Lauderdale
c/o Joseph Kenney
100 North Andrews Ave.
Fort Lauderdale, FL 33301

Dear Mr. Kenney:

This is to notify you of the Environmental Protection and Growth Management Department's action concerning your application received April 2, 2019, for authorization to install two 14" force mains across the Intracoastal Waterway from an easement located on 888 Intracoastal Drive to 1777 SE 10th Street in the City of Fort Lauderdale, Florida. The application has been reviewed for an Environmental Resource License.

Broward County - Environmental Resource License (ERL) Review – Granted

The Department has reviewed the project for compliance with Aquatic and Wetland Resource Protection Ordinance Sec. 27-331 through 27-341 of the Broward County Code. Based on the information submitted, Environmental Resource License No. **DF19-1081** is hereby issued. The above named licensee is hereby authorized to perform the work per the approved drawings(s), plans, documents and specifications as submitted by the licensee, and made a part hereof. The above referenced approvals will remain in effect subject to the attached Broward County General Conditions, Broward County Specific Conditions, and stamped exhibits.

The issuance of this license is a **final agency determination**. A person with a substantial interest may file a petition to request review of, or to intervene in a review of, a final administrative determination, subject to the provisions of Section 27-14, Broward County Code of Ordinances (excerpt attached).

Sincerely,

Linda Sunderland

Linda Sunderland, NRS
Natural Resources Section Manager

May 29, 2019

Date

ENC:

1. Environmental Resource License
2. Sec. 27-14 Administrative Review Procedures (4 pages)
3. One copy of stamped drawings (14 pages)

cc:

1. Daniel Davila, Chen Moore and Associates (via e-mail)
2. USACOE-PBG (via e-mail)

ENVIRONMENTAL RESOURCE LICENSE

LICENSEE: City of Fort Lauderdale
c/o Joseph Kennedy
100 N. Andrews Ave.
Fort Lauderdale, Florida 33301

LICENSE NO: DF19-1081
PROJECT:
Municipal Project –
Force Main via HDD

This license is issued under the provision of Chapter 27 of the Broward County Code of Ordinances also cited as Broward County Natural Resource Protection Code hereinafter called the Code. The above-named applicant, hereinafter called licensee, is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents, and specifications as submitted by applicant, and made a part hereof and specifically described as follows:

Description of Work: This license authorizes installation of approximately two 14" wide force mains using horizontal direction drill (HDD) method running under ~420-linear feet of the Intracoastal Waterway (ICWW). All bore pits shall be located in uplands and conduits shall be installed a minimum depth of 10-feet below the benthic floor. The proposed activities shall be located beneath all surface waters and wetlands. Should any impacts occur during work please contact the county immediately at 954-519-1454. ***This license does not authorize impacts to any other natural resources.***

Location of Work: This project is located across the Intracoastal Waterway from an easement located on 888 Intracoastal Drive to 1777 SE 10th, Section 01, Township 50 South, Range 42 East, in the City of Fort Lauderdale, Florida. Folio Numbers 504201BH0100 and 504201BD0010.

Construction shall be in accordance with submitted ERL Application Form received on 04/02/2019, and all additional information submitted; plans stamped by the Department on 05/29/2019 (attached); and with all General and Specific Conditions of this license.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations and restrictions set forth herein are accepted by the licensee and enforceable by Environmental Protection and Growth Management Department (EPGMD) pursuant to Chapter 27 of the Broward County Code of Ordinances. EPGMD will review this license periodically and may revoke the license, initiate administrative and/or judicial action for any violation of the conditions by the licensee, its agents, employees, servants or representatives or principals.
2. This license is valid only for the specific uses set forth in the license application, and any deviation from the approved uses may constitute grounds for revocation and enforcement action by EPGMD.
3. In the event the licensee is temporarily unable to comply with any of the conditions of the license, the licensee shall notify EPGMD within twelve (12) hours. Within five (5) working days of the event, the licensee shall submit a written report to EPGMD that describes the incident, its cause, the measures being taken to correct the problem and prevent its reoccurrence, the owner's intention toward repair, replacement, and reconstruction of destroyed facilities, and a schedule of action leading toward operation within the license conditions.
4. The issuance of this license does not convey any vested rights or exclusive privileges, nor does it authorize any injury to public or private property or any invasion of personal rights, or any violations of federal, state or local laws or regulations.
5. This license must be available for inspection on the licensee's premises during the entire life of the license.
6. By accepting this license, the licensee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, that are submitted to EPGMD, may be used by EPGMD as evidence in any enforcement proceeding arising under Chapter 27 of the Broward County Code of Ordinances, except where such use is prohibited by § 403.111, F.S.
7. The licensee agrees to comply with Chapter 27 of the Broward County Code of Ordinances, as amended.
8. Any new owner of a licensed facility shall apply by letter for a transfer of license within thirty (30) days after sale or legal transfer. The transferor shall remain liable for performance in accordance with the license until the transferee applies for, and is granted the transfer of license. The transferee shall also be liable for performance in accordance with the license.
9. The licensee, by acceptance of this license, specifically agrees to allow access to the licensed source at reasonable times by EPGMD personnel for the purposes of inspection and testing to determine compliance with this license and Chapter 27 of the Broward County Code of Ordinances.
10. This license does not constitute a waiver or approval of any other license that may be required for other aspects of the total project.
11. If the licensee wishes to renew a license or extend its term, the licensee shall make application sixty (60) days prior to its expiration. Expired licenses are not renewable.
12. In addition to the general conditions set forth above, each license issued by EPGMD shall contain specific conditions determined by site conditions and requirements pursuant to the regulations as determined by the director of EPGMD. The licensee agrees that specific conditions are enforceable by EPGMD for any violation thereof.
13. Enforcement of the terms and provisions of this license shall be at the reasonable discretion of EPGMD, and any forbearance on behalf of EPGMD to exercise its rights hereunder in the event of any breach by the licensee, shall not be deemed or construed to be a waiver of EPGMD's rights hereunder.

SPECIFIC CONDITIONS:**A. STANDARD CONDITIONS**

1. **Notify the Department in writing a minimum of 48 hours prior to project commencement and a maximum of 48 hours after project completion.** Commencement notification should include such information as the intended start date, estimated duration of construction, and the name and contact information of the firm contracted to do the work. Failure to comply with this condition may result in enforcement action.
2. Any project caused environmental problem(s) shall be reported immediately to the Department's Environmental Response Line at 954-519-1499.
3. All project generated solid waste and/or spoil material must be disposed of in a suitable approved in accordance with current regulations at an upland location (not including surface waters and wetlands).
4. Turbidity screens, silt fences, or equivalent shall be properly employed and maintained as necessary to effectively contain suspended sediments and/or runoff during construction activities. **Dredging, filling, excavation, seawall removal, seawall construction, and other projects which result in similar degrees of disturbance to wet sediments shall in all cases employ turbidity control measures designed to effectively enclose the entire work area.**
5. Turbidity levels shall be monitored and recorded if a visible turbidity plume is observed leaving the site during construction activities. If monitoring reveals that turbidity levels exceed 29 NTU's above natural background 50 feet downstream of the point of discharge, project activities shall immediately cease, and work shall not resume until turbidity levels drop to within these limits [62-302.530(69) FAC].

B. CONSTRUCTION CONDITIONS

1. No dredging is authorized by this license.
2. If the approved license drawings and/or license attachments/plans conflict with the specific conditions, then the specific conditions shall prevail.
3. **Demolition and construction related debris must be disposed of at an approved upland location and may not be left in the waterway.**
4. This license does not eliminate the necessity to obtain any required federal, state, local or special district authorizations prior to the start of any activity approved by this license.

C. DIRECTIONAL DRILLING

1. Installation, maintenance, repair, and removal conducted using directional drilling or jack-and-bore methods are subject to the following special conditions:
 - (a) All work areas associated with directional drilling or jack-and-bore activities, including entrance and exit pits, drill rigs, tanks, pumps, drilling fluid mixing and settling pits, dewatering systems and staging areas for pipe, cables, and drill string, shall be located within uplands.
 - (b) The use of drilling fluids shall not cause or contribute to a violation of state ground water quality criteria or standards, as defined in Chapter 62-520, F.A.C.
 - (c) The licensee shall, at least 48 hours prior to commencement of any directional drilling or jack-and-bore activities, submit to the agency the name, as registered with the Florida Department of State, and all-hours telephone contact information of all contractors responsible for drilling and for containment and cleanup in the event of a drilling fluid frac-out or spill;

- (d) Contractor shall, at all times during directional drilling activities, maintain appropriate equipment and materials in a readily-accessible location and condition, to effectively contain and clean up a drilling fluid frac-out or spill;
 - (e) The licensee or the licensee's contractor shall, at all times during directional drilling activities, ensure that appropriately-trained personnel monitor downhole equipment position, drilling fluid circulation and pressures, and actively monitor the entire utility line route for surface frac-out of drilling fluids.
 - (f) Drilling activities shall be discontinued and the drilling fluid or slurry shall be contained using appropriate methods as soon as possible, in the event of a drilling fluid frac-out or spill. Removal of drilling fluid or slurry from wetlands and other surface waters shall be initiated and completed in the most expeditious manner practicable. Removed drilling fluid shall be contained or disposed of in an appropriate upland location. Any frac-out or spill of drilling fluid into wetlands or other surface waters shall be reported to Broward County Response line at (954) 519-1499 within 24 hours following detection of the spill or frac-out.
2. If a visible turbidity plume is observed leaving the site at any time, the licensee shall:
- (a) Immediately cease all work contributing to the water quality violation. Operations may not resume until the Department gives authorization to do so.
 - (b) Notify the EPGMD immediately at (954) 519-1499, referencing the license number and project name.
 - (c) Stabilize all exposed material contributing to the water quality violation. Modify the work procedures that were responsible for the violation, and install more turbidity containment devices and/or repair any non-functioning turbidity containment devices.
3. Spoils shall be properly handled and disposed of in accordance with current regulations. Material generated from the excavation authorized by this license must be placed on the upland portion of the site and must be contained in such a manner as to prevent erosion into the adjacent mangrove wetlands or other surface waters. No discharge of water or dredged material to wetlands or other surface waters shall be allowed during the transport of the material.
- D. A COPY OF THIS LICENSE SHALL BE KEPT ON SITE DURING ALL PHASES OF LICENSED CONSTRUCTION.**

Recommended for approval by:

Michelle Decker
License Processor

Issued this 29th day of May, 2019

Expiration Date: May 29th, 2024

**BROWARD COUNTY ENVIRONMENTAL PROTECTION AND
GROWTH MANAGEMENT DEPARTMENT**

Linda Sunderland

**LINDA SUNDERLAND, NRS
NATURAL RESOURCES SECTION MANAGER
ENVIRONMENTAL ENGINEERING AND PERMITTING DIVISION**

Sec. 27-14. Administrative review of EPGMD determinations.

- (a) A person with a substantial interest may file a petition to request review of or to intervene in a review of a final administrative determination made pursuant to this chapter concerning:
- (1) The requirement that a facility or activity obtain a license or environmental review approval.
 - (2) Interpretations of license or environmental review approval conditions.
 - (3) Interpretations of variance conditions.
 - (4) The decision to suspend or revoke a license or environmental review approval.
 - (5) The requirement of certain license conditions.
 - (6) The issuance of a license or environmental review approval.
 - (7) The denial of a license or environmental review approval.
 - (8) The scope of a license or environmental review approval, geographic or otherwise.
 - (9) The scope of a variance, geographic or otherwise.
 - (10) The issuance of a stop work order.
 - (11) Similar final administrative determinations.

This administrative review procedure shall be the only means of review available for the above final administrative determinations by either the petitioner or the intervenor (the parties).

- (b) person may not obtain review by this procedure of:
- (1) The issuance or adjudication of or other matters involving a notice of violation or a citation.
 - (2) Internal policy decisions
- (c) A person desiring a review of a staff determination made pursuant to this Chapter shall first bring the determination to the attention of the appropriate section supervisor to attempt to resolve the matter. If a resolution cannot be reached, then the decision shall be reviewed by successive supervisory levels until the issue is resolved or reaches the level of the director or his or her designee for the final determination.
- (d) A person desiring administrative review of a final determination made by the director or the designee shall file a petition with the director for review by the hearing examiner. The petition shall be filed within ten (10) days from the rendition of the action taken or of the decision made by the director. An entity whose license or approval is being challenged shall be a party to the action.
- (e) The review shall not be heard until the provisions of subsection (f) are met. Upon motion to the hearing examiner, an insufficient petition shall be dismissed with or without leave to refile. If a petition is determined to be insufficient by the hearing examiner and the petitioner has been given leave to refile by the hearing examiner, unless otherwise ordered by the hearing examiner, the petitioner must refile within ten (10) days of the rendition of the order of dismissal or the petition will be dismissed with prejudice.

- (f) A sufficient petition for review or petition for intervention in the review shall, at a minimum, contain the following information:
- (1) The nature of the determination sought to be reviewed.
 - (2) A short, plain statement of the facts which form the subject matter upon which the determination was made as asserted by all parties of record at the time that the petition is filed; a statement of the material facts in dispute, if any. If any party is unable to state the matters in sufficient detail at the time initial petition is filed, the petition may be limited to a statement of the issues involved; and thereafter, upon timely written motion, a more definite and detailed statement shall be furnished not less than seven (7) days prior to the date set for the hearing.
 - (3) The specific determination for which the review is sought.
 - (4) The specific legal grounds upon which the parties seek review of the determination.
 - (5) A short statement of the petitioner's or the intervenor's substantial interest in the matter to be reviewed.
 - (6) The specific section of this chapter on which the decision is based, if known, and the specific section that the parties allege should control the decision, if known.
 - (7) A copy of the director's or the designee's written final determination.
 - (8) A statement of the relief requested stating precisely the action that the petitioner wants EPGMD to take with respect to the final determination.
- (g) All pleadings or other documents filed in the proceeding must be signed by a party, the party's attorney, or the party's qualified representative. The signature of a party, the party's attorney or a party's qualified representative constitutes a certificate that he or she has read the pleading or other document and that to the best of his or her knowledge, information, and belief formed after reasonable inquiry, it is not brought for any improper purposes, such as to harass or to cause unnecessary delay or for frivolous purpose or needless increase in the cost of litigation. If a pleading or other document is signed in violation of these requirements, the hearing examiner, upon motion or his or her own initiative, shall dismiss the matter.
- (h) A petitioner or intervenor may request an emergency hearing to stay all activities or work conducted pursuant to the challenged license or approval. Such petitioner or intervenor has the burden of proof to show by a preponderance of the evidence that the continued activities would cause substantial pollution or degradation to the environment. An emergency hearing shall be scheduled by EPGMD and be held within five (5) days of said request or as soon thereafter as possible subject to the availability of the hearing examiner. The petitioner or intervenor shall comply with the notice provisions of section 27-14(j)(2)a. and c. and section 27-14(j)(3) and (4) of this chapter.
- (i) The petition for review will not stay environmental protection activities required for the remediation or mitigation of a site or facility, the protection of the environment or the health, safety and welfare of the citizens of Broward County, or the prevention of further environmental degradation. The person responsible for these activities must take all necessary steps to prevent environmental degradation and must conduct the remediation or mitigation activities required by this chapter. The director may allow these activities to be delayed until after the hearing examiner's decision by certifying to

the hearing examiner that, by reason of facts stated in the certificate, a delay in the initiation or completion of these activities would not cause substantial environmental degradation or peril to life or property. The delay for conducting these activities may be subject to appropriate terms to ensure protection of the environment. The person responsible for these activities shall be responsible for any environmental damage or any violation of this chapter caused by the delay.

(j) Notice and Scheduling Requirements:

- (1) The hearing on the review shall be scheduled within a reasonable time. It shall be the responsibility of the petitioner to request through EPGMD that the hearing date be scheduled. It shall also be the responsibility of the petitioner to give notice in accordance with this section at least ten (10) days prior to the hearing.
- (2) The petitioner shall give notice of the hearing by:
 - a. Giving personal notice to all proper parties; and
 - b. Publishing notice on two (2) days in a newspaper of general circulation in the county; and
 - c. Posting notice at a location determined by the Broward County Administrator's Office.
- (3) The petitioner shall bear the cost of giving notice.
- (4) The notice shall contain, at a minimum:
 - a. A description and location of the facility or the activity to be conducted by the petitioner; and
 - b. The time and place of the hearing.

(k) The petitioner shall bear the cost of accurately and completely preserving all testimony and providing full or partial transcripts to all parties.

(l) The hearing shall be a quasi-judicial hearing.

- (1) The applicant/petitioner requesting the administrative review, any intervenor/petitioner and EPGMD shall have an opportunity to respond to and to present witnesses, other evidence and argument on all issues involved, to conduct cross-examination and submit rebuttal evidence, to submit proposed findings of facts and orders, and to be represented by counsel. Members of the general public who are not intervenors as set forth in Section 27-14 of this chapter are not parties to the proceeding.
- (2) When appropriate, the general public may be given an opportunity to present oral or written communications. If the hearing examiner proposes to consider such material, then all parties shall be given an opportunity to cross-examine, challenge or rebut it.

(m) Denial, protest of, revocation, or suspension of a license, environmental review approval, or any other approval:

- (1) In regard to denial or protest of approval of a license and any other review of an administrative decision, notwithstanding (2) below, the petitioner shall have the burden of showing, by a preponderance of the evidence, that the determination of the director was an arbitrary and/or capricious abuse of discretion, not supported by competent, substantial evidence or not in conformance with the

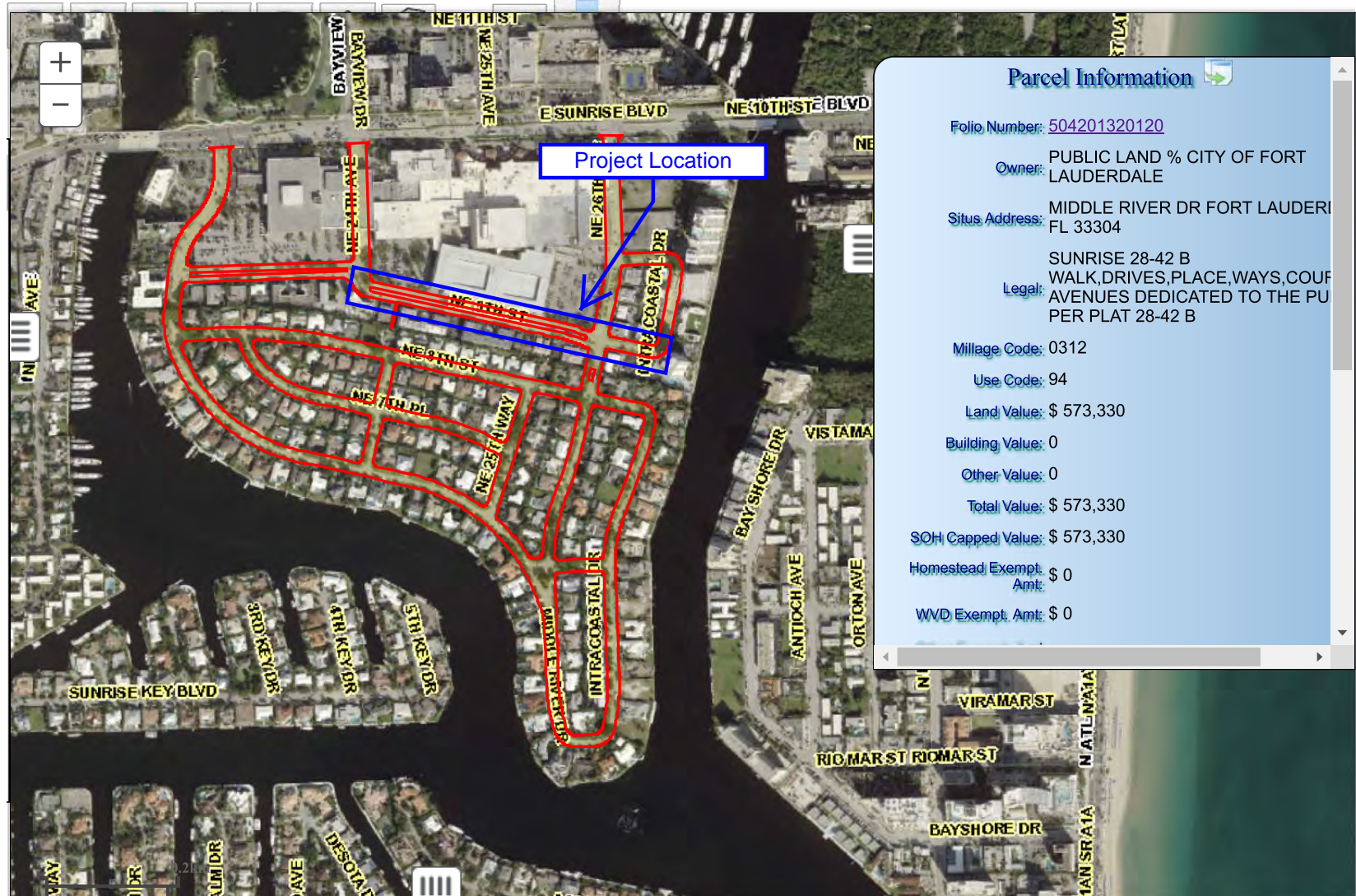
essential requirements of this chapter. The hearing examiner shall not substitute his or her judgment for that of EPGMD on an issue of discretion even though the hearing examiner may have reached a different conclusion based on the same facts.

- (2) In an action to revoke or suspend a valid license or approval, the burden shall be upon EPGMD to prove, by a preponderance of the evidence in an administrative hearing, the grounds for revocation or suspension. The license holder or approval recipient shall be provided notice of the hearing and a copy of the petition stating the grounds for revocation or suspension as provided in section 27-63 of this chapter. The petition shall state with specificity the acts complained of in order to allow the license holder or approval recipient an opportunity to prepare a defense. The hearing shall be conducted in accordance with the provisions of Section 27-37 of this chapter.
- (n) Findings of fact shall be based exclusively on the evidence of record and on matters officially recognized.
- (o) If the hearing examiner finds that the director or his or her designee has erroneously interpreted a provision and that a correct interpretation compels a particular action, he or she shall remand the case to the director or his or her designee for further action under a correct interpretation of the provision.
- (p) The hearing examiner shall complete and submit to the director and all parties a final order consisting of his or her findings of fact and conclusions of law.
- (q) A party to the hearing may obtain appellate review of the final order as provided by section 27-42 of this chapter.
- (r) A petitioner or intervenor shall pay a filing fee at the time the application for review is filed. The amount of the filing fee shall be set by resolution of the Board.

(Ord. No. 2003-34, § 1, 9-23-03; Ord. No. 2005-08, § 2.03, 4-26-05)
Secs. 27-15--27-19. Reserved.

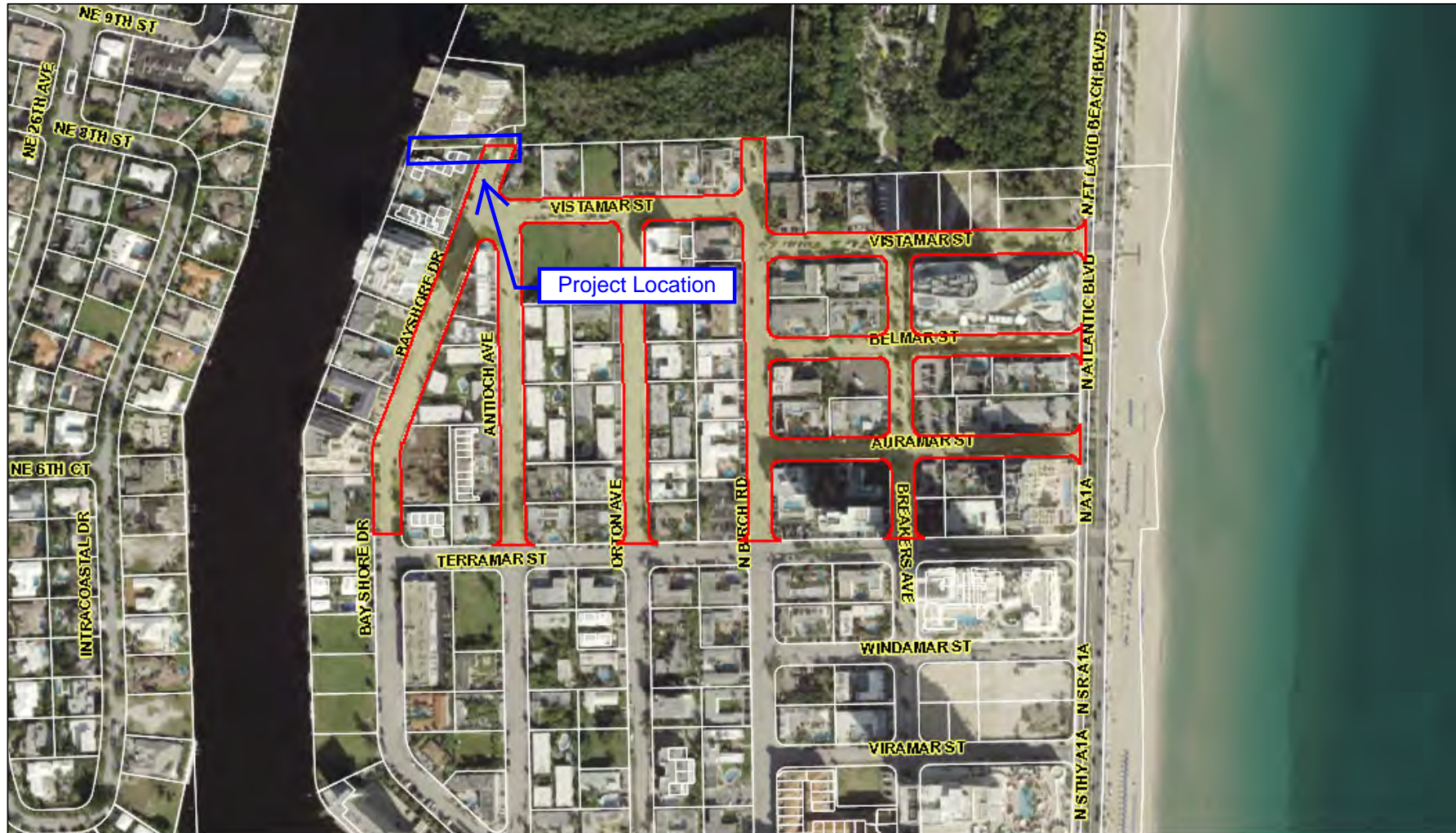
[Search By Folio](#)
[Search By Name](#)
[Search By Address](#)
[Help](#)
[About](#)

Marty Kiar Broward County Property Appraiser Florida

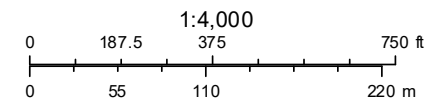


City of Fort Lauderdale

Bid 12374-906 R2

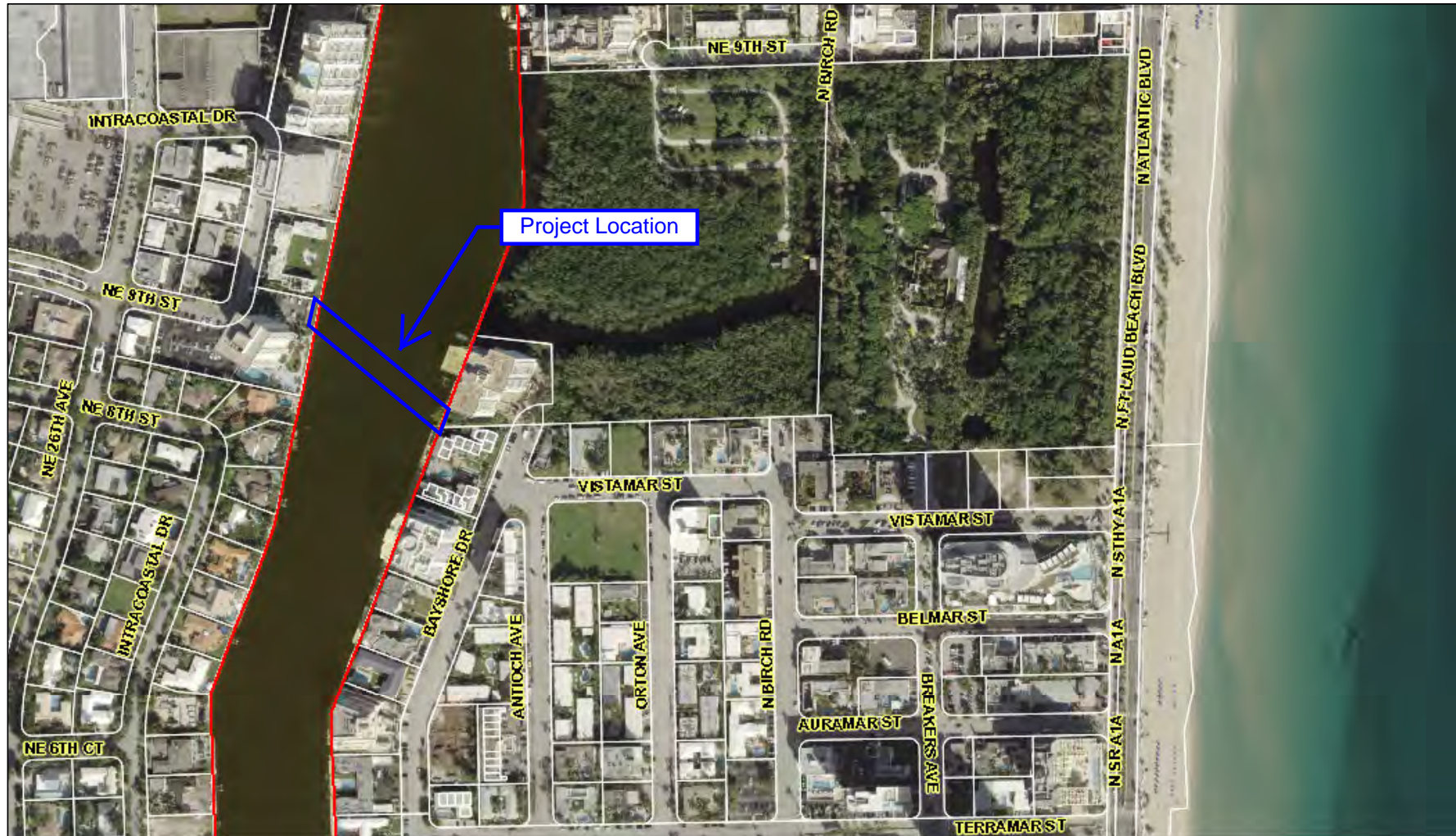


January 28, 2019

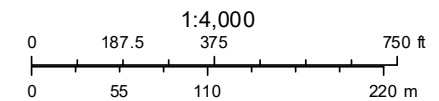


5/8/2020 1:34 PM

Flight Date: Dec. 15, 2017 Broward County Property Appraiser p. 443



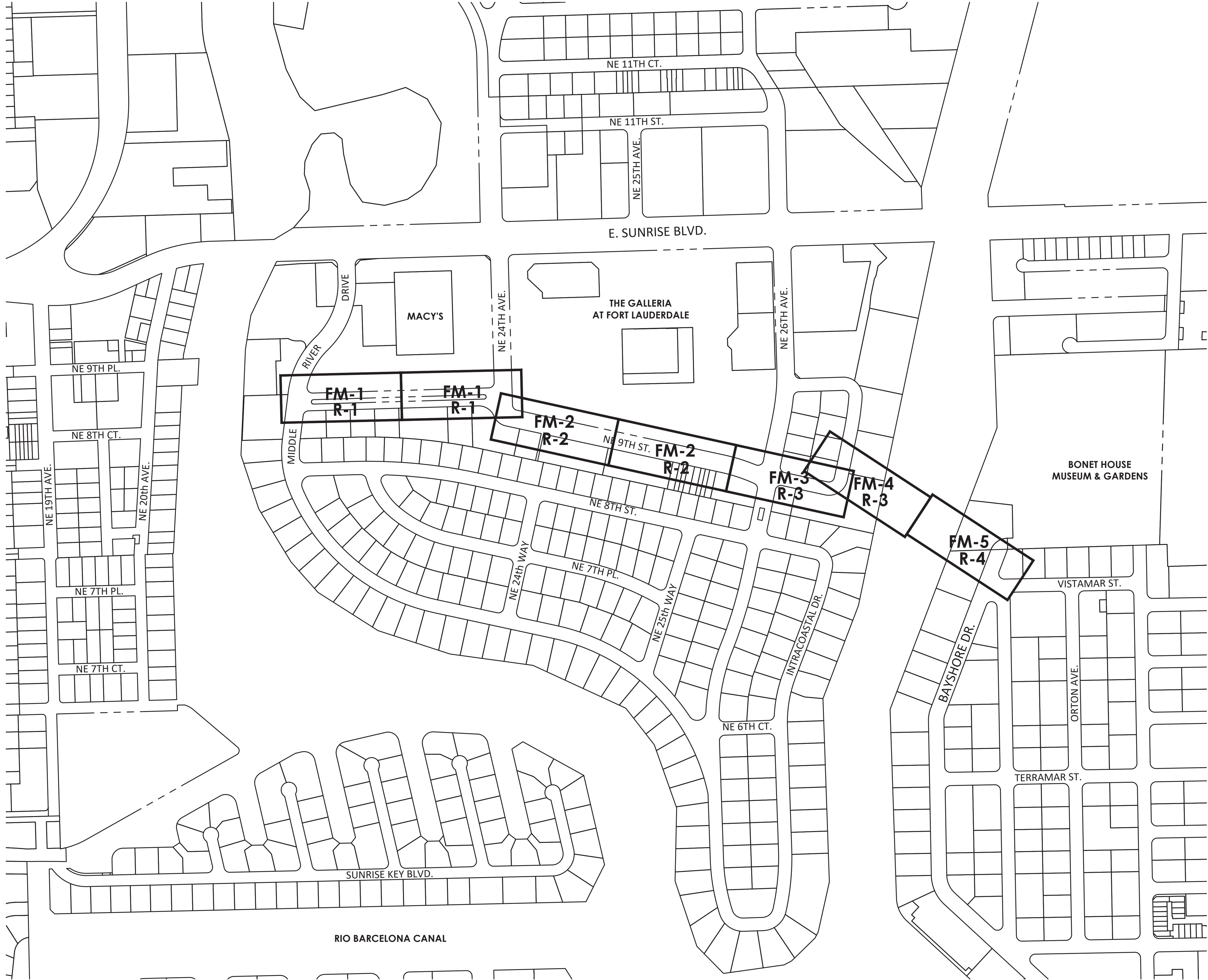
January 28, 2019



5/8/2020 1:34 PM

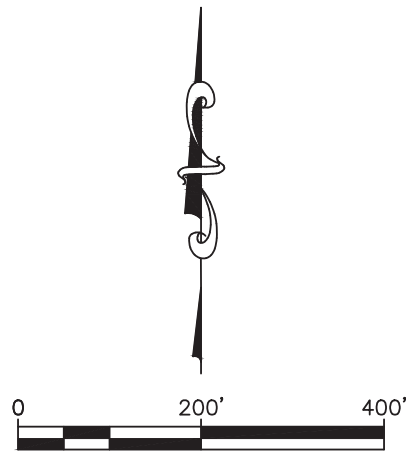
Flight Date : Dec. 15, 2017 Broward County Property Appraisal 444

Plot Date: 2/15/2019 4:25:14 PM Username: JTom Layout Name: KEY-1 Folder Path: V:\Projects\2018\18-047.040 - boyshore dr intracoastl crossing fm to 2\Design\CAD\Plans Filename: 12389-KMAP.dwg



CHEN-MOORE
&ASSOCIATES
500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com

CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425



THE ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED
BY DANIEL DAVILA, PE, ON MARCH 13, 2019
USING A SHA AUTHENTICATION CODE.
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED
SIGNED AND SEALED AND THE SHA AUTHENTICATION CODE
MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH
AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
CONVERSION FACTOR:
NAVD88 = NGVD29 IN THIS AREA

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS
THE N. RIVER FROM
NE 9TH ST. TO N. BIRCH RD.
KEY MAP

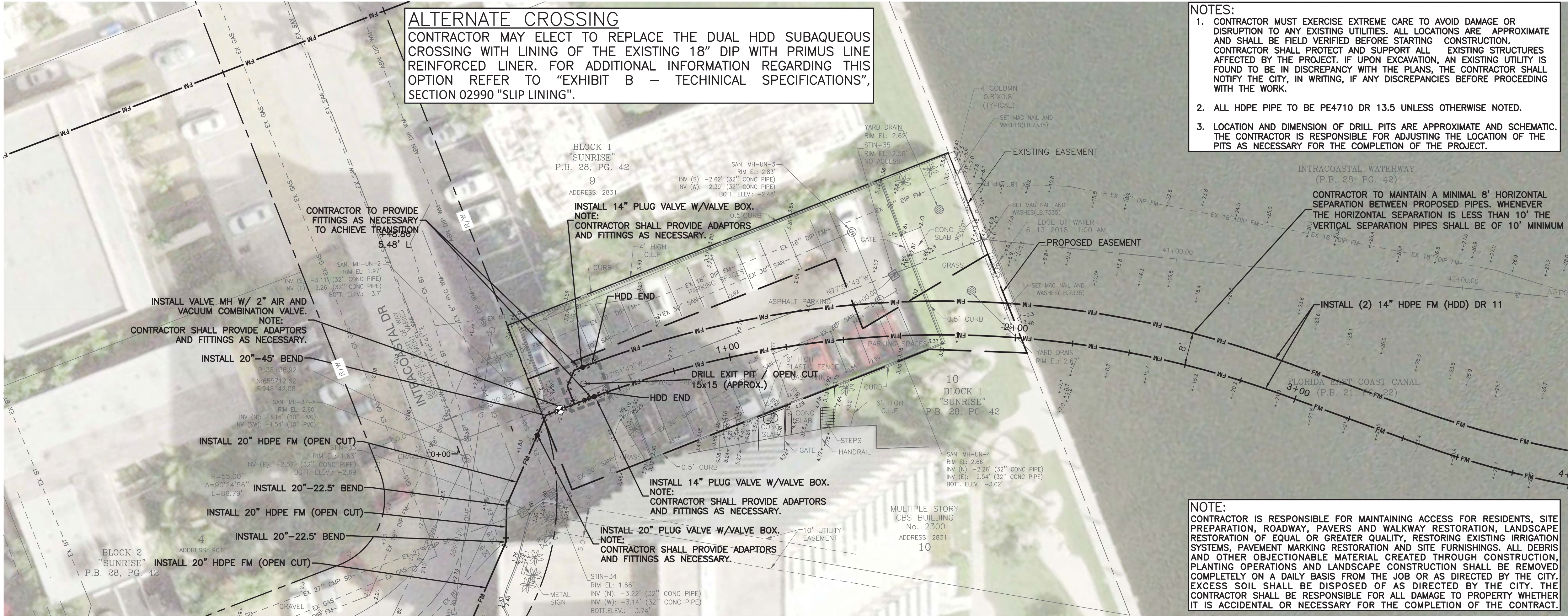
DRAWING #	SHT #
KEY-1	06
TOTAL:	18
CAD FILE:	12389-KMAP
DRAWING FILE NO.	4-XXX-XX

NO.	DATE	BY	CHKD	DESCRIPTION

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

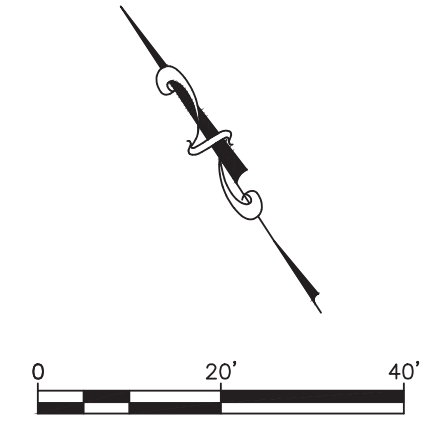
ENGINEER:
DANIEL DAVILA, P.E.
LICENSE NO. 63014
DATE:

DRAWN BY:	DATE:
JH	01/11/19
DESIGNED BY:	SCALE:
DC	
CHECKED BY:	
DD	
FIELD BOOK:	



MATCHLINE SEE DRAWING NO. FM-5

CHEN-MOORE & ASSOCIATES
500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425



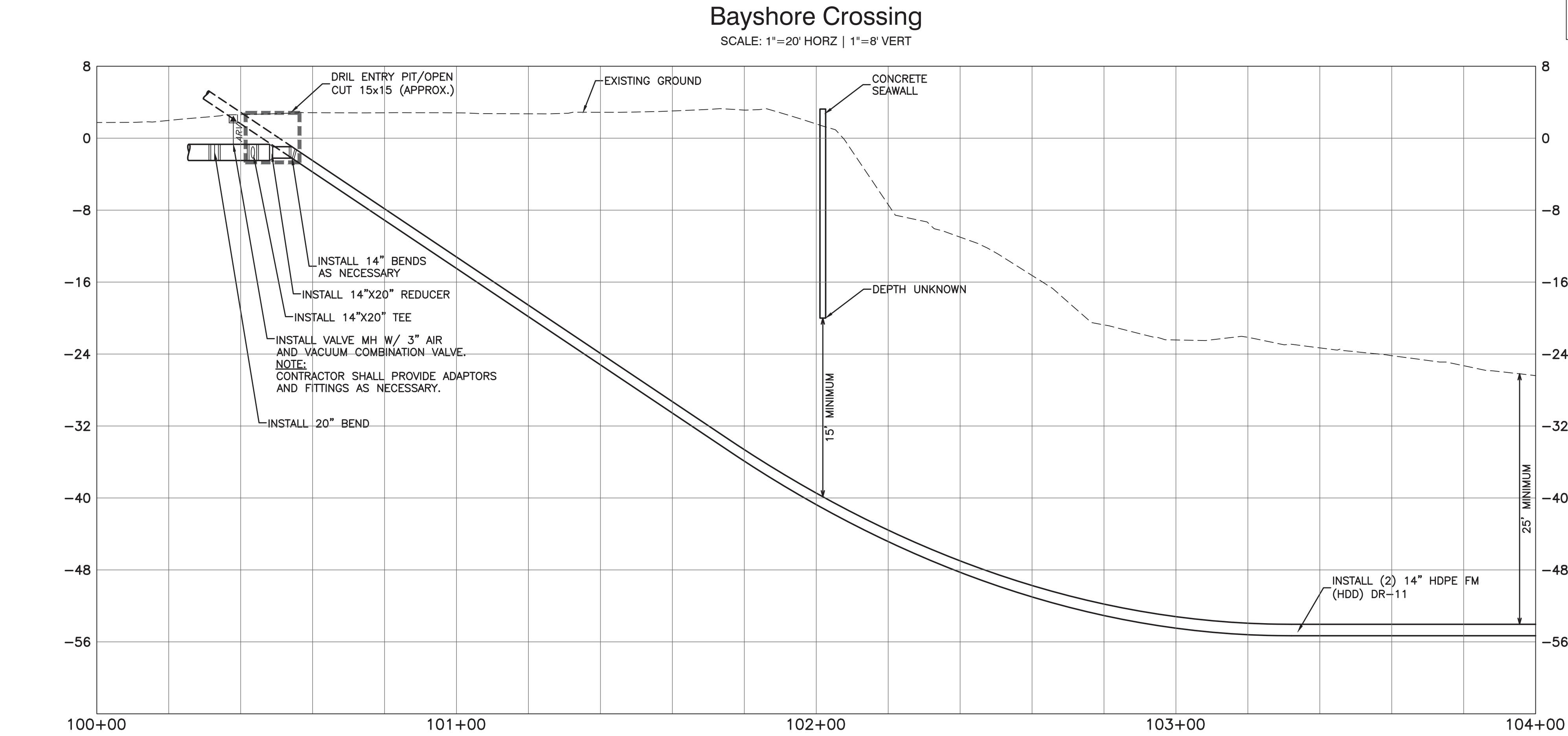
THE ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY DANIEL DAVILA, PE ON MARCH 13, 2019 USING A SHA AUTHENTICATION CODE.

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

Sunshine811
Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.
Check positive response codes before you dig!

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
CONVERSION FACTOR:
NAVD88 + 1.58 = NGVD29 IN THIS AREA

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION



ENGINEER: DANIEL DAVILA, P.E.
DATE: 01/11/19
DESIGNED BY: JH
CHECKED BY: DC
FIELD BOOK: DO

DRAWN BY: JH
DATE: 01/11/19
SCALE: 1"=20' HORIZ | 1"=8' VERT

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	REVISIONS		DESCRIPTION
	DATE	BY	

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS THE N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.
FORCE MAIN PLAN AND PROFILE

DRAWING #	SHT #
FM-4	10
TOTAL:	18
CAD FILE:	12389-MULTI-FORC
DRAWING FILE NO.	4-XXX-XX

MATCHLINE SEE DRAWING NO. FM-4

NOTES:

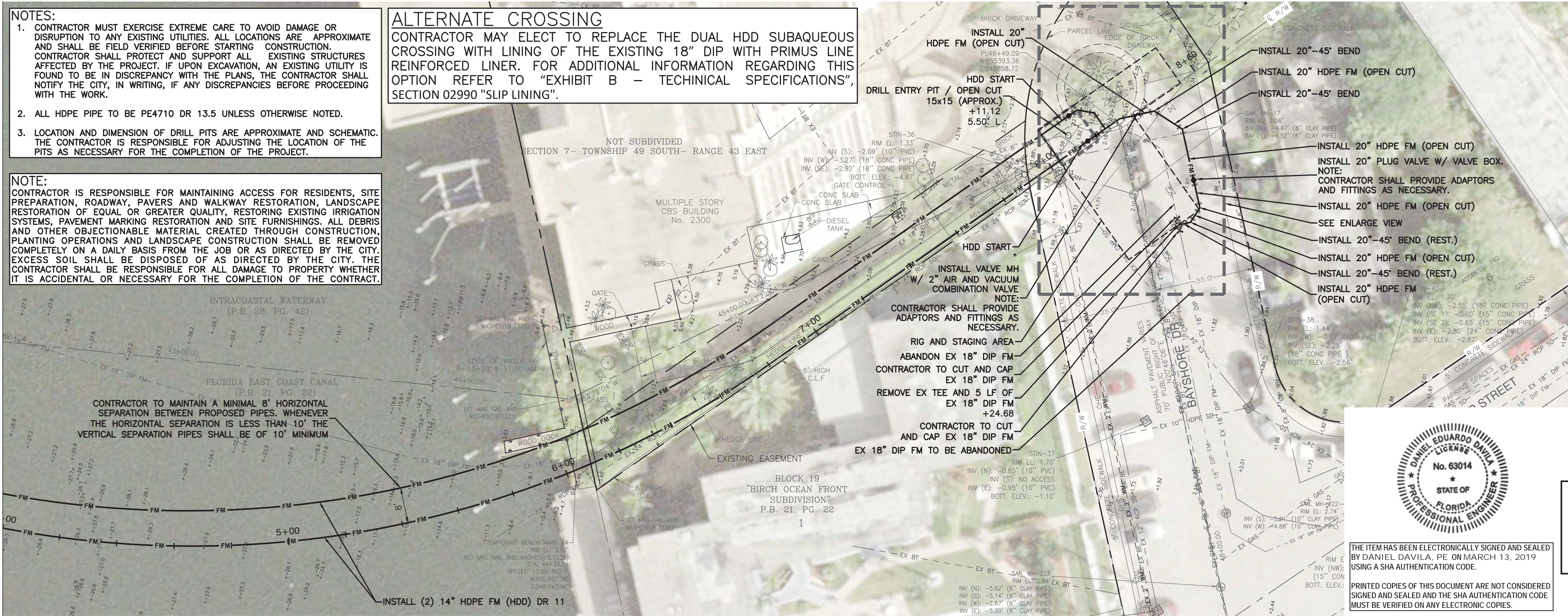
1. CONTRACTOR MUST EXERCISE EXTREME CARE TO AVOID DAMAGE OR DISRUPTION TO ANY EXISTING UTILITIES. ALL LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BEFORE STARTING CONSTRUCTION. CONTRACTOR SHALL PROTECT AND SUPPORT ALL EXISTING STRUCTURES AFFECTED BY THE PROJECT. IF UPON EXCAVATION, AN EXISTING UTILITY IS FOUND TO BE IN DISCREPANCY WITH THE PLANS, THE CONTRACTOR SHALL NOTIFY THE CITY, IN WRITING, IF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
2. ALL HDPE PIPE TO BE PE4710 DR 13.5 UNLESS OTHERWISE NOTED.
3. LOCATION AND DIMENSION OF DRILL PITS ARE APPROXIMATE AND SCHEMATIC. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING THE LOCATION OF THE PITS AS NECESSARY FOR THE COMPLETION OF THE PROJECT.

NOTE:

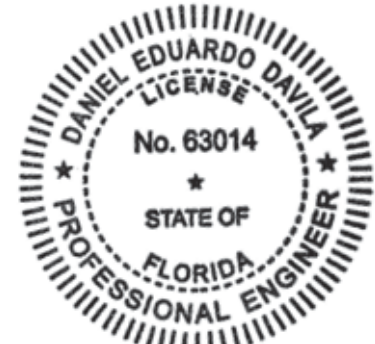
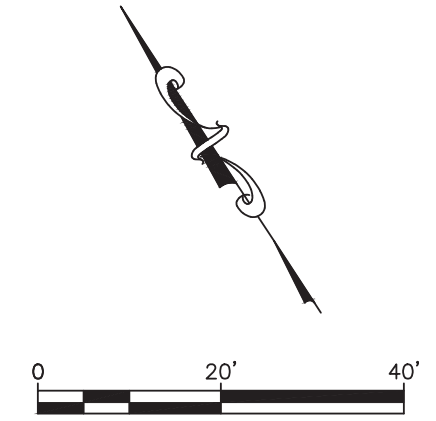
CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS FOR RESIDENTS, SITE PREPARATION, ROADWAY, PAVERS AND WALKWAY RESTORATION, LANDSCAPE RESTORATION OF EQUAL OR GREATER QUALITY, RESTORING EXISTING IRRIGATION SYSTEMS, PAVEMENT MARKING RESTORATION AND SITE FURNISHINGS. ALL DEBRIS AND OTHER OBJECTIONABLE MATERIAL CREATED THROUGH CONSTRUCTION, PLANTING OPERATIONS AND LANDSCAPE CONSTRUCTION SHALL BE REMOVED COMPLETELY ON A DAILY BASIS FROM THE JOB OR AS DIRECTED BY THE CITY. EXCESS SOIL SHALL BE DISPOSED OF AS DIRECTED BY THE CITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO PROPERTY WHETHER IT IS ACCIDENTAL OR NECESSARY FOR THE COMPLETION OF THE CONTRACT.

ALTERNATE CROSSING

CONTRACTOR MAY ELECT TO REPLACE THE DUAL HDD SUBAQUEOUS CROSSING WITH LINING OF THE EXISTING 18" DIP WITH PRIMUS LINE REINFORCED LINER. FOR ADDITIONAL INFORMATION REGARDING THIS OPTION REFER TO "EXHIBIT B - TECHNICAL SPECIFICATIONS", SECTION 02990 "SLIP LINING".



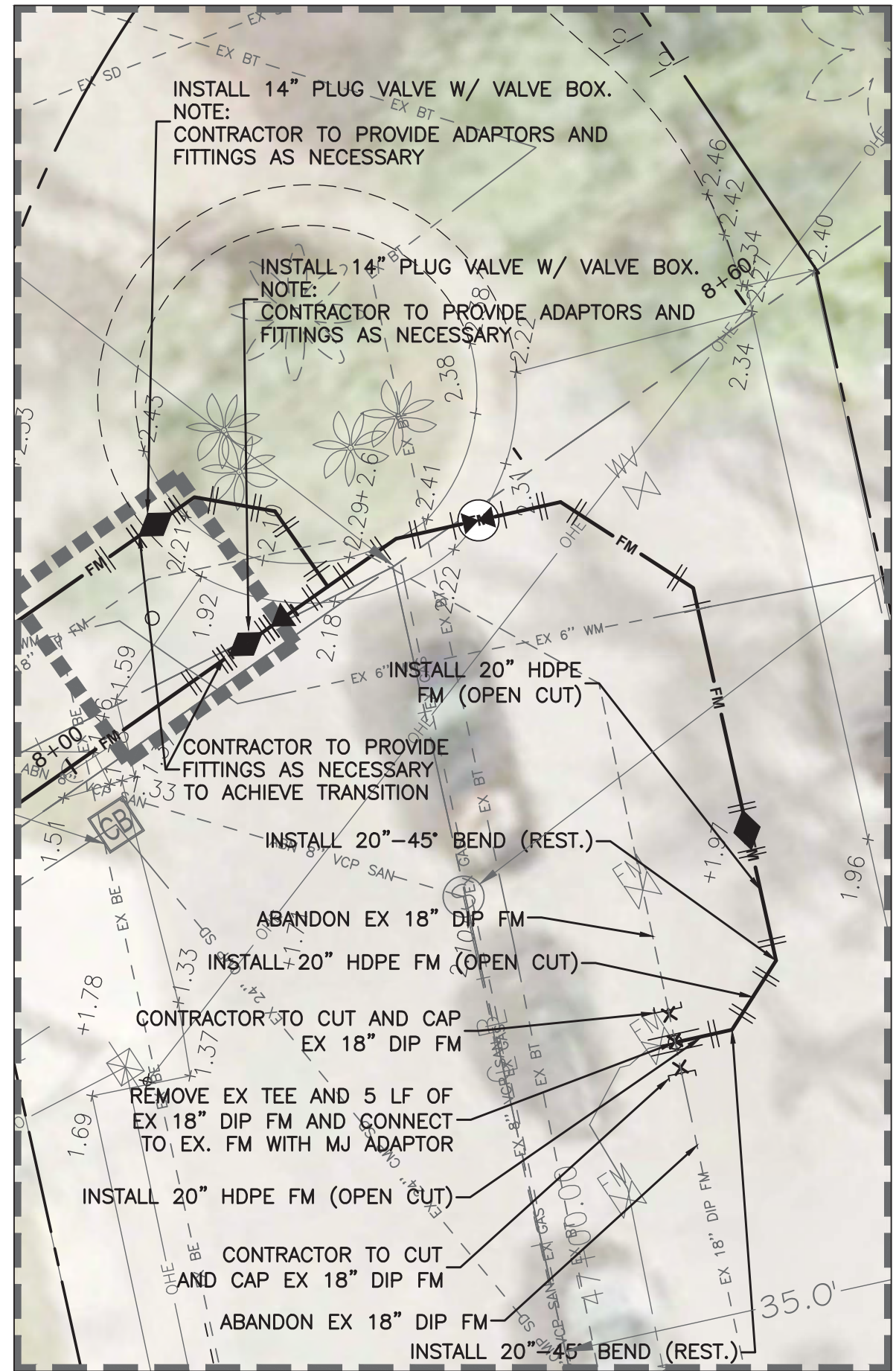
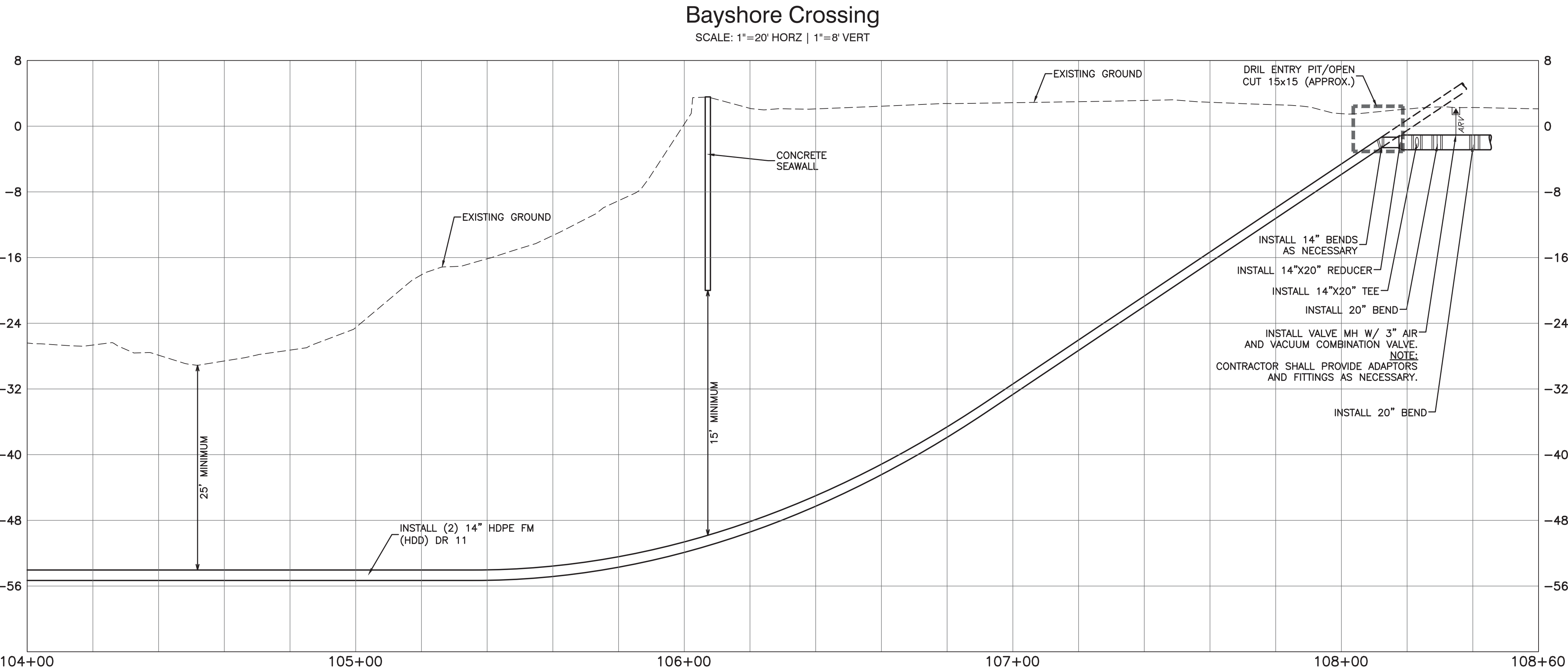
CHEN-MOORE
& ASSOCIATES
500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425



THE ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY DANIEL DAVILA, PE ON MARCH 13, 2019 USING A SHA AUTHENTICATION CODE.

Sunshine811
Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.
Check positive response codes before you dig!

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
CONVERSION FACTOR
NAVD88 + 1.58 = NGVD29 IN THIS AREA



ENLARGE VIEW
SCALE: 1"=10'

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS
THE N. RIVER FROM
NE 9TH ST. TO N. BIRCH RD.
FORCE MAIN PLAN AND PROFILE

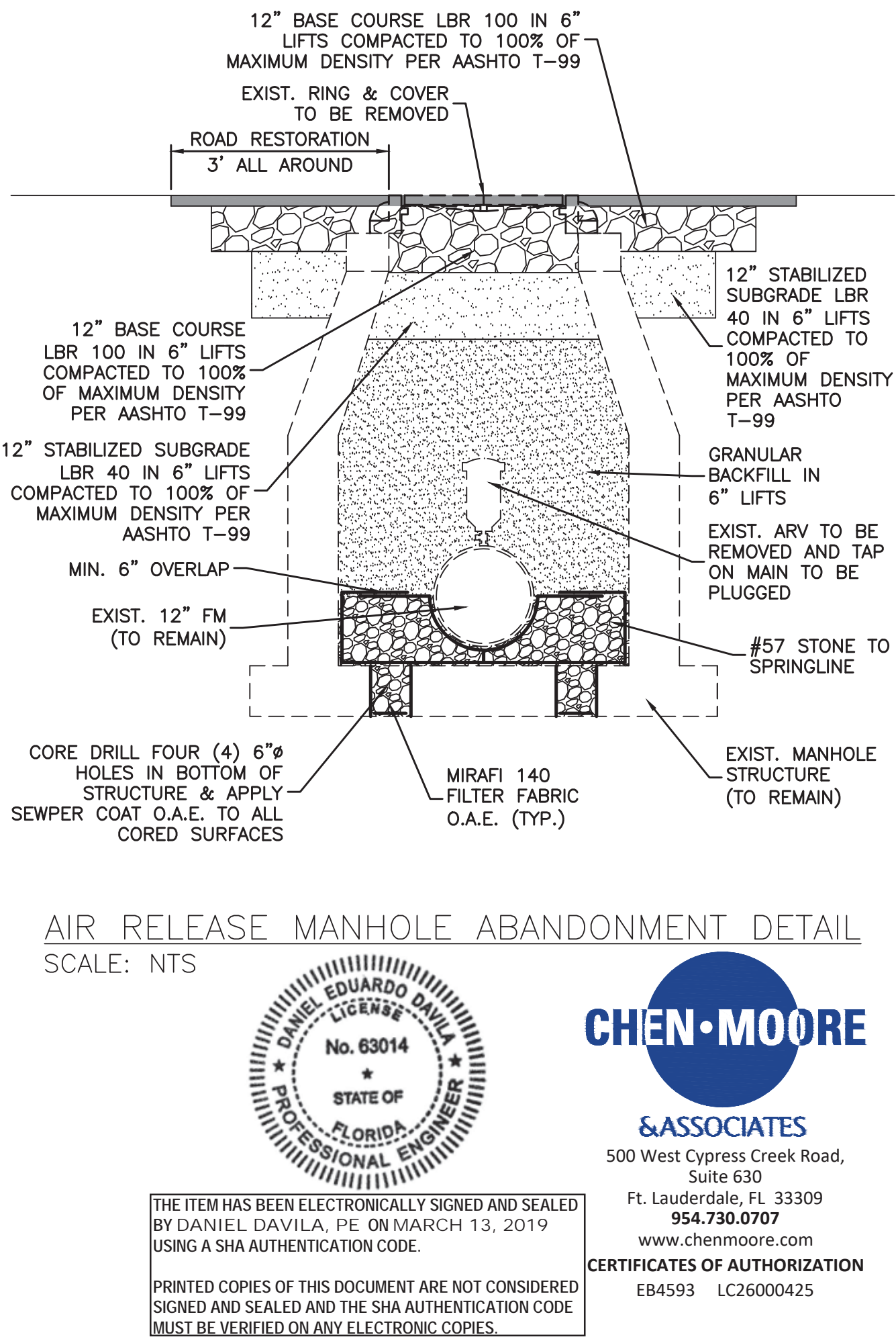
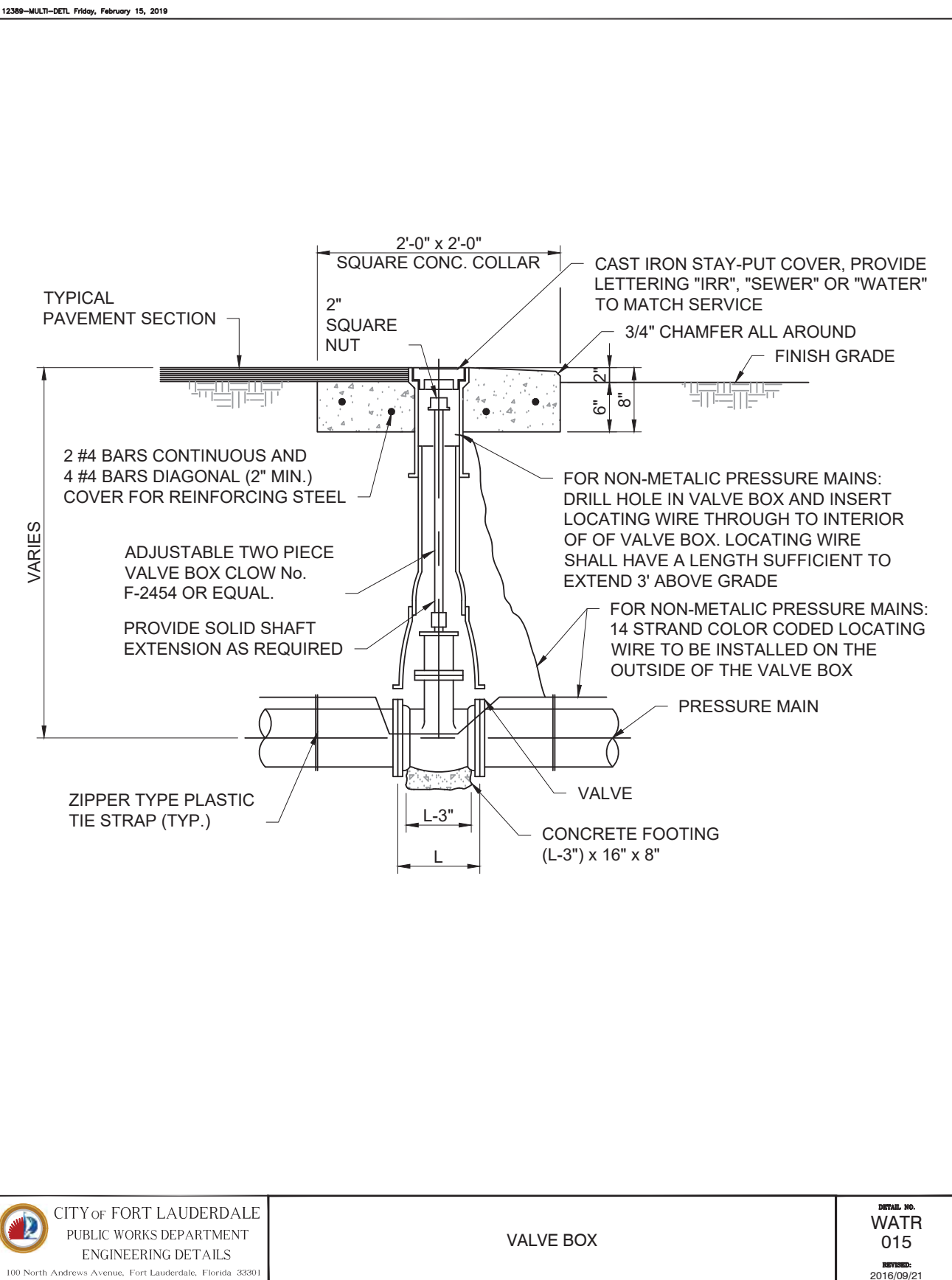
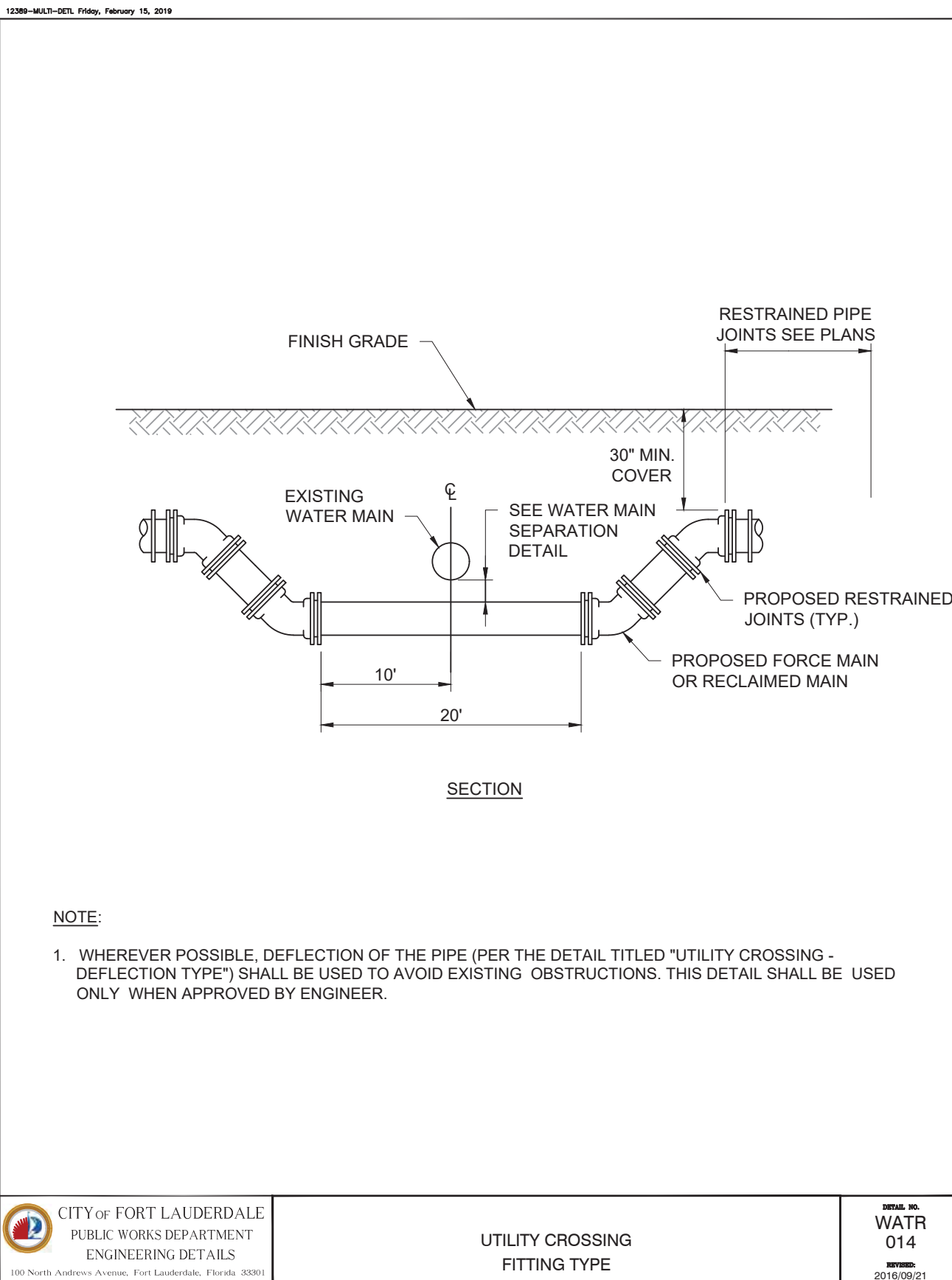
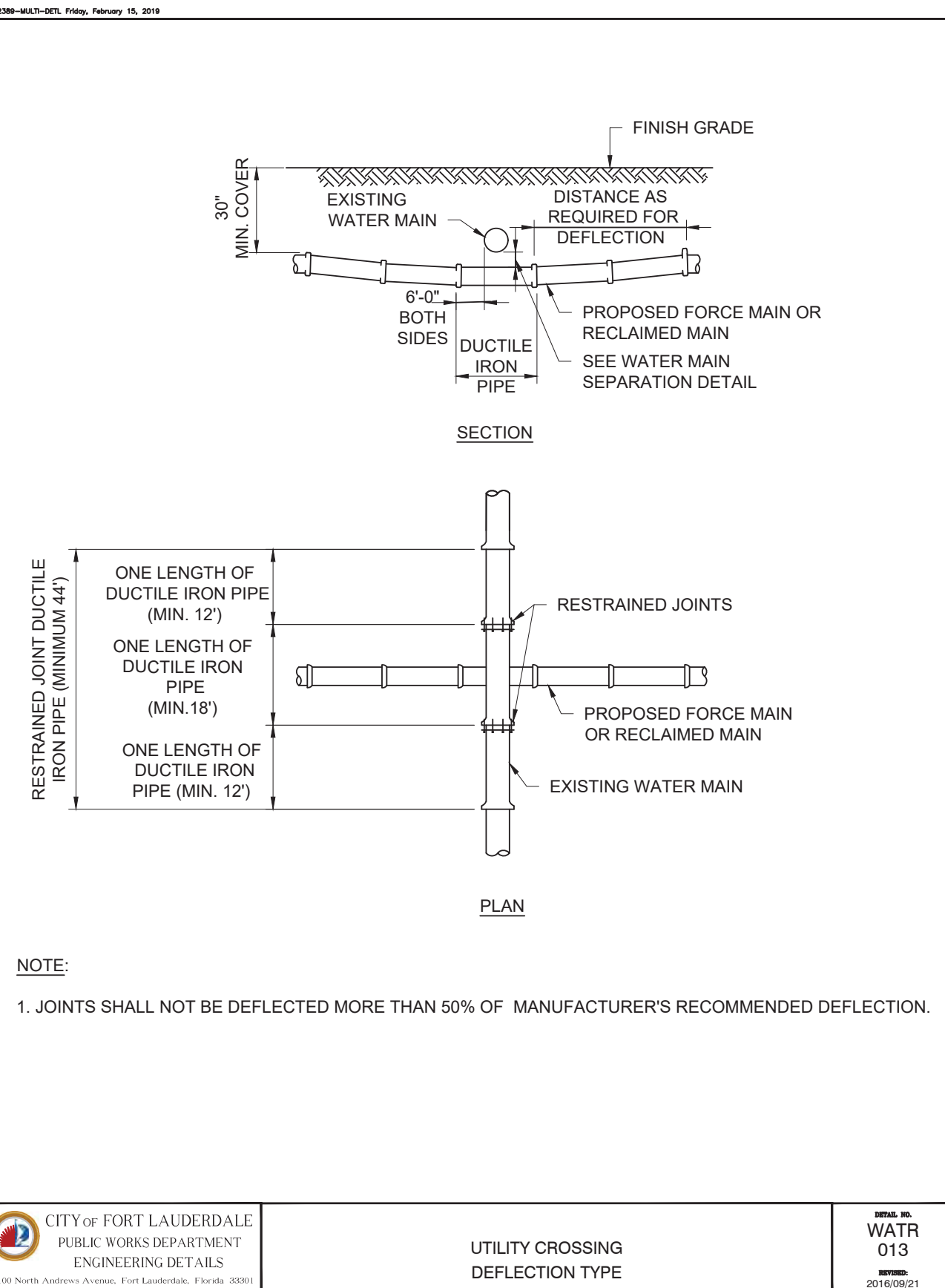
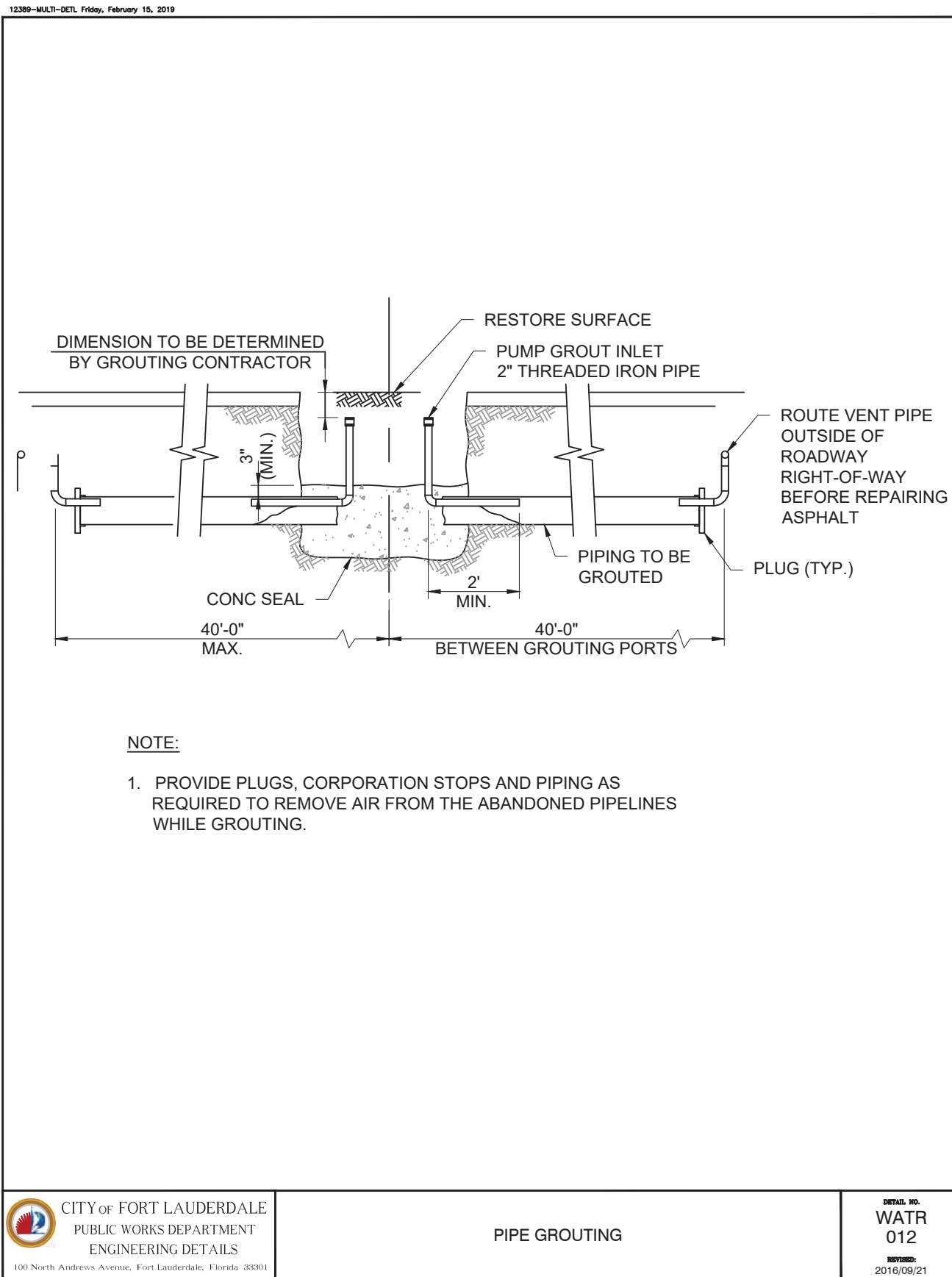
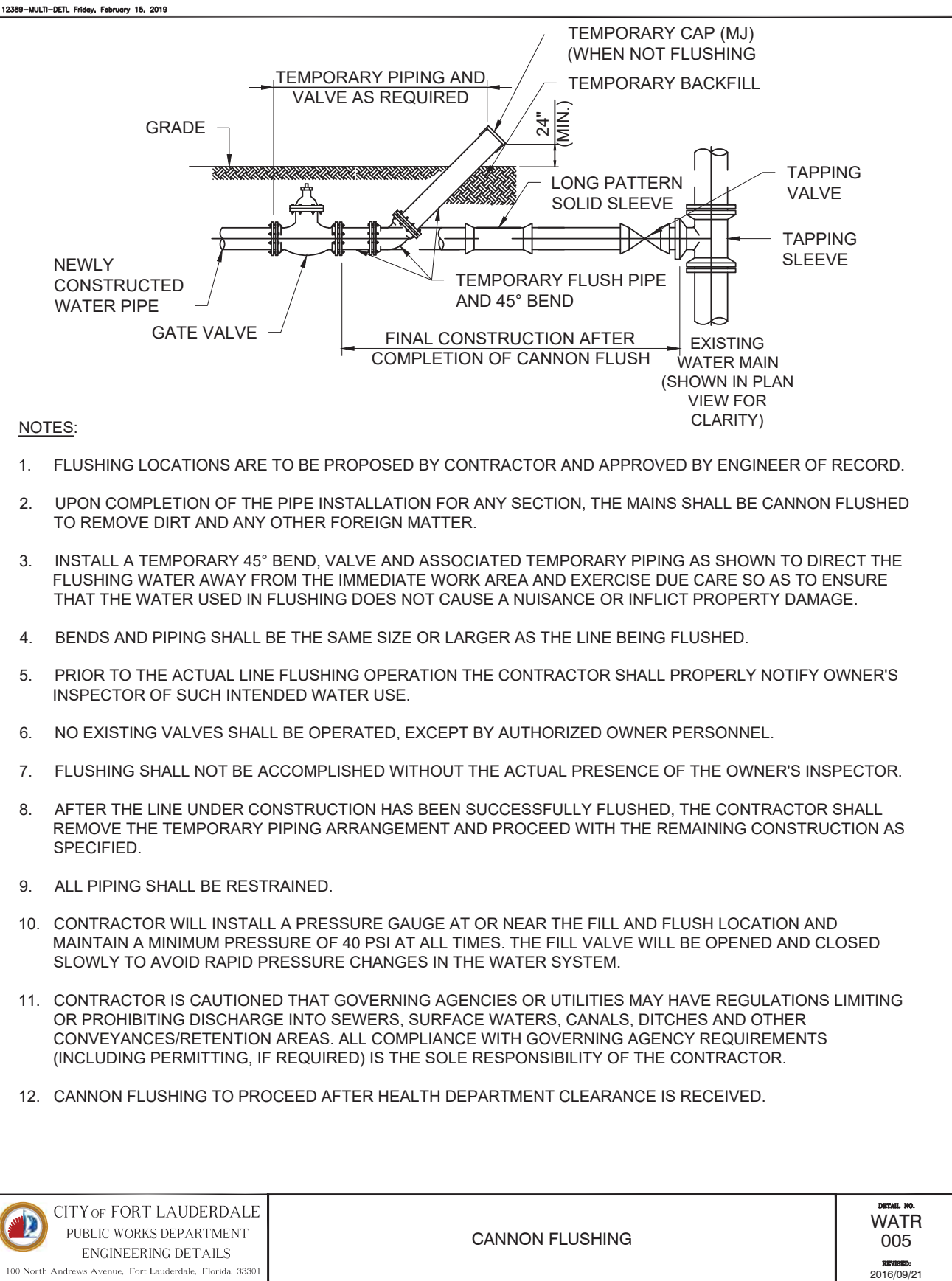
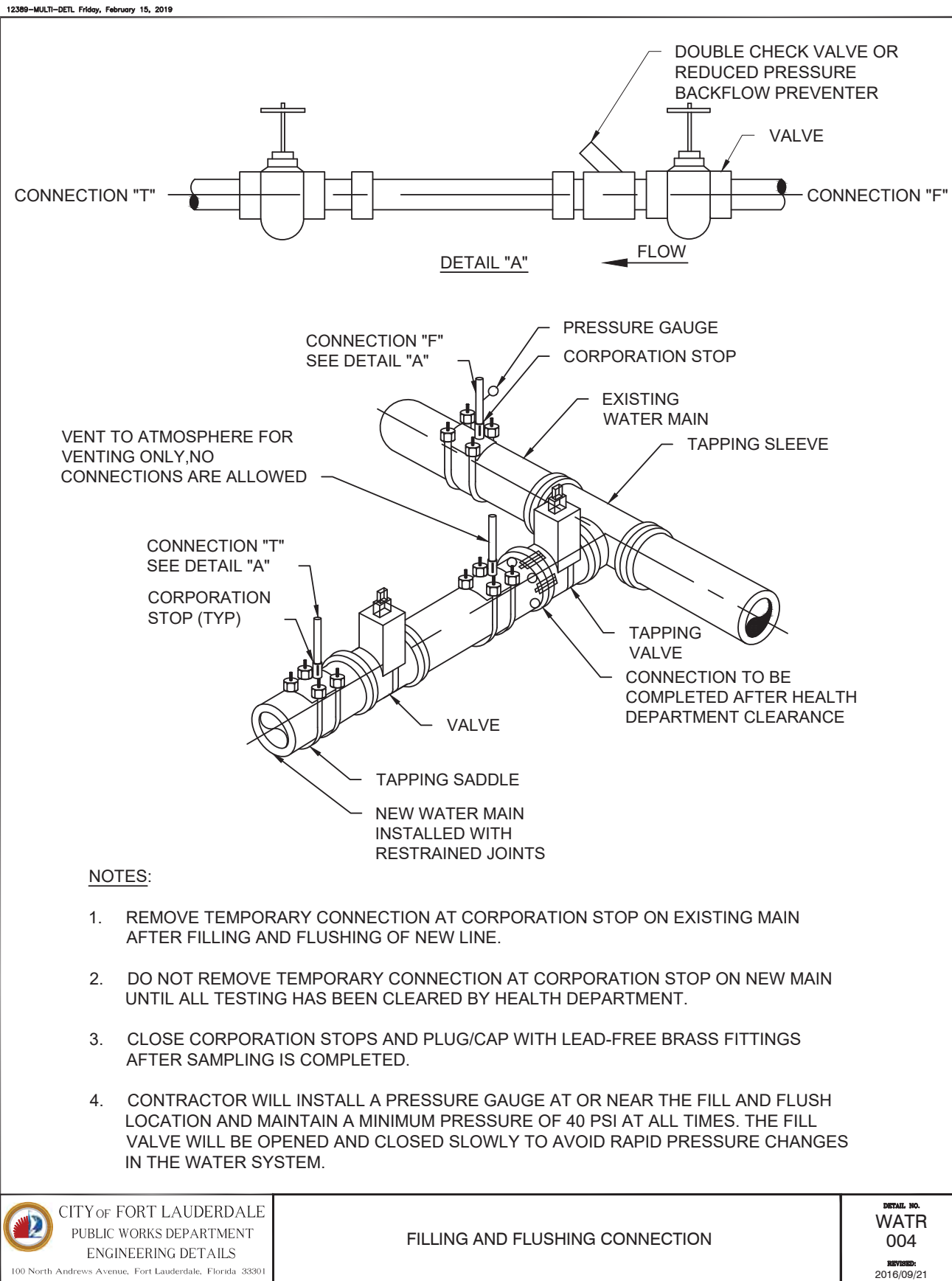
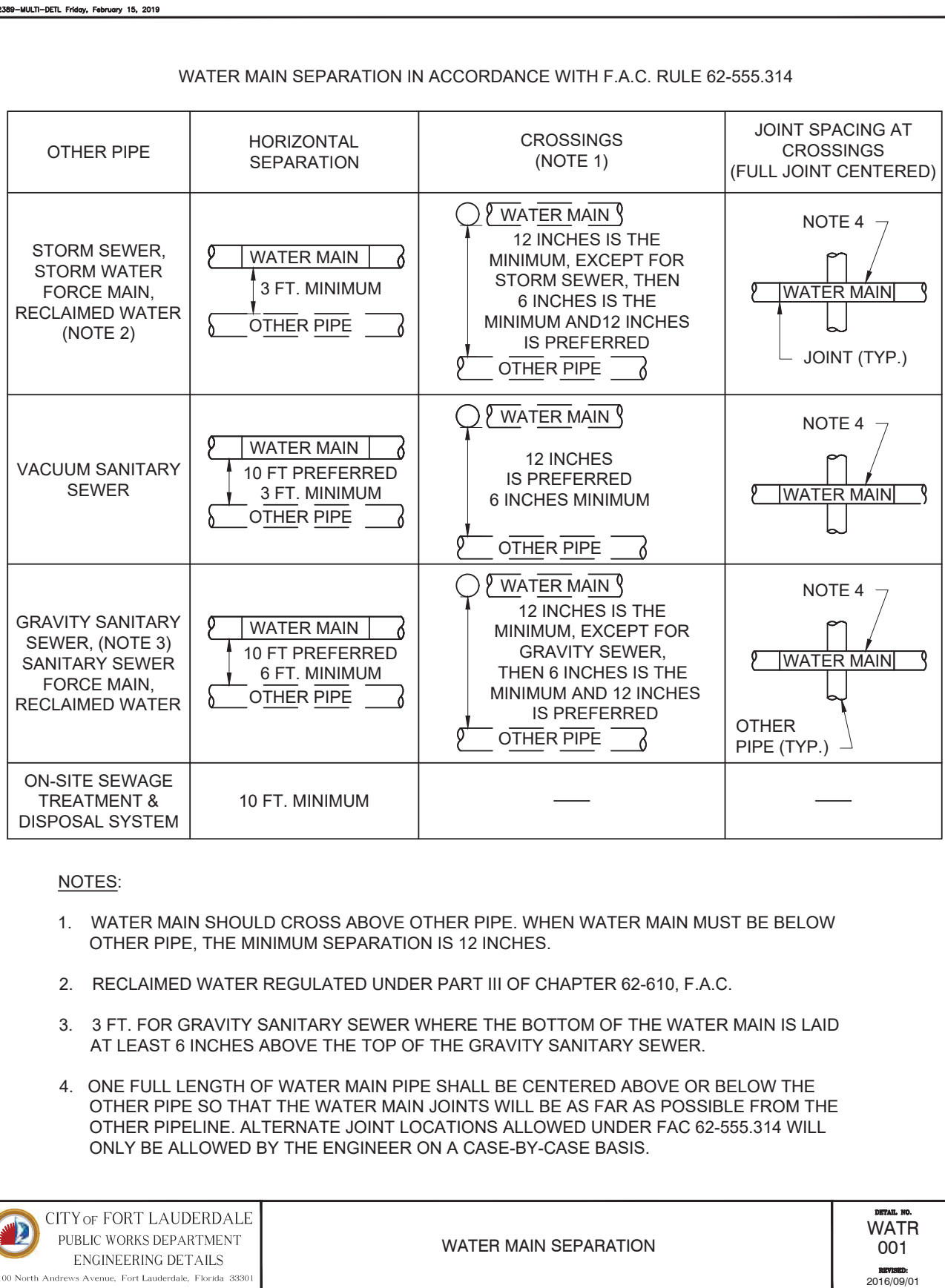
DRAWING #
FM-5
TOTAL: 18
CAD FILE:
12389-MULTI-FORC
DRAWING FILE NO.
4-XXX-XX

REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHKD

ENGINEER:
DANIEL DAVILA, P.E.
No. 63014
DATE:

DRAWN BY: JH
DESIGNED BY: DC
CHECKED BY: DO
FIELD BOOK:

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301



ENGINEER: DANIEL DAVILA, P.E.
No. 63014
DATE:

DRAWN BY: JH
DATE: 01/11/19
DESIGNED BY: DC
SCALE:
CHECKED BY: DD
FIELD BOOK:

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY (CHKD)	DESCRIPTION

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS THE N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.
DETAILS

DRAWING # D-1
SHT # 16
TOTAL: 18
CAD FILE: 12389-MULTI-DET
DRAWING FILE NO. 4-XXX-XX



- ## PRESSURE PIPE STANDARD CUT-IN DETAIL



16) N.T.S.

6"	300	8"
8"	400	6"
10"	600	4"
12"	600	4"

(401)

1. PRESSURE TEST PROCEDURE TO FOLLOW THE CURRENT AWWA C-600-05 STANDARD (150psi, (2) HOUR DURATION). THERE SHALL BE NO PRESSURE DROP IN THE PIPE DURING THE TEST ("ZERO" FILL-UP TOLERANCE).

(403)

PIPE DIA.	11.25d	22.5d	45d	90d	DEAD END	TEE	45d VERT. BEND	22d VERT. BEND
(IN.)	(FT)	(FT)	(FT)	(FT)	(FT)	(FT)	(FT)	(FT)
6	5	9	16	31	60	35	20	12
8	6	11	20	42	80	50	25	14
10	7	14	24	52	100	60	26	18
12	8	16	28	63	120	65	30	20
14	10	18	32	73	130	80	35	23
16	11	20	35	84	140	90	40	26
18	12	22	39	94	150	100	45	28
20	13	24	42	105	180	120	55	32
24	14	27	49	126	220	150	65	35

www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425

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

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

DRAWING #	SHT #
D-2	17
TOTAL: 18	
CAD FILE: 12389-MULTI-DETL	
DRAWING FILE NO. 4-XXX-XX	

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

Bid 12374-906 R2

LOCATION MAP
(NOT TO SCALE)

All elevations shown hereon are based on the National American Vertical Datum of 1988 (N.A.V.D. 88), and a Benchmark supplied by the Public Works and Waste Management Department of Broward County, Florida.

A C&GS BM DISC, ABOUT 2.85 NORTH ALONG THE FLORIDA/EAST COAST RAILWAY FROM THE STATION AT FT. LAUD - ERDALE, THENCE 1.35 MILES E. ALONG SUNRISE BOUL- VARD, SET ON THE TOP OF SEAWALL OF THE LIBERTY NATIONAL BANK BOAT DOCK ON THE MIDDLE RIVER, (BANKS AT 2242 SUNRISE BOULEVARD), 309' SOUTHWEST OF THE SOUTH CURB OF SUNRISE BOULEVARD, 6.5' NORTH- EAST OF THE SOUTHEAST CORNER OF BOAT DOCK, 6.6' EAST OF THE WEST EDGE OF BOAT DOCK, 1.5' WEST OF A3" IRON PIPE RAIL WHICH IS A PART OF A RAILING FENCE AROUND A PARKING LOT, 226' WEST/SOUTHWEST OFB2 AND ABOVE LEVEL WITH THE PARKING AREA.

For Horizontal Control:

Global Positioning System (G.P.S.). measurements were conducted in the field to acquire said coordinate values, which are based on the following Horizontal Control Station:

Name: North Dade
Code: FLND
Geographic Coordinates:
Latitude: 25° 57' 56.76772" N
Longitude: 80° 10' 02.22301" W
State Plane Coordinates:
Northing: 594119.571 US Feet
Easting: 929757.558 US Feet
Creation Date: 09-10-2014
Receiver Type: Leica AR 20
Satellite System: GPS and GLONASS

Since no other information were furnished other than that is cited under pertinent information, the Client is hereby advised that there may be legal restrictions on the Subject Property that are not shown on the Survey Map that may be found in the Public Records of Broward Dade County.

The Surveyor makes no representation as to ownership or possession of the Subject Property by any entity or individual that may appear on the Public Records of this County.

No improvements were located, other than those shown. No underground foundations, improvements and/or utilities were located or shown hereon.

The purpose of this survey is for drainage, roadway and seawall improvements

This Topographic Survey was prepared at the insistence of and certified to:


City of Fort Lauderdale

I hereby certify, That this "Topographic Survey" and the Survey Map resulting therefrom was performed under my direction and is true and correct to the best of my knowledge and belief and further, that said "Topographic Survey" meets the intent of the applicable provisions of the Standards of Practice for Land Surveying in the State of Florida, pursuant to Rule 5J-17.051 through 5J-17.052 of the Florida Administrative Code and its implementing law, Chapter 472.027 of the Florida Statutes.

By: Eduardo M. Suarez, PSM Signature Date
Registered Surveyor and Mapper LS6313
State of Florida

NOTICE: Not valid without the signature and original raised seal of a Florida Licensed Surveyor and Mapper. Additions or deletions to Survey Maps by other than the signing party are prohibited without the written consent of the signing party.

DRAWN BY: SF-AC	DATE: 07/16/2018
DESIGNED BY: XX	SCALE: 1"=20'
CHECKED BY: DH	
FIELD BOOK	



CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

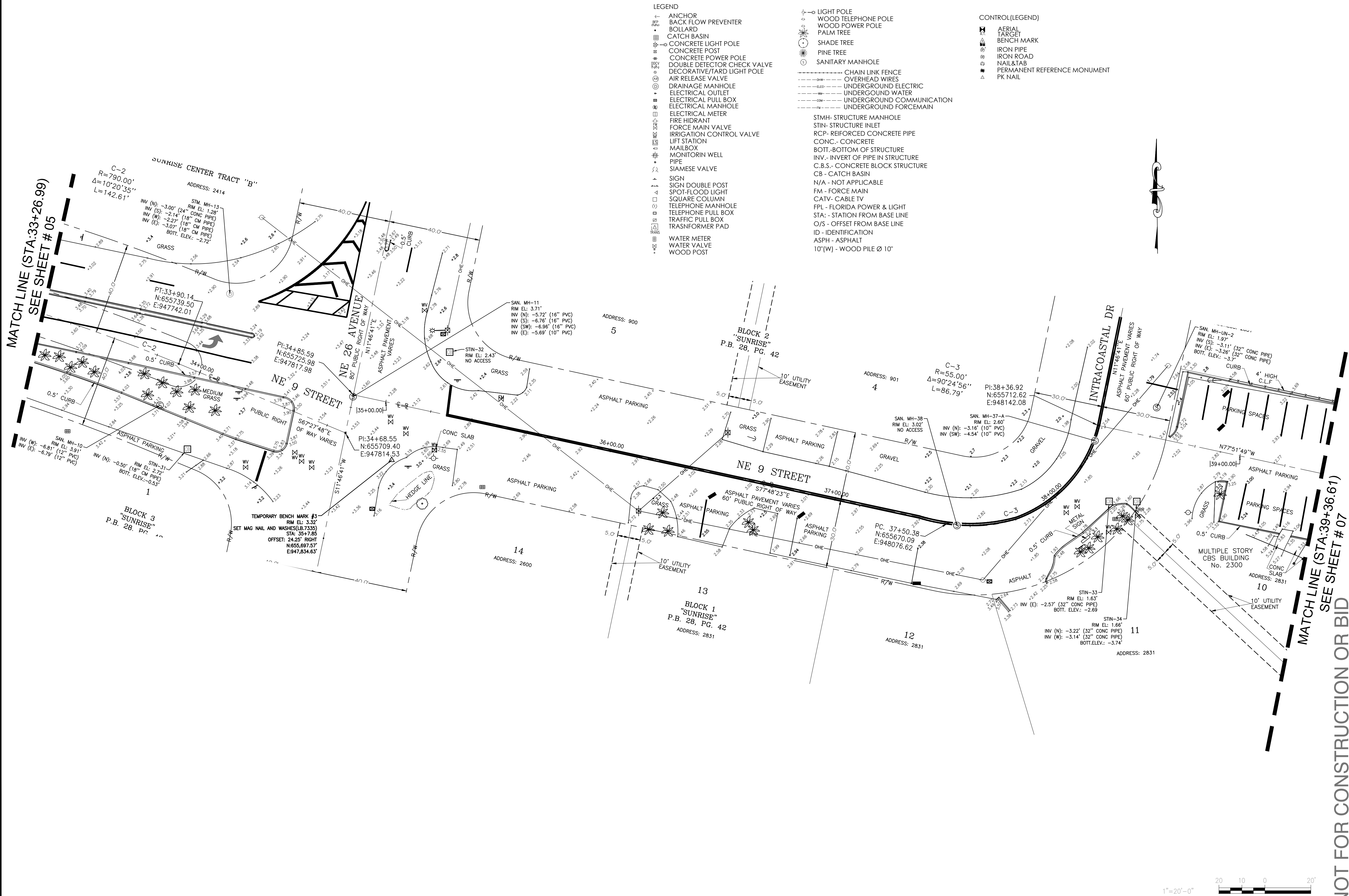
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

[illegible]

PROJECT #
BAYSHORE 18-INC FM
NE 19TH STREET

SHEET NO. 01	OF 9
TOTAL: 9	
CAD FILE: 18218.0.00 TOPOGRAPHIC	
DRAWING FILE NO. 18218.0.00	

NOT FOR CONSTRUCTION OR BID



- LEGEND
- ANCHOR
 - BACK FLOW PREVENTER
 - BOLLARD
 - CATCH BASIN
 - CONCRETE LIGHT POLE
 - CONCRETE POST
 - CONCRETE POWER POLE
 - DOUBLE DETECTOR CHECK VALVE
 - DECORATIVE/TARD LIGHT POLE
 - AIR RELEASE VALVE
 - DRAINAGE MANHOLE
 - ELECTRICAL OUTLET
 - ELECTRICAL PULL BOX
 - ELECTRICAL MANHOLE
 - ELECTRICAL METER
 - FIRE HYDRANT
 - FORCE MAIN VALVE
 - IRRIGATION CONTROL VALVE
 - LIFT STATION
 - MAILBOX
 - MONITORIN WELL
 - PIPE
 - SIAMESE VALVE
 - SIGN
 - SIGN DOUBLE POST
 - SPOT-FLOOD LIGHT
 - SQUARE COLUMN
 - TELEPHONE MANHOLE
 - TELEPHONE PULL BOX
 - TRAFFIC PULL BOX
 - TRANSFORMER PAD
 - WATER METER
 - WATER VALVE
 - WOOD POST
 - LIGHT POLE
 - WOOD TELEPHONE POLE
 - WOOD POWER POLE
 - PALM TREE
 - SHADE TREE
 - PINE TREE
 - SANITARY MANHOLE
 - CHAIN LINK FENCE
 - OVERHEAD WIRES
 - UNDERGROUND ELECTRIC
 - UNDERGROUND WATER
 - UNDERGROUND COMMUNICATION
 - UNDERGROUND FORCEMAIN
 - STMH- STRUCTURE MANHOLE
 - STIN- STRUCTURE INLET
 - RCPC- REINFORCED CONCRETE PIPE
 - CONC.- CONCRETE
 - BOTT.-BOTTOM OF STRUCTURE
 - INV.- INVERT OF PIPE IN STRUCTURE
 - C.B.S.- CONCRETE BLOCK STRUCTURE
 - CB - CATCH BASIN
 - N/A - NOT APPLICABLE
 - FM - FORCE MAIN
 - CATV - CABLE TV
 - FPL - FLORIDA POWER & LIGHT
 - STA- STATION FROM BASE LINE
 - O/S - OFFSET FROM BASE LINE
 - ID - IDENTIFICATION
 - ASPH - ASPHALT
 - 10"(W) - WOOD PILE Ø 10"
- CONTROL(LEGEND)
- AERIAL TARGET
 - BENCH MARK
 - IRON PIPE
 - IRON ROAD
 - NAIL&TAB
 - PERMANENT REFERENCE MONUMENT
 - PK NAIL

NOT FOR CONSTRUCTION OR BID

SURVEYOR
EDUARDO SUAREZ
FL REG. NO: 6313
DATE: 07/16/2018

DRAWN BY: SF-AC
DATE: 07/16/2018
DESIGNED BY: XX
CHECKED BY: DH
FIELD BOOK: EFB

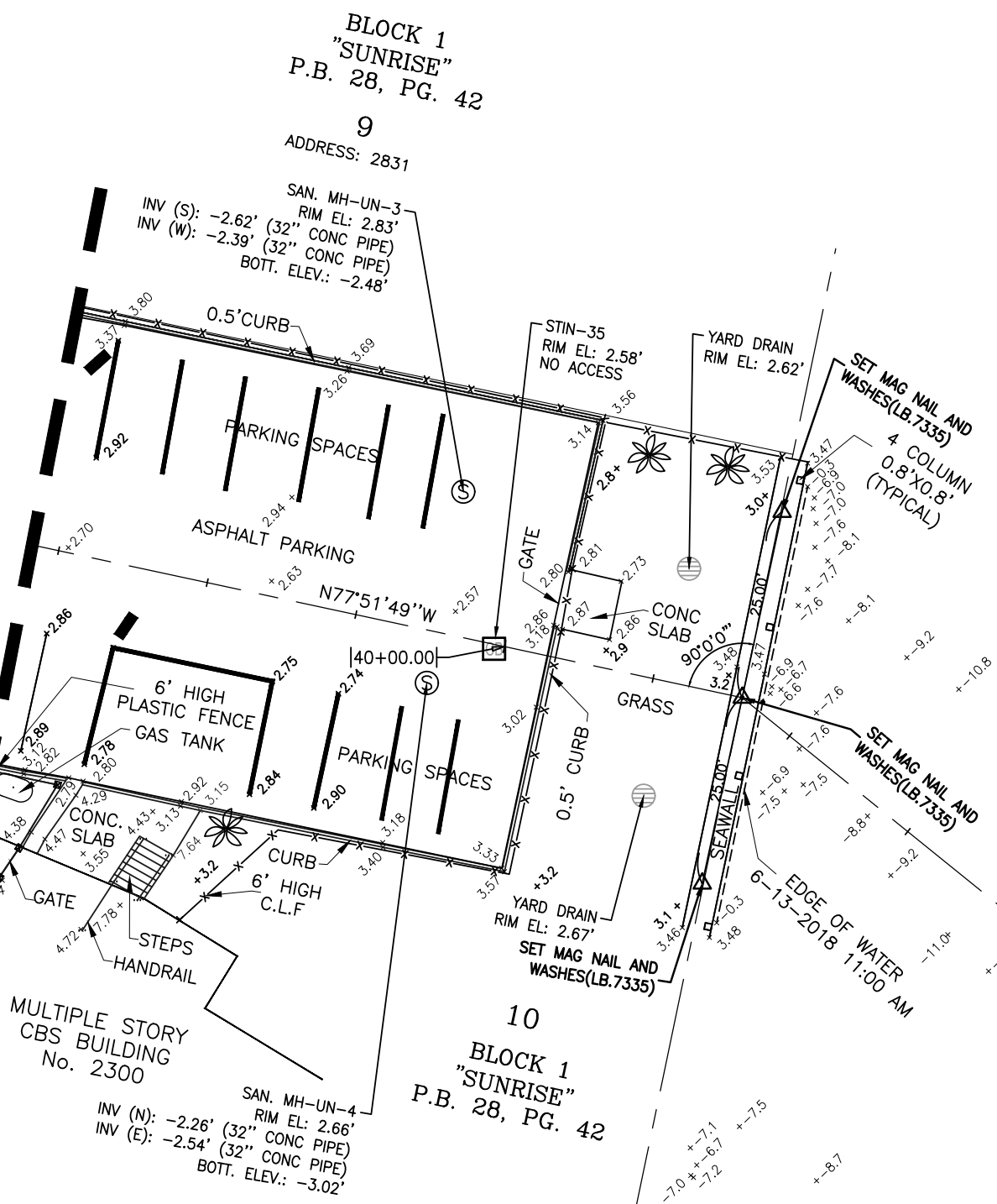
CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHKD

PROJECT #
BYSHORE 18-INC FM
NE 19TH STREET

SHEET NO. 06 OF 9
TOTAL: 9
CAD FILE: 18218.0.00 TOPOGRAPHIC
DRAWING FILE NO. 18218.0.00

MATCH LINE (STA:39+36.67)
SEE SHEET # 06



- LEGEND
- ANCHOR
 - BACK FLOW PREVENTER
 - BOLLARD
 - CATCH BASIN
 - CONCRETE LIGHT POLE
 - CONCRETE POST
 - CONCRETE POWER POLE
 - DOUBLE DETECTOR CHECK VALVE
 - DECORATIVE/TARD LIGHT POLE
 - AIR RELEASE VALVE
 - DRAINAGE MANHOLE
 - ELECTRICAL OUTLET
 - ELECTRICAL PULL BOX
 - ELECTRICAL MANHOLE
 - ELECTRICAL METER
 - FIRE HIDRANT
 - FORCE MAIN VALVE
 - IRRIGATION CONTROL VALVE
 - LIFT STATION
 - MAILBOX
 - MONITORIN WELL
 - PIPE
 - SIAMESE VALVE
 - SIGN
 - SIGN DOUBLE POST
 - SPOT-FLOOD LIGHT
 - SQUARE COLUMN
 - TELEPHONE MANHOLE
 - TELEPHONE PULL BOX
 - TRAFFIC PULL BOX
 - TRANSFORMER PAD
 - WATER METER
 - WATER VALVE
 - WOOD POST

- CONTROL(LEGEND)
- CHAIN LINK FENCE
 - OVERHEAD WIRES
 - UNDERGROUND ELECTRIC
 - UNDERGROUND WATER
 - UNDERGROUND COMMUNICATION
 - UNDERGROUND FORCEMAIN

- STMH- STRUCTURE MANHOLE
- STIN- STRUCTURE INLET
- RCP- REINFORCED CONCRETE PIPE
- CONC- CONCRETE
- BOTT- BOTTOM OF STRUCTURE
- INV.- INVERT OF PIPE IN STRUCTURE
- C.B.S.- CONCRETE BLOCK STRUCTURE
- CB- CATCH BASIN
- N/A - NOT APPLICABLE
- FM- FORCE MAIN
- CATV- CABLE TV
- FPL- FLORIDA POWER & LIGHT
- STA- STATION FROM BASE LINE
- O/S - OFFSET FROM BASE LINE
- ID - IDENTIFICATION
- ASPH - ASPHALT
- 10"(W) - WOOD PILE Ø 10"

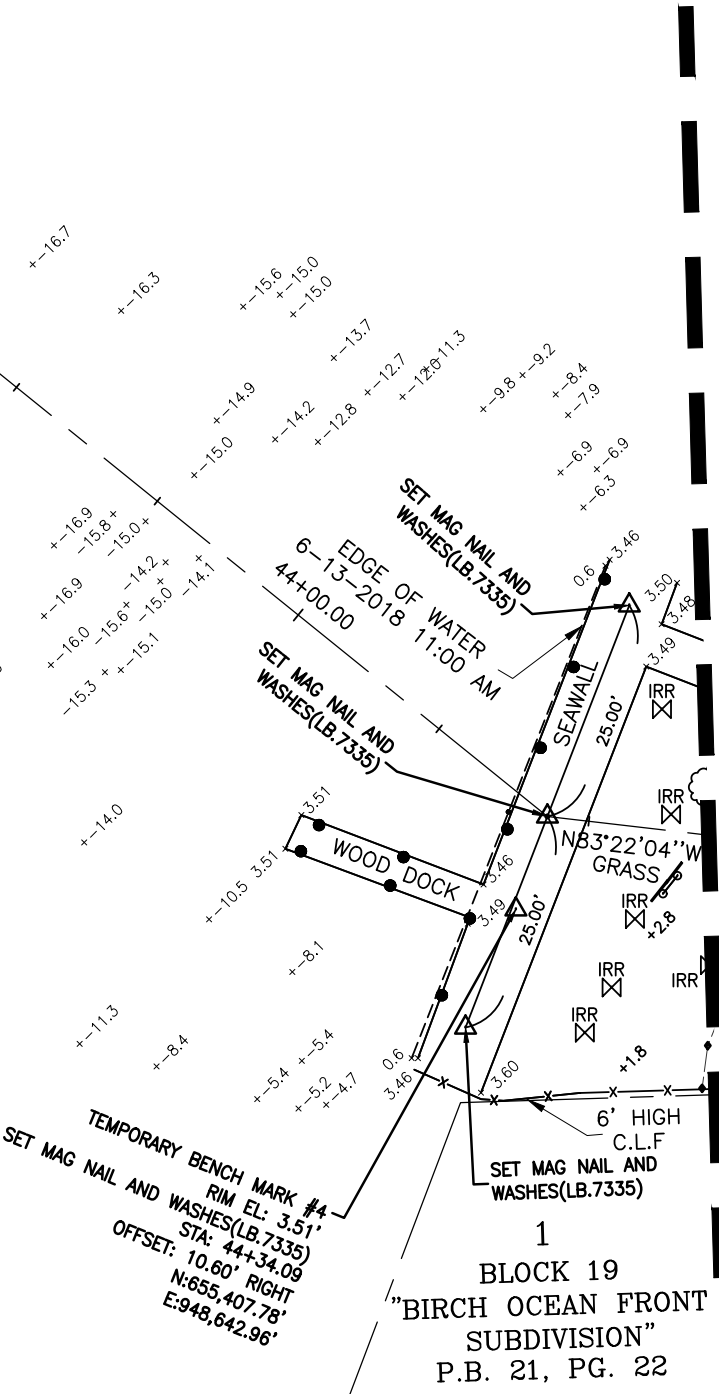
- AERIAL TARGET
- BENCH MARK
- IRON PIPE
- IRON ROAD
- NAIL&TAB
- PERMANENT REFERENCE MONUMENT
- PK NAIL

FLORIDA EAST COAST CANAL
(P.B. 21, PG. 22)

INTRACOASTAL WATERWAY
(P.B. 28, PG. 42)



MATCH LINE (STA:44+54.49)
SEE SHEET # 08



NOT FOR CONSTRUCTION OR BID

SURVEYOR
EDUARDO SUAREZ
P.L. REG. NO: 6313
DATE: 07/16/2018

DRAWN BY: SF-AC
DATE: 07/16/2018
DESIGNED BY: XX
SCALE: 1"=20'
CHECKED BY: DH
FIELD BOOK: EFB

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

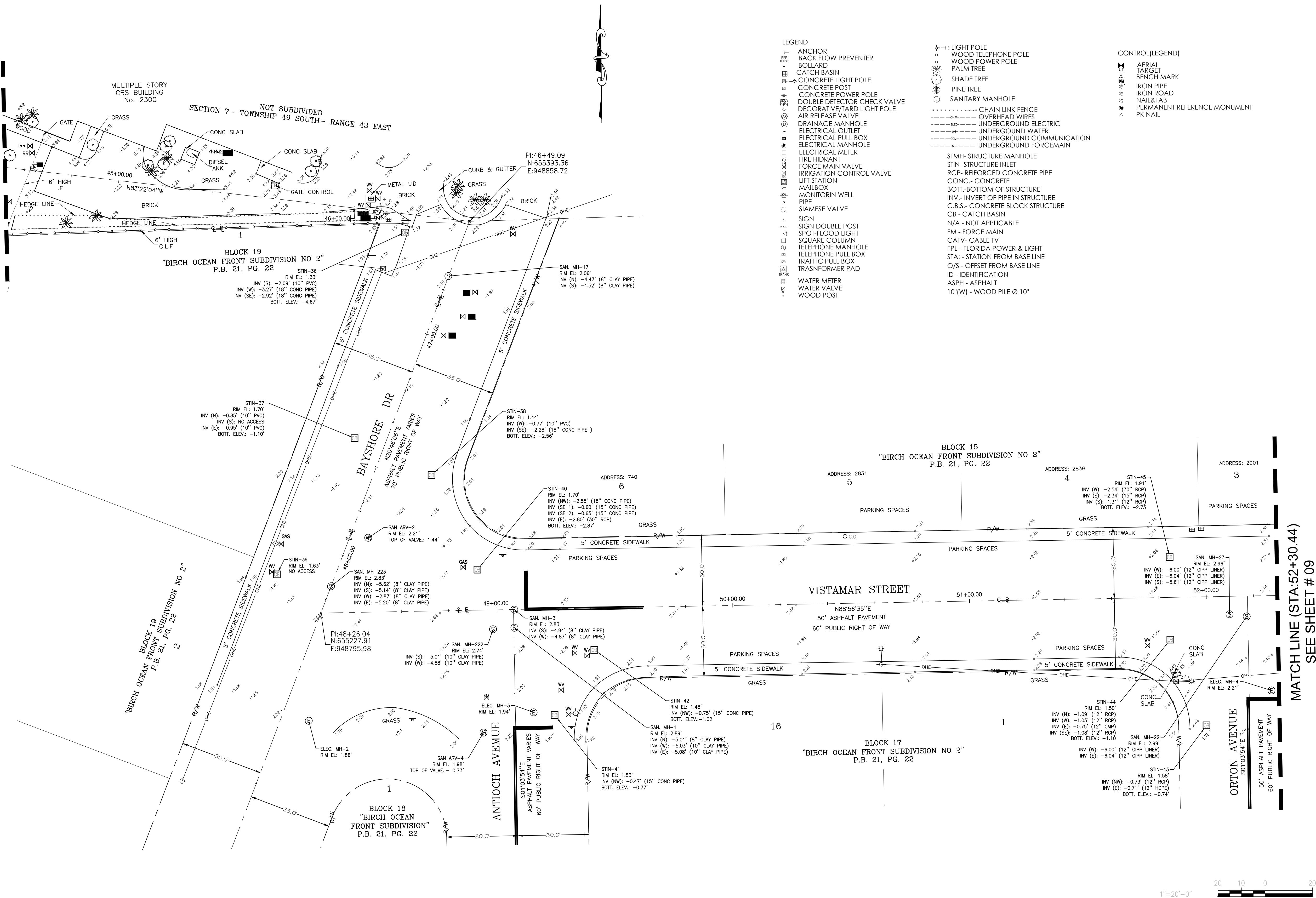
REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHKD

PROJECT #
BAYSHORE 18-INCH FM
NE 19TH STREET

SHEET NO. 07 **OF** 9

TOTAL: 9
CAD FILE: 18218.0.00 TOPOGRAPHIC
DRAWING FILE NO. 18218.0.00

MATCH LINE (STA:44+54.49)
SEE SHEET # 07



PLOT DATE: 9/24/2018 11:06 AM BY: CSUARZREF=

File = L:\18218 18-Inch, Bayshore Ft. Lauderdale FL\Outbound\TOPO -- ROUTE SURVEY\09-24-18\18218.0.00 Topographic Survey 88 Saved by AZAHEL Save date = 9/24/2018 10:48 AM

- LEGEND
- ANCHOR
 - BACK FLOW PREVENTER
 - BOLLARD
 - CATCH BASIN
 - CONCRETE LIGHT POLE
 - CONCRETE POST
 - CONCRETE POWER POLE
 - DOUBLE DETECTOR CHECK VALVE
 - AIR RELEASE VALVE
 - ELECTRICAL OUTLET
 - ELECTRICAL PULL BOX
 - ELECTRICAL MANHOLE
 - ELECTRICAL METER
 - FIRE HYDRANT
 - FORCE MAIN VALVE
 - IRRIGATION CONTROL VALVE
 - LIFT STATION
 - MAILBOX
 - MONITORIN WELL
 - PIPE
 - SIAMESE VALVE
 - SIGN
 - SIGN DOUBLE POST
 - SPOT-FLOOD LIGHT
 - SQUARE COLUMN
 - TELEPHONE MANHOLE
 - TELEPHONE PULL BOX
 - TRAFFIC PULL BOX
 - TRANSFORMER PAD
 - WATER METER
 - WATER VALVE
 - WOOD POST
- CONTROL(LEGEND)
- AERIAL TARGET
 - BENCH MARK
 - IRON PIPE
 - IRON ROAD
 - NAIL&TAB
 - PERMANENT REFERENCE MONUMENT
 - PK NAIL
- STMH- STRUCTURE MANHOLE
STIN- STRUCTURE INLET
RCP- REINFORCED CONCRETE PIPE
CONC.- CONCRETE
BOTT.-BOTTOM OF STRUCTURE
INV.- INVERT OF PIPE IN STRUCTURE
C.B.S.- CONCRETE BLOCK STRUCTURE
CB - CATCH BASIN
N/A - NOT APPLICABLE
FM - FORCE MAIN
CATV- CABLE TV
FPL - FLORIDA POWER & LIGHT
STA- STATION FROM BASE LINE
O/S - OFFSET FROM BASE LINE
ID - IDENTIFICATION
ASPH - ASPHALT
10'(W) - WOOD PILE Ø 10"

SURVEYOR
EDUARDO SUAREZ
P.L. No. 6313
MAR 07/19/2016

DATE: 07/16/2018
DRAWN BY: SF-AC
DESIGNED BY: SCALE: 1"=20'
CHECKED BY: XX
FIELD BOOK: EFB

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS		DESCRIPTION	
NO.	DATE	BY	DESCRIPTION

PROJECT #
BAYSHORE 18-INC FM
NE 19TH STREET

SHEET NO. 08 OF 9
TOTAL: 9
CAD FILE: 18218.0.00 TOPOGRAPHIC
DRAWING FILE NO. 18218.0.00

NOT FOR CONSTRUCTION OR BID

MATCH LINE (STA:52+30.44)
SEE SHEET # 09



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
4400 PGA BOULEVARD, SUITE 500
PALM BEACH GARDENS, FL 33410

September 11, 2019

REPLY TO
ATTENTION OF

Regulatory Division
 South Permits Branch
 Palm Beach Gardens Permits Section
 SAJ-2019-01818(RGP-JKA)

City of Fort Lauderdale
 Attention: Joseph Kenney
 100 North Andrews Avenue
 Fort Lauderdale, Florida 33301
jkenney@fortlauderdale.gov

Dear Mr. Kenney:

Your application for a Department of the Army permit received on May 21, 2019, has been assigned number SAJ-2019-01818. A review of the information and drawings provided shows the proposed work is to conduct a horizontal direction drill (HDD) for the installation of two water utility lines under the Intracoastal Waterway (ICW). Both the entry and exit bore locations are located within the uplands and exceed the required 25 foot distance from the top of bank and the HDD will be located a minimum of 14 feet below the federal channel and 25 feet on either side of the channel. Drilling pressure shall not exceed 10 psi. The project would affect waters of the United States associated with Intracoastal Waterway at with the western directional drill entry bore is located on NE 9th Street and the eastern exit bore is located on Bayshore Drive, in Section 1, Township 50 South, Range 42 East, Fort Lauderdale, Broward County, Florida.

Bore Locations	Address	Latitude	Longitude
Entry Location	Bayshore Drive	26.134006	-80.107928
Exit Location	NE 9 th Street	26.134858	-80.109911

Your project, as depicted on the enclosed drawings, is authorized by Regional General Permit (GP) SAJ-14. This authorization is valid until February 22, 2024. Please access the Corps' Jacksonville District Regulatory Division Internet page to view the special and general conditions for SAJ-14, which apply specifically to this authorization. The Internet URL address is:

<http://www.saj.usace.army.mil/Missions/Regulatory.aspx>

Please be aware this Internet address is case sensitive; and, you will need to enter it exactly as it appears above. Once there you will need to click on "Source Book"; and, then click on "General Permits". Then you will need to click on the specific SAJ permit

noted above. You must comply with all of the special and general conditions of the permit; and, any project-specific conditions noted below, or you may be subject to enforcement action. The following project-specific conditions are included with this authorization:

1. **Reporting Address:** The Permittee shall submit all reports, notifications, documentation and correspondence required by the general and special conditions of this permit to the following address:
 - a. For standard mail: U.S. Army Corps of Engineers, Regulatory Division, Enforcement Section, 4400 PGA Boulevard, Suite 500, Palm Beach Gardens, Florida 33410.
 - b. For electronic mail SAJ-RD-Enforcement@usace.army.mil (not to exceed 10 MB).

The Permittee shall reference this permit number, SAJ-2019-01818 (GP-JKA), on all submittals.

2. **As-Built with X-Y-Z Coordinates:** Within 60 days of completion of the authorized work, the Permittee shall submit as-built drawings of the authorized work and a completed As-Built Certification Form (Attachment 2) to the Corps. The drawings shall be signed and sealed by a surveyor licensed under Florida Statute 472 and include the following:
 - a. A plan view drawing of the location of the authorized work footprint (as shown on the permit drawings) on 8½-inch by 11-inch paper. The drawings shall include the X Y & Z State Plane coordination points of the object above the channel as it enters and exits the design edges of the authorized width of the channel, plus a minimum of 25 feet outside the channel edges.
 - b. Listing of any deviations between the work authorized by this permit and the work as constructed. In the event the completed work deviates, in any manner, from the authorized work, describe on the As-Built Certification Form the deviations between the work authorized by this permit and the work as constructed. Clearly indicate on the as-built drawings any deviations that have been listed. Please note the depiction and/or description of any deviations on the drawings and/or As-Built Certification Form does not constitute approval of any deviations by the U.S. Army Corps of Engineers.

- c. Placement of the Department of the Army Permit number on all sheets submitted.
3. **Assurance of Navigation and Maintenance:** The Permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structures or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the Permittee will be required, upon due notice from the U.S. Army Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
4. **Notification of Work:** Where the proposed subaqueous utility or transmission line is to be installed in navigable waters of the United States, at least 2 weeks prior to the start of the authorized work, the Permittee must notify the National Oceanic and Atmospheric Administration (NOAA) and the Corps in writing that the work is commencing; and, again, upon completion of the work. The Permittee shall notify the District Engineer in writing at the letterhead address, attention Regulatory Division; and, the NOAA, either in mailed correspondence to Nautical Data Branch Office of Coast Survey N/CS26, 1315 East-West Highway, Silver Spring, MD 20910-3282 or by electronic mail correspondence, with scans of the requisite documents attached, through ocs.ndb@noaa.gov. The post-construction notification will include "as-built plans", signed and sealed by a registered surveyor/engineer licensed in the State of Florida, that certify the project is constructed as authorized; and, must include an accurate depiction of the location and configuration of the completed activity in relation to the mean high water of the navigable water.
5. **Erosion Control:** Prior to the initiation of any work authorized by this permit, the Permittee shall install erosion control measures along the perimeter of all work areas to prevent the displacement of fill material outside the work area into waters of the United States. Immediately after completion of the final grading of the land surface, all slopes, land surfaces, and filled areas shall be stabilized using sod, degradable mats, barriers, or a combination of similar stabilizing materials to prevent erosion. The erosion control measures shall remain in place and be maintained until all authorized work is completed and the work areas are stabilized.

6. Cultural Resources:

- a. No structure or work shall adversely affect impact or disturb properties listed in the National Register of Historic Places (NRHP) or those eligible for inclusion in the NRHP.
- b. If during the ground disturbing activities and construction work within the permit area, there are archaeological/cultural materials encountered which were not the subject of a previous cultural resources assessment survey (and which shall include, but not be limited to: pottery, modified shell, flora, fauna, human remains, ceramics, stone tools or metal implements, dugout canoes, evidence of structures or any other physical remains that could be associated with Native American cultures or early colonial or American settlement), the Permittee shall immediately stop all work and ground-disturbing activities within a 100-meter diameter of the discovery and notify the Corps within the same business day (8 hours). The Corps shall then notify the Florida State Historic Preservation Officer (SHPO) and the appropriate Tribal Historic Preservation Officer(s) (THPO(s)) to assess the significance of the discovery and devise appropriate actions.
- c. Additional cultural resources assessments may be required of the permit area in the case of unanticipated discoveries as referenced in accordance with the above Special Condition ; and if deemed necessary by the SHPO, THPO(s), or Corps, in accordance with 36 CFR 800 or 33 CFR 325, Appendix C (5). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume on non-federal lands without written authorization from the SHPO for finds under his or her jurisdiction, and from the Corps.
- d. In the unlikely event that unmarked human remains are identified on non-federal lands, they will be treated in accordance with Section 872.05 Florida Statutes. All work and ground disturbing activities within a 100-meter diameter of the unmarked human remains shall immediately cease and the Permittee shall immediately notify the medical examiner, Corps, and State Archeologist within the same business day (8-hours). The Corps shall then notify the appropriate SHPO and THPO(s). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity

shall not resume without written authorization from the State Archeologist and from the Corps.

7. **Excavated Material:** The Permittee shall not place any excavated material in wetlands or surface waters.
8. **Staging area:** All staging areas shall be limited to upland areas.
9. **Construction Requirements:** This permit requires that the top of the horizontal directional drill boring is no less than 14-feet beneath the authorized depth of (any shallow draft navigation channel) including a minimum of 25-feet outside the channel edges. The bore pits will be located in the uplands a minimum of 25 feet from the top of the banks. The total drilling fluid pressure is not to exceed 10 psi.
10. **Notification of Unmarked Utilities:** No work shall be performed until after the Permittee provides notification to the owner(s) or operator(s) of any marked utilities in the work area, unless the Permittee is the same entity as the owner(s) or operator(s).
11. **In the Event of a Frac-Out:** Should a frac-out and release of drilling fluids occur within navigable waters of the U.S., and in-water work is required to remediate the action, the Permittee shall comply with the following special conditions:
 - a. **Frac-Out Contingency Plan:** The Permittee shall comply with the frac-out contingency plan (Attachment 3).
 - b. **Manatee Conditions:** The Permittee shall comply with the "Standard Manatee Conditions for In-Water Work – 2011" (Attachment 4).
 - c. **JAXBO Project Design Criteria (PDCs) for In-Water Activities:** The Permittee shall comply with National Marine Fisheries Service's "PDCs for In-Water Activities" dated November 20, 2017 (Attachment 5).
 - d. **Daylight Hours:** All activities must be completed during daylight hours.
12. **Eastern Indigo Snake Protection Measures and Inspection:** Permittee shall comply with U.S. Fish and Wildlife Service's "Standard Protection Measures for the Eastern Indigo Snake" dated August 12, 2013, as provided in Attachment 4 of this permit. All gopher tortoise burrows, active or inactive, shall be evacuated prior to site manipulation in the vicinity of the burrow. If excavating potentially

occupied burrows, active or inactive, individuals must first obtain state authorization via a Florida Fish and Wildlife Conservation Commission (FWC) Authorized Gopher Tortoise Agent permit. The excavation method selected shall minimize the potential for injury of an indigo snake. The Permittee shall follow the excavation guidance provided in the most current FWC Gopher Tortoise Permitting Guidelines found at <http://myfwc.com/gophertortoise>. If an indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity. Holes, cavities, and snake refugia other than gopher tortoise burrows shall be inspected each morning before planned site manipulation of a particular area, and if occupied by an indigo snake, no work shall commence until the snake has vacated the vicinity of the proposed work.

- 13. Consent to Easement:** A portion of the authorized work may be located within the Federal right-of-way for an identified Federal project and would require a Department of the Army Consent to Easement. By copy of this permit, the proposal is being forwarded to the Corps' Real Estate Division for action on the Consent to Easement. Failure to obtain the Consent to Easement or waiver invalidates this authorization. The Real Estate Division is responsible for issuing the Consent to Easement. Contact with Real Estate for questions or status updates can be done at Post Office Box 4970, Jacksonville, Florida 32232-0019 or by telephone at 904-570-4514.

This authorization does not obviate the necessity to obtain any other Federal, State, or local permits, which may be required. Prior to the initiation of any construction, projects qualifying for this NWP/RGP permit must qualify for an exemption under section 403.813(1), F.S. or 373.406, F.S., or otherwise be authorized by the applicable permit required under Part IV of Chapter 373, F.S., by the Department of Environmental Protection, a water management district under section 373.069, F.S., or a local government with delegated authority under section 373.441, F.S., and receive Water Quality Certification (WQC) and applicable Coastal Zone Consistency Concurrence (CZCC) or waiver thereto, as well as any authorizations required for the use of state-owned submerged lands under Chapter 253, F.S., and, as applicable, Chapter 258, F.S. You should check State-permitting requirements with the Florida Department of Environmental Protection or the appropriate water management district.

This authorization does not include conditions that would prevent the 'take' of a state-listed fish or wildlife species. These species are protected under sec. 379.411, Florida Statutes, and listed under Rule 68A-27, Florida Administrative Code. With regard to fish and wildlife species designated as species of special concern or threatened by the State of Florida, you are responsible for coordinating directly with the Florida Fish and Wildlife

Conservation Commission (FWC). You can visit the FWC license and permitting webpage (<http://www.myfwc.com/license/wildlife/>) for more information, including a list of those fish and wildlife species designated as species of special concern or threatened. The Florida Natural Areas Inventory (<http://www.fnai.org/>) also maintains updated lists, by county, of documented occurrences of those species.

This authorization does not give absolute Federal authority to perform the work as specified on your application. The proposed work may be subject to local building restrictions mandated by the National Flood Insurance Program. You should contact your local office that issues building permits to determine if your site is located in a flood-prone area, and if you must comply with the local building requirements mandated by the National Flood Insurance Program.

If you are unable to access the internet or require a hardcopy of any of the conditions, limitations, or expiration date for the above referenced NWP and RGP, please contact Jerilyn Ashworth by telephone at 561-472-3516.

Thank you for your cooperation with our permit program. The Corps' Jacksonville District Regulatory Division is committed to improving service to our customers. We strive to perform our duty in a friendly and timely manner while working to preserve our environment. We invite you to complete our automated Customer Service Survey at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. Please be aware this Internet address is case sensitive; and, you will need to enter it exactly as it appears above. Your input is appreciated – favorable or otherwise.

Sincerely,



Jerilyn Ashworth
Project Manager

Enclosures

Copies Furnished:

CESAJ-RD-PE

Daniel Davila, ddavila@chenmoore.com

GENERAL CONDITIONS
33 CFR PART 320-330

1. The time limit for completing the work authorized ends on the **dates identified in the letter.**
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow a representative from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

DEPARTMENT OF THE ARMY PERMIT TRANSFER REQUEST**PERMIT NUMBER: SAJ-2019-01818(RGP-JKA)**

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. Although the construction period for works authorized by Department of the Army permits is finite, the permit itself, with its limitations, does not expire.

To validate the transfer of this permit and the associated responsibilities associated with compliance with its terms and conditions, have the transferee sign and date below and mail to the U.S. Army Corps of Engineers, Enforcement Section, Post Office Box 4970, Jacksonville, FL 32232-0019.

(TRANSFEEE-SIGNATURE)

(SUBDIVISION)

(DATE)

(LOT)

(BLOCK)

(NAME-PRINTED)

(STREET ADDRESS)

(MAILING ADDRESS)

(CITY, STATE, ZIP CODE)

Bid 12374-906 R2

12380-MACT-NOTE Files, February 15, 2019

17. DUST GENERATED FROM CONSTRUCTION SHALL BE MINIMIZED BY DAILY WATERING OF THE SITE.
18. AT ANY TIME DURING CONSTRUCTION THAT THE SILT FENCING IS DISTURBED, THE SILT FENCING SHALL BE RESTORED TO ITS ORIGINAL STATE WITHIN 24 HOURS. AT NO TIME DURING CONSTRUCTION SHALL WORK BE PERFORMED WITHOUT THE INTEGRITY OF THE SILT FENCING SECURED.
19. A QUALIFIED INSPECTOR, PROVIDED BY THE CONTRACTOR, SHALL INSPECT ALL POINTS OF DISCHARGE INTO NEARBY SURFACE WATER. THE INSPECTION SHALL OCCUR AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER. INSPECTION INCLUDES THE WRITTEN RECORDING OF THE CONDITION OF ALL DISCHARGE POINTS, INTEGRITY OF SILT FENCING, DAILY DUST CONTROL MEASURES, VEHICULAR TRAFFIC AND CONSTRUCTION MATERIAL STORAGE AND DISPOSAL. WRITTEN RECORD OF ALL INSPECTIONS SHALL BE STORED BY THE CONTRACTOR.
20. THE INSPECTION REPORT SHALL INCLUDE, BUT IS NOT LIMITED TO, THE FOLLOWING INFORMATION: NAME AND QUALIFICATION OF PERSONNEL MAKING THE INSPECTION, DATE OF INSPECTION, RAINFALL DATE, MAJOR OBSERVATIONS RELATING TO THE SWPPP, ACTIONS TAKEN BY CONTRACTOR AND ANY INCIDENT OF NONCOMPLIANCE WITH PERMIT, WHERE AN INSPECTION DOES NOT IDENTIFY ANY INCIDENT OF NONCOMPLIANCE, THE REPORT SHALL CONTAIN A CERTIFICATION THAT THE FACILITY IS IN COMPLIANCE WITH THE SWPPP AND THE PERMIT.
21. THE CONTRACTOR SHALL RETAIN A COPY OF THE SWPPP AND ALL REPORTS, RECORDS AND DOCUMENTATION REQUIRED BY THE PERMIT AT THE CONSTRUCTION SITE, OR AN APPROPRIATE ALTERNATIVE LOCATION AS SPECIFIED IN THE NOTICE OF INTENT, FROM THE DATE OF PROJECT INITIATION TO THE DATE OF FINAL STABILIZATION.
22. THE CONTRACTOR SHALL RETAIN THE SWPPP, NOI AND ALL RECORDS ASSOCIATED THEREWITH FOR A PERIOD OF AT LEAST THREE (3) YEARS FROM THE DATE THAT THE SITE IS FINALLY STABILIZED.
23. SEE LANDSCAPE PLANS FOR TREE REMOVAL AND LANDSCAPE DEMOLITION.
24. CONTRACTOR SHALL COORDINATE THROUGH CITY'S CONSTRUCTION DIVISION AND CITY'S PARKS DEPARTMENT ON HOW TO STOCK AND RE-USE EXCAVATED SOIL FROM SITE (AS APPLICABLE TO THE PROJECT).

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS

100 North Andrews Avenue, Fort Lauderdale, FL 33304

DEMOLITION NOTES
SHEET 8

ISSUE NO.
GNRL
009

DATE
2017/07/19

12886-wd-3-NOVE Plans, February 15, 2019

INTERRUPTION OF EXISTING UTILITIES:

1. ANY DEMOLITION WORK THAT REQUIRES INTERRUPTION OF SERVICE TO ANY CUSTOMER SHALL BE DONE SO WITH A MINIMUM OF SEVENTY-TWO (72) HOUR WRITTEN NOTICE TO, AND WRITTEN APPROVAL BY, THE APPROPRIATE UTILITY COMPANY.
2. THE CONTRACTOR SHALL ARRANGE A MEETING WITH THE LOCAL JURISDICTIONAL AGENCIES AND OTHER GOVERNING AGENCIES, AND OTHER AFFECTED UTILITIES PRIOR TO SCHEDULING THE SHUT DOWN TO ASSESS THE SCOPE OF WORK.
3. ALL SYSTEM SHUT DOWNS SHALL BE SCHEDULED BY THE CONTRACTOR AT SUCH TIME THAT SYSTEM DEMAND IS LOW. THIS GENERALLY REQUIRES NIGHT TIME WORK BY THE CONTRACTOR AND REQUIRES FULL-TIME INSPECTION BY A REPRESENTATIVE OF THE UTILITY. ALL COST FOR OVERTIME WORK BY THE REPRESENTATIVE OF THE UTILITY SHALL BE BORNE BY THE CONTRACTOR.
4. EACH CUSTOMER AFFECTED BY THE SHUT-DOWN SHALL BE PROVIDED, MINIMUM, FORTY-EIGHT (48) HOURS WRITTEN NOTIFICATION BY THE CONTRACTOR.

TEMPORARY DEMOLITION FACILITIES:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE OR SUPPLY TEMPORARY WATER SERVICE, SANITARY FACILITIES AND ELECTRICITY TO ITS EMPLOYEES AND SUBCONTRACTORS FOR THEIR USE DURING DEMOLITION.
2. MAINTENANCE OF TRAFFIC (MOT) IN THE PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS.
3. ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAYS OR WALKWAYS SHALL BE PROPERLY MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.
4. NO TRENCHES OR HOLES NEAR WALKWAYS OR IN ROADWAYS OR THEIR SHOULDERS ARE TO BE LEFT OPEN DURING NIGHTTIME HOURS WITHOUT EXPRESS WRITTEN PERMISSION OF THE CITY OR RESPECTIVE GOVERNING AGENCY.

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS

1401 North Andrews Avenue, Fort Lauderdale, Florida 33304

DEMOLITION NOTES
SHEET 9

FILED IN
GNRPL
009

20170519

1380-M43-1075-Plans, January 15, 2019

WASTE MANAGEMENT PLAN:

1. IMPLEMENT A WASTE MANAGEMENT PLAN FOR APPROVAL BY THE OWNER. PROVIDE HANDLING, CONTAINERS, STORAGE, SIGNAGE, TRANSPORTATION AND OTHER ITEMS AS NEEDED TO IMPLEMENT THE WASTE MANAGEMENT PLAN DURING THE ENTIRE DURATION OF THE CONTRACT.
2. DESIGNATE A WASTE MANAGEMENT COORDINATOR TO BE RESPONSIBLE FOR IMPLEMENTING, MONITORING AND REPORTING STATUS OF WASTE MANAGEMENT WORK PLAN. COORDINATOR SHALL BE PRESENT AT PROJECT SITE FULL-TIME FOR DURATION OF PROJECT.
3. TRAIN WORKERS, SUBCONTRACTORS AND SUPPLIERS ON PROPER WASTE MANAGEMENT PROCEDURES, AS APPROPRIATE FOR THE WORK AT THE PROJECT SITE.
4. DISTRIBUTE A WASTE MANAGEMENT PLAN BEFORE WORK BEGINS. REVIEW PLAN PROCEDURES AND LOCATION ESTABLISHED FOR SALVAGE, RECYCLING AND DISPOSAL.

RECYCLING DEMOLITION WASTE:

1. SEPARATE RECYCLABLE WASTE FROM OTHER WASTE MATERIALS, TRASH AND DEBRIS. SEPARATE RECYCLABLE WASTE BY TYPE AT THE PROJECT SITE TO THE MAXIMUM EXTENT PRACTICAL.
2. PROVIDE APPROPRIATELY MARKED CONTAINERS OR BINS FOR CONTROLLING RECYCLABLE WASTE UNTIL THEY ARE REMOVED FROM THE PROJECT SITE. INCLUDE A LIST OF ACCEPTABLE AND UNACCEPTABLE MATERIALS AT EACH CONTAINER AND BIN.
3. INSPECT CONTAINERS AND BINS FOR CONTAMINATION AND REMOVE CONTAMINATED MATERIALS IF FOUND.
4. STOCKPILE PROCESSED MATERIALS ON-SITE WITHOUT INTERMIXING WITH OTHER MATERIALS. PLACE, GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. COVER TO PREVENT WINDBLOWN DUST.
5. STOCKPILE MATERIALS AWAY FROM DEMOLITION AREA. DO NOT STORE WITHIN DRIP LINE OF REMAINING TREES.
6. STORE COMPONENTS OFF THE GROUND AND PROTECT FROM THE WEATHER.
7. REMOVE RECYCLABLE WASTE OFF THE OWNER'S PROPERTY AND TRANSPORT TO RECYCLING RECEIVER OR PROCESSOR.
8. ASPHALTIC CONCRETE PAVING: BREAK UP AND TRANSPORT PAVING TO ASPHALT RECYCLING FACILITY.
9. CONCRETE: REMOVE REINFORCEMENT AND OTHER METALS FROM CONCRETE AND SORT WITH OTHER METALS.
10. MASONRY: MASONRY WASTE SHALL INCLUDE WHOLE OR BROKEN BRICK AND CONCRETE MASONRY UNITS. WHOLE MASONRY UNITS SHALL BE CLEANED AND REUSED OR DONATED. BROKEN MASONRY SHALL BE CRUSHED AND USED AS FILL FOR OFFSITE AREAS. REMOVE METAL REINFORCEMENT, ANCHORS AND TIES FROM MASONRY AND SORT WITH OTHER METALS.

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DEMOLITION NOTES
SHEET 10

DATE: 01/15/19
GNNL
009

2017/01/19

LEGEND	
ABBREVIATIONS	
C.L.F.	= CHAIN LINK FENCE
CMP.	= CORRUGATED METAL PIPE
CONC.	= CONCRETE
F.H.	= FIRE HYDRANT
GAS	= GAS MAIN
INV.	= PIPE INVERT
OHW	= OVERHEAD WIRES
R/W	= RIGHT-OF-WAY LINE
RCP	= REINFORCED CONCRETE PIPE
SAN	= SANITARY SEWER PIPE
SMH	= SANITARY MANHOLE
S.V.	= SEWER VALVE
T.O.P.	= TOP OF PIPE
UNK.	= UNKNOWN TREE TYPE
U.T.O.	= UNABLE TO OBTAIN DATA
U.V.	= UNKNOWN VALVE
W.V.	= WATER VALVE
B.C.H.C.E.D.	= BROWARD COUNTY HIGHWAY CONSTRUCTION AND ENGINEERING DEPARTMENT.

VERTICAL DATUM INFORMATION

ALL ELEVATIONS SHOWN ARE IN NORTH
AMERICAN VERTICAL DATUM OF 1988 (NAV88)

CONVERSION FACTOR:

NAV888 + 1.60 = NGVD29 IN THIS AREA

500 West Cypress Creek Road,
Suite 630

Ft. Lauderdale, FL 33309

954.730.0707

www.chenmoore.com

CERTIFICATES OF AUTHORIZATION

EB4593 LC26000425

THE ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED
BY DANIEL DAVILA, PE ON MARCH 13, 2019
USING A SHA AUTHENTICATION CODE.

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

SIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

[illegible]

PROJECT # 12389
18" FORCE MAIN REPLACEMENT
THE N. RIVER FROM
NE 9TH ST. TO N. BIRCH RD.
GENERAL NOTES

Plot Date: 2/15/2019 4:25:02 PM
Folder Path: V:\Projects 2018\18-047,040 - boyshore dr intracoast crossing fm to 2 Design\CAD\Plans
Layout Name: Jfamo
Filename: 12389-MULTI-NOTE.dwg

12389-MULTI-NOTE File: February 15, 2019

11. METALS: METALS FROM REINFORCED CONCRETE, REINFORCED MASONRY, STRUCTURAL STEEL MEMBERS, FLASHING AND SHEET METAL, CONDUIT PIPE, SIDING, PIPING AND WIRING SHALL BE SEPARATED BY TYPE.

12. STRUCTURAL STEEL: STACK MEMBERS ACCORDING TO THEIR SIZE, TYPE AND LENGTH.

13. NUTS AND BOLTS: REMOVE BOLTS, NUTS, WASHERS AND OTHER ROUGH HARDWARE.

14. SITE-CLEARING WASTE SHALL BE RECYCLED BY CHIPPING BRUSH, BRANCHES AND TREES, THEN HAUL TO WOOD RECYCLING CENTER.

DISPOSAL OF WASTE:


1. GENERAL: EXCEPT FOR ITEMS OR MATERIALS TO BE SALVAGED, RECYCLED OR OTHERWISE REUSED, REMOVE WASTE MATERIALS FROM PROJECT SITE AND LEGALLY DISPOSE OF THEM IN A LANDFILL OR OTHER PERMITTED DISPOSAL FACILITY.

2. EXCEPT AS OTHERWISE SPECIFIED, DO NOT ALLOW WASTE MATERIALS THAT ARE TO BE DISPOSED OF TO ACCUMULATE ON-SITE.


3. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT SHALL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.

4. BURNING: DO NOT BURN WASTE MATERIALS.

5. DISPOSAL: TRANSPORT WASTE MATERIALS OFF THE OWNER'S PROPERTY AND LEGALLY DISPOSE OF THEM.

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DEMOLITION NOTES
SHEET 11

GNRL
009
2017/07/13

GENERAL CONSTRUCTION NOTES:

- NO CONNECTIONS FOR THE PURPOSE OF OBTAINING WATER SUPPLY DURING CONSTRUCTION SHALL BE MADE TO ANY FIRE HYDRANT OR BLOW-OFF STRUCTURE WITHOUT FIRST OBTAINING PERMISSION AND A CONSTRUCTION METER FROM THE CITY OF FORT LAUDERDALE.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR LOCATING, MOVING AND RELOCATING OR REPLACING ALL WATER SERVICES OR SEWER LATERALS WHICH ARE ENCOUNTERED DURING EXCAVATION. THE CONTRACTOR SHALL SUBMIT A WRITTEN PLAN FOR WATER SERVICE AND WASTEWATER SERVICE DISRUPTION FOR APPROVAL PRIOR TO THE ANTICIPATED DISRUPTION. THE CONTRACTOR SHALL NOTIFY THE PROPERTY OWNERS 48 HOURS IN ADVANCE OF ANY WORK ON THEIR SERVICES. THIS WORK SHALL BE CONSIDERED INCIDENTAL.
- THE CONTRACTOR MUST USE EXTREME CARE TO AVOID DAMAGE OR DISRUPTION TO ANY EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT. ALL PLAN LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED. CONTRACTOR IS TO CONTACT SUNSHINE STATE ONE CALL OF FLORIDA AT 1-800-432-4770 AND ALL OTHER PARTICIPATING UTILITIES 2 FULL BUSINESS DAYS PRIOR TO CONSTRUCTION FOR FIELD MARKUP LOCATIONS OF EXISTING UTILITIES AND FACILITIES.
- THE CONTRACTOR MUST INFORM THE CITY AT LEAST 48-HOURS IN ADVANCE OF CONSTRUCTION, IN WRITING IF ANY CONFLICT IS DISCOVERED DURING POT HOLE OPERATIONS FOR CLARIFICATION BY THE CITY.
- IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE UTILITIES DEPARTMENT OF THE CITY OF FORT LAUDERDALE AT LEAST TWO (2) BUSINESS DAYS IN ADVANCE TO COORDINATE ANY ACTIVITY TO BE PERFORMED BY THE CITY'S UTILITIES DEPARTMENT.
- CONTRACTOR SHALL NOT DISTURB AREAS OUTSIDE EXISTING RIGHTS-OF-WAY, UNLESS OTHERWISE NOTED ON THE PLANS.
- IN GENERAL, EXISTING STRUCTURES AND UTILITIES ARE NOTED AS EXISTING AND/OR SHOWN IN THIN LINES. NEW CONSTRUCTION IS IN HEAVY LINES AND/OR UNDERLINED.
- ALL WORK WITHIN STATE DEPARTMENT OF TRANSPORTATION (FDOT) RIGHT-OF-WAYS SHALL BE IN CONFORMANCE WITH FDOT SPECIFICATIONS AND PERMIT REQUIREMENTS.
- ALL WORK WITHIN BROWARD COUNTY RIGHT-OF-WAYS SHALL BE IN CONFORMANCE WITH THE BROWARD COUNTY MINIMUM STANDARDS AND/OR REQUIREMENTS.
- CONTRACTOR SHALL COMPLY WITH ALL LOCAL CITY, COUNTY AND STATE REGULATIONS PERTAINING TO THE CLOSING OF PUBLIC STREETS FOR USE OF TRAFFIC DURING CONSTRUCTION.
- CONTRACTOR SHALL PREPARE AND SUBMIT MAINTENANCE OF TRAFFIC (MOT) PLANS TO FDOT, CITY OF FORT LAUDERDALE, AND BROWARD COUNTY AS REQUIRED FOR WORK TO BE DONE WITHIN THEIR R/W PRIOR TO COMMENCEMENT OF WORK. SPECIFIC AGENCY MOT REQUIREMENTS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- STATIONS SHOWN ON THE DRAWINGS ARE BASED ON THE ESTABLISHED BASELINE AND SHALL NOT BE CONSIDERED AS DISTANCES OR AS A MEASURE OF THE LINEAR FOOTAGE OF PIPE TO BE INSTALLED.
- CONTRACTOR SHALL MAINTAIN ACCESS TO PRIVATE PROPERTY AT ALL TIMES, UNLESS OTHERWISE NOTED ON THE PLANS.
- ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAY OR WALKWAY SHALL BE PROPERLY MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.
- TRENCHES OR HOLES NEAR WALKWAYS, IN ROADWAYS OR THEIR SHOULDERS SHALL NOT BE LEFT OPEN DURING NIGHT TIME HOURS WITHOUT ADEQUATE PROTECTION.
- CONTRACTOR SHALL PROMPTLY REPAIR AND RESTORE EXISTING PAVEMENT, SIDEWALKS, CURBS, DRIVEWAYS, PIPES, RESIDENTIAL AND COMMERCIAL SPRINKLER LINES, CONDUIT, CABLES, ETC. AND LANDSCAPE AREAS DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES.

12389-MULTI-NOTE File: February 15, 2019

TRAFFIC CONTROL PLAN NOTES:

1. THE TRAFFIC CONTROL PLANS FOR THE PROJECT SHALL COMPLY WITH THE LATEST EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX NO. 600-860 MUTCD AND THE STANDARD SPECIFICATIONS. THE CONTRACTOR'S RESPONSE TIME TO ALL REPORTED MALFUNCTIONS OF TRAFFIC SIGNALS WITHIN THE PROJECT LIMITS SHALL BE NO MORE THAN TWO (2) HOURS AND SHALL RESTORE ALL MALFUNCTIONING TRAFFIC SIGNAL EQUIPMENT TO ITS LEVEL OF OPERATION PRIOR TO THE MALFUNCTIONING WITHIN TWENTY-FOUR (24) HOURS. DURING THIS TIME THE CONTRACTOR SHALL PROVIDE AT HIS EXPENSE TEMPORARY TRAFFIC CONTROL DEVICES, FLAGGLER PERSONNEL AND LAW ENFORCEMENT PERSONNEL AS NECESSARY TO MAINTAIN A SAFE AND EFFICIENT FLOW OF TRAFFIC AT THE AFFECTED WORK ZONE. THE ENGINEER OR THE CITY OF FORT LAUDERDALE SHALL APPROVE ALL MODIFICATIONS PRIOR TO THEIR IMPLEMENTATION.

2. THE CONTRACTOR SHALL MAINTAIN PROPER OPERATION OF ALL TRAFFIC SIGNAL LOOP ASSEMBLIES AND LOOP DETECTORS WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL CORRECT ALL LOOP ASSEMBLY/DETECTOR MALFUNCTIONS WITHIN 24 HOURS OF NOTIFICATION OF SUCH MALFUNCTIONS BY THE ENGINEER.

3. THE AGENCY RESPONSIBLE FOR MAINTENANCE OF THE TRAFFIC SIGNALS AND RELATED EQUIPMENT IS BROWARD COUNTY TRAFFIC ENGINEERING.

4. A REGULATORY SPEED OF 25 MPH SHALL BE POSTED WITHIN THE LIMITS OF THE WORK ZONE.

5. EXISTING SIGNS AND PAVEMENT MARKINGS THAT CONFLICT WITH CONSTRUCTION SIGNS AND MARKINGS SHALL BE REMOVED DURING CONSTRUCTION. ALL EXISTING SIGNS THAT ARE REMOVED SHALL BE STOCKPILED IN A SECURE PLACE AND REINSTALLED AFTER CONSTRUCTION. REMOVE AND REPLACE ANY GROUND MOUNT SIGN BY USE OF INDEX NO. 611.

6. THE CONTRACTOR SHALL MAINTAIN EXISTING DRAINAGE PATTERNS AND PREVENT ADVERSE FLOODING OF THE TRAVEL LANES DURING CONSTRUCTION.


7. THE CONTRACTOR SHALL OBTAIN WRITTEN AUTHORIZATION FROM THE CITY OF FORT LAUDERDALE FOR ANY AND ALL CONSTRUCTION ACTIVITIES TO BE PERFORMED AT NIGHT. NO LANE CLOSURE SHALL BE ALLOWED BETWEEN THE HOURS OF 6:00 AM TO 9:00 AM AND 4:00 PM TO 7:00 PM, MONDAY THROUGH FRIDAY UNLESS APPROVED BY THE ENGINEER.

8. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANY TWO (2) BUSINESS DAYS IN ADVANCE OF ANY EXCAVATION INVOLVING ITS UTILITIES SO THAT A COMPANY REPRESENTATIVE CAN BE PRESENT. THE LOCATION OF THE UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION. SEE SPECS FOR LIST OF UTILITY COMPANIES.


9. TRAFFIC CONTROL ON ALL COUNTY RIGHTS-OF-WAY SHALL MEET THE ADDITIONAL REQUIREMENTS OF THE BROWARD COUNTY ENGINEERING DEPARTMENT.

10. CONTRACTOR SHALL PREPARE AND SUBMIT MAINTENANCE OF TRAFFIC PLAN (MOT) WHERE REQUIRED BY FEDERAL, STATE, COUNTY, OR LOCAL AGENCIES HAVING JURISDICTION. CONTRACTOR SHALL OBTAIN ALL REQUIRED APPROVALS AND PERMITS ASSOCIATED WITH THE MOT'S. ALL MOTS TO BE ATS CERTIFIED.

11. THE CONTRACTOR SHALL ALSO COORDINATE THE CONSTRUCTION SCHEDULE WITH FDOT, BROWARD COUNTY AND THE CITY OF FORT LAUDERDALE TO AVOID LANE CLOSURES WHICH WOULD ADVERSELY AFFECT TRAFFIC DURING RUSH HOUR.

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

TRAFFIC CONTROL PLAN NOTES

GNRL
002
2017/07/13

- CONTRACTOR SHALL PROVIDE TEMPORARY FENCING AS REQUIRED BY AGENCIES HAVING JURISDICTION OVER THE PROJECT AND/OR WHEN REQUIRED FOR PUBLIC SAFETY.
- THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION AND UNTIL ACCEPTANCE OF WORK, FOR THE PROTECTION OF EXISTING AND NEWLY INSTALLED UTILITIES FROM DAMAGE OR DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING SUCH MEASURES AS NECESSARY TO PROTECT THE HEALTH, SAFETY AND WELFARE OF THOSE PERSONS HAVING ACCESS TO THE WORK SITE.
- LOCATION OF AIR RELEASE VALVES MAY BE FIELD ADJUSTED BY THE ENGINEER OR CITY OF FORT LAUDERDALE AS NECESSARY.
- CONTRACTOR SHALL ADJUST TO GRADE ALL EXISTING UTILITY CASTINGS INCLUDING VALVE BOXES, MANHOLES, HAND HOLES, PULL BOXES, INLETS AND SIMILAR STRUCTURES IN CONSTRUCTION AREA TO BE OVERLAPPED WITH ASPHALT.
- EXISTING TRAFFIC SIGNS SHALL BE RESET UPON COMPLETION PER FDOT STANDARDS. COST SHALL BE CONSIDERED INCIDENTAL. CONTRACTOR SHALL REPAIR OR REPLACE DAMAGED TRAFFIC SIGNAL LOOPS PER BROWARD COUNTY TRAFFIC ENGINEERING SPECIFICATIONS; COST SHALL BE INCIDENTAL.
- CONTRACTOR SHALL RESTORE EXISTING PAVEMENT AND PAVEMENT MARKINGS/SIGNAGE TO ORIGINAL PRE-CONSTRUCTION CONDITION OR AS OTHERWISE SPECIFIED IN CONTRACT DOCUMENTS. THIS WORK SHALL BE CONSIDERED INCIDENTAL.
- ALL CONSTRUCTION WITHIN FDOT R/W MUST CONFORM WITH FDOT SPECIFICATIONS, STANDARDS, AND PERMIT REQUIREMENTS. NO WORK SHALL COMMENCE WITHIN FDOT R/W'S WITHOUT AN FDOT PERMIT. FULL LANE WIDTH RESTORATION TO MATCH EXISTING PAVEMENT SECTION IS REQUIRED IN ACCORDANCE WITH FDOT STANDARDS FOR PROPOSED WORK WITHIN FDOT R/W.
- CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS AND ELEVATIONS BEFORE STARTING CONSTRUCTION.
- ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988.

12389-MULTI-NOTE File: February 15, 2019

MINIMUM DENSITY REQUIREMENTS

LOCATION	MATERIAL	MINIMUM DENSITY (% OF MAX)	TESTING FREQUENCY
ROADS (INCLUDES SIDEWALKS, ASPHALT PATHS)	BACKFILL	98%	VERTICAL DISTRIBUTION: ONE TEST AT EVERY LIFT STARTING AT TOP OF FIRST LIFT AND PROCEEDING UPWARD TO GRADE.
	SUBGRADE	98%	HORIZONTAL DISTRIBUTION: TESTS SHALL BE PERFORMED AT RANDOMLY SELECTED LOCATIONS WITHIN EACH 300 FOOT INTERVAL (MAXIMUM) ALONG THE LENGTH OF ROADWAY, SIDEWALK OR PATHWAY.
	BASE	98%	VERTICAL DISTRIBUTION: ONE TEST AT EVERY LIFT STARTING AT THE BOTTOM OF THE STRUCTURE AND PROCEEDING UPWARD TO GRADE.
MANHOLES AND VAULTS (IN ROADS AND PARKING AREAS)	IN-PLACE SUBGRADE BENEATH STRUCTURES	95%	HORIZONTAL DISTRIBUTION: PERFORM TESTING AT EACH STRUCTURE.
	BACKFILL BENEATH STRUCTURES	98%	
	BACKFILL AROUND STRUCTURES	98%	
	CRUSHED STONE BENEATH STRUCTURES	NOTE 6	
PARKING AREAS	BACKFILL	98%	VERTICAL DISTRIBUTION: ONE TEST AT EVERY LIFT STARTING AT TOP OF FIRST LIFT AND PROCEEDING UPWARD TO GRADE.
	SUBGRADE	98%	HORIZONTAL DISTRIBUTION: TESTS SHALL BE PERFORMED EVERY 6,000 SQUARE FEET OF PARKING AREA.
	BASE	98%	
UTILITY TRENCH BACKFILL	BEDDING AND BACKFILL	98%	VERTICAL DISTRIBUTION: ONE TEST AT EVERY LIFT STARTING AT THE SPRING LINE AND PROCEEDING UPWARD TO GRADE.
			HORIZONTAL DISTRIBUTION: TESTS SHALL BE PERFORMED AT RANDOMLY SELECTED LOCATIONS WITHIN EACH 300 FOOT INTERVAL (MAXIMUM) ALONG THE LENGTH OF A PIPE INSTALLATION, AND BETWEEN EACH SET OF STRUCTURES SEPARATED BY LESS THAN 300 FEET.
ROADS AND PARKING	ASPHALT	94%	ASPHALT TESTING MAY BE DONE BY CORE SAMPLING OR NUCLEAR GAUGE DENSITY TESTING. ASPHALT TESTING SHALL BE AT MAXIMUM 300 LINEAR FOOT ALONG ROADWAYS AND 6,000 SQUARE FOOT INTERVALS FOR PARKING AREAS.

NOTES:

1. THE DENSITY REQUIREMENTS PRESENTED ASSUME DRY TRENCH CONDITIONS.


2. UNLESS INDICATED OTHERWISE IN THE SPECIFICATIONS, TESTING SHALL COMPLY WITH THE REQUIREMENTS PRESENTED IN THIS TABLE.

3. LIFT THICKNESSES FOR BASE, SUBGRADE AND BACKFILL SHALL BE AS INDICATED ON THE DETAILS OR DESCRIBED IN THE SPECIFICATIONS.


4. MAXIMUM DENSITY SHALL BE DETERMINED BY ASTM D 1557 OR AASHTO T 180 (MODIFIED PROCTOR).

5. FIELD DENSITY TESTS SHALL BE PERFORMED IN ACCORDANCE WITH ASTM D 1556 OR D 2922.

6. THE AGGREGATE SHALL BE COMPACTED TO A DEGREE ACCEPTABLE TO THE ENGINEER BY USE OF A VIBRATORY COMPACTOR AND/OR CRAWLER TRACTOR.

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING DETAILS
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DENSITY TESTING NOTES

GNRL
010
2017/07/13

GENERAL DEMOLITION SPECIFICATIONS:

- THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL VERIFY THE LOCATION, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES AND OTHER FEATURES AFFECTING THE WORK PRIOR TO DEMOLITION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES WHICH MAY EFFECT THE DEMOLITION WORK.
- CHAPTER 553.851 OF THE FLORIDA STATUTES REQUIRES THAT AN EXCAVATOR NOTIFY ALL UTILITIES A MINIMUM OF TWO (2) WORKING DAYS PRIOR TO EXCAVATING.
- THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, SUPERVISION, AND EQUIPMENT REQUIRED FOR THE ORDERLY DEMOLITION AND REMOVAL OF EXISTING STRUCTURES, PAVEMENT AND UTILITIES AS SHOWN ON THE DRAWINGS AND DESCRIBED HEREIN.
- THE CONTRACTOR IS REQUIRED TO FAMILIARIZE HIMSELF WITH THE STRUCTURES TO BE DEMOLISHED.
- PROTECT AND SAVE ALL UTILITIES, UNLESS OTHERWISE NOTED.
- ALL THE CONCRETE AND PAVEMENT TO BE REMOVED MUST BE SAW CUT CLEAN PRIOR TO REMOVAL.
- ALL EXISTING STRUCTURES, PAVEMENTS, SLABS, FOUNDATIONS, STEPS AND OTHER ON-SITE EXISTING FEATURES INDICATED ON THE DRAWINGS TO BE REMOVED SHALL BE DEMOLISHED AND REMOVED BY THE CONTRACTOR (AS APPLICABLE TO PROJECT).
- ALL EXISTING SEWERS, PIPING AND UTILITIES SHOWN ARE NOT TO BE INTERPRETED AT THE EXACT LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK.
- THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE UTILITY COMPANY PRIOR TO REMOVAL OR RELOCATION OF ANY ELECTRICAL, TELEPHONE, CABLE AND/OR GAS LINES. SUFFICIENT TIME SHALL BE PROVIDED FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE.
- CONTRACTOR MUST STOP OPERATION AND NOTIFY THE OWNER/ENGINEER FOR PROPER DIRECTION IF ANY ENVIRONMENTAL OR HEALTH RELATED CONTAMINANT IS ENCOUNTERED DURING THE DEMOLITION/EXCAVATION PROCESS.
- CONTINUOUS ACCESS AND OPERATION SHALL BE MAINTAINED FOR THE SURROUNDING PROPERTIES AND BUILDINGS AT ALL TIMES DURING DEMOLITION OF THE EXISTING COMPOST FACILITY.
- PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED.
- ALL SIGNS OUTSIDE THE DEMOLITION AREA ARE TO REMAIN UNLESS OTHERWISE SPECIFIED.
- THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES BEFORE EXCAVATION.
- ALL TRASH, DEBRIS AND OTHER MATERIAL REMOVED FROM THE SITE SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

MAINTENANCE OF TRAFFIC SCHOOL/PEDESTRIAN

- THE "MAINTENANCE OF TRAFFIC" PLAN, PROVIDED BY THE CONTRACTOR, SHALL INCLUDE PROVISIONS FOR PEDESTRIAN AND/OR SCHOOL STUDENT TRAFFIC AS WELL AS VEHICULAR TRAFFIC. THE FOLLOWING ARE MINIMUM REQUIREMENTS.
- THE SAFE WALK ROUTE FOR ALL SCHOOL STUDENTS WITHIN THE VICINITY OF THE CONSTRUCTION ZONE SHALL BE MAINTAINED DURING THE TIMES STUDENTS ARE ARRIVING AT OR LEAVING SCHOOL. IF THE CURRENT WALKING SURFACE CAN NOT BE MAINTAINED, THEN A TEMPORARY ROAD-ROCK 4' WALK WAY SHALL BE CREATED. THE SAFE WALK ROUTE SHALL BE SEPARATED FROM THE CONSTRUCTION ACTIVITY BY THE 4' HIGH ORANGE CONSTRUCTION FENCE FOR THE ENTIRE LENGTH OF THE PROJECT OR THE LENGTH OF THE WALK ROUTE, WHICHEVER IS LESS.
- ALL CONSTRUCTION EQUIPMENT AROUND ANY DESIGNATED CROSSWALK SHALL CEASE TO OPERATE DURING THE TIMES STUDENTS ARE ARRIVING AT OR LEAVING SCHOOL. ALL CONSTRUCTION EQUIPMENT ADJACENT TO A DESIGNATED WALK ROUTE SHALL CEASE OPERATING UNLESS SATISFACTORILY BARRICADED FROM THE WALK ROUTE.
- IN THE CASE THAT A DESIGNATED CROSSING OR ANY PORTION OF THE DESIGNATED WALK ROUTE CANNOT BE MAINTAINED, THEN THE CONTRACTOR SHALL NOTIFY THE SPECIAL PROJECTS COORDINATOR AT BROWARD COUNTY TRAFFIC ENGINEERING DIVISION, (954) 847-2671, A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO CLOSING THAT ROUTE IN ORDER THAT AN ALTERNATE CROSSING/ROUTE CAN BE ESTABLISHED.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL ANY NECESSARY PAVEMENT, ROAD ROCK, PAVEMENT MARKING AND SIGNAGE AND/OR ANY PEDESTRIAN SIGNALIZATION AND/OR MODIFICATION TO ACCOMMODATE AN EXISTING OR ALTERNATE WALK ROUTE.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE STATE CERTIFIED SCHOOL CROSSING GUARDS OR OFF DUTY POLICE OFFICERS TO CROSS STUDENTS AT ANY LOCATIONS OTHER THAN THOSE PREVIOUSLY DESIGNATED. THE CONTRACTOR MAY USE FLAG MEN, ONLY IF THEY ARE STATE CERTIFIED AS A SCHOOL CROSSING GUARD.
- THIRTY (30) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE SPECIAL PROJECTS COORDINATOR AT BROWARD COUNTY TRAFFIC ENGINEERING DIVISION, (954) 847-2671, TO ARRANGE A PRE-CONSTRUCTION - SCHOOL SAFETY MEETING.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE BROWARD COUNTY SCHOOL BOARD PUPIL TRANSPORTATION DEPARTMENT, (754) 321-4440, TO ARRANGE A PRE-CONSTRUCTION - SCHOOL BUS ROUTE MEETING. THIS MEETING IS TO DETERMINE ALL BUS ROUTES AND TO MAKE ANY NECESSARY ARRANGEMENTS FOR REROUTING. THIS MEETING SHALL INCLUDE THE SPECIAL PROJECTS COORDINATOR FROM BROWARD COUNTY TRAFFIC ENGINEERING DIVISION, (954) 847-2671.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SAFE AND ADEQUATE WALKING SURFACE FOR ALL SCHOOL CHILDREN/PEDESTRIANS. THE SAFE WALK ROUTE SHALL BE PART OF THE MAINTENANCE OF TRAFFIC PLAN.
- ALL VEHICLE DETECTION DEVICES SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT. ANY DEVIATION SHALL REQUIRE PRIOR WRITTEN APPROVAL BY THE TRAFFIC ENGINEERING DIVISION. ALL TRAFFIC ENGINEERING COMMUNICATIONS FACILITIES LOCATED WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED THROUGHOUT THE PROJECT.
- ALL TRAFFIC CONTROL DEVICES USED WITHIN PUBLIC RIGHT OF WAY SHALL BE ON FDOT APPROVED PRODUCT LIST (APL).

INTERRUPTION OF EXISTING UTILITIES

- ANY DEMOLITION WORK THAT REQUIRES INTERRUPTION OF SERVICE TO ANY CUSTOMER SHALL BE DONE SO WITH A MINIMUM OF SEVENTY-TWO (72) HOUR NOTICE TO, AND WRITTEN APPROVAL BY, THE APPROPRIATE UTILITY COMPANY. THE CONTRACTOR SHALL ARRANGE A MEETING WITH THE LOCAL JURISDICTIONAL AGENCIES AND OTHER GOVERNING AGENCIES, AND OTHER AFFECTED UTILITIES PRIOR TO SCHEDULING THE SHUT DOWN TO ASSESS THE SCOPE OF WORK. ALL SYSTEM SHUT DOWNS SHALL BE SCHEDULED BY THE CONTRACTOR AT SUCH TIME THAT SYSTEM DEMAND IS LOW. THIS GENERALLY REQUIRES NIGHT TIME WORK BY THE CONTRACTOR AND REQUIRES FULL TIME INSPECTION BY A REPRESENTATIVE OF THE UTILITY. ALL COST FOR OVERTIME WORK BY THE REPRESENTATIVE OF THE UTILITY SHALL BE BORNE BY THE CONTRACTOR. EACH CUSTOMER AFFECTED BY THE SHUT DOWN SHALL BE PROVIDED, MINIMUM, FORTY-EIGHT (48) HOURS WRITTEN NOTIFICATION BY THE CONTRACTOR.

TEMPORARY DEMOLITION FACILITIES

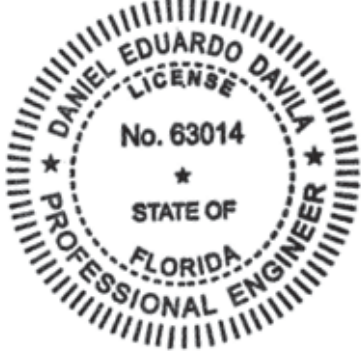
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE OR SUPPLY TEMPORARY WATER SERVICE, SANITARY FACILITIES AND ELECTRICITY TO ITS EMPLOYEES AND SUBCONTRACTORS FOR THEIR USE DURING DEMOLITION.
- MAINTENANCE OF TRAFFIC (MOT) IN THE PUBLIC RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE MUTCD AND FDOT.
- ALL OPEN TRENCHES AND HOLES ADJACENT TO ROADWAYS OR WALKWAYS SHALL BE PROPERLY MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.
- NO TRENCHES OR HOLES NEAR WALKWAYS OR IN ROADWAYS OR THEIR SHOULDERS ARE TO BE LEFT OPEN DURING NIGHTTIME HOURS WITHOUT EXPRESS WRITTEN PERMISSION OF THE CITY OR RESPECTIVE GOVERNING AGENCY.

VERTICAL DATUM INFORMATION

ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)


CONVERSION FACTOR:

NAVD88 + 1.60 = NGVD29 IN THIS AREA



THE ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY DANIEL DAVILA, PE ON MARCH 13, 2019 USING A SHA AUTHENTICATION CODE.

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



CHEN-MOORE & ASSOCIATES

Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com

CERTIFICATES OF AUTHORIZATION
EB4593 1C26000425

REVISIONS			DESCRIPTION
NO.	DATE	BY	

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS THE N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.

GENERAL NOTES

DRAWING #
GN-3

SHT #
04

TOTAL: 18

CAD FILE: 12389-MULTI-NOTE

DRAWING FILE NO. 4-XXX-XX

ENGINEER:
DANIEL DAVILA, P.E.
REG. No: 63014
DATE:

DRAWN BY: JH
DATE: 01/11/19
DESIGNED BY: DC
SCALE:
CHECKED BY: DD
FIELD BOOK:

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

City of Fort Lauderdale

Bld 12374-006 R2

CAM 20-0627
Exhibit 3
Page 467 of 556

Filename: 12389-MULTI-NOTE.dwg

Layout Name: Jfamo

Username: Jfamo

Plot Date: 2/15/2019 4:25:04 PM

Folder Path: V:\Projects\2018\18-047-040 - boyshore dr

HORIZONTAL DIRECTIONAL DRILLING (HDD) WITH (HDPE) PIPE

I. WORK INCLUDED

A. FURNISH ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED TO INSTALL FORCE MAIN PIPE USING DIRECTIONAL DRILLING METHOD OF INSTALLATION, ALL IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE FORCE MAIN PIPE SIZE, TYPE AND LENGTH SHALL BE AS SPECIFIED HEREIN AND AS SHOWN ON THE DRAWINGS. WORK INCLUDED SHALL INCLUDE AND NOT BE LIMITED TO PROPER INSTALLATION, TESTING, RESTORATION OF UNDERGROUND UTILITIES AND ENVIRONMENTAL PROTECTION AND RESTORATION.

B. THE DIRECTIONAL DRILL SHALL BE ACCOMPLISHED BY FIRST DRILLING A PILOT HOLE TO DESIGN STANDARDS; THEN ENLARGING THE PILOT HOLE TO SUFFICIENT SIZE TO ACCOMMODATE THE PULL BACK.

II. REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3261: BUTT HEAT FUSION POLYETHYLENE PLASTIC FITTINGS

ASTM F 714-05: SPECIFICATION FOR POLYETHYLENE PIPE

PIPE ASTM F 1055: ELECTRO-FUSION FITTINGS FOR OUTSIDE DIAMETER CONTROLLED PE

ASTM F 1962: MAXI-HORIZONTAL DIRECTIONAL DRILLING

ASTM F 2620: HEAT FUSION JOINING OF POLYETHYLENE PIPE AND FITTINGS

B. AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA C 906: STANDARD FOR POLYETHYLENE PRESSURE PIPE AND FITTINGS, 4 IN. THROUGH 63 IN. FOR WATER DISTRIBUTION

III. GENERAL REQUIREMENTS

A. DIRECTIONAL DRILLING AND PIPE INSTALLATION SHALL BE DONE ONLY BY AN EXPERIENCED, LICENSED CONTRACTOR SPECIALIZING IN DIRECTIONAL DRILLING TECHNIQUE AND WHOSE KEY PERSONNEL HAVE AT LEAST FIVE (5) YEARS' EXPERIENCE IN THIS WORK. FURTHERMORE, THE SAID CONTRACTOR SHALL HAVE HAD EXPERIENCE IN DIRECTIONAL DRILLING UNDER FLORIDA WATERWAYS. ACCEPTABLE DIRECTIONAL DRILLING CONTRACTORS MUST MEET THESE MINIMUM QUALIFICATIONS PRESENTED IN DOCUMENTATION OF COMPLIANCE WITH MINIMUM STANDARDS IN SECTION 1.05 .A.2.

B. THE CONTRACTOR SHALL VISIT THE SITE AND DETERMINE THE PROXIMITY OF STRUCTURES ON EITHER SIDE OF THE CROSSINGS. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A DRILLING PLAN OUTLINING PROCEDURES TO PREVENT FRAC-OUT AND DRILLING FLUID OR THE DRILLING PROCESS FROM ADVERSELY AFFECTING THESE STRUCTURES.

C. PRIOR TO PRE-CONSTRUCTION MEETING CONTRACTOR IS TO SUBMIT FRAC-OUT PLAN PER STATE WATER QUALITY STANDARDS TO DRILL 62-302 WITH TEST KIT OF THE NON-TOXIC FLUORESCENT TRACKING DYES THAT THE CONTRACTOR WILL USE WITH THE DRILLING LUBRICANT AS A MONITORING METHOD WITH THE BENTONITE.

D. PRIOR TO THE START OF WORK, THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA TO DESIGN A DETAILED PLAN OF BORING AND RECEIVING PITS, INCLUDING EXCAVATION, TOGETHER WITH AN OUTLINE OF THE METHODS TO BE USED AND A TIME SCHEDULE FOR DIRECTIONAL DRILL OPERATIONS. IN ADDITION CONTRACTOR SHALL IDENTIFY AN ENVIRONMENTAL SCIENTIST/BIOLOGIST WITH EXPERIENCE IN WATER QUALITY MONITORING AND HABITAT PROTECTION TO BE USED IN THE EVENT OF A FRAC-OUT.

E. THREE WORKDAYS WRITTEN NOTICE PRIOR TO START OF THE ACTUAL WORK SHALL BE GIVEN TO THE OWNER AND ENGINEER.

F. THE CONTRACTOR SHALL INSTALL, MAINTAIN, AND LEAVE IN PLACE ANY SHEETING, UNDERPINNING, CRIBBING, AND OTHER RELATED ITEMS (OTHER THAN THAT REQUIRED FOR THE BORING AND RECEIVING PITS) TO SUPPORT ANY STRUCTURE OR FACILITY AFFECTED BY THE BORING OPERATIONS. THE ENGINEER, DEPENDING UPON EXISTING CONDITIONS, MAY REQUIRE THAT ADDITIONAL SHEETING FOR THE EXCAVATION BE LEFT IN PLACE.

G. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR THE METHODS AND MEANS OF CONSTRUCTION, THE STABILITY AND ACCURACY OF THE DRILLED AND REAMED HOLE AND CONSTRUCTED PITS, AND ALL COST RESPONSIBLE FOR THE SAFETY OF THE PITS AND RELATED STRUCTURES, AND PERSONNEL ENGAGED IN CONSTRUCTION THROUGHOUT THE DURATION OF WORK.

H. ALL WORK UNDER THIS SPECIFICATION AFFECTING THE RIGHT-OF-WAY, OR MUNICIPAL FACILITIES SHALL BE CARRIED OUT TO THE FULL SATISFACTION OF THE AUTHORIZED REPRESENTATIVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FULLY INFORMED OF ALL REQUIREMENTS AND PERMIT CONDITIONS AS IT PERTAINS TO THE SPECIFIC PROJECT AND SHALL CONDUCT ALL WORK ACCORDINGLY.

I. ALL EQUIPMENT USED BY THE CONTRACTOR ON OWNER'S PROPERTY AND RIGHTS-OF-WAY MAY BE INSPECTED BY THE OWNER OR THE OWNER'S REPRESENTATIVES.

J. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ALL DAMAGES ARISING FROM THE FAILURE OF THE CONTRACTOR OR SUBCONTRACTORS TO COMPLY WITH THE REGULATIONS AND THE REQUIREMENTS OF THESE SPECIFICATIONS.

K. THE CONTRACTOR'S METHODS AND SCHEDULE SHALL COMPLY WITH THE OVERALL PROJECT REQUIREMENTS. THE CONTRACTOR SHALL BE FAMILIAR WITH THE WORK WITHIN THE LOCAL SUBSURFACE CONDITIONS. THE CONTRACTOR'S SELECTION OF INADEQUATE, INAPPROPRIATE, OR INEFFICIENT EQUIPMENT AND METHODS WILL NOT BE CAUSE FOR ADJUSTMENTS TO THE CONTRACT PRICE OR CONTRACT TIME.

L. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CLEAN UP OF PROJECT SITE, DEBRIS, MATERIALS AND EQUIPMENT AND SHALL CLEAR THE SITE OF AND DISPOSE OF THEM IN ACCORDANCE WITH CONTRACT DOCUMENTS.

IV. SUBMITTALS

A. THE CONTRACTOR SHALL SUBMIT FOR THE OWNER'S AND ENGINEER'S APPROVAL THE QUALIFICATIONS OF THE DIRECTIONAL DRILLING SPECIALTY PROVIDER INDICATING COMPLIANCE WITH THE FOLLOWING MINIMUM EXPERIENCE CRITERIA:

1. DESCRIPTIONS OF SUCCESSFULLY COMPLETED SIMILAR PROJECTS USING THE GUIDED DIRECTIONAL DRILL TECHNIQUE, WHICH SHALL INCLUDE A LISTING OF THE FOLLOWING INFORMATION:

- a. PROJECT NAME AND LOCATION
- b. YEAR OF PROJECT
- c. OWNER/CLIENT
- d. CLIENT CONTACT INFORMATION
- e. DIAMETER AND MATERIAL OF PIPE
- f. LENGTH OF DIRECTION DRILLING INSTALLATION

g. OTHER INFORMATION RELEVANT TO THE SUCCESSFUL COMPLETION OF THE PROJECT

2. DOCUMENTATION OF COMPLIANCE WITH THE FOLLOWING MINIMUM STANDARDS:

a. THE DIRECTIONAL DRILLING SPECIALTY PROVIDER SHALL BE AN EXPERIENCED, LICENSED CONTRACTOR SPECIALIZING IN GUIDED DIRECTIONAL DRILLING AND WHOSE KEY PERSONNEL ASSIGNED TO THIS WORK SHALL HAVE A MINIMUM OF FIVE (5) YEARS OF RELATED DIRECTIONAL DRILLING EXPERIENCE.

b. THE DIRECTIONAL DRILLING SPECIALTY PROVIDER SHALL HAVE INSTALLED UTILITIES UNDER MAJOR WATERWAYS VIA DIRECTIONAL DRILL TECHNIQUE.

B. TWO (2) WEEKS PRIOR TO THE START OF THE DIRECTIONAL DRILLING WORK, THE CONTRACTOR SHALL SUBMIT THE DIRECTIONAL DRILLING WORK PLAN FOR THE OWNER'S AND ENGINEER'S REVIEW. THE WORK PLAN SHALL INCLUDE THE FOLLOWING INFORMATION:

1. A PLAN SHOWING DETAILS OF THE PROPOSED METHOD OF CONSTRUCTION, SEQUENCE OF OPERATIONS TO BE PERFORMED, NUMBER AND SIZE OF CONSTRUCTION CREW, HOURS TO BE WORKED, PILOT HOLE DRILLING PROCEDURE, REAMING PROCEDURE, PULLBACK PROCEDURE, METHOD OF MONITORING THE DRILLING HEAD AND METHOD OF VERIFYING PIPE LOCATION FOR AS-BUILT DRAWINGS.

2. A DRILLING FLUID PLAN WHICH DETAILS TYPES OF DRILLING FLUIDS, INCLUDING THE NON-TOXIC FLUORESCENT TRACKING DYES, CLEANING AND RECYCLING EQUIPMENT, ESTIMATED FLOW RATES, AND PROCEDURES FOR MINIMIZING DRILLING FLUID ESCAPE.

3. A PLAN IN THE EVENT OF DRILLING FLUID ESCAPE INCLUDING, BUT NOT LIMITED TO, STOPPAGE OF WORK, NOTIFICATION OF APPLICABLE PERMITTING AUTHORITIES WHOSE RIGHT-OF-WAY IS IMPACTED BY THE ESCAPE OF DRILLING FLUID, PROCEDURE TO CONFINE DRILLING FLUIDS/MUDS, AND PROCEDURE FOR REPAIR/PLUGGING OF FISSURES AT NO ADDITIONAL COST TO THE OWNER.

4. A PLAN AND PROFILE DRAWING SHOWING THE CONTRACTOR'S PROPOSED PILOT BORE HOLE ROUTING AND LOCATION OF OTHER UNDERGROUND UTILITIES. THE PLAN DRAWING SHALL BE AT A 1" = 20' SCALE AND THE PROFILE DRAWING AT A 1" = 20' SCALE HORIZONTAL AND 1" = 2' SCALE VERTICAL.

5. A 1" = 20' SCALE DRAWING OF THE PROPOSED SETUP OF MAJOR EQUIPMENT AT THE ENTRY POINT AND THE PROPOSED LAYOUT PIPE AT THE EXIT POINT.

C. THE CONTRACTOR SHALL FURNISH SHOP DRAWINGS SHOWING ALL FABRICATION AND CONSTRUCTION DETAILS FOR THE DIRECTIONAL DRILLED CROSSINGS.

D. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING DRILLING LOGS THAT PROVIDE DRILL BIT LOCATIONS AT LEAST 30 FEET ALONG THE DRILL PATH. IN ADDITION, LOGS WILL BE KEPT THAT RECORD THE FOLLOWING ON AN HOURLY BASIS THROUGHOUT EACH DRILL PASS, BACKREAM PASS OR PIPE INSTALLATION PASS:

- 1. DRILL FLUID PRESSURE
- 2. DRILLING FLUID FLOW RATE
- 3. DRILL THRUST PRESSURE
- 4. DRILL PULLBACK PRESSURE
- 5. DRILL HEAD TORQUE
- 6. HORIZONTAL DISTANCE OF DRILL HEAD FROM ENTRY POINT

E. UPON COMPLETION OF THE PILOT HOLE PHASE OF THE OPERATION, A COMPLETE SET OF AS-BUILT RECORDS SHOWING THE ACTUAL HORIZONTAL AND VERTICAL ALIGNMENT OF THE PILOT BORE AT INTERVALS NOT EXCEEDING 30 FEET SHALL BE SUBMITTED IN DUPLICATE TO THE ENGINEER AND THE CITY OF FORT LAUDERDALE. THE RECORDS SHALL BE IN THE FORM OF AN ELECTRONIC AUTOCAD AS-BUILT DRAWING FILE. THESE RECORDS SHALL INCLUDE COPIES OF THE PLAN DRAWING AT A 1" = 20' SCALE, AND A PROFILE DRAWING AT A 1" = 20' SCALE HORIZONTAL AND A 1" = 2' SCALE VERTICAL, AS WELL AS DIRECTIONAL SURVEY REPORTS AS RECORDED DURING THE DRILLING OPERATION.

SAFETY

A. THE CONTRACTOR SHALL, AT ALL TIMES, CONFORM TO ALL APPLICABLE STATE AND FEDERAL REGULATIONS.

B. CONTRACTOR IS TO ADHERE TO REQUIREMENTS OF UNITED STATES ARMY CORP OF ENGINEERS PERMIT. SEE ACQUIRED PERMITS EXHIBIT FOR PERMIT REQUIREMENTS.

C. GUIDED DIRECTIONAL DRILLING EQUIPMENT MACHINE SAFETY REQUIREMENTS WILL INCLUDE A COMMON GROUNDING SYSTEM TO PREVENT ELECTRICAL SHOCK IN THE EVENT OF HIGH VOLTAGE UNDERGROUND CABLE STRIKE. THE GROUNDING SYSTEM WILL CONNECT ALL PIECES OF INTERCONNECTING MACHINERY: THE DRILL, MUD MIXING SYSTEM, DRILL POWER UNIT, DRILL ROD TRAILER, OPERATOR'S BOOTH, WORKER GROUNDING MATS AND ANY OTHER INTERCONNECTED EQUIPMENT TO A COMMON GROUND. THE DRILL WILL BE EQUIPPED WITH AN "ELECTRICAL STRIKE" AUDIBLE AND VISUAL WARNING SYSTEM THAT WILL NOTIFY THE SYSTEM OPERATORS OF AN ELECTRICAL STRIKE.

D. OPERATORS OF THE DRILL WILL WEAR ELECTRICAL SHOCK PROTECTION EQUIPMENT AND OPERATE FROM COMMON GROUNDED MATS AS REQUIRED.

MATERIALS

A. THE CARRIER PIPE SHALL CONFORM TO SECTION 02610; PIPING, GENERAL.

B. EQUIPMENT (GRADERS, SHOVELS, ETC.) AND MATERIALS (SUCH AS GROUND SHEETS, HAY BALES, BOOMS, AND ABSORBENT PADS) FOR CLEANUP AND CONTINGENCIES SHALL BE PROVIDED IN SUFFICIENT QUANTITIES BY CONTRACTOR AND MAINTAINED AT ALL SITES FOR USE IN THE EVENT OF INADVERTENT LEAKS, SEEPS OR SPILLS.

C. TECHNICAL CRITERIA FOR BENTONITE SHALL BE AS GIVEN IN API SPECIFICATION 13A, SPECIFICATION FOR DRILLING FLUIDS MATERIALS. ANY MODIFICATION TO THE BASIS DRILLING FLUID INVOLVING ADDITIVES MUST DESCRIBE THE TYPE OF MATERIAL TO BE USED AND BE INCLUDED IN CONTRACTOR'S DRILLING PLAN PRESENTED TO OWNER. THE OWNER RETAINS THE RIGHT TO SAMPLE AND MONITOR THE WASTE DRILLING MUD, CUTTINGS AND WATER.

HDPE PIPELINE IDENTIFICATION

A. ALL POLYETHYLENE PIPE SHALL BE BLACK, AND SHALL CONTAIN A CONTINUOUS COLORED STRIPE, 2 INCHES WIDE, AT THREE SEPARATE LOCATIONS ALONG THE LENGTH OF THE PIPE. STRIPE COLOR SHALL BE:

- 1. POTABLE WATER MAINS - BLUE
- 2. RECLAIMED WATER MAINS - PURPLE
- 3. FORCE MAINS - BROWN
- 4. SANITARY SEWER - GREEN
- 5. STORM SEWER - NO STRIPES REQUIRED

DIRECTIONAL DRILLING OPERATION

A. THE CONTRACTOR SHALL PROVIDE ALL MATERIAL, EQUIPMENT, AND FACILITIES REQUIRED FOR DIRECTIONAL DRILLING. PROPER ALIGNMENT AND ELEVATION OF THE OPENING SHALL BE CONSISTENTLY MAINTAINED THROUGHOUT THE DIRECTIONAL DRILLING OPERATION. ENTRANCE AND EXIT ANGLES FOR THE DRILL ARE AT THE CONTRACTOR'S DISCRETION SUCH THAT THE ELEVATION PROFILE MAINTAINS ADEQUATE GROUND COVER TO REASONABLY PRECAUTION AGAINST HYDRAULIC FRACTURES WITH THE DRILLING FLUID AND MAINTAIN THE MINIMUM COVER SHOWN IN THE DRAWINGS AND SPECIFIED HEREIN.

B. THE POSITION OF THE DRILL STRING SHALL BE MONITORED BY THE CONTRACTOR WITH THE DOWNHOLE SURVEY INSTRUMENTS. THE CONTRACTOR SHALL COMPUTE THE POSITION IN THE X, Y, EVERY 30 FEET. SERIOUS DEVIATIONS BETWEEN THE DESIGN POSITION WHICH MAY AFFECT THE INSTALLATION OF THE PIPELINE AND ARE BEYOND THE CONTROL OF THE CONTRACTOR TO CORRECT SHALL BE DOCUMENTED AND IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER FOR DISCUSSION AND/OR APPROVAL. THE PROFILE AND ALIGNMENT DEFINED ON THE CONSTRUCTION DRAWINGS FOR THE BORES DEFINE THE MINIMUM DEPTH AND RADIUS OF CURVATURE. AT NO POINT IN THE DRILLED PROFILE SHALL THE RADIUS OF CURVATURE OF THE BORE BE LESS THAN 700 FEET. THE CONTRACTOR SHALL MAINTAIN AND PROVIDE TO THE OWNER, UPON REQUEST, THE DATA GENERATED BY THE DOWNHOLE SURVEY TOOLS IN A FORM SUITABLE FOR INDEPENDENT CALCULATION OF THE PILOT HOLE PROFILE.

C. THE USE OF A SEPARATE STEERING SYSTEM EMPLOYING A GROUND SURVEY GRID SYSTEM, SUCH AS "TRU-TRACKER" OR EQUAL SHOULD BE USED, AT THE CONTRACTOR'S DISCRETION, TO ENSURE PROPER MONITORING OF THE DRILL STRING.

D. BORING PITS SHALL BE SHORED WITH SHEETING OR SUCH OTHER MATERIALS AS REQUIRED. SHEETING SHALL BE DRIVEN TO A SUFFICIENT DEPTH BELOW THE INVERT OF THE CARRIER PIPE TO RESIST ANY PRESSURE DEVELOPED BY THE SOIL OUTSIDE THE BORING PIT. SHEETING WHEN USED SHALL TERMINATE NOT LESS THAN 3 FEET 6 INCHES ABOVE EXISTING GRADE.

E. AT THE COMPLETION OF THE DIRECTION DRILLING OPERATIONS, THE CONTRACTOR WILL BE REQUIRED TO REMOVE ALL SHEETING IN PLACE. IF STEEL SHEETING IS USED, IT MAY BE REMOVED AFTER INSTALLATION OF THE CARRIER PIPE IN THE BORE HOLE, BUT PRIOR TO INSTALLATION OF THE JOINING CARRIER PIPE. HOWEVER, SHOULD DAMAGE TO THE ROADWAY, PIPELINE OR ANY OTHER ADJACENT STRUCTURE OCCUR, THE CONTRACTOR SHALL LEAVE ALL REMAINING SHEETING IN PLACE AND REDRIVE AND LEAVE IN PLACE ANY SHEETING WHICH IS REQUIRED TO STABILIZE THE SITE AND PREVENT ADDITIONAL DAMAGE FROM OCCURRING. THE TOP OF ALL SHEETING LEFT IN PLACE SHALL BE CUT OFF 36 INCHES BELOW FINISHED GRADE.

F. BENTONITE OR OTHER STABILIZING GELS SHALL BE USED TO PREVENT CALVING OF THE UNSUPPORTED BORE HOLE.

G. THE GUIDED HORIZONTAL DIRECTION DRILLING OPERATION IS TO BE OPERATED IN A MANNER TO ELIMINATE THE DISCHARGE OF WATER, DRILLING MUD AND CUTTINGS TO THE CANAL OR LAND AREAS INVOLVED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND PROCEDURES TO MAXIMIZE THE REAMER TO REMOVE OR REUSE OF DRILLING MUD TO MINIMIZE WASTE. ALL EXCAVATED PITS USED IN THE DRILLING OPERATION SHALL BE LINED BY CONTRACTOR WITH HEAVY DUTY PLASTIC SHEETING WITH SEALED JOINTS TO PREVENT THE MIGRATION OF DRILLING FLUIDS AND/OR GROUND WATER.

H. PITS CONSTRUCTED AT THE ENTRY OR EXIT POINT AREA SHALL BE SO CONSTRUCTED TO COMPLETELY CONTAIN THE DRILL FLUID AND PREVENT ITS ESCAPE TO THE SURROUNDING LAND OR CANAL.

I. THE CONTRACTOR SHALL MAINTAIN A CLOSED LOOP DRILLING FLUID SYSTEM AND UTILIZE DRILLING TOOLS AND PROCEDURES WHICH WILL MINIMIZE THE DISCHARGE OF ANY DRILLING FLUIDS.

J. CONTRACTOR SHALL HAVE DIVERS PRESENT DURING THE DRILLING OPERATIONS IN ORDER TO RESPOND TO POTENTIAL FRAC-OUT RELEASE.

K. THE GUIDED HORIZONTAL DIRECTION DRILLING OPERATION IS TO BE OPERATED IN A MANNER TO ELIMINATE THE DISCHARGE OF WATER, DRILLING MUD AND CUTTINGS TO THE CANAL OR LAND AREAS INVOLVED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND PROCEDURES TO MAXIMIZE THE REAMER TO REMOVE OR REUSE OF DRILLING MUD TO MINIMIZE WASTE. ALL EXCAVATED PITS USED IN THE DRILLING OPERATION SHALL BE LINED BY CONTRACTOR WITH HEAVY DUTY PLASTIC SHEETING WITH SEALED JOINTS TO PREVENT THE MIGRATION OF DRILLING FLUIDS AND/OR GROUND WATER.

L. PITS CONSTRUCTED AT THE ENTRY OR EXIT POINT AREA SHALL BE SO CONSTRUCTED TO COMPLETELY CONTAIN THE DRILL FLUID AND PREVENT ITS ESCAPE TO THE SURROUNDING LAND OR CANAL.

M. THE CONTRACTOR SHALL MAINTAIN A CLOSED LOOP DRILLING FLUID SYSTEM AND UTILIZE DRILLING TOOLS AND PROCEDURES WHICH WILL MINIMIZE THE DISCHARGE OF ANY DRILLING FLUIDS.

N. CONTRACTOR SHALL HAVE DIVERS PRESENT DURING THE DRILLING OPERATIONS IN ORDER TO RESPOND TO POTENTIAL FRAC-OUT RELEASE.

O. THE GUIDED HORIZONTAL DIRECTION DRILLING OPERATION IS TO BE OPERATED IN A MANNER TO ELIMINATE THE DISCHARGE OF WATER, DRILLING MUD AND CUTTINGS TO THE CANAL OR LAND AREAS INVOLVED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND PROCEDURES TO MAXIMIZE THE REAMER TO REMOVE OR REUSE OF DRILLING MUD TO MINIMIZE WASTE. ALL EXCAVATED PITS USED IN THE DRILLING OPERATION SHALL BE LINED BY CONTRACTOR WITH HEAVY DUTY PLASTIC SHEETING WITH SEALED JOINTS TO PREVENT THE MIGRATION OF DRILLING FLUIDS AND/OR GROUND WATER.

P. PITS CONSTRUCTED AT THE ENTRY OR EXIT POINT AREA SHALL BE SO CONSTRUCTED TO COMPLETELY CONTAIN THE DRILL FLUID AND PREVENT ITS ESCAPE TO THE SURROUNDING LAND OR CANAL.

Q. THE CONTRACTOR SHALL MAINTAIN A CLOSED LOOP DRILLING FLUID SYSTEM AND UTILIZE DRILLING TOOLS AND PROCEDURES WHICH WILL MINIMIZE THE DISCHARGE OF ANY DRILLING FLUIDS.

R. CONTRACTOR SHALL HAVE DIVERS PRESENT DURING THE DRILLING OPERATIONS IN ORDER TO RESPOND TO POTENTIAL FRAC-OUT RELEASE.

S. THE GUIDED HORIZONTAL DIRECTION DRILLING OPERATION IS TO BE OPERATED IN A MANNER TO ELIMINATE THE DISCHARGE OF WATER, DRILLING MUD AND CUTTINGS TO THE CANAL OR LAND AREAS INVOLVED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND PROCEDURES TO MAXIMIZE THE REAMER TO REMOVE OR REUSE OF DRILLING MUD TO MINIMIZE WASTE. ALL EXCAVATED PITS USED IN THE DRILLING OPERATION SHALL BE LINED BY CONTRACTOR WITH HEAVY DUTY PLASTIC SHEETING WITH SEALED JOINTS TO PREVENT THE MIGRATION OF DRILLING FLUIDS AND/OR GROUND WATER.

T. PITS CONSTRUCTED AT THE ENTRY OR EXIT POINT AREA SHALL BE SO CONSTRUCTED TO COMPLETELY CONTAIN THE DRILL FLUID AND PREVENT ITS ESCAPE TO THE SURROUNDING LAND OR CANAL.

U. THE CONTRACTOR SHALL MAINTAIN A CLOSED LOOP DRILLING FLUID SYSTEM AND UTILIZE DRILLING TOOLS AND PROCEDURES WHICH WILL MINIMIZE THE DISCHARGE OF ANY DRILLING FLUIDS.

V. CONTRACTOR SHALL HAVE DIVERS PRESENT DURING THE DRILLING OPERATIONS IN ORDER TO RESPOND TO POTENTIAL FRAC-OUT RELEASE.

W. THE GUIDED HORIZONTAL DIRECTION DRILLING OPERATION IS TO BE OPERATED IN A MANNER TO ELIMINATE THE DISCHARGE OF WATER, DRILLING MUD AND CUTTINGS TO THE CANAL OR LAND AREAS INVOLVED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND PROCEDURES TO MAXIMIZE THE REAMER TO REMOVE OR REUSE OF DRILLING MUD TO MINIMIZE WASTE. ALL EXCAVATED PITS USED IN THE DRILLING OPERATION SHALL BE LINED BY CONTRACTOR WITH HEAVY DUTY PLASTIC SHEETING WITH SEALED JOINTS TO PREVENT THE MIGRATION OF DRILLING FLUIDS AND/OR GROUND WATER.

X. DIRECTIONAL DRILL WORK PLAN & CONTINGENCY

A. AT LEAST, TWO (2) WEEKS PRIOR TO THE START OF THE DIRECTIONAL DRILLING WORK, THE CONTRACTOR SHALL SUBMIT THE DIRECTIONAL DRILLING WORK PLAN FOR THE CITY AND ENGINEER'S REVIEW. THE WORK PLAN SHALL INCLUDE THE FOLLOWING INFORMATION:

1. A PLAN SHOWING DETAILS OF THE PROPOSED METHOD OF CONSTRUCTION, SEQUENCE OF OPERATIONS TO BE PERFORMED, NUMBER AND SIZE OF CONSTRUCTION CREW, HOURS TO BE WORKED, PILOT HOLE DRILLING PROCEDURE, REAMING PROCEDURE, PULLBACK PROCEDURE, METHOD OF MONITORING THE DRILLING HEAD AND METHOD OF VERIFYING PIPE LOCATION FOR AS-BUILT DRAWINGS.
2. A DRILLING FLUID PLAN WHICH DETAILS TYPES OF DRILLING FLUIDS, CLEANING AND RECYCLING EQUIPMENT, ESTIMATED FLOW RATES, AND PROCEDURES FOR MINIMIZING DRILLING FLUID ESCAPE.
3. A FRAC-OUT PLAN IN THE EVENT OF DRILLING FLUID ESCAPE TO ENSURE THAT PREVENTIVE AND RESPONSIVE MEASURES ARE IMPLEMENTED, INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING SECTIONS.

F. ALL DRILLING MUD SHALL BE REMOVED FROM THE ENTRY AND EXIT AREA SOLS SUCH THAT WATER WILL PERCOLATE. ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL CONDITIONS.

G. A COMPLETE LIST OF ALL DRILLING FLUID ADDITIVES AND MIXTURES TO BE USED IN THE DIRECTIONAL OPERATION WILL BE SUBMITTED TO THE ENGINEER, ALONG WITH THEIR RESPECTIVE MATERIAL SAFETY DATA SHEETS. ALL DRILLING FLUIDS AND LOOSE CUTTINGS SHALL BE CONTAINED IN PITS OR HOLDING TANKS FOR RECYCLING OR DISPOSAL. NO FLUIDS SHALL BE ALLOWED TO ENTER ANY UNAPPROVED AREAS OR NATURAL WATERWAYS. UPON COMPLETION OF THE DIRECTIONAL DRILL PROJECT, DRILLING FLUID SHALL BE DISPOSED OF BY THE CONTRACTOR AT AN APPROVED DUMP SITE.

H. A "WEAK-LINK" OR BREAKAWAY DEVICE SHALL BE USED AT THE LEADING END OF THE PIPE TO PROTECT THE PIPE FROM EXCESSIVE PULLING LOADS. THE BREAKAWAY STRENGTH OF THIS DEVICE SHALL BE SET AT OR BELOW THE ALLOWABLE TENSILE LOAD OF THE PIPE.

I. HOPE PIPE SHALL NOT BE PLACED IN DIRECT SUNLIGHT IMMEDIATELY PRIOR TO INSTALLATION.

J. HOPE PIPE SHALL HAVE THE BEADS REMOVED FROM THE INTERIOR OF THE FUSED JOINTS.

K. A SUFFICIENT LENGTH OF HOPE PIPE SHALL BE PULLED PAST THE EXIT POINT AND LEFT BEFORE THE ENTRY POINT TO ALLOW FOR RELAXATION.

L. HOPE PIPE SHALL HAVE MECHANICAL JOINT ADAPTERS TO CONNECT TO THE PIPE ON EITHER SIDE OF THE DIRECTIONAL DRILLS. MECHANICAL JOINT ADAPTER USED IS TO MATCH HOPE PIPE MANUFACTURER REQUIREMENTS FOR CONNECTION TO DUCTILE IRON PIPE.

M. HOPE SHALL HAVE SUFFICIENT TIME FOR RELAXATION BEFORE CONNECTING TO THE PIPE ON EITHER SIDE OF THE DIRECTIONAL DRILL.

N. THE CONTRACTOR SHALL MAINTAIN A CLOSED LOOP DRILLING FLUID SYSTEM AND UTILIZE DRILLING TOOLS AND PROCEDURES WHICH WILL MINIMIZE THE DISCHARGE OF ANY DRILLING FLUIDS.

O. CONTRACTOR SHALL HAVE DIVERS PRESENT DURING THE DRILLING OPERATIONS IN ORDER TO RESPOND TO POTENTIAL FRAC-OUT RELEASE.

P. THE GUIDED HORIZONTAL DIRECTION DRILLING OPERATION IS TO BE OPERATED IN A MANNER TO ELIMINATE THE DISCHARGE OF WATER, DRILLING MUD AND CUTTINGS TO THE CANAL OR LAND AREAS INVOLVED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND PROCEDURES TO MAXIMIZE THE REAMER TO REMOVE OR REUSE OF DRILLING MUD TO MINIMIZE WASTE. ALL EXCAVATED PITS USED IN THE DRILLING OPERATION SHALL BE LINED BY CONTRACTOR WITH HEAVY DUTY PLASTIC SHEETING WITH SEALED JOINTS TO PREVENT THE MIGRATION OF DRILLING FLUIDS AND/OR GROUND WATER.

Q. PITS CONSTRUCTED AT THE ENTRY OR EXIT POINT AREA SHALL BE SO CONSTRUCTED TO COMPLETELY CONTAIN THE DRILL FLUID AND PREVENT ITS ESCAPE TO THE SURROUNDING LAND OR CANAL.

R. THE CONTRACTOR SHALL MAINTAIN A CLOSED LOOP DRILLING FLUID SYSTEM AND UTILIZE DRILLING TOOLS AND PROCEDURES WHICH WILL MINIMIZE THE DISCHARGE OF ANY DRILLING FLUIDS.

S. CONTRACTOR SHALL HAVE DIVERS PRESENT DURING THE DRILLING OPERATIONS IN ORDER TO RESPOND TO POTENTIAL FRAC-OUT RELEASE.

T. THE GUIDED HORIZONTAL DIRECTION DRILLING OPERATION IS TO BE OPERATED IN A MANNER TO ELIMINATE THE DISCHARGE OF WATER, DRILLING MUD AND CUTTINGS TO THE CANAL OR LAND AREAS INVOLVED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND PROCEDURES TO MAXIMIZE THE REAMER TO REMOVE OR REUSE OF DRILLING MUD TO MINIMIZE WASTE. ALL EXCAVATED PITS USED IN THE DRILLING OPERATION SHALL BE LINED BY CONTRACTOR WITH HEAVY DUTY PLASTIC SHEETING WITH SEALED JOINTS TO PREVENT THE MIGRATION OF DRILLING FLUIDS AND/OR GROUND WATER.

U. PITS CONSTRUCTED AT THE ENTRY OR EXIT POINT AREA SHALL BE SO CONSTRUCTED TO COMPLETELY CONTAIN THE DRILL FLUID AND PREVENT ITS ESCAPE TO THE SURROUNDING LAND OR CANAL.

V. THE CONTRACTOR SHALL MAINTAIN A CLOSED LOOP DRILLING FLUID SYSTEM AND UTILIZE DRILLING TOOLS AND PROCEDURES WHICH WILL MINIMIZE THE DISCHARGE OF ANY DRILLING FLUIDS.

W. CONTRACTOR SHALL HAVE DIVERS PRESENT DURING THE DRILLING OPERATIONS IN ORDER TO RESPOND TO POTENTIAL FRAC-OUT RELEASE.

X. THE GUIDED HORIZONTAL DIRECTION DRILLING OPERATION IS TO BE OPERATED IN A MANNER TO ELIMINATE THE DISCHARGE OF WATER, DRILLING MUD AND CUTTINGS TO THE CANAL OR LAND AREAS INVOLVED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND PROCEDURES TO MAXIMIZE THE REAMER TO REMOVE OR REUSE OF DRILLING MUD TO MINIMIZE WASTE. ALL EXCAVATED PITS USED IN THE DRILLING OPERATION SHALL BE LINED BY CONTRACTOR WITH HEAVY DUTY PLASTIC SHEETING WITH SEALED JOINTS TO PREVENT THE MIGRATION OF DRILLING FLUIDS AND/OR GROUND WATER.

Y. PITS CONSTRUCTED AT THE ENTRY OR EXIT POINT AREA SHALL BE SO CONSTRUCTED TO COMPLETELY CONTAIN THE DRILL FLUID AND PREVENT ITS ESCAPE TO THE SURROUNDING LAND OR CANAL.

Z. THE CONTRACTOR SHALL MAINTAIN A CLOSED LOOP DRILLING FLUID SYSTEM AND UTILIZE DRILLING TOOLS AND PROCEDURES WHICH WILL MINIMIZE THE DISCHARGE OF ANY DRILLING FLUIDS.

AA. CONTRACTOR SHALL HAVE DIVERS PRESENT DURING THE DRILLING OPERATIONS IN ORDER TO RESPOND TO POTENTIAL FRAC-OUT RELEASE.

AB. THE GUIDED HORIZONTAL DIRECTION DRILLING OPERATION IS TO BE OPERATED IN A MANNER TO ELIMINATE THE DISCHARGE OF WATER, DRILLING MUD AND CUTTINGS TO THE CANAL OR LAND AREAS INVOLVED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND PROCEDURES TO MAXIMIZE THE REAMER TO REMOVE OR REUSE OF DRILLING MUD TO MINIMIZE WASTE. ALL EXCAVATED PITS USED IN THE DRILLING OPERATION SHALL BE LINED BY CONTRACTOR WITH HEAVY DUTY PLASTIC SHEETING WITH SEALED JOINTS TO PREVENT THE MIGRATION OF DRILLING FLUIDS AND/OR GROUND WATER.

AC. PITS CONSTRUCTED AT THE ENTRY OR EXIT POINT AREA SHALL BE SO CONSTRUCTED TO COMPLETELY CONTAIN THE DRILL FLUID AND PREVENT ITS ESCAPE TO THE SURROUNDING LAND OR CANAL.

AD. THE CONTRACTOR SHALL MAINTAIN A CLOSED LOOP DRILLING FLUID SYSTEM AND UTILIZE DRILLING TOOLS AND PROCEDURES WHICH WILL MINIMIZE THE DISCHARGE OF ANY DRILLING FLUIDS.

AE. CONTRACTOR SHALL HAVE DIVERS PRESENT DURING THE DRILLING OPERATIONS IN ORDER TO RESPOND TO POTENTIAL FRAC-OUT RELEASE.

AF. THE GUIDED HORIZONTAL DIRECTION DRILLING OPERATION IS TO BE OPERATED IN A MANNER TO ELIMINATE THE DISCHARGE OF WATER, DRILLING MUD AND CUTTINGS TO THE CANAL OR LAND AREAS INVOLVED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND PROCEDURES TO MAXIMIZE THE REAMER TO REMOVE OR REUSE OF DRILLING MUD TO MINIMIZE WASTE. ALL EXCAVATED PITS USED IN THE DRILLING OPERATION SHALL BE LINED BY CONTRACTOR WITH HEAVY DUTY PLASTIC SHEETING WITH SEALED JOINTS TO PREVENT THE MIGRATION OF DRILLING FLUIDS AND/OR GROUND WATER.

AG. PITS CONSTRUCTED AT THE ENTRY OR EXIT POINT AREA SHALL BE SO CONSTRUCTED TO COMPLETELY CONTAIN THE DRILL FLUID AND PREVENT ITS ESCAPE TO THE SURROUNDING LAND OR CANAL.

AH. THE CONTRACTOR SHALL MAINTAIN A CLOSED LOOP DRILLING FLUID SYSTEM AND UTILIZE DRILLING TOOLS AND PROCEDURES WHICH WILL MINIMIZE THE DISCHARGE OF ANY DRILLING FLUIDS.

AI. CONTRACTOR SHALL HAVE DIVERS PRESENT DURING THE DRILLING OPERATIONS IN ORDER TO RESPOND TO POTENTIAL FRAC-OUT RELEASE.

AJ. THE GUIDED HORIZONTAL DIRECTION DRILLING OPERATION IS TO BE OPERATED IN A MANNER TO ELIMINATE THE DISCHARGE OF WATER, DRILLING MUD AND CUTTINGS TO THE CANAL OR LAND AREAS INVOLVED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND PROCEDURES TO MAXIMIZE THE REAMER TO REMOVE OR REUSE OF DRILLING MUD TO MINIMIZE WASTE. ALL EXCAVATED PITS USED IN THE DRILLING OPERATION SHALL BE LINED BY CONTRACTOR WITH HEAVY DUTY PLASTIC SHEETING WITH SEALED JOINTS TO PREVENT THE MIGRATION OF DRILLING FLUIDS AND/OR GROUND WATER.

AK. PITS CONSTRUCTED AT THE ENTRY OR EXIT POINT AREA SHALL BE SO CONSTRUCTED TO COMPLETELY CONTAIN THE DRILL FLUID AND PREVENT ITS ESCAPE TO THE SURROUNDING LAND OR CANAL.

AL. THE CONTRACTOR SHALL MAINTAIN A CLOSED LOOP DRILLING FLUID SYSTEM AND UTILIZE DRILLING TOOLS AND PROCEDURES WHICH WILL MINIMIZE THE DISCHARGE OF ANY DRILLING FLUIDS.

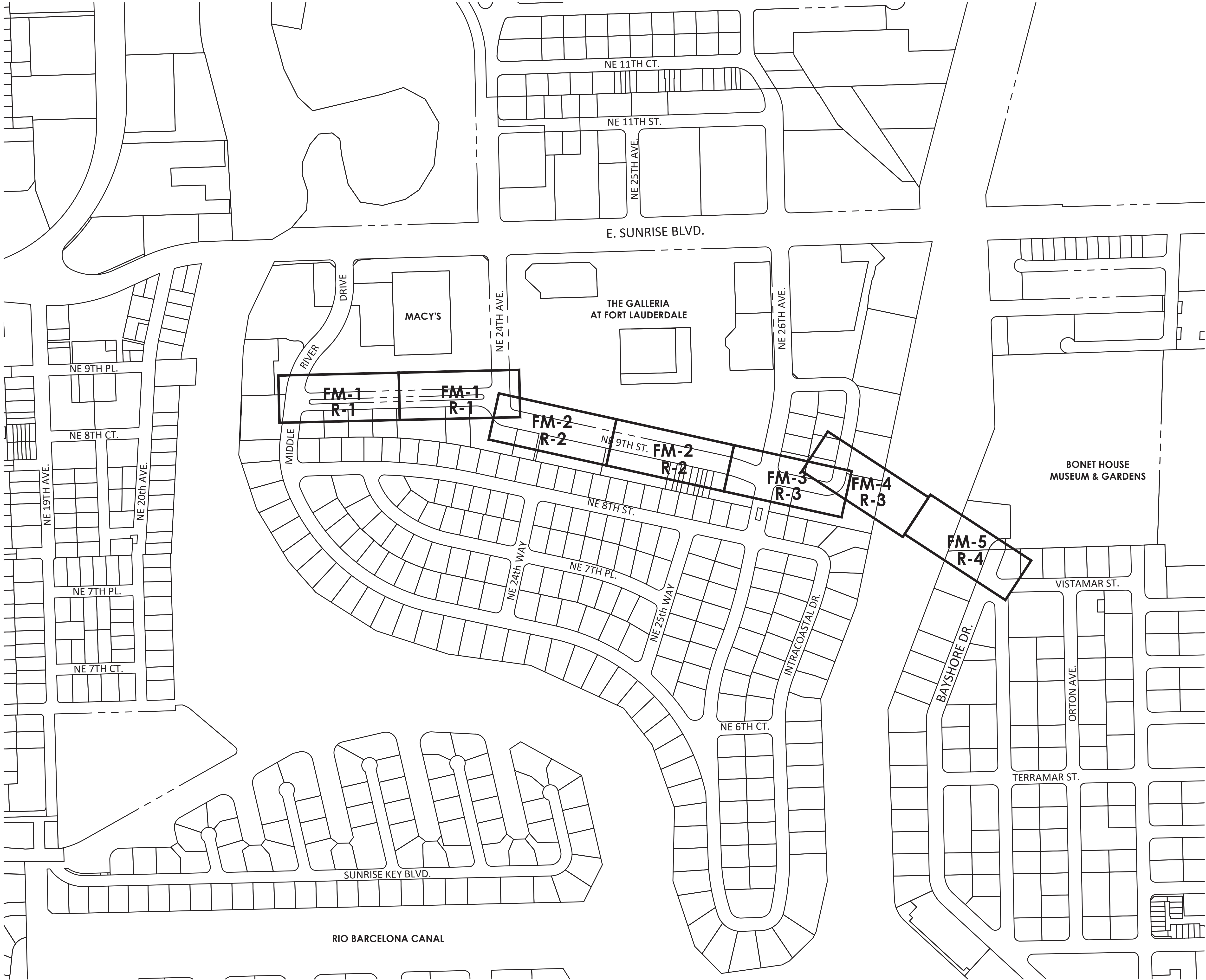
AM. CONTRACTOR SHALL HAVE DIVERS PRESENT DURING THE DRILLING OPERATIONS IN ORDER TO RESPOND TO POTENTIAL FRAC-OUT RELEASE.

AN. THE GUIDED HORIZONTAL DIRECTION DRILLING OPERATION IS TO BE OPERATED IN A MANNER TO ELIMINATE THE DISCHARGE OF WATER, DRILLING MUD AND CUTTINGS TO THE CANAL OR LAND AREAS INVOLVED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND PROCEDURES TO MAXIMIZE THE REAMER TO REMOVE OR REUSE OF DRILLING MUD TO MINIMIZE WASTE. ALL EXCAVATED PITS USED IN THE DRILLING OPERATION SHALL BE LINED BY CONTRACTOR WITH HEAVY DUTY PLASTIC SHEETING WITH SEALED JOINTS TO PREVENT THE MIGRATION OF DRILLING FLUIDS AND/OR GROUND WATER.

AO. PITS CONSTRUCTED AT THE ENTRY OR EXIT POINT AREA SHALL BE SO CONSTRUCTED TO COMPLETELY CONTAIN THE DRILL FLUID AND PREVENT ITS ESCAPE TO THE SURROUNDING LAND OR CANAL.

AP. THE CONTRACTOR SHALL MAINTAIN A CLOSED LOOP DRILLING FLUID SYSTEM AND UTILIZE DRILLING TOOLS AND PROCEDURES WHICH WILL MINIMIZE THE DISCHARGE OF ANY DRILLING FLUIDS.

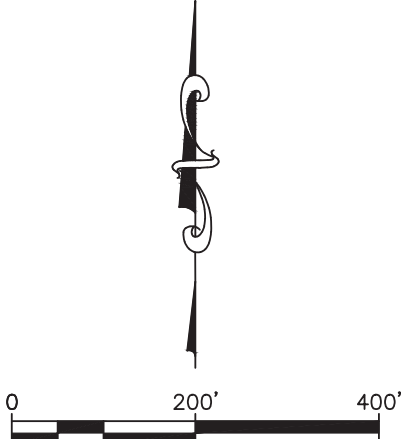
AQ. CONTRACTOR SHALL HAVE DIVERS PRESENT DURING THE DRILLING OPERATIONS IN ORDER TO RESPOND TO POTENTIAL FRAC-OUT RELEASE.



VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
CONVERSION FACTOR:
NAVD88 = NGVD29 IN THIS AREA



THE ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY DANIEL DAVILA, PE ON MARCH 13, 2019 USING A SHA AUTHENTICATION CODE.
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SHA AUTHENTICATION CODE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.



CHEN-MOORE & ASSOCIATES
500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425

REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHK'D

PROJECT # 12389	
18" FORCE MAIN REPLACEMENT ACROSS THE N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.	
KEY MAP	
DRAWING #	SHT #
KEY-1	06
TOTAL: 18	
CAD FILE: 12389-KMAP	
DRAWING FILE NO. 4-XXX-XX	

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

ENGINEER: DANIEL DAVILA, P.E.
REG. NO. 63014
DATE:

DRAWN BY: JH
DATE: 01/11/19

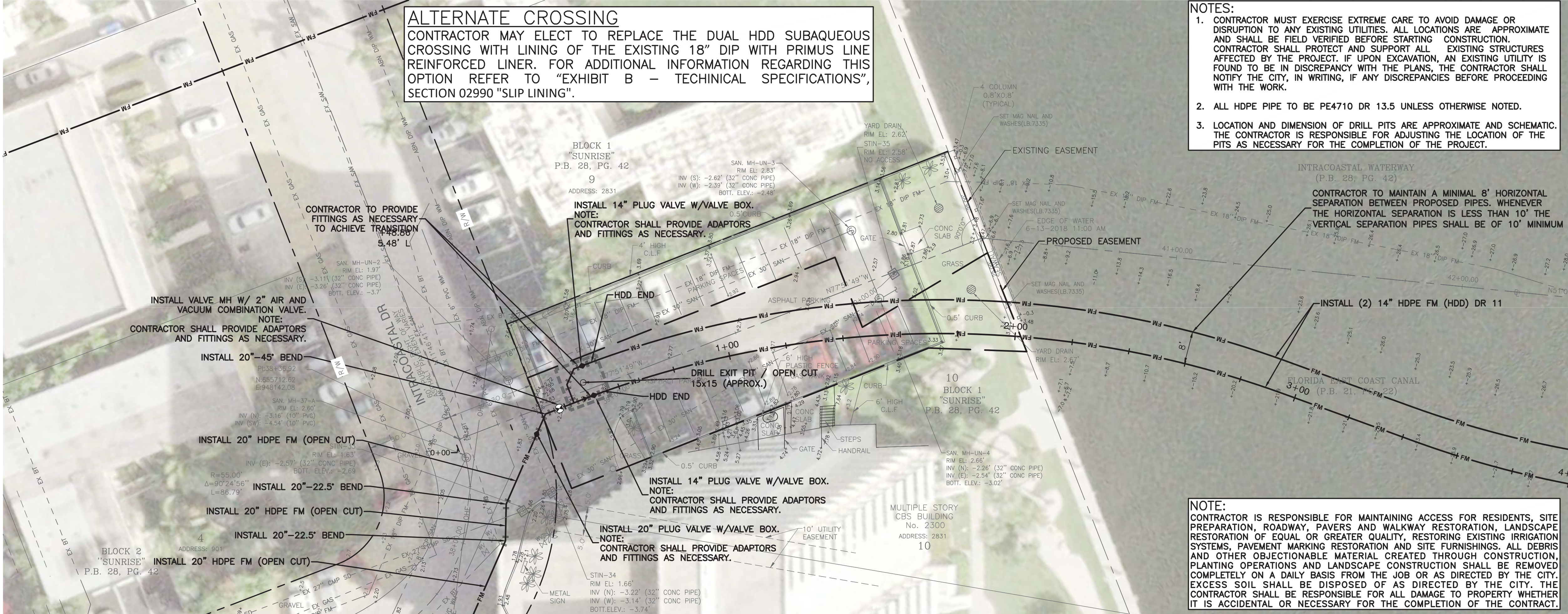
DESIGNED BY: DC
SCALE:

CHECKED BY: DD

FIELD BOOK:

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

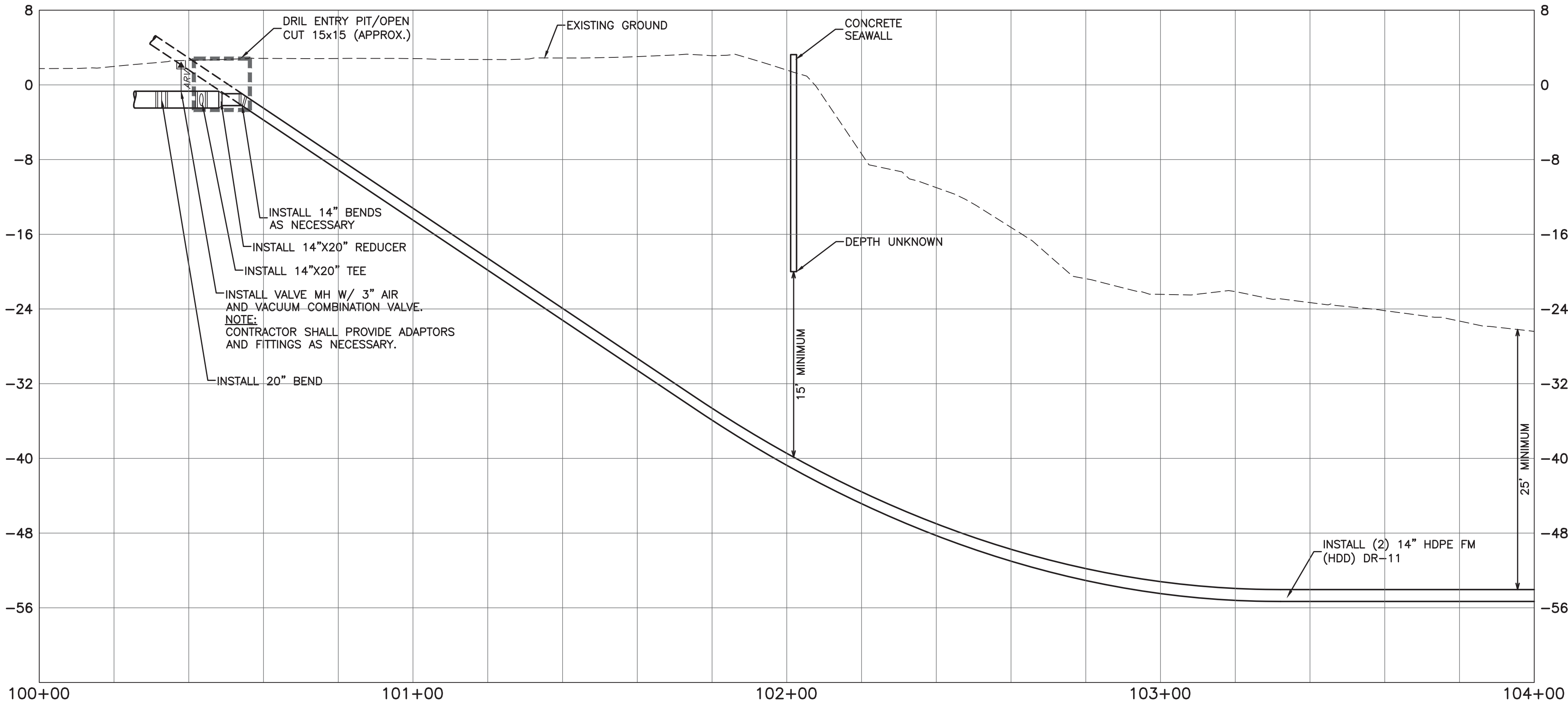




MATCHLINE SEE DRAWING NO. FM-3

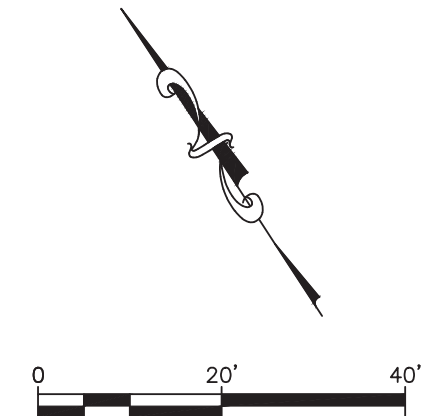
Bayshore Crossing

SCALE: 1"=20' HORZ | 1"=8' VERT



VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
CONVERSION FACTOR:
NAVD88 + 1.58 = NGVD29 IN THIS AREA

CHEN-MOORE
ASSOCIATES
500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425



THE ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY DANIEL DAVILA, PE ON MARCH 13, 2019 USING A SHA AUTHENTICATION CODE.

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

Sunshine811

Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.
Check positive response codes before you dig!

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHKD

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS THE N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.
FORCE MAIN PLAN AND PROFILE

DRAWING #	SHT #
FM-4	10
TOTAL:	18
CAD FILE:	12389-MULTI-FORC
DRAWING FILE NO.	4-XXX-XX

ENGINEER:
DANIEL DAVILA, P.E.
REG. No. 63014
DATE:

DRAWN BY: JH
DESIGNED BY: DC
CHECKED BY: DD
FIELD BOOK:

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

MATCHLINE SEE DRAWING NO. FM-4

NOTES:

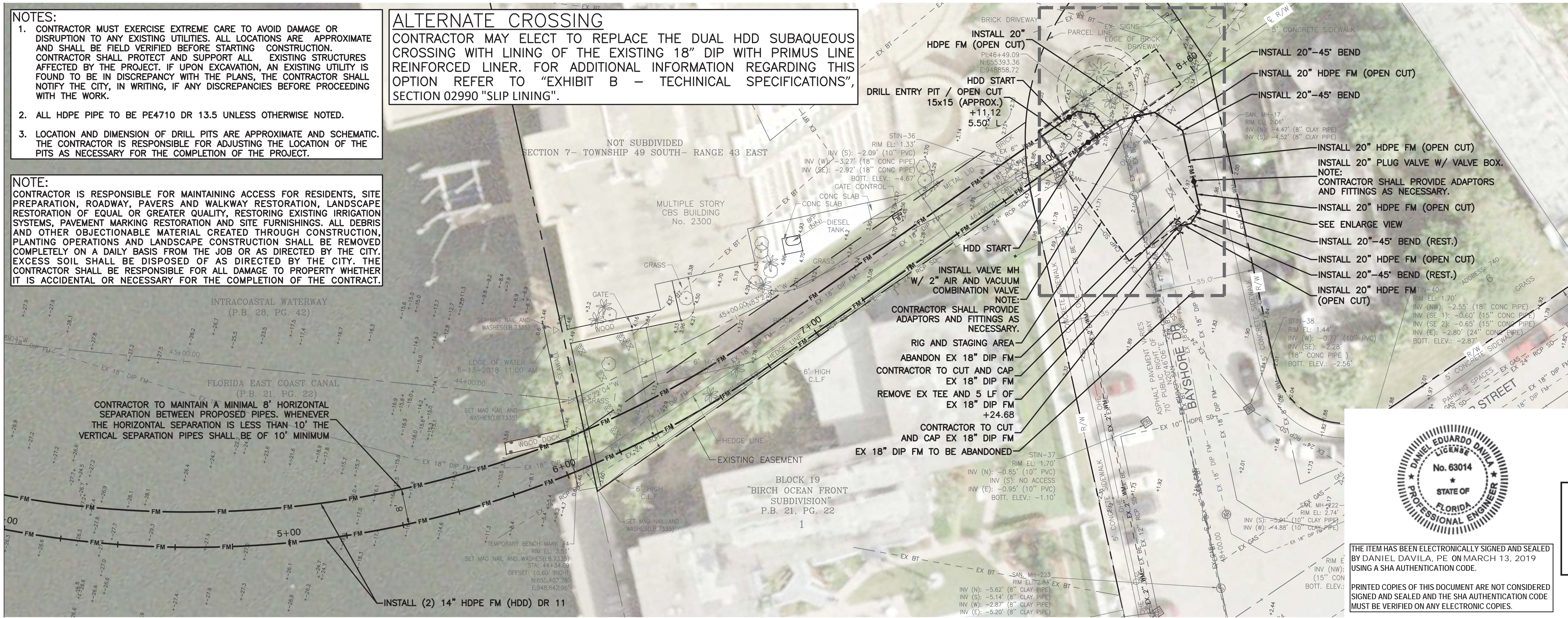
1. CONTRACTOR MUST EXERCISE EXTREME CARE TO AVOID DAMAGE OR DISRUPTION TO ANY EXISTING UTILITIES. ALL LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BEFORE STARTING CONSTRUCTION. CONTRACTOR SHALL PROTECT AND SUPPORT ALL EXISTING STRUCTURES AFFECTED BY THE PROJECT. IF UPON EXCAVATION, AN EXISTING UTILITY IS FOUND TO BE IN DISCREPANCY WITH THE PLANS, THE CONTRACTOR SHALL NOTIFY THE CITY, IN WRITING, IF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
2. ALL HDPE PIPE TO BE PE4710 DR 13.5 UNLESS OTHERWISE NOTED.
3. LOCATION AND DIMENSION OF DRILL PITS ARE APPROXIMATE AND SCHEMATIC. THE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING THE LOCATION OF THE PITS AS NECESSARY FOR THE COMPLETION OF THE PROJECT.

NOTE:

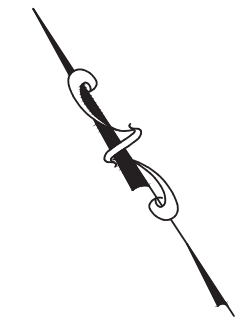
CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS FOR RESIDENTS, SITE PREPARATION, ROADWAY, PAVERS AND WALKWAY RESTORATION, LANDSCAPE RESTORATION OF EQUAL OR GREATER QUALITY, RESTORING EXISTING IRRIGATION SYSTEMS, PAVEMENT MARKING RESTORATION AND SITE FURNISHINGS. ALL DEBRIS AND OTHER OBJECTIONABLE MATERIAL CREATED THROUGH CONSTRUCTION, PLANTING OPERATIONS AND LANDSCAPE CONSTRUCTION SHALL BE REMOVED COMPLETELY ON A DAILY BASIS FROM THE JOB OR AS DIRECTED BY THE CITY. EXCESS SOIL SHALL BE DISPOSED OF AS DIRECTED BY THE CITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO PROPERTY WHETHER IT IS ACCIDENTAL OR NECESSARY FOR THE COMPLETION OF THE CONTRACT.

ALTERNATE CROSSING

CONTRACTOR MAY ELECT TO REPLACE THE DUAL HDD SUBAQUEOUS CROSSING WITH LINING OF THE EXISTING 18" DIP WITH PRIMUS LINE REINFORCED LINER. FOR ADDITIONAL INFORMATION REGARDING THIS OPTION REFER TO 'EXHIBIT B - TECHNICAL SPECIFICATIONS', SECTION 02990 "SLIP LINING".



500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425



THE ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY DANIEL DAVILA, PE ON MARCH 13, 2019 USING A SHA AUTHENTICATION CODE.

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



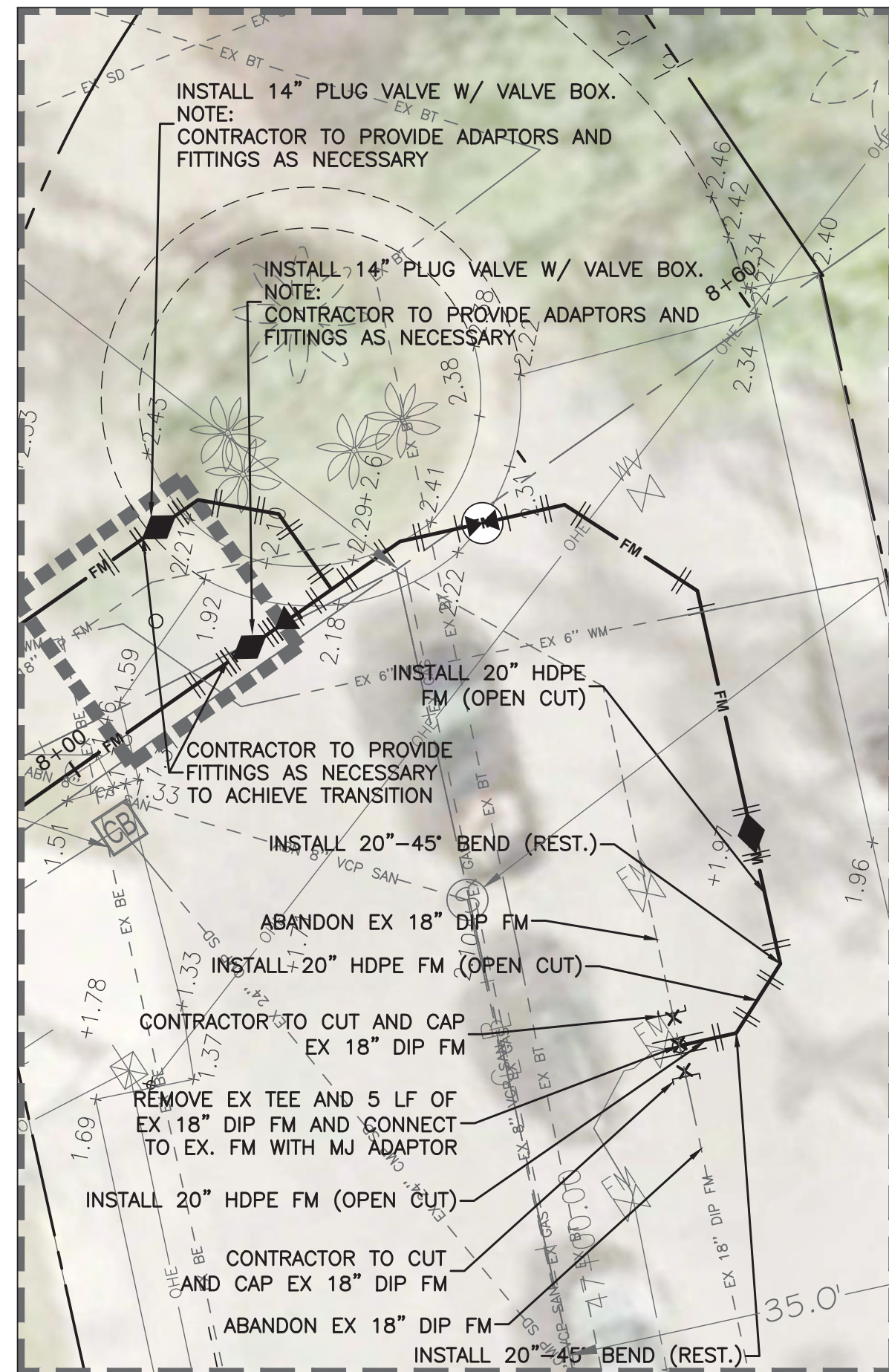
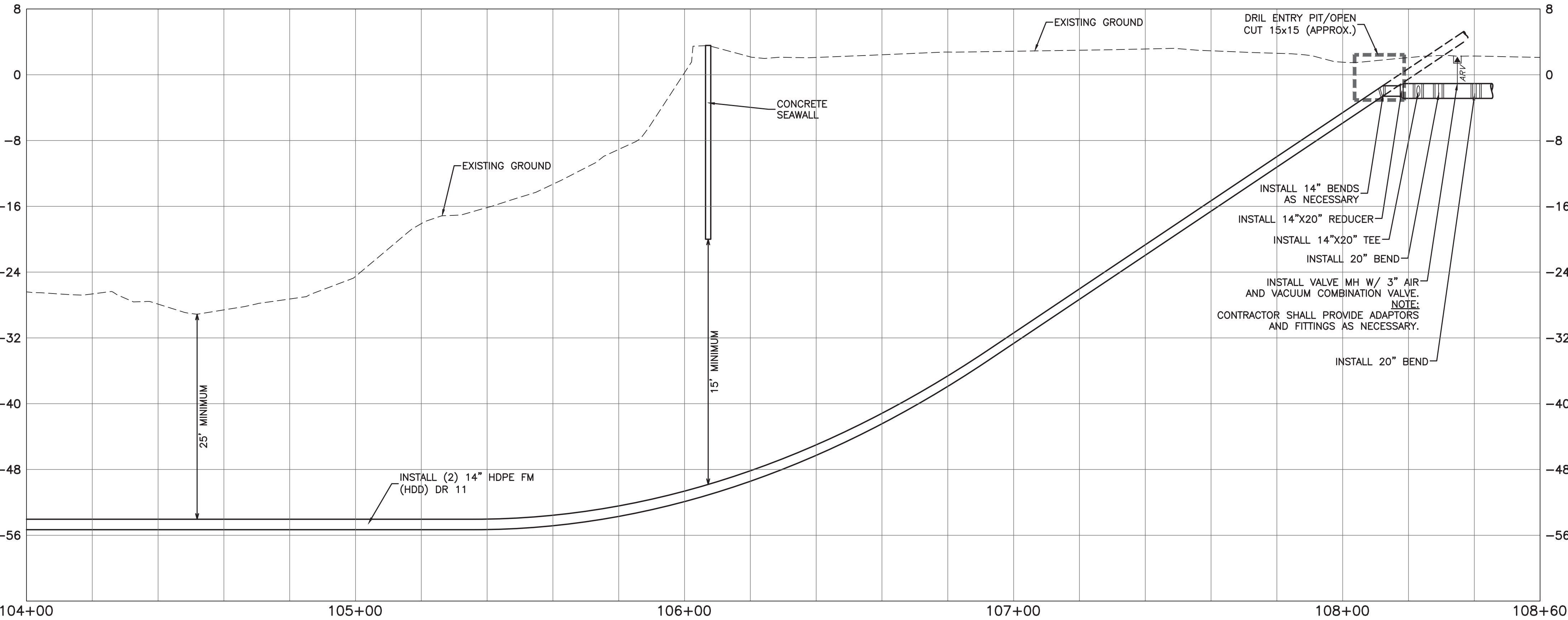
Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.

Check positive response codes before you dig!

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
CONVERSION FACTOR:
NAVD88 + 1.58 = NGVD29 IN THIS AREA

Bayshore Crossing

SCALE: 1"=20' HORIZ | 1"=8' VERT



ENLARGE VIEW
SCALE: 1"=10'

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

NO.	DATE	BY	CHKD	DESCRIPTION

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS
THE N. RIVER FROM
NE 9TH ST. TO N. BIRCH RD.
FORCE MAIN PLAN AND PROFILE

DRAWING #	SHT #
FM-5	11
TOTAL:	18
CAD FILE:	12389-MULTI-FORC
DRAWING FILE NO.	4-XXX-XX

ENGINEER:
DANIEL DAVILA, P.E.
REG. NO. 63014
DATE:

DRAWN BY: JH
DATE: 01/11/19
DESIGNED BY: DC
SCALE:
CHECKED BY: DD
FIELD BOOK:

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301



Filename: 12389-MULTI-REST.dwg

Username: JTamo

52



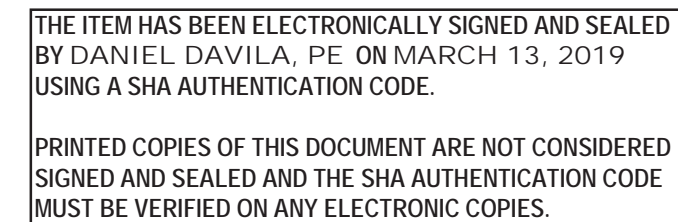
DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

DRAWING #	SHT #
R-3	14
TOTAL: 18	
CAD FILE: 12389-MULTI-REST	
DRAWING FILE NO. 4-XXX-XX	

[illegible]


City of Fort Lauderdale

Bid 12374-906 R2



A circular professional engineer seal for the State of Florida. The outer ring contains the text "DANIEL EDUARDO DAVILA" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by two stars. Inside this ring, the word "LICENSE" is at the top, "No. 63014" is in the center, and "STATE OF FLORIDA" is at the bottom, also separated by two stars.

DRAWN BY: JH	DATE: 01/11/19
DESIGNED BY: DC	SCALE: 1"=20'
CHECKED BY: DD	
FIELD BOOK:	



CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

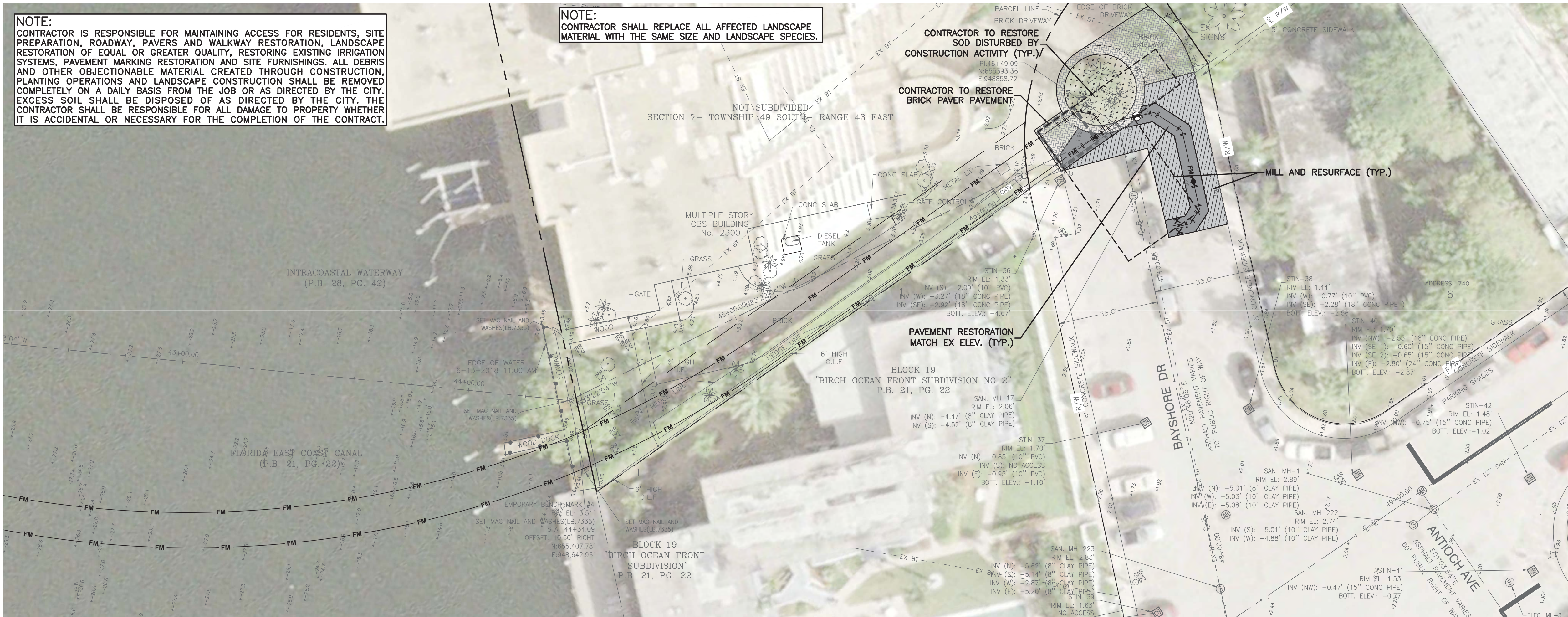
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

CAM 20-0627
Exhibit 3
Page 472 of 556

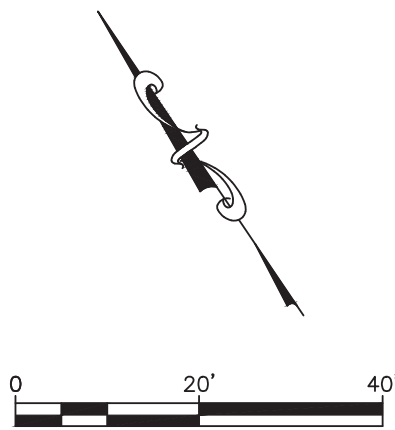
MATCHLINE SEE DRAWING NO. R-3

NOTE:
CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ACCESS FOR RESIDENTS, SITE PREPARATION, ROADWAY, PAVERS AND WALKWAY RESTORATION, LANDSCAPE RESTORATION OF EQUAL OR GREATER QUALITY, RESTORING EXISTING IRRIGATION SYSTEMS, PAVEMENT MARKING RESTORATION AND SITE FURNISHINGS. ALL DEBRIS AND OTHER OBJECTIONABLE MATERIAL CREATED THROUGH CONSTRUCTION, PLANTING OPERATIONS AND LANDSCAPE CONSTRUCTION SHALL BE REMOVED COMPLETELY ON A DAILY BASIS FROM THE JOB OR AS DIRECTED BY THE CITY. EXCESS SOIL SHALL BE DISPOSED OF AS DIRECTED BY THE CITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO PROPERTY WHETHER IT IS ACCIDENTAL OR NECESSARY FOR THE COMPLETION OF THE CONTRACT.

NOTE:
CONTRACTOR SHALL REPLACE ALL AFFECTED LANDSCAPE MATERIAL WITH THE SAME SIZE AND LANDSCAPE SPECIES.



CHEN-MOORE
& ASSOCIATES
500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425



ENGINEER:
DANIEL DAVILA, P.E.
REG. No. 63014
DATE:

DRAWN BY: JH
DATE: 01/11/19
DESIGNED BY: DC
SCALE: 1"=20'
CHECKED BY: DD
FIELD BOOK:

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	REVISIONS	
		BY	DESCRIPTION

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS
THE N. RIVER FROM
NE 9TH ST. TO N. BIRCH RD.
RESTORATION PLAN

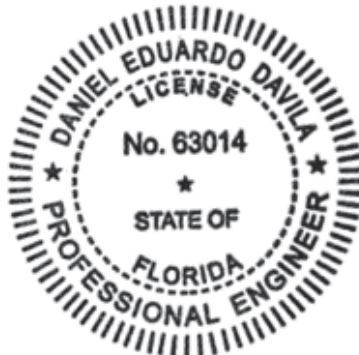
DRAWING #	SHT #
R-4	15
TOTAL:	18
CAD FILE:	12389-MULTI-REST
DRAWING FILE NO.	4-XXX-XX



Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.

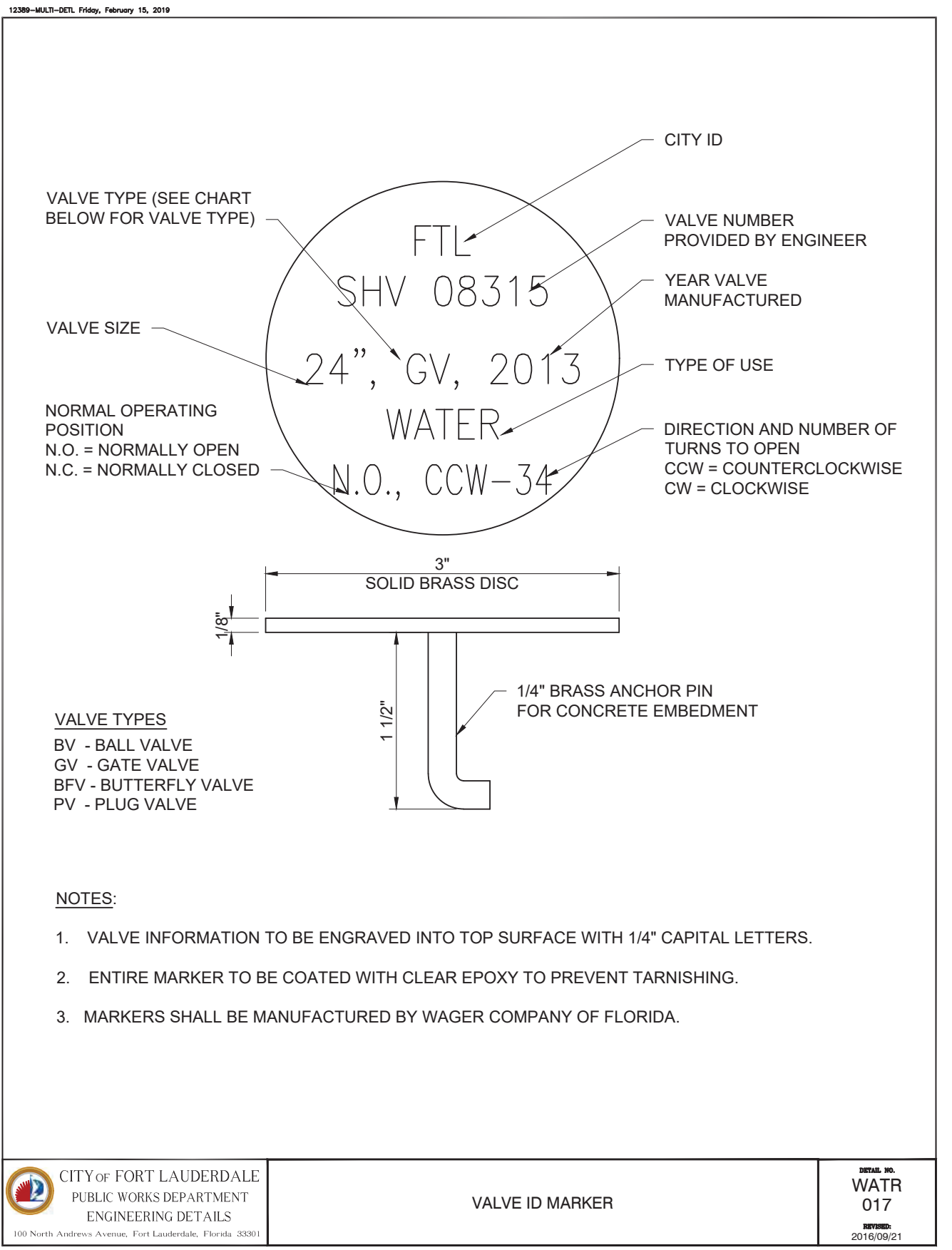
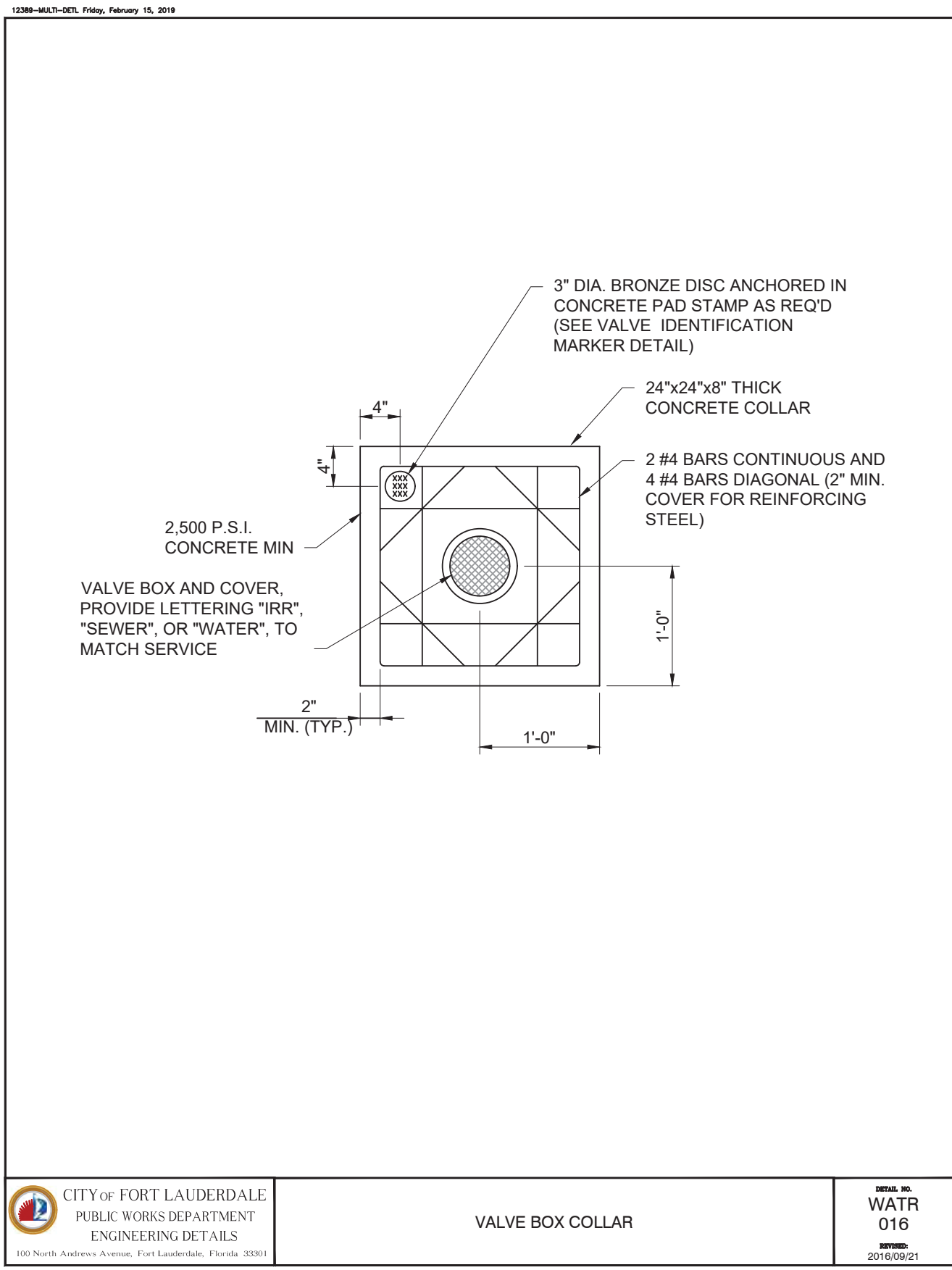
Check positive response codes before you dig!

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
CONVERSION FACTOR:
NAVD88 + 1.58 = NGVD29 IN THIS AREA



THE ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY DANIEL DAVILA, PE ON MARCH 13, 2019 USING A SHA AUTHENTICATION CODE.

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



NOTES:

- STORM SEWER, GRAVITY WASTEWATER AND RECLAIMED WATER MAIN CROSSING UNDER POTABLE WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF EIGHTEEN (18) INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE STORM/WASTEWATER/RECLAIMED WATER PIPE JOINTS AND POTABLE WATER MAIN JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN TEN (10) FEET BETWEEN ANY TWO JOINTS, BOTH PIPES SHALL BE D.I.P., AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6 INCHES. WHERE THERE IS NO ALTERNATIVE TO STORM/WASTEWATER/RECLAIMED WATER PIPES CROSSING OVER A POTABLE WATER MAIN, THE CRITERIA FOR MINIMUM 18" VERTICAL SEPARATION BETWEEN LINES AND JOINT ARRANGEMENT, AS STATED ABOVE, SHALL BE REQUIRED, AND BOTH PIPES SHALL BE D.I.P. IRRESPECTIVE OF SEPARATION. D.I.P. IS NOT REQUIRED FOR STORM SEWERS.
- MAINTAIN MIN. TEN (10) FEET HORIZONTAL DISTANCE BETWEEN POTABLE WATER MAIN AND STORM SEWER, WASTEWATER MAIN, OR FORCE MAIN. MAINTAIN MIN. THREE (3) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN RECLAIMED WATER MAIN AND POTABLE WATER MAIN, STORM SEWER, WASTEWATER GRAVITY MAIN OR FORCE MAIN. VERTICAL DISTANCE OF EIGHTEEN (18) INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND OUTSIDE OF THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN WITH THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN CROSSING OVER THE FORCE MAIN.
- FORCE MAIN CROSSING POTABLE WATER MAIN OR RECLAIMED WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF EIGHTEEN (18) INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND OUTSIDE OF THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN WITH POTABLE WATER MAIN OR RECLAIMED WATER MAIN CROSSING OVER THE FORCE MAIN.
- FITTINGS SHALL BE RESTRAINED.
- THE DEFLECTION TYPE CROSSING IS PREFERRED.
- DO NOT EXCEED 75% OF MANUFACTURER'S RECOMMENDED MAXIMUM JOINT DEFLECTION FOR DUCTILE IRON PIPE. NO DEFLECTION AT THE JOINT IS ALLOWED FOR P.V.C. PIPE. BENDING OF P.V.C. PIPE SHALL NOT EXCEED THE FOLLOWING PARAMETERS:

PVC PIPE SIZE (INCH)	MIN. ALLOWED RADIUS (FT.)	MAX. DEFLECTION (INCH) PER 20' LENGTH
6"	300	8"
8"	400	6"
10"	600	4"
12"	600	4"

PRESSURE PIPE CONFLICT NOTES

401

I. FORCE MAIN AND WATER MAIN OUTSIDE OF WELLFIELD PROTECTION ZONE

MAXIMUM QUANTITY OF WATER (GALLONS PER HOUR) THAT MAY BE SUPPLIED TO MAINTAIN PRESSURE WITHIN 5 P.S.I. OF THE SPECIFIED TEST PRESSURE.

(MECHANICAL OR PUSH-ON JOINT, 18 FT. NOMINAL LENGTHS, PER 1000 FT. OF PIPE)

AVG. TEST PRESSURE PSI	PIPE DIAMETER (INCHES)
	2 3 4 6 8 10 12 14 16 18 20 24 30
150	0.10 0.14 0.18 0.27 0.37 0.46 0.55 0.64 0.73 0.83 0.92 1.10 1.38

NOTES:

- TO OBTAIN THE MAXIMUM QUANTITY OF WATER FOR PIPE WITH 20 FT. NOMINAL LENGTHS, MULTIPLY THE QUANTITY CALCULATED FROM THE TABLE BY 0.9.
- THE MAXIMUM QUANTITY OF ADDED WATER FOR A PIPELINE IS CALCULATED BY MULTIPLYING THE QUANTITY PER HOUR AS OBTAINED FROM THE ABOVE TABLE, BY THE DURATION OF THE TEST IN HOURS, AND BY THE TOTAL LENGTH OF THE LINE BEING TESTED DIVIDED BY 1,000. IF THE LINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE MAXIMUM QUANTITY ADDED WILL BE THE SUM OF THE COMPUTED QUANTITIES FOR EACH SIZE.
- MAXIMUM TEST LENGTH = 2,500 FEET PER SECTION.
- THIS STANDARD SHALL REFLECT ANY REVISION OF A.W.W.A. C-600-05. HOWEVER, THE MAXIMUM QUANTITY OF WATER ADDED SHALL NOT EXCEED 50% OF RECOMMENDED LIMIT PER APPLICABLE AWWA C-600-05 STANDARD.
- STANDARD TEST PRESSURE = 150 P.S.I.
- FORMULA BASIS: $L = \frac{(S)(D)(P)}{133,200}$

L = MAXIMUM QUANTITY OF WATER TO BE ADDED (GALLONS PER HOUR)
S = LENGTH OF PIPE TESTED (FEET)
D = DIAMETER OF PIPE (INCHES)
P = TEST PRESSURE (P.S.I.)

- PRESSURE TEST DURATION TO BE MIN. 2 HOURS.
- DISINFECTION OF MAINS SHALL COMPLY WITH A.N.S.I./A.W.W.A. C-651-05 STANDARD.
- DUCTILE IRON WATER MAIN PIPE SHALL CONFORM TO THE REQUIREMENTS OF A.N.S.I./A.W.W.A. C-151-02.

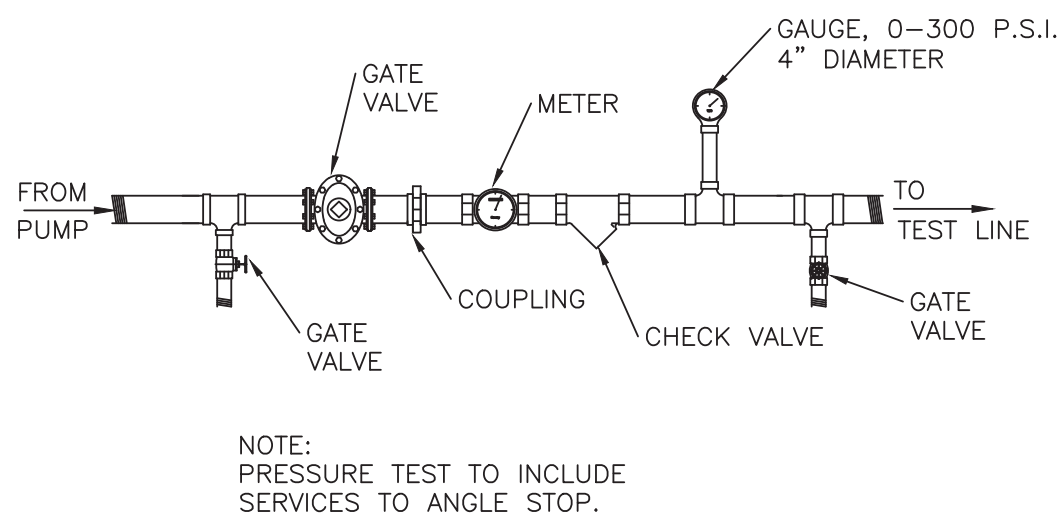
II. FORCE MAIN AND WATER MAIN WITHIN WELLFIELD PROTECTION ZONE.

NOTES:

- PRESSURE TEST PROCEDURE TO FOLLOW THE CURRENT AWWA C-600-05 STANDARD (150psi, (2) HOUR DURATION). THERE SHALL BE NO PRESSURE DROP IN THE PIPE DURING THE TEST ("ZERO" FILL-UP TOLERANCE).

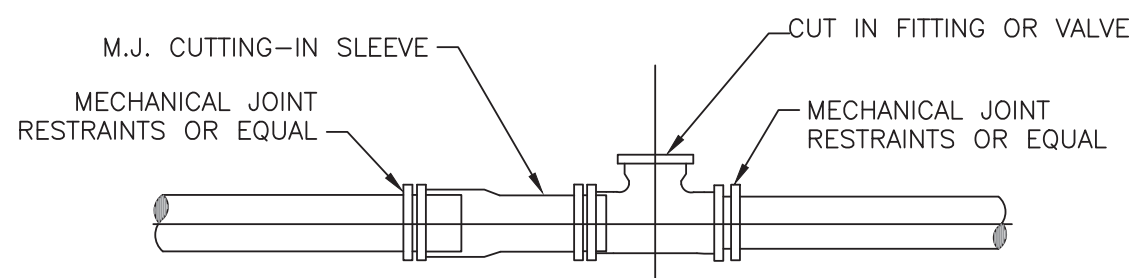
PRESSURE TEST CRITERIA

403



PRESSURE TEST DETAIL

306

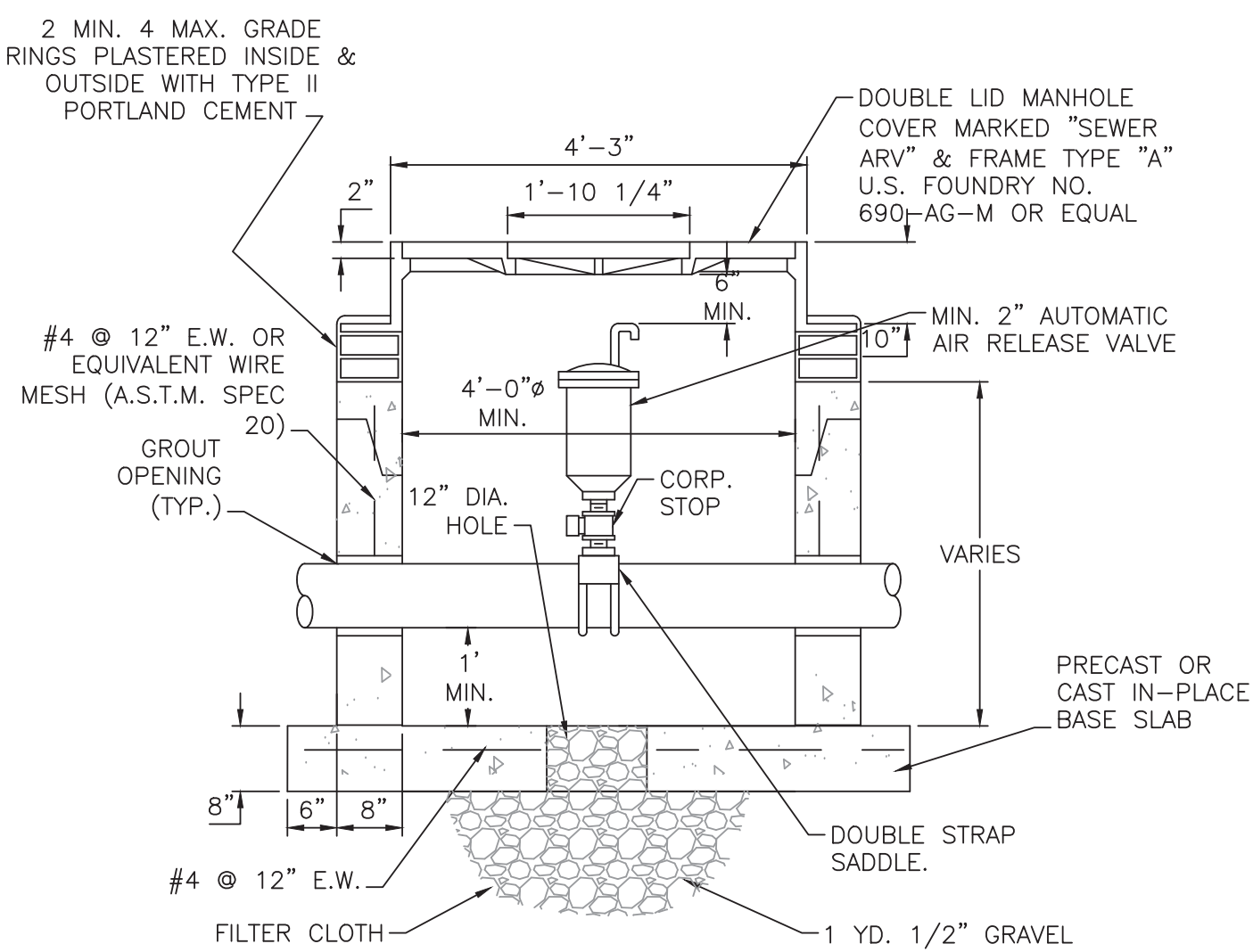


DUCTILE IRON-MECHANICAL JOINT (FORCE MAIN)

- MECHANICAL JOINTS RESTRAINTS ARE REQUIRED THROUGHOUT ASSEMBLY.

PRESSURE PIPE STANDARD CUT-IN DETAIL

404



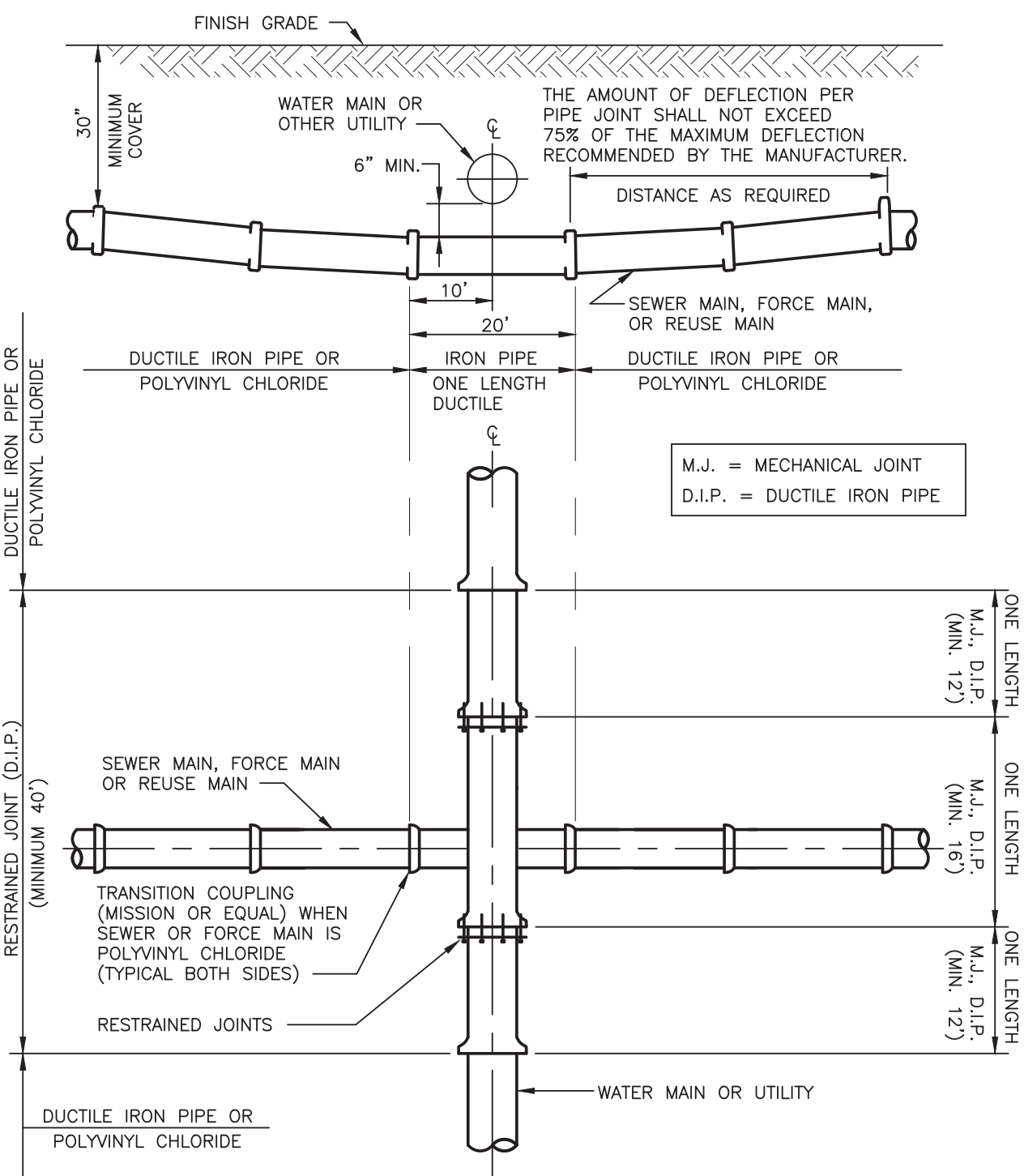
NOTES:

- PRECAST CONCRETE TYPE # 4000 P.S.I.
- ALL OPENINGS SHALL BE SEALED WITH A WATERPROOF NON-SHRINKING GROUT.
- LIFT HOLES ARE PERMITTED.
- ALL PIPE HOLES SHALL BE PRECAST OR CORE-DRILLED.
- MANHOLE FABRICATION SHALL BE IN ACCORDANCE WITH A.S.T.M. C-478 LATEST STANDARD.
- PAINT INSIDE & OUTSIDE WITH 2 COATS OF AN APPROVED PROTECTIVE COATING. (MIN. 10 MIL D.F.T. PER COAT.)
- CONCRETE COLLAR REQUIRED WHEN MANHOLE IS OUTSIDE PAVEMENT, SEE DETAIL.
- AIR RELEASE VALVE SHALL BE TYPE AND SIZE APPROPRIATE FOR SERVICE INTENDED (2" MIN.).
- CONSTRUCTION JOINT AT BASE IS PERMITTED.
- DUCTILE IRON PIPE IS REQUIRED THROUGH THE MANHOLE.
- THREADED AREAS OF CORPORATION STOP SHALL BE SPIRAL WRAPPED WITH TWO LAYERS OF TEFLON TAPE.
- IF MANHOLE IS LARGER THAN 4' DIAMETER USE REDUCING GRADE RING OR CONE SECTION.
- USE CONFLICT TYPE MANHOLE WITH PRECAST OR CAST IN-PLACE BOTTOM SLAB.
- DIMENSIONS SHOWN ARE MINIMAL REQUIREMENTS.

AIR RELEASE VALVE AND MANHOLE IN PAVED AREAS

CONTRACTOR TO SIZE MANHOLE AS NECESSARY

407

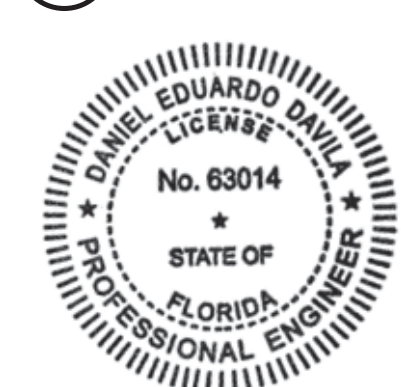


STANDARD UTILITY CROSSING

N.T.S.

RESTRAINED PIPE JOINT SCHEDULE

N.T.S.



& ASSOCIATES

500 West Cypress Creek Road, Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com
CERTIFICATES OF AUTHORIZATION
EB4593 LC26000425

THE ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY DANIEL DAVILA, PE ON MARCH 13, 2019 USING A SHA AUTHENTICATION CODE.

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

DESIGN CRITERIA PACKAGE - NOT FOR CONSTRUCTION

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS THE N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.
DETAILS

DRAWING #	SHT #
D-2	17
TOTAL:	18
CAD FILE:	12389-MULTI-DET
DRAWING FILE NO.	4-XXX-XX

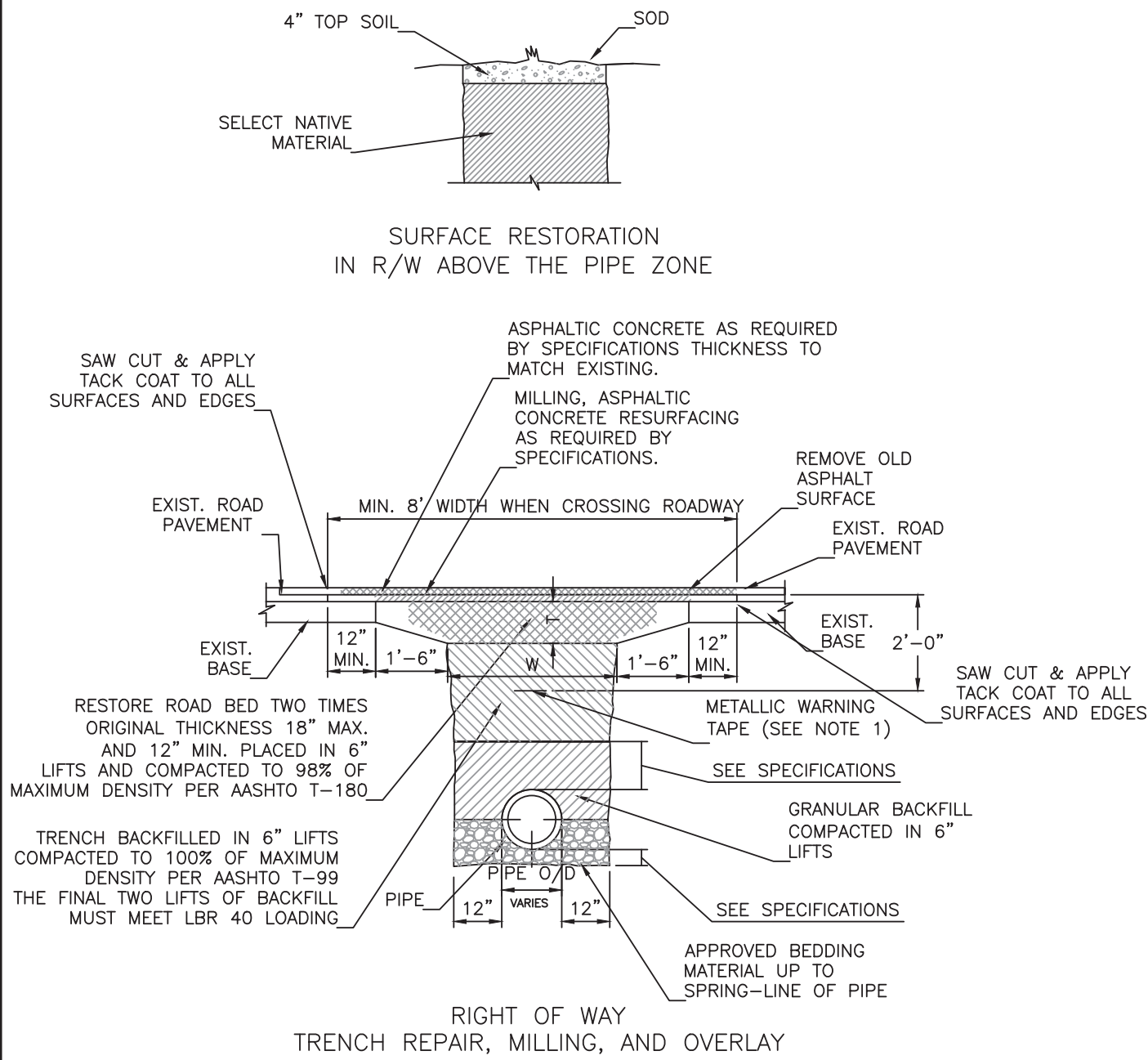
NO.	DATE	BY	CHKD	DESCRIPTION

ENGINEER:
DANIEL DAVILA, P.E.
REG. No. 63014
DATE:

DRAWN BY: JH
DATE: 01/11/19
DESIGNED BY: DC
SCALE:
CHECKED BY: DD
FIELD BOOK:

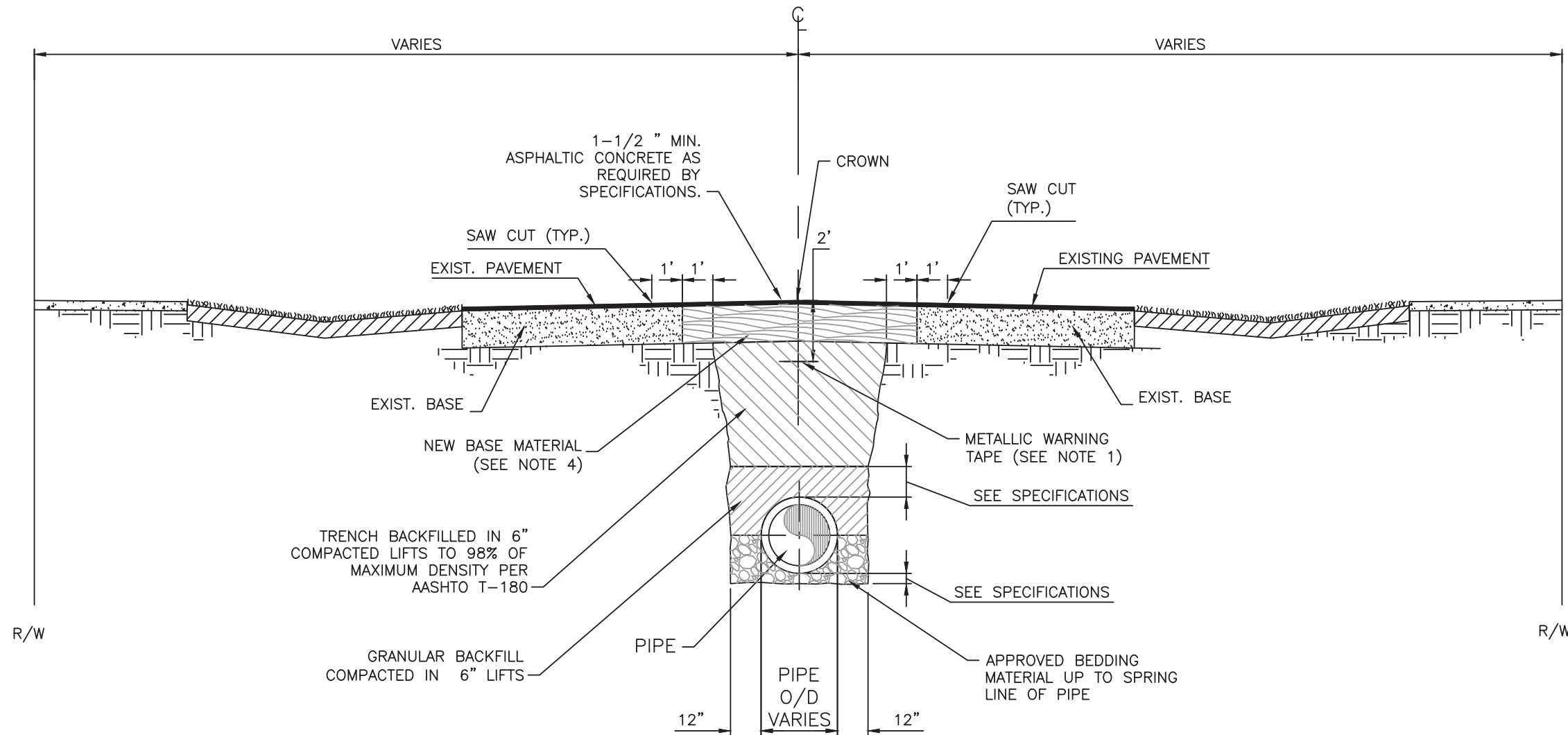
CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

Plot Date: 2/15/2019 4:29:05 PM Username: Jfamo Folder Path: V:\Projects\2018\18-047\040 - boyshore dr intracoast crossing fm to 2 Design\CAD\Plans Layout Name: D-3 Filename: 12389-MULTI-DET.dwg



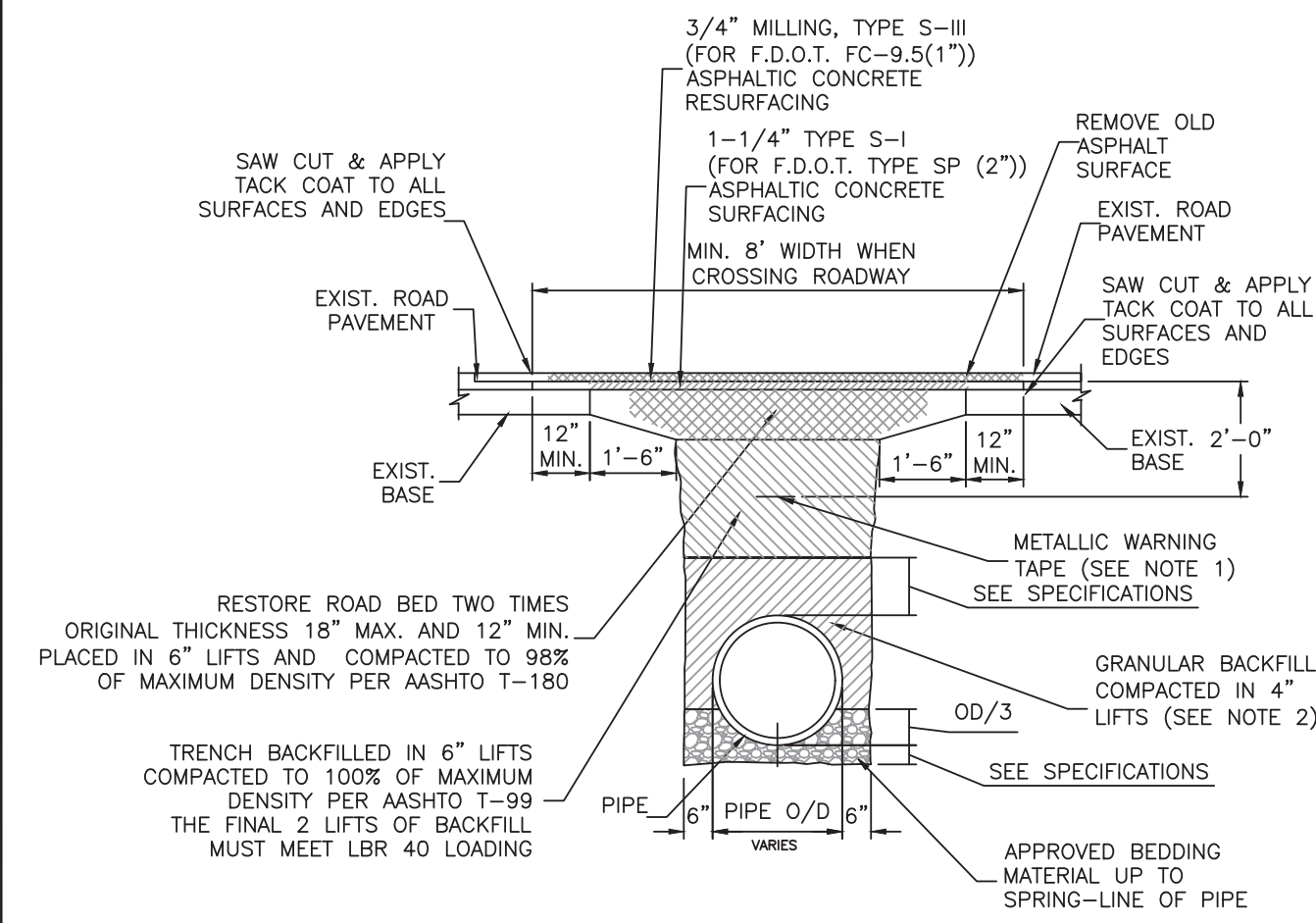
TYPICAL TRENCH AND PAVEMENT RESTORATION FOR TRANSVERSE CROSSING

100



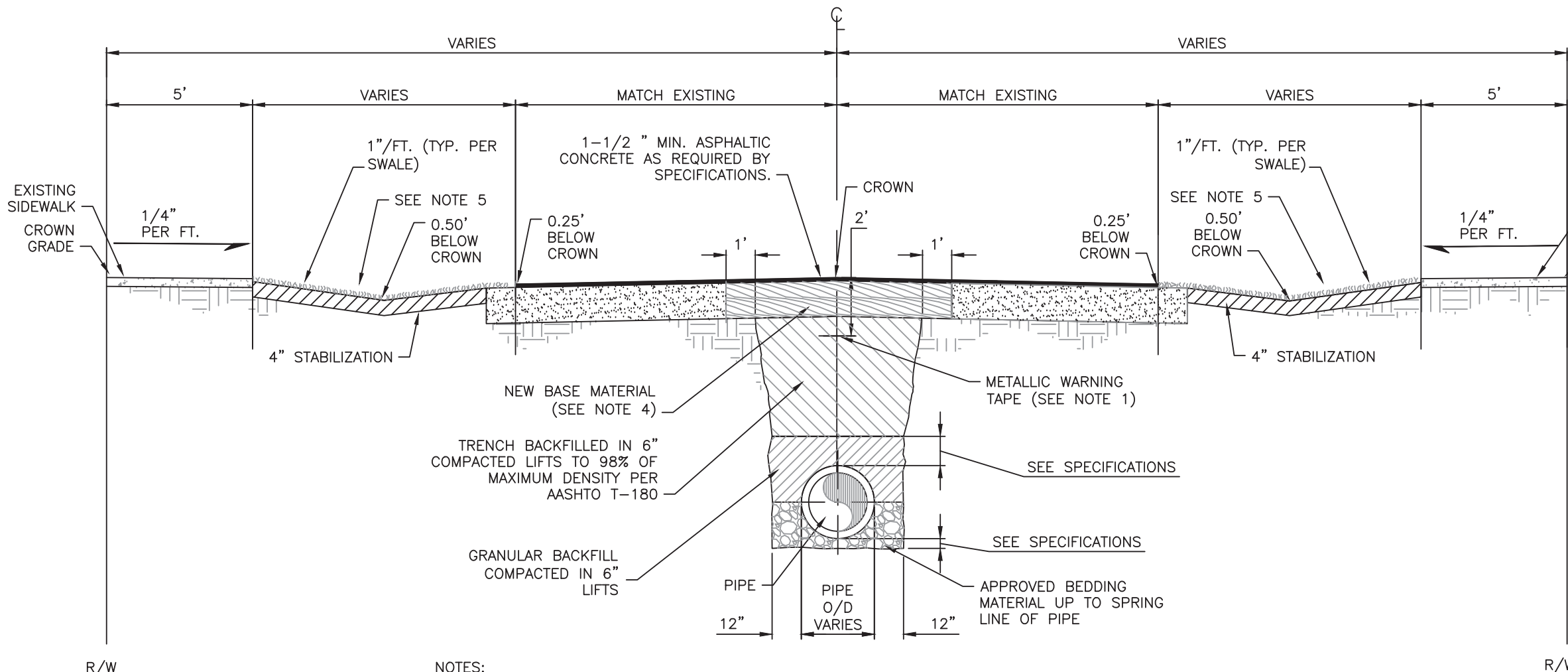
TYPICAL ROAD SECTION, TYPICAL TRENCH AND TRENCH RESTORATION FOR PARALLEL PIPE TRENCH

100A



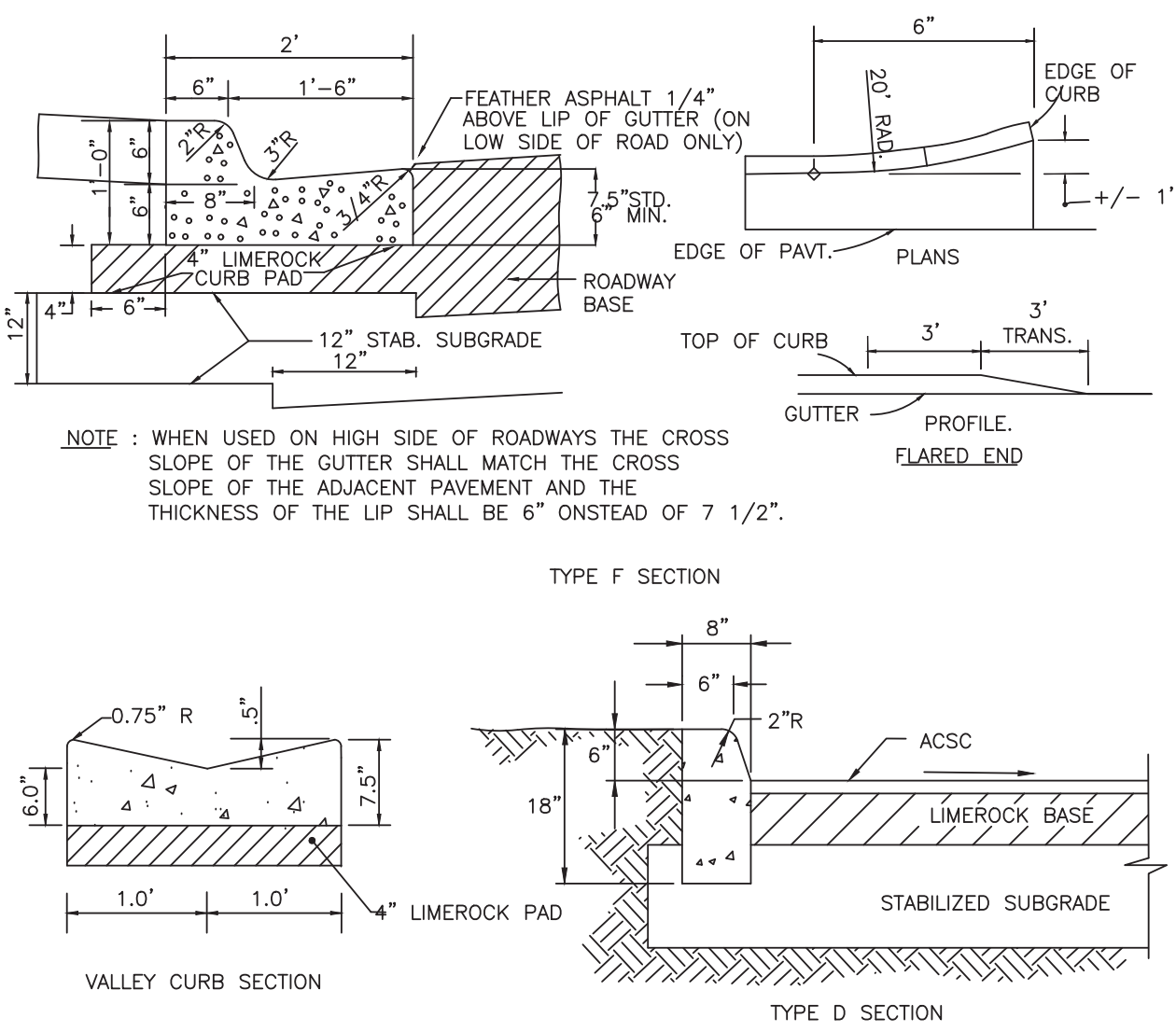
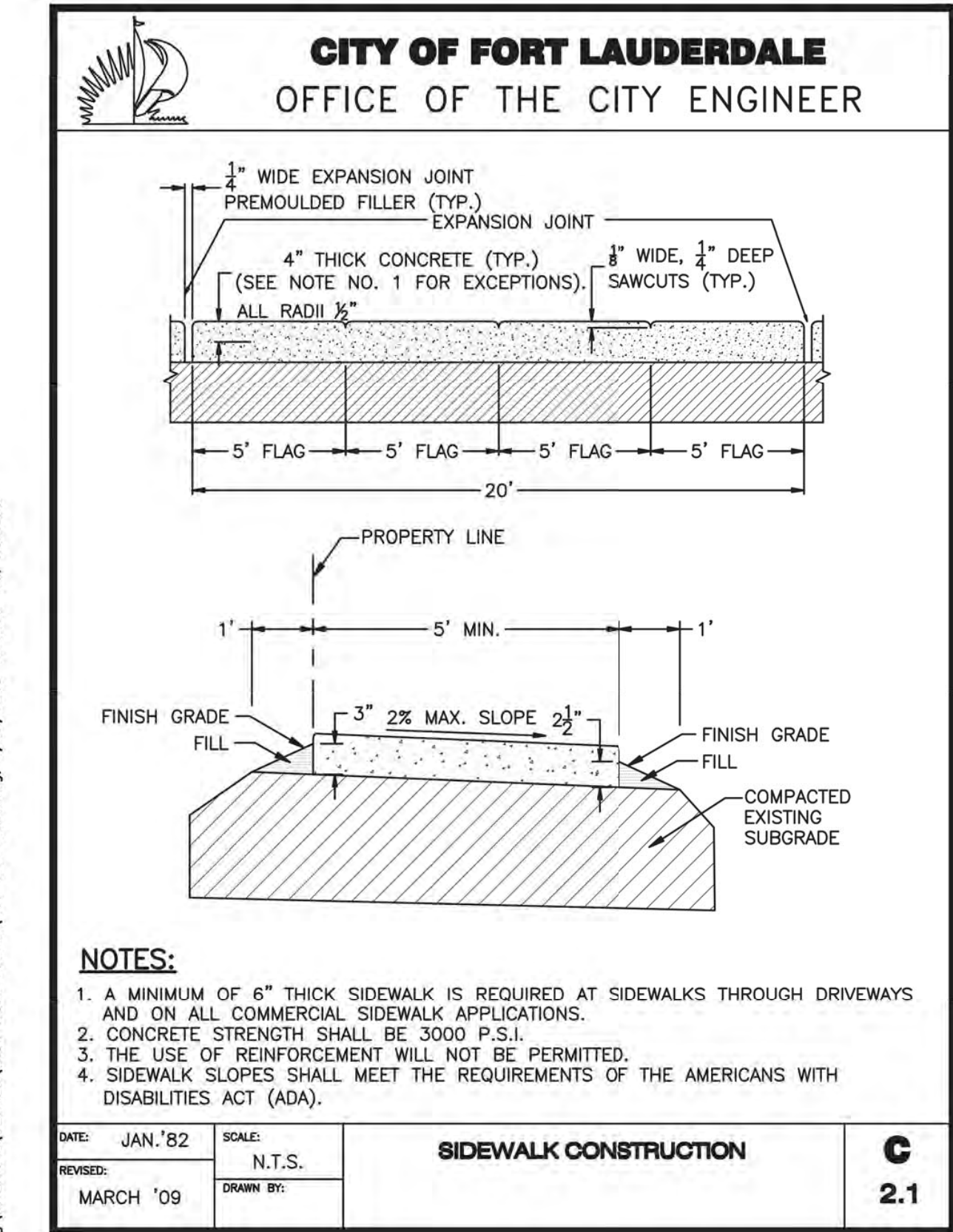
F.D.O.T. & BROWARD COUNTY TYPICAL TRENCH AND PAVEMENT RESTORATION

100BC

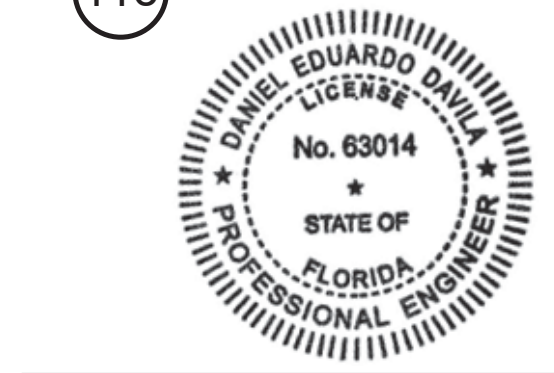


TYPICAL ROAD SECTION, TYPICAL TRENCH, PAVEMENT AND SWALE RESTORATION FOR PARALLEL PIPE TRENCH

100B



116 CURB & GUTTER RESTORATION



THE ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY DANIEL DAVILA, PE ON MARCH 13, 2019 USING A SHA AUTHENTICATION CODE.

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



CHEN-MOORE & ASSOCIATES

500 West Cypress Creek Road, Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com

CERTIFICATES OF AUTHORIZATION

EB4593 LC26000425

ENGINEER:
DANIEL DAVILA, P.E.
REG. No. 63014
DATE:

DRAWN BY: JH
DESIGNED BY: DC
CHECKED BY: DD
DATE: 01/11/19
SCALE: 1"=20'

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS		DESCRIPTION
NO.	DATE	BY / CHK'D

PROJECT # 12389
18" FORCE MAIN REPLACEMENT ACROSS THE N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.

DETAILS

DRAWING #	SHT #
D-3	18
TOTAL:	18
CAD FILE:	12389-MULTI-DET
DRAWING FILE NO.	4-XXX-XX

ATTACHMENT 2: SAJ-2019-01818**AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER**

Submit this form and one set of as-built engineering drawings to the U.S. Army Corps of Engineers, Enforcement Section, 4400 PGA Boulevard, Suite 500, Palm Beach Gardens, FL, 33410. If you have questions regarding this requirement, please contact the Enforcement Branch at 904-232-3131.

1. Department of the Army Permit Number: SAJ-2019-01818(GP-JKA)

2. Permittee Information:

Name: _____

Address: _____

3. Project Site Identification (physical location/address):

4. As-Built Certification: I hereby certify that the authorized work, including any mitigation required by Special Conditions to the permit, has been accomplished in accordance with the Department of the Army permit with any deviations noted below. This determination is based upon on-site observation, scheduled, and conducted by me or by a project representative under my direct supervision. I have enclosed one set of as-built engineering drawings.

Signature of Engineer

Name (*Please type*)

(FL, PR, or VI) Reg. Number

Company Name

City

State

ZIP

(Affix Seal)

Date

Telephone Number

Date Work Started: _____ Date Work Completed: _____

Identify any deviations from the approved permit drawings and/or special conditions (attach additional pages if necessary):

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

ATTACHMENT 3- SAJ-2019-01818**BAYSHORE DRIVE INTRACOASTAL CROSSING FORCEMAIN**

City of Ft. Lauderdale

Public Works Department - Engineering and Architecture

100 North Andrews Avenue, Ft. Lauderdale, Florida 33301

Project Manager: Daniel Fisher, P.E.

Phone: 954-828-5850

FRAC-OUT CONTINGENCY PLAN**TABLE OF CONTENTS**

- 1.0 Introduction and Purpose
- 2.0 Description of Work
- 3.0 Site Supervisor/Foremen Responsibilities
- 4.0 Equipment
- 5.0 Training
- 6.0 Drilling Procedures
- 7.0 Vac-Truck
- 8.0 Field Response to Frac-Out Occurrence
- 9.0 Response Close-out Procedures
- 10.0 Construction Re-start
- 11.0 Bore Abandonment
- 12.0 Notification
- 13.0 Communicating with Regulatory Agency Personnel
- 14.0 Documentation
- 15.0 Project Completion and Clean-up

FRAC-OUT CONTINGENCY PLAN (FCP)**1.0 Introduction and Purpose**

Directional bore operations have a potential to release drilling fluids into the surface environment through frac-outs. A frac-out is the condition where drilling mud is released through fractured bedrock into the surrounding rock and sand and travels toward the surface. Because drilling muds consist largely of a bentonite clay-water mixture, they are not classified as toxic or hazardous substances. However, if it is released into water bodies, bentonite has the potential to adversely impact fish and invertebrates. While drilling fluid seepage associated with a frac-out is most likely to occur near the bore entry and exit points where the drill head is shallow, frac-outs can occur in any location along a directional bore. This Frac-Out Contingency Plan (FCP) establishes operational procedures and responsibilities for the prevention, containment, and cleanup of frac-outs associated with the proposed directional drilling utility project of **Bayshore**

Drive Intracoastal Crossing Forcemain. All Contractors, personnel, and Sub-Contractors responsible for the work must adhere to this plan during the directional drilling process. The specific objectives of this plan are to:

1. Minimize the potential for a frac-out associated with directional drilling activities;
2. Provide for the timely detection of frac-outs;
3. Protect the environmentally sensitive riverbed and associated riparian vegetation;
4. Ensure an organized, timely, and "minimum-impact" response in the event of a frac-out and release of drilling bentonite; and
5. Ensure that all appropriate notifications are made immediately to the customer, management and safety personnel.

2.0 Description of Work:

Drilling operations will be halted by the drill rig operators immediately upon detection of a drop in drilling pressure or other evidence of a frac-out. The Design-Build Firm (DBF) will have a work boat onsite during all bore crossings with trained divers looking for frac-outs. On these work boats will be turbidity curtains long enough to reach the sea floor at the deepest points and necessary clean up tools to contain a frac-out should one be presented. The work boat team will notify all teams and clean-up of all spills shall begin immediately. Management and safety department shall be notified immediately of any spills and shall be consulted regarding clean-up procedures. A spill kit shall be onsite and used if a frac-out occurs. A vacuum truck and containment materials, such as straw bales, floating turbidity barriers, and silt fence shall also be on-site prior to and during all operations. The Site Supervisor will be immediately notified. In the event of a frac-out, the on-site foreman/supervisor will conduct an evaluation of the situation and direct recommended mitigation actions, based on the following guidelines:

- a. If the frac-out is minor, easily contained, has not reached the surface and is not threatening sensitive resources, drilling operations may resume after use of a leak stopping compound or redirection of the bore;
- b. If the frac-out has reached the surface, any material contaminated with Bentonite shall be removed by hand to a depth of 2-feet, contained and properly disposed of, as required by law. The drilling contractor shall be responsible for ensuring that the bentonite is either properly disposed of at an approved disposal facility or properly recycled in an approved manner. The Site Supervisor shall notify and take any necessary follow-up response actions in coordination with agency representatives. The Site Supervisor will coordinate the mobilization of equipment stored at off-site locations (e.g., vacuum trucks) on an as needed basis;

3.0 Site Supervisor/Foremen Responsibilities:

The Site Supervisor/Foremen has overall responsibility for implementing this FCP. The Site Supervisor/Foremen will ensure that all employees are trained prior to all drilling. The Site Supervisor/Foremen shall be notified immediately when a frac-out is detected. The Site Supervisor/Foremen will be responsible for ensuring that the safety department is aware of the

frac-out, coordinating personnel, response, cleanup, regulatory agency notification and coordination to ensure proper clean-up, disposal of recovered material and timely reporting of the incident. The Site Supervisor/Foremen shall ensure all waste materials are properly containerized, labeled, and removed from the site to an approved disposal facility by personnel experienced in the removal, transport and disposal of drilling mud. The Site Supervisor/Foremen shall be familiar with all aspects of the drilling activity, the contents of this Frac-out Contingency Plan and the conditions of approval under which the activity is permitted to take place. The Site Supervisor/Foremen shall have the authority to stop work and commit the resources (personnel and equipment) necessary to implement this plan. The Site Supervisor/Foremen shall assure that a copy of this plan is available (onsite) and accessible to all construction personnel. The Site Supervisor/Foremen shall ensure that all workers are properly trained and familiar with the necessary procedures for response to a frac-out, prior to commencement of drilling operations.

4.0 Equipment:

The Site Supervisor shall ensure that:

- a. All equipment and vehicles are checked and maintained daily to prevent leaks of hazardous materials;
- b. Spill kits and spill containment materials are available on-site at all times and that the equipment is in good working order;
- c. Equipment required to contain and clean up a frac-out release will either be available at the work site or readily available at an offsite location within 10 minutes of the bore site; and
- d. If equipment is required to be operated near a riverbed, absorbent pads and plastic sheeting for placement beneath motorized equipment shall be used to protect the riverbed from engine fluids.

5.0 Training

Prior to the start of construction, the Site Supervisor/Foremen, shall ensure that the crew members receive training in the following:

- a. The provisions of the Frac-out Contingency Plan, equipment maintenance and site-specific permit and monitoring requirements;
- b. Inspection procedures for release prevention and containment equipment and materials;
- c. Contractor/crew obligation to immediately stop the drilling operation upon first evidence of the occurrence of a frac-out and to immediately report any frac-out releases;
- d. Contractor/crew member responsibilities in the event of a release;
- e. Operation of release prevention and control equipment and the location of release control materials, as necessary and appropriate; and
- f. Protocols for communication with agency representatives who might be on-site during the clean-up effort.

6.0 Drilling Procedures

The following procedures shall be followed each day, prior to the start of work. The Frac-out Contingency Plan shall be available on-site during all construction. The Site Supervisor/Foremen shall be on-site at any time that drilling is occurring or is planned to occur. The Site Supervisor/Foremen shall ensure that a Job Briefing meeting is held at the start of each day of drilling to review the appropriate procedures to be followed in case of a frac-out. Questions shall be answered, and clarification given on any point over which the drilling crew or other project staff has concerns. Drilling pressures shall be closely monitored so they do not exceed those needed to penetrate the formation, with a maximum drilling pressure of **ten pounds per square inch (10 psi)**. Pressure levels shall be monitored randomly by the operator. Pressure levels shall be minimized to prevent frac-outs. During the pilot bore, maintain the drilled annulus. Cutters and reamers will be pulled back into previously-drilled sections after each new joint of pipe is added. Exit and entry pits shall be enclosed by silt fences and straw. A spill kit shall be on-site and used if a frac-out occurs. A vacuum truck shall be readily available on-site prior to and during all drilling operations. Containment materials (Straw, silt fencing, sand bags, frac-out spill kits, etc.) shall be staged on-site at location where they are readily available and easily mobilized for immediate use in the event of an accidental release of drilling mud (frac-out). If necessary, barriers (straw bales or sedimentation fences) between the bore site and the edge of the water source, shall be constructed, prior to drilling, to prevent released bentonite material from reaching the water. Once the drill rig is in place, and drilling begins, the drill operator shall stop work whenever the pressure in the drill rig drops, or there is a lack of returns in the entrance pit. At this time the Site Supervisor/Foremen shall be informed of the potential frac-out. The Site Supervisor/Foremen and the drill rig operator(s) shall work to coordinate the likely location of the frac-out. The location of the frac-out shall be recorded and notes made on the location and measures taken to address the concern. The following subsections shall be adhered to when addressing a frac-out situation. Water containing mud, silt, bentonite, or other pollutants from equipment washing or other activities, shall not be allowed to enter a lake, flowing stream or any other water source. The Bentonite used in the drilling process shall be either disposed of at an approved disposal facility or recycled in an approved manner. Other construction materials and wastes shall be recycled, or disposed of, as appropriate.

7.0 Vac-Truck:

A vacuum truck shall be staged at a location from which it can be mobilized and relocated so that any place along the drill shot, can be reached by the apparatus, within 10 minutes of a frac-out.

8.0 Field Response to Frac-out Occurrence:

Response of the field crew to a frac-out release shall be immediate and in accordance with procedures identified in this Plan. All appropriate emergency actions that do not pose additional threats to sensitive resources will be taken, as follows:

- a. Directional boring will stop immediately;
- b. The bore stem will be pulled back to relieve pressure on frac-out;

- c. The Site Supervisor/Foremen will be notified to ensure that management and the safety department is notified, adequate response actions are taken and notifications made;
- d. The Site Supervisor/Foremen shall evaluate the situation and recommend the type and level of response warranted, including the level of notification required;
- e. If the frac-out is minor, easily contained, has not reached the surface and is not threatening sensitive resources, a leak stopping compound shall be used to block the frac-out. If the use of leak stopping compound is not fully successful, the bore stem shall be redirected to a new location along the desired drill path where a frac-out has not occurred;
- f. If the frac-out has reached the surface, any material contaminated with Bentonite shall be removed by hand, to a depth of 2-feet, contained and properly disposed of, as required by law. A dike or berm may be constructed around the frac-out to entrap released drilling fluid, if necessary. Clean sand shall be placed, and the area returned to pre-project contours; and
- g. If a frac-out occurs, reaches the surface and becomes widespread, the Site Supervisor/Foremen shall authorize a readily accessible vacuum truck and bulldozer stored off-site to be mobilized. The vacuum truck may be either positioned at either end of the line of the drill so that the frac-out can be reached by crews on foot, or may be pulled by a bulldozer, so that contaminated soils can be vacuumed up.

9.0 Response Close-out Procedures:

When the release has been contained and cleaned up, response closeout activities will be conducted at the direction of the Site Supervisor/Foremen and shall include the following:

- a. The recovered drilling fluid will either be recycled or hauled to an approved facility for disposal. No recovered drilling fluids will be discharged into streams, storm drains or any other water source;
- b. All frac-out excavation and clean-up sites will be returned to pre-project contours using clean fill, as necessary; and
- c. All containment measures (fiber rolls, straw bale, etc.) will be removed, unless otherwise specified by the Site Supervisor/Foremen.

10.0 Construction Re-start:

For small releases not requiring external notification, drilling may continue, if one hundred percent (100%) containment is achieved through the use of a leak stopping compound or redirection of the bore and the clean-up crew remains at the frac-out location throughout the construction period. For releases requiring external notification and/or other agencies, construction activities will not restart without prior approval from the safety department.

11.0 Bore Abandonment:

Abandonment of the bore will only be required when all efforts to control the frac-out within the existing directional bore have failed.

12.0 Notification:

In the event of a Frac-out that reaches a water source, the Site Supervisor/Foremen will notify safety department, so they can notify the appropriate resource agencies. All agency notifications will occur within 24 hours and proper documentation will be accomplished in a timely and complete manner. The following information will be provided:

- a. Name and telephone number of person reporting;
- b. Location of the release;
- c. Date and time of release;
- d. Type and quantity, estimated size of release;
- e. How the release occurred;
- f. The type of activity that was occurring around the area of the frac-out;
- g. Description of any sensitive areas, and their location in relation to the frac-out;
- h. Description of the methods used to clean up or secure the site; and
- i. Listing of the current permits obtained for the project.

13.0 Communicating with Regulatory Agency Personnel:

All employees and subcontractors will adhere to the following protocols when permitting Regulatory Agency Personnel arrive on site. Regulatory Agency Personnel will be required to comply with appropriate safety rules. Only the Site Supervisor/Foremen and the safety department are to coordinate communication with Regulatory Agency Personnel.

14.0 Documentation:

The Site Supervisor/Foremen shall record the frac-out event in his or her daily log. The log will include the following: details on the release event, including an estimate of the amount of bentonite released, the location and time of release, the size of the area impacted, and the success of the clean-up action. The log report shall also include the: Name and telephone number of person reporting; Date, How the release occurred; The type of activity that was occurring around the area of the frac-out: Description of any sensitive areas, and their location in relation to the frac-out: Description of the methods used to clean up or secure the site; and a listing of the current permits obtained for the project.

15.0 Project Completion and Clean-up:

- a. All materials and any rubbish-construction debris shall be removed from the construction zone at the end of each workday;
- b. Sump pits at bore entry and exits will be filled and returned to natural grade;
- c. All protective measures (fiber rolls, straw bale, silt fence, etc.) will be removed unless otherwise specified by the Site Supervisor/Foremen.

ATTACHMENT 4- SAJ-2019-01818**STANDARD MANATEE CONDITIONS FOR IN-WATER WORK**
2011

The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

- a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.
- b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.
- d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
- e. Any collision with or injury to a manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com
- f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8 ½" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.

CAUTION: MANATEE HABITAT

All project vessels

IDLE SPEED / NO WAKE

When a manatee is within 50 feet of work
all in-water activities must

SHUT DOWN

Report any collision with or injury to a manatee:

Wildlife Alert:

1-888-404-FWCC(3922)

cell *FWC or #FWC



ATTACHMENT 5: SAJ-2019-01818**U.S. Army Corps of Engineers Jacksonville District's Programmatic Biological Opinion (JaxBO) Project Design Criteria (PDCs) for In-Water Activities****November 20, 2017**

- 1) **(AP.7.) Education and Observation:** The permittee must ensure that all personnel associated with the project are instructed about the potential presence of species protected under the ESA and the Marine Mammal Protection Act (MMPA). All on-site project personnel are responsible for observing water-related activities for the presence of protected species. All personnel shall be advised that there are civil and criminal penalties for harming, harassing, or killing ESA-listed species or marine mammals. To determine which species may be found in the project area, please review the relevant Protected Species List at:
http://sero.nmfs.noaa.gov/protected_resources/section_7/threatened_endangered/index.html
- 2) **(AP.8.) Reporting** of interactions with protected species:
 - a) Any collision(s) with and/or injury to any sea turtle, sawfish, whale, or sturgeon occurring during the construction of a project, shall be reported immediately to NMFS's Protected Resources Division (PRD) at (1-727-824-5312) or by email to takeareport.nmfs@noaa.gov and SAJ-RD-Enforcement@usace.army.mil.
 - b) Smalltooth sawfish: Report sightings to 1-844-SAWFISH or email Sawfish@MyFWC.com
 - c) Sturgeon: Report dead sturgeon to 1-844-STURG 911 (1-844-788-7491) or email nmfs.ser.sturgeonnetwork@noaa.gov
 - d) Sea turtles and marine mammals: Report stranded, injured, or dead animals to 1-877-WHALE HELP (1-877-942-5343).
 - e) North Atlantic right whale: Report injured, dead, or entangled right whales to the USCG via VHF Channel 16.
- 3) **(AP.9.) Vessel Traffic and Construction Equipment:** All vessel operators must watch for and avoid collision with species protected under the ESA and MMPA. Vessel operators must avoid potential interactions with protected species and operate in accordance with the following protective measures:
 - a) *Construction Equipment.*
 - i) All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while operating in water depths where the draft of the vessel provides less than a 4-foot (ft) clearance from the bottom, and in all depths after a protected species has been observed in and has departed the area.
 - ii) All vessels will follow marked channels and/or routes using the maximum water depth whenever possible.
 - iii) Operation of any mechanical construction equipment, including vessels, shall cease immediately if a listed species is observed within a 50-ft radius of

construction equipment and shall not resume until the species has departed the area of its own volition.

- iv) If the detection of species is not possible during certain weather conditions (e.g., fog, rain, wind), then in-water operations will cease until weather conditions improve and detection is again feasible.
- b) *All Vessels:*
- i) Sea turtles: Maintain a minimum distance of 150 ft.
 - ii) North Atlantic right whale: Maintain a minimum 1,500-ft distance (500 yards).
 - iii) Vessels 65 ft in length or longer must comply with the Right Whale Ship Strike Reduction Rule (50 CFR 224.105) which includes reducing speeds to 10 knots or less in Seasonal Management Areas (<http://www.fisheries.noaa.gov/pr/shipstrike/>).
 - iv) Mariners shall check various communication media for general information regarding avoiding ship strikes and specific information regarding right whale sightings in the area. These include NOAA weather radio, USCG NAVTEX broadcasts, and Notices to Mariners.
 - v) Marine mammals (i.e., dolphins, whales [other than North Atlantic right whales], and porpoises): Maintain a minimum distance of 300 ft.
 - vi) When these animals are sighted while the vessel is underway (e.g., bow-riding), attempt to remain parallel to the animal's course. Avoid excessive speed or abrupt changes in direction until they have left the area.
 - vii) Reduce speed to 10 knots or less when mother/calf pairs or groups of marine mammals are observed, when safety permits.
- 4) **(AP.10.) Turbidity Control Measures during Construction:** Turbidity must be monitored and controlled. Prior to initiating any of the work covered under this Opinion, the Permittee shall install turbidity curtains as described below. In some instances, the use of turbidity curtains may be waived by the USACE project manager if the project is deemed too minimal to generate turbidity (e.g., certain ATON installation, scientific survey device placement, marine debris removal) or if the current is too strong for the curtains to stay in place. Turbidity curtains specifications:
- a) Install floating turbidity barriers with weighted skirts that extend to within 1 ft of the bottom around all work areas that are in, or adjacent to, surface waters.
 - b) Use these turbidity barriers throughout construction to control erosion and siltation and ensure that turbidity levels within the project area do not exceed background conditions.
 - c) Position turbidity barriers in a way that does not block species' entry to or exit from designated critical habitat.
 - d) Monitor and maintain turbidity barriers in place until the authorized work has been completed and the water quality in the project area has returned to background conditions.
 - e) In the range of ESA-listed corals (St. Lucie Inlet, Martin County south to the Dry Tortugas and the U.S. Caribbean) and Johnson's seagrass (Turkey Creek/Palm

Bay south to central Biscayne Bay in the lagoon systems on the east coast of Florida):

- i) Projects that include upland earth moving (e.g., grading to install a building or parking lot associated with a dock and seawall project), must install sediment control barriers to prevent any upland sediments from reaching estuarine or marine waters.
 - ii) The turbidity curtain requirement cannot be waived for any project that moves or removes sediment (e.g., dredging, auger to create a pile, trenching to install a cableline). If turbidity curtains are not feasible in an area based on site conditions such as water current, high wave action, or stormy conditions, the project must undergo individual Section 7 consultation and is not covered under this Programmatic Opinion.
- 5) **(AP.11.) Entanglement:** All turbidity curtains and other in-water equipment must be properly secured with materials that reduce the risk of entanglement of marine species (described below). Turbidity curtains likewise must be made of materials that reduce the risk of entanglement of marine species.
- a) In-water lines (rope, chain, and cable, including the lines to secure turbidity curtains) must be stiff, taut, and non-looping. Examples of such lines are heavy metal chains or heavy cables that do not readily loop and tangle. Flexible in-water lines, such as nylon rope or any lines that could loop or tangle, must be enclosed in a plastic or rubber sleeve/tube to add rigidity and prevent the line from looping and tangling. In all instances, no excess line is allowed in the water.
 - b) Turbidity curtains and other in-water equipment must be placed in a manner that does not entrap species within the construction area or block access for them to navigate around the construction area.

EXHIBIT I

BENTHIC CHARACTERIZATION SURVEY



Aptim Environmental & Infrastructure, Inc.
2481 NW Boca Raton Blvd.
Boca Raton, FL 33431

FIELD OBSERVATION REPORT

Date: June 7, 2018
Project: Benthic Resource Survey to Support Permitting for the Bayshore Drive Intracoastal Waterway Force Main Crossing Project
Location: City of Fort Lauderdale, Florida
Commission No.: 631236287
Field Representatives: Stacy Buck, Lauren Floyd, Holly Berckenhoff and Coty Granger

1.0 INTRODUCTION

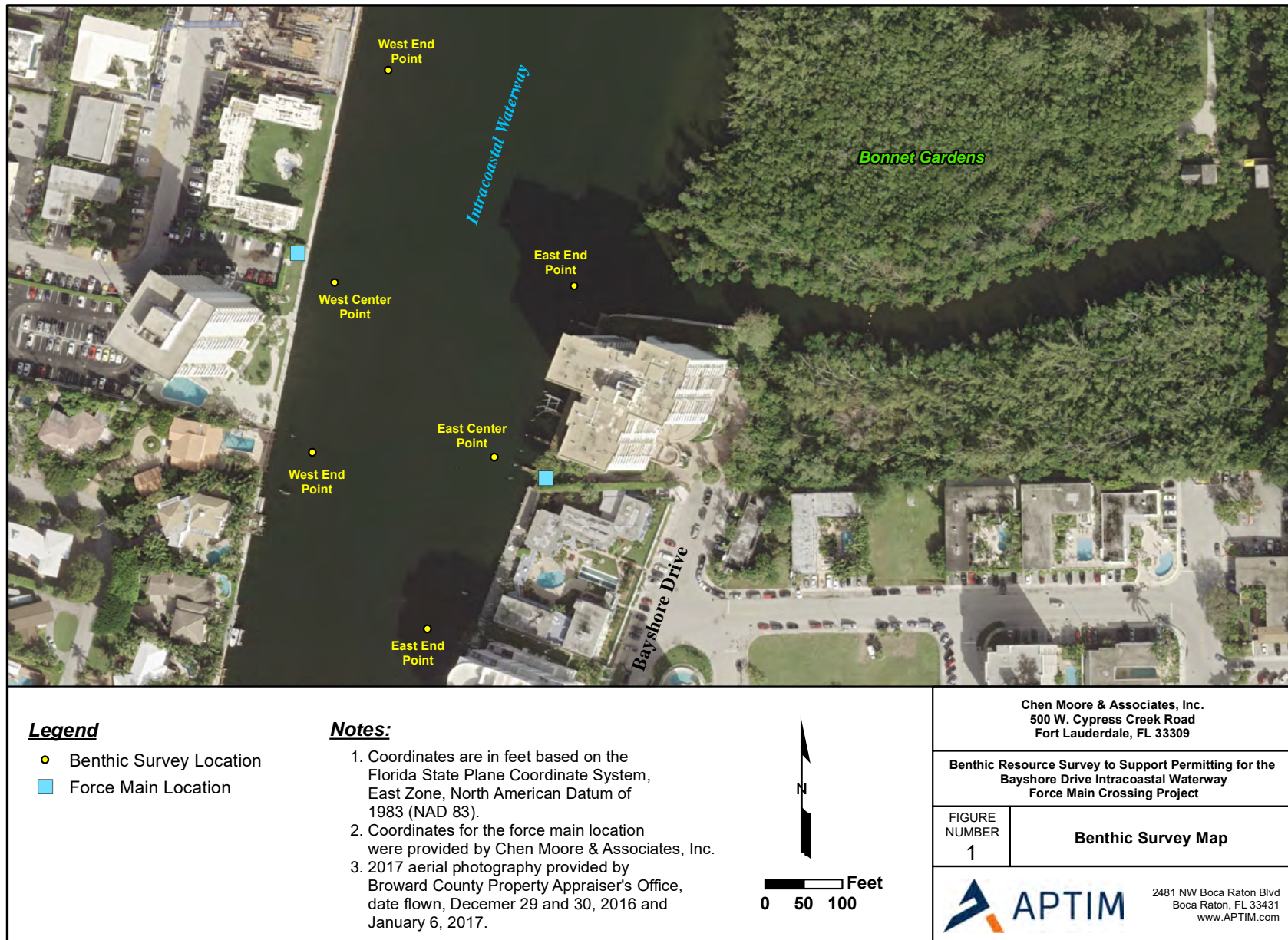
APTIM biologists conducted a benthic resource survey on June 7, 2018 for Chen Moore & Associates, Inc. in support of permitting for the *Bayshore Drive Intracoastal Waterway Force Main Crossing Project*. The survey was conducted in the section of the Intracoastal Waterway (ICW) in Fort Lauderdale associated with the proposed force main.

2.0 BENTHIC SURVEY METHODOLOGY

Qualified marine biologists conducted a benthic survey in the project area (approximately 250 ft north and south of each entry point into the ICW out to edge of channel) to identify and map any seagrass or coral resources that may be present. Chen Moore & Associates, Inc. provided the exact location of the entry points of the force main as shown in Figure 1. The biologists began the survey on the east side of ICW at the north end point. The areas along the seawall and out to the edge of the channel (approximately 12-15 ft. deep) were investigated as the biologists swam to the south end point. The same procedure was conducted along the west side of the ICW as biologists started at the north end point and swam to the south end point. Representative photographs were taken underwater of the benthic habitat.

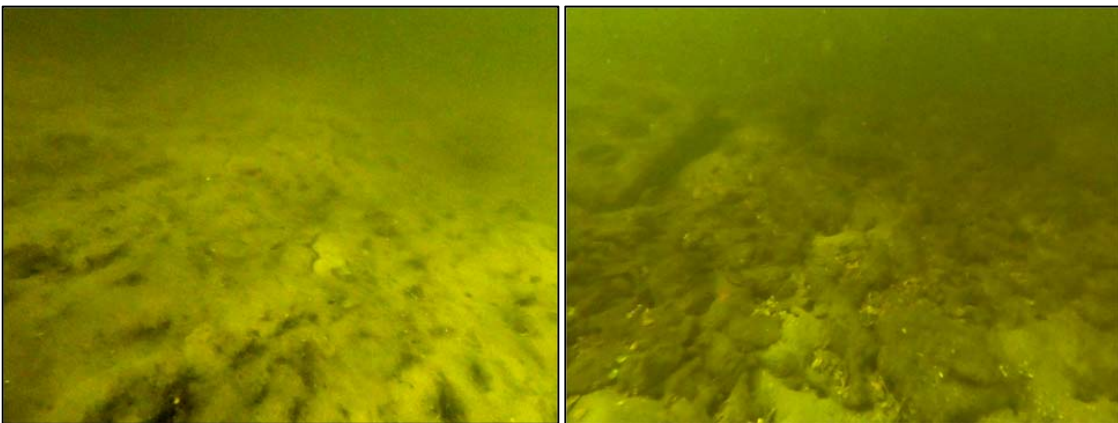
3.0 RESULTS AND CONCLUSION

No seagrass or coral resources were observed within the project area. Figure 1 shows the extent of the survey area along the east and west sides of the ICW. The bottom consisted of an unvegetated sandy/silty substrate throughout the entire survey area. Dead oysters, rocks and anthropogenic debris (boat parts, bottles, etc.) were observed closer to the seawall. Representative photographs are provided below.

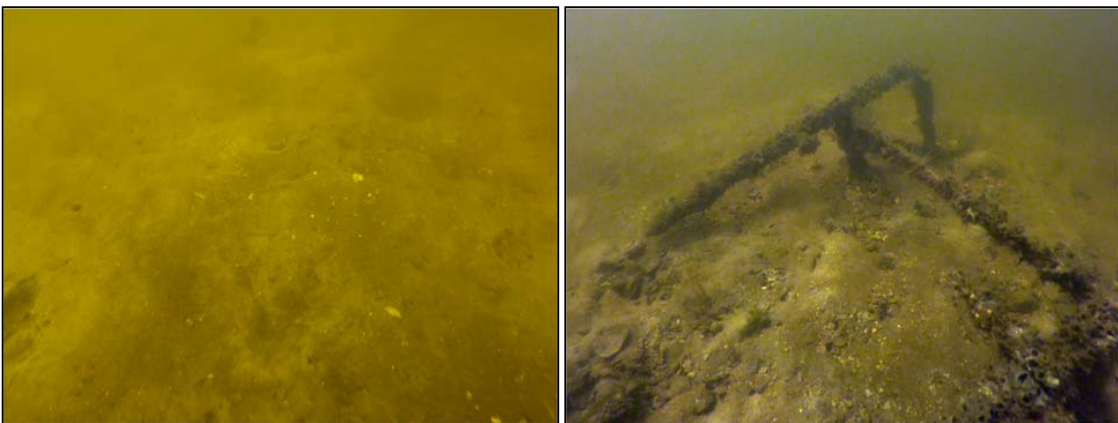




Photographs 1-2. Biologists investigating the east side of the Intracoastal Waterway observed sandy/silty substrate throughout the project area.



Photographs 3-4. Sandy and rocky substrate along the east side of ICW.



Photographs 5-6. Biologists investigating the west side observed sandy/silty substrate throughout the project area. Debris was also observed along the seawalls.

EXHIBIT J

GEOTECHNICAL REPORT

**REPORT OF
GEOTECHNICAL EXPLORATION**

**BAYSHORE DRIVE, 18-INCH FORCEMAIN REPLACEMENT
MIDDLE RIVER DRIVE ON NE 9TH STREET DUE EAST
ACROSS INTRACOSTAL WATERWAY TO NORTH BIRCH STREET
FORT LAUDERDALE, FLORIDA**

FOR

CHEN-MOORE AND ASSOCIATES

PREPARED BY

NUTTING ENGINEERS OF FLORIDA, INC.

ORDER NO. 14436.42

JUNE 2018



5/8/2020 1:34 PM

Geotechnical & Construction Materials
Engineering, Testing, & Inspection
Environmental Services

p. 495



June 22, 2018

Mr. Daniel Davila, P.E.
Chen-Moore and Associates
500 Cypress Creek Road, Suite 630
Fort Lauderdale, Florida 33309

Subject: Report of Geotechnical Exploration
**Proposed 18-inch Forcemain Replacement, Bayshore Drive
Middle River Drive and NE 9th Street Sue East Across
Intracoastal Waterway to North Birch Street**
Fort Lauderdale, Florida

Dear Mr. Davila, P.E.:

Nutting Engineers of Florida, Inc. (NE), has performed a Geotechnical Exploration for the proposed utility replacement along the above referenced roadways and Intracoastal Waterway in Fort Lauderdale, Florida. This exploration was performed in accordance with the written authorization to proceed provided by Chen Moore and Associates, Inc. dated May 22, 2018. This study was performed to develop information regarding existing geotechnical subsurface soil conditions at specific test locations. This information along with proposed construction information provided was used to develop general opinions regarding remedial and preparatory earthwork for the new replacement lines. This report presents our findings and recommendations based upon the information examined at the time of this evaluation.

PROJECT INFORMATION

Based on discussions with Mr. Dan Davila and review of site plans, we understand that plans include the installation of a new 18-inch diameter force main pipeline as further detailed by others. Along with the lines, associated incidental roadway restoration may be performed within the project areas, when needed. The lines are anticipated to be installed via directional drill operations when feasible; however where conflicts exist open cut excavations is proposed to be performed. The directional drill may be extended to depths of twenty feet or more (will be greater beneath the Intracoastal Waterway), while the open cut may only extend to depths of approximately ten feet. Because of this, the depth of the new forcemain will vary along the construction area. We understand that approximately 4,500 linear feet of new line will be installed.

The force main will start at the western end at the approximate intersection of Middle River Drive and NE 9th Street. The line will continue due east along NE 9th Street and continue east beyond Intracoastal Drive, continuing beneath the Intracoastal Waterway to Bayshore

Drive. From Bayshore Drive the pipeline will migrate due south to Vistamar Street, then due east to the termination point at approximately North Birch Street.

We note that the depth and makeup of the existing pipes were not known at the time of this report. We also note that the depth of the proposed line beneath the Intracoastal Waterway is currently unknown. The locations of the directional drill and open cuts were also not known to us at the time of the report; therefore our exploration was limited to the proposed desired boring locations provided by Chen Moore and Associates, Inc. If this information is incorrect our office must be notified in writing in order to perform additional test borings to address the correct depths for the proposed construction.

Based on current site elevations and review of plans provided to our office, we estimate that existing grades are within approximately six inches of final elevations; however, the final elevations shall be determined by a civil engineer, or other qualified party. NE should be notified in writing by the client of any changes in the proposed construction along with a request to amend our analysis and/or recommendations within.

GENERAL SUBSURFACE CONDITIONS

Soil Survey Maps

As part of the geotechnical exploration, we have reviewed available Natural Resources Conservation Service (NRCS) online soil survey map for Broward County. The USDA online NRCS mapping provides qualitative information about potential general shallow soil conditions in the project vicinity.

This information was derived from approximately 6 ft. deep manual auger borings, aerial photo and surface feature interpretation at some point in the past. The NRCS data may or may not reflect actual current site conditions. As indicated in the online Soil Survey Mapping at the time the survey was conducted, one main soil descriptions was identified within the subject roadway section. The soil type is outlined below.

Arents-Urban, Organic Substratum, Land Complex

These soils are described as nearly level, heterogeneous overburden material that has been either dredged from nearby waterways or imported from other areas and used as fill. The fill is approximately three feet thick, and is underlain by organic soils to a depth of six feet or more. We note that the maximum depth of the survey is six feet.

Subsurface Exploration

NUTTING ENGINEERS OF FLORIDA, INC. performed five Standard Penetration Test (SPT) borings (ASTM D-1586) to depths of twenty to seventy-five feet below the land surface. We note that the two seventy-five-foot test borings were performed along the eastern and western side of the Intracoastal Waterway for purposes of the directional drilling operations. The



locations of the test borings are indicated on the boring location plan presented in the Appendix of this report.

We note that the number of borings and locations were determined by Chen Moore and Associates, Inc. based on the site plan prepared by Chen Moore and Associates, Inc. The boring locations were identified in the field using approximate methods; namely, a measuring wheel and available surface controls. As such the soil boring locations should be considered to be approximate.

Test Boring Results

In general, the soil boring locations recorded substantially varying conditions including either a four-inch pavement section with an approximate eighteen-inch base/subbase course section (sand with limestone fragments) in the upper two feet, or surficial topsoil underlain by intermixed sand and limestone fragments in the upper two feet. Below the pavement or topsoil section in test borings B-1 through B-4, very loose to medium dense brown to gray sand with some limestone fragments was encountered to a depth of four to five feet underlain by soft dark brown peat and gray organic silt to a depth of eight to ten feet. Below the peat and silt soils medium hard to very soft gray to light tan limestone with some sand lenses to a depth of thirty-eight feet, underlain by loose to medium dense gray sand to a depth of forty-nine feet. Below forty-nine feet soft to refusal light gray sandstone with some little sand was encountered to a depth of seventy-five feet, the maximum depth explored. We note that the commencement of the upper limestone formation varied from ten to fifteen feet below the existing grade within these test borings.

In test boring B-5, medium dense to very loose gray to brown sand and shell fragments with some limestone fragments was encountered to a depth of thirteen feet, underlain by very soft gray silt and peat to a depth of twenty feet. Below the peat and silt soils medium hard to very soft gray to light tan limestone with some sand lenses was encountered to a depth of forty-eight feet, underlain by loose to medium dense gray sand with some sandstone lenses to a depth of sixty-eight feet. Below sixty-eight feet hard light gray sandstone with some little sand was encountered to a depth of seventy-five feet, the maximum depth explored. Please see the enclosed soil classification sheet in the Appendix of this report for additional important information regarding these descriptions, the field evaluation and other related information.

Rock Formation Note:

It is possible that the sandstone/limestone encountered may be present in areas other than recorded in the test boring. Generally, rock in the South Florida area may include limestone or sandstone which has irregularities and discontinuities including vertical and horizontal solution features, varying surface and bottom elevations, and varying degrees of hardness. The rock features may also contain intervening sand and other material filled lenses. The standard penetration test borings executed in this evaluation were performed in accordance with the normal standard of care in this area. Despite this, this process may sometimes fail to



detect the presence of rock strata by passing through solution features. Solution features can be very common in rock strata in Southeast Florida.

Also given the brittle nature of some rock strata, rocks may readily shatter when hit by the split spoon. Despite this, these strata which may not be depicted in the soil boring logs may present significant resistance to excavation. Resistance to excavation may generate vibrations which may be perceived to or actually induce settlements in subject nearby structures. Pre and post condition surveys and vibration monitoring would be advantageous in such circumstances. For these reasons, appropriate due care shall be exercised by contractors performing excavation operations in this area, utilizing local experience and test excavations if feasible.

Laboratory Testing and Results

Soil samples obtained from the drilling operations were preserved in jars and visually classified in the laboratory by a geotechnical engineer to confirm the field classifications. Selected soil samples of the organic soils recovered from the borings were subjected to testing to determine natural moisture and organic content to estimate the engineering properties of these soils. The tests were performed on selected samples believed to be representative of the materials encountered. Results of the tests are tabulated below:

LABORATORY RESULTS

<i>Test Boring #</i>	<i>Soil Description</i>	<i>Sample Depth Interval (Feet)</i>	<i>Moisture Content (%)</i>	<i>Organic Content (%)</i>
B-2	Dark Brown PEAT, Some Silt	6 – 8	465	70
B-3	Dark Brown PEAT, Some Silt	8 – 10	411	46
B-5	Gray Organic SILT, Little Peat	13 – 15	106	10
B-5	Gray Organic SILT, Little Peat	18 – 20	157	21

The moisture contents suggests that the soils are moderately to very highly compressible, while the organic contents suggests that over two-thirds of the soil is made up of organic material that will naturally breakdown and decay over time. In general, fill placed beneath buildings and roadways should not have more than three to five percent organic material.

Groundwater Information

The immediate groundwater level was measured at the boring locations at the time of drilling. The groundwater level was encountered at approximate depths of three and a half to five feet below the existing ground surface at the time of drilling.



The immediate depth to groundwater measurements presented in this report will not provide a reliable indication of stabilized or more long term depth to groundwater at this site. Water table elevations can vary dramatically with time through rainfall, droughts, storm events, flood control activities, nearby surface water bodies, tidal activity, pumping and many other factors. For these reasons, this immediate depth to water data **should not** be relied upon alone for project design considerations.

ANALYSIS AND RECOMMENDATIONS

Intracoastal Directional Drilling Note: We note that further information and recommendations may be needed with regards to the directional drilling operations that will be employed beneath the Intracoastal Waterway. Further discussions along with the potential for additional test borings will be required in order to better address the operation. **We request that our office be included in the team discussions in order to address the additional geotechnical concerns or needs for the project along the Intracoastal Waterway.**

Current Recommendations Beyond the Intracoastal Waterway

The limited test borings performed for this project suggest that a highly compressible and widely varying thickness organic layer exists within the subject area. Because of this full removal and placement within the forcemain area of construction is not viewed to be feasible. We also understand that with the directional drilling operations or open cut excavations, the new forcemain may exist above, below, or within the area of the organic soils.

Based on the site subsurface conditions it is possible to construct the proposed force main on the existing in place soils using conventional installation and compaction techniques; however, where the lines are located above the organic soils some potential for settlements greater than one inch are possible. The lines should be designed to anticipate substantial settlements. When the forcemain line is located within any organic soil zones, the organic soils will need to be removed to a depth of two feet below the bottom of the new pipe line and replaced with clean pipe bedding and backfill material. We note that the depth of material removed may vary during earthwork operations. Other excavated "clean" soils, approved by the project geotechnical engineer of record, may be used for pipe bedding and general backfill. Also, during the excavation process, any questionable soils encountered should be evaluated by a representative of Nutting Engineers.

We note that medium hard to refusal limestone/sandstone may be encountered at depths of ten to seventy-five feet below the existing ground surface as evidenced in the test borings. Due to the nature of directional drilling (horizontal), the size and relative hardness of the limestone formation cannot be accurately determined by the drilling methods employed in this study. Substantial excavation resistance, difficulty, and associative disruptive vibrations could occur within the sand/rock strata, possibly requiring special equipment. It is recommended that a directional drilling contractor that is very knowledgeable with local rock conditions be retained to perform the construction.



Backfill should be performed in accordance with the recommendations presented herein or as specified by the civil engineer. Sand and/or limestone fragments encountered above the unsuitable material layer may be stockpiled for later use.

Fill needed to bring the site to back to grade may be placed in lifts not exceeding twelve inches in loose thickness. Each lift should be thoroughly compacted until densities equivalent to at least 95 percent of the modified Proctor maximum dry density (ASTM D-1557) are uniformly obtained.

Fill should consist of granular soil, with less than ten percent passing the No. 200 sieve, free of rubble, organics (five percent or less) silt/clay, debris and other unsuitable material. The fill should have ASTM designation (D-2487) of GP, GW, SP, or SW, with a maximum particle size of no more than three inches or as otherwise approved by the geotechnical engineer.

Dewatering

The immediate groundwater table was encountered at a depth of approximately three and a half to five feet below the existing ground surface and is subject to variation as stated. As stated previously, other qualified personnel shall be responsible for the design, permitting, maintenance, and other factors related to dewatering and groundwater control, if needed. We note that during construction, if pipeline bedding compaction is needed then the groundwater level should be maintained at least two feet below the bottom of the excavations so that adequate compaction and density tests can be performed. If this is not feasible, our office should be contacted for additional consultation. **If the contractor needs to pump water out within an excavation, the contractor needs to monitor that sands are not being piped within the sand filled vertical solution holes within the limestone stratum. This may cause voids in locations far from the actual dewatering area. This may also result in the production of settlements beyond the construction area. It is advisable to perform pre-condition surveys of nearby structures prior to dewatering/construction operations.**

Trench Excavations

Based on the borings performed for this project, it appears that an unsupported vertical cut is not considered stable or safe during construction. An unsupported excavation may cause the collapse of the sidewalls when workmen are in the excavations. An excavation collapse can also damage the formwork and/or steel for the proposed structure as it is being constructed. Therefore, in our opinion and following the current regulations established by OSHA for excavations, cut slopes are required. If slopes cannot be maintained, or are not practical, then the excavation must be cased or shored. Shoring procedures should conform to those presented in the Occupational Safety and Health Administration (OSHA) standards.



We note that the values in the table are based on visual classification and if more exact values are needed, specific laboratory testing should be performed. Also, the depths of the soils were not included since the depths of each stratum vary. Also, appropriate factors of safety should be applied by the design engineer depending on the application. We are available to assist in the design process if needed.

TABLE OF GENERAL SOIL PARAMETERS

SOIL DESCRIPTION	SOIL UNIT WEIGHT (PCF)		ANGLE OF INTERNAL FRICTION (DEGREES)	EARTH PRESSURE COEFFICIENT	
	SATURATED	SUB-MERGED		ACTIVE (Ka)	PASSIVE (Kp)
Very Loose SAND	110	48	28	0.36	2.8
Loose SAND	115	53	30	0.33	3
Medium Dense to Dense SAND	120	58	32	0.31	3.25
Soft SILT or PEAT	90	28	0	1.0	1.0

If shoring involves installing sheet piles by vibratory methods, the vibrations should be monitored with seismograph equipment.

Excavations of five feet or more will need to be sloped or shored in accordance with State of Florida and OSHA recommendations. We expect that cut slopes made in the granular soils at an inclination of 2 horizontal to 1 vertical above the water table level and 3 horizontal to 1 vertical below the water table may remain stable for short periods of time provided they are not subjected to seepage, water flow, surcharge loads (e.g. from stockpiled spoil or equipment) and excessive vibration. **Within organic silt and peat soils excavations will need to be maintained at a 1 horizontal to 1 vertical.** Slope requirements of the Occupational Safety and Health Administration (OSHA) may be more restrictive and should be adhered to when applicable. The limestone encountered may generally be classified by OSHA as a Type B material, however where sands are encountered procedures should be in accordance with the Type C category.

For Generalized Asphalt Pavement Section: The following would apply within pavement areas which require trench repair. The pavement areas should be compacted to a minimum of 98 percent of the modified Proctor maximum dry density to a depth of at least 12 inches below the subgrade level. We recommend that stabilized subgrade having a minimum Limerock Bearing Ratio (LBR) of 40 be placed to a depth of approximately one foot below the base course.



The base course will range from approximately 6 to 8 inches, and should have a minimum LBR of 100. The pavement material and thickness should be based on design requirements as determined by the project Civil Engineer.

Within the subject area, it is possible that the natural ground water level may have an impact on the roadway pavement. Wet season water levels and major rain events should be anticipated to be somewhat higher than we encountered in our study, which may affect the pavement section. Please review our discussions of groundwater in the Groundwater Information section of this report.

Replacing/repairing the roadway and green areas should be in accordance with the Civil Engineers plans.

GENERAL INFORMATION

Our client for this geotechnical evaluation was:

Mr. Daniel Davila, P.E.
Chen-Moore and Associates
500 Cypress Creek Road, Suite 630
Fort Lauderdale, Florida 33309

The contents of this report are for the exclusive use of the client, the client's design & construction team and governmental authorities for this specific project exclusively. Information conveyed in this report shall not be used or relied upon by other parties or for other projects without the expressed written consent of Nutting Engineers of Florida, Inc. This report discusses geotechnical considerations for this site based upon observed conditions and our understanding of proposed construction for foundation support. Environmental issues including (but not limited to), soil and/or groundwater contamination, and other environmental considerations are beyond our scope of service for this project. As such, this report should not be used or relied upon for evaluation of environmental issues.

Prior to initiating compaction operations, we recommend that representative samples of the structural fill material to be used and acceptable in-place soils be collected and tested to determine their compaction and classification characteristics. The maximum dry density, optimum moisture content, gradation and plasticity characteristics should be determined. These tests are needed for compaction quality control of the structural fill and existing soils, and to determine if the fill material is acceptable.

If conditions are encountered which are not consistent with the findings presented in this report, or if proposed construction is moved from the location investigated, this office shall be notified immediately so that the condition or change can be evaluated and appropriate action taken.



The vibratory compaction equipment may cause vibrations that could be felt by persons within nearby buildings and could potentially induce structural settlements. Additionally, preexisting settlements may exist within these structures that could be construed to have been caused or worsened by the proposed vibratory compaction after the fact. Pre- and post conditions surveys of these structures along with the vibration monitoring during vibratory compaction could be performed to better evaluate this concern. The contractor should exercise due care during the performance of the vibratory compaction work with due consideration of potential impacts on existing structures. If potential vibrations and impacts are not considered tolerable, then alternate foundation modification techniques should be considered.


Nutting Engineers of Florida, Inc. shall bear no liability for the implementation of recommended inspection and testing services as described in this report if implemented by others. Nutting has no ability to verify the completeness, accuracy or proper technique of such procedures if performed by others.

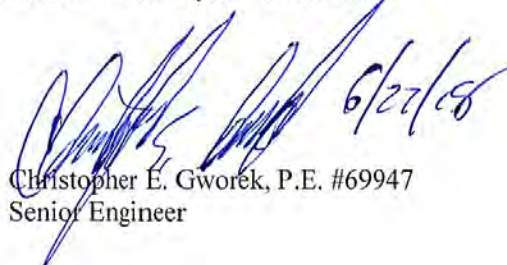
Excavations of five feet or more in depth should be sloped or shored in accordance with OSHA and State of Florida requirements.

The Geotechnical Engineer warrants that the findings, recommendations, specifications, or professional advice contained herein, have been presented after being prepared in accordance with general accepted professional practice in the field of foundation engineering, soil mechanics and engineering geology. No other warranties are implied or expressed.

We appreciate the opportunity to be of service on this project. If we can be of any further assistance, or if you need additional information, please contact us at your convenience.

Sincerely,
NUTTING ENGINEERS OF FLORIDA, INC.

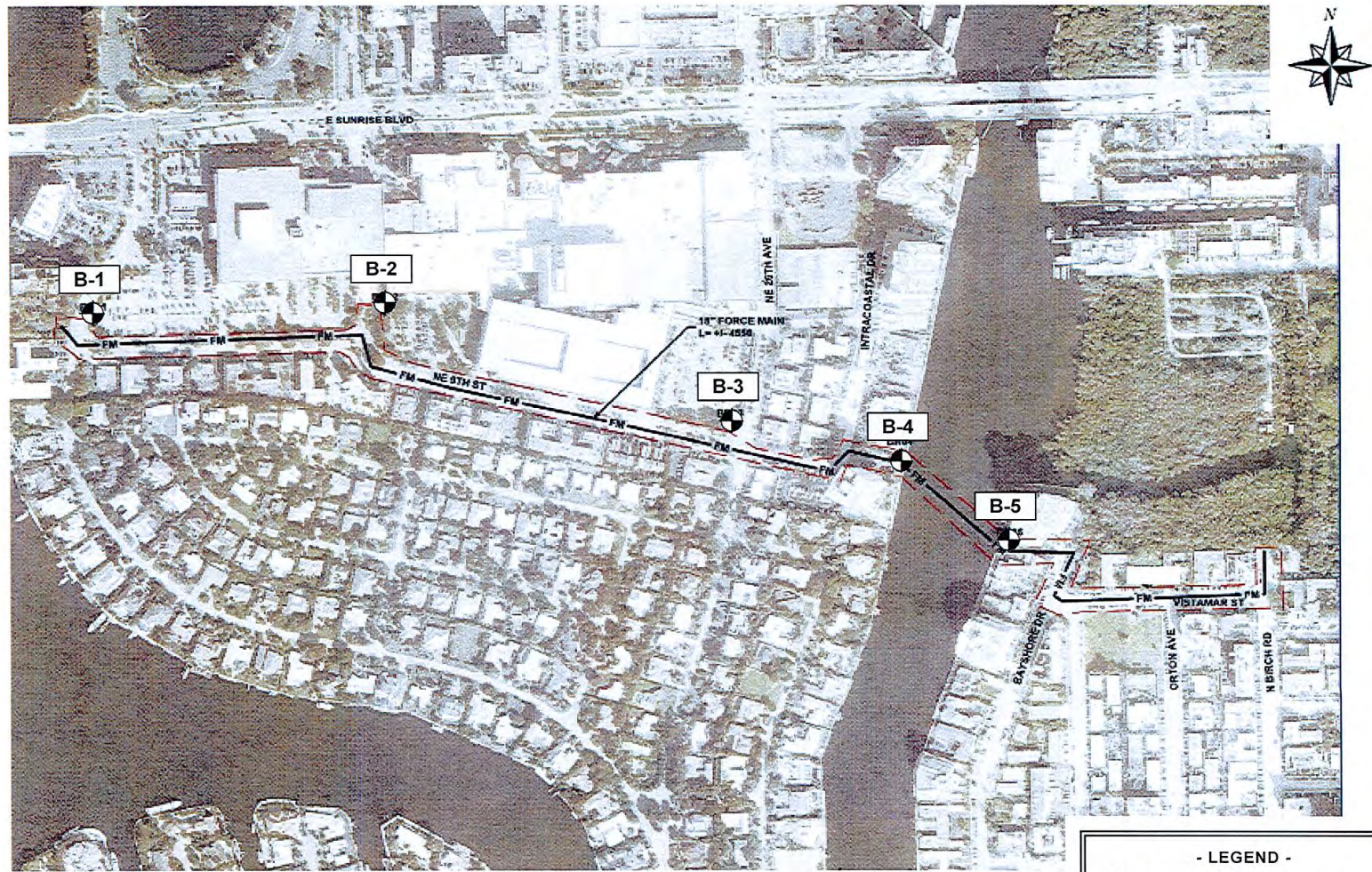

Richard C. Wohlforth, P.E.
Director of Engineering

 6/27/18
Christopher E. Gworek, P.E. #69947
Senior Engineer

Appendix: Boring Location Plan
Test Boring Results
Limitations of Liability
Soil Classification Criteria

REP CHEN MOORE BAYSHORE DRIVE FORCEMAIN ORGANICS CEG





- LEGEND -
 APPROX. TEST LOCATION



Chen Moore & Associates
Bayshore Drive 18-inch Force Main Rehabilitation
 Bayshore Drive
 Fort Lauderdale, Florida

ORDER NO. 14436.42

APPROXIMATE
 TEST
 LOCATION PLAN

GEOTECHNICAL EXPLORATION
 — Not to Scale —

FIG. 1



1310 Neptune Drive
Boynton Beach, FL, 33426

BORING NUMBER B-1

PAGE 1 OF 1

PROJECT NUMBER 14436.42
CLIENT Chen Moore & Associates, Inc. PROJECT NAME Bayshore Drive 18" Force Main Rehabilitation
PROJECT LOCATION Bayshore Drive, Fort Lauderdale, Florida

DATE STARTED 6/13/18 COMPLETED 6/13/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown

DRILLING METHOD Standard Penetration Boring

GROUND WATER LEVELS:

LOGGED BY Dancor Group CHECKED BY C. Gworek ☒ AT TIME OF DRILLING 3.6 ft

APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL	MC	LL	
						20	40	60	80
						□ FINES CONTENT (%) □			
						20	40	60	80
0		Dk. brown fine SAND, trace root Lt. brown fine SAND, some limestone fragments	SS 1	2-7-6-5	13		▲		
			SS 2	4-2-2-1	4	▲			
5		Gray SILT and SAND Dk. brown PEAT, some sand	SS 3	2-2-2-9	4	▲			
		Dk. brown fine SAND	SS 4	3-4-5-6	9	▲			
			SS 5	4-9-3-4	12	▲			
10									
		Lt. gray LIMESTONE	SS 6	16-15-12-12	27			▲	
15									
			SS 7	30-15-12-20	27			▲	
20		Bottom of hole at 20.0 feet.							

Disclaimer Nutting Engineers of Florida, Inc. accepts no liability for the consequences of the independent interpretation of drilling logs by others.



1310 Neptune Drive
Boynton Beach, FL, 33426

BORING NUMBER B-2

PAGE 1 OF 1

PROJECT NUMBER 14436.42CLIENT Chen Moore & Associates, Inc.PROJECT NAME Bayshore Drive 18" Forcemain RehabilitationPROJECT LOCATION Bayshore Drive, Fort Lauderdale, FloridaDATE STARTED 6/12/18 COMPLETED 6/12/18 SURFACE ELEVATION REFERENCE Approx. @ Road CrownDRILLING METHOD Standard Penetration Boring

GROUND WATER LEVELS:

LOGGED BY Danco Group CHECKED BY C. Gworek ☒ AT TIME OF DRILLING 4.2 ftAPPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL	MC	LL	
						20	40	60	80
						□ FINES CONTENT (%) □			
						20	40	60	80
0		ASPHALT 4"							
		Lt. brown fine SAND and LIMESTONE fragments	SS 1	33-24-14-10	38				▲
		Lt. brown to gray fine SAND and SHELL	SS 2	8-6-6-8	12	▲			
5		Dk. brown PEAT	SS 3	7-4-1-1	5	▲			
			SS 4	1-2-1-1	3	▲			
			SS 5	1-1-2-1	3	▲			
10		Lt. gray LIMESTONE and SAND							
			SS 6	9-19-17-20	36				▲
15									
			SS 7	18-15-19-21	34				▲
20		Bottom of hole at 20.0 feet.							

Disclaimer Nutting Engineers of Florida, Inc. accepts no liability for the consequences of the independent interpretation of drilling logs by others.



1310 Neptune Drive
Boynton Beach, FL., 33426

BORING NUMBER B-3

PAGE 1 OF 1

PROJECT NUMBER 14436.42
CLIENT Chen Moore & Associates, Inc. PROJECT NAME Bayshore Drive 18" Forcemain Rehabilitation
PROJECT LOCATION Bayshore Drive, Fort Lauderdale, Florida

DATE STARTED 6/12/18 COMPLETED 6/12/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown

DRILLING METHOD Standard Penetration Boring

GROUND WATER LEVELS:

LOGGED BY Dancor Group CHECKED BY C. Gworek ☒ AT TIME OF DRILLING 3.4 ft

APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL MC LL			
						20	40	60	80
0						□ FINES CONTENT (%) □			
						20	40	60	80
		Dk. brown fine SAND, trace limestone and root	SS 1	3-7-5-4	12	▲			
		Lt. brown fine SAND and LIMESTONE fragments							
		Lt. brown fine SAND, little limestone fragments	SS 2	2-1-1-W.O.R.	2	▲			
5		Dk. brown PEAT	SS 3	1-W.O.R.-1	0	▲			
			SS 4	2-1-1-2	2	▲			
			SS 5	2-1-1-2	2	▲			
10		Lt. gray LIMESTONE and SAND	SS 6	5-5-7-7	12	▲			
			SS 7	3-6-19-15	25		▲		
15									
20		Bottom of hole at 20.0 feet.	SS 8	20-25-23-26	48				▲

Disclaimer Nutting Engineers of Florida, Inc. accepts no liability for the consequences of the independent interpretation of drilling logs by others.



1310 Neptune Drive
Boynton Beach, FL, 33426

BORING NUMBER B-4

PAGE 1 OF 2

PROJECT NUMBER 14436.42
CLIENT Chen Moore & Associates, Inc. PROJECT NAME Bayshore Drive 18" Forcemain Rehabilitation
PROJECT LOCATION Bayshore Drive, Fort Lauderdale, Florida

DATE STARTED 6/13/18 COMPLETED 6/13/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown
DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:
LOGGED BY Dancor Group CHECKED BY C. Gworek ☒ AT TIME OF DRILLING 4.4 ft
APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL	MC	LL	
						20	40	60	80
						□ FINES CONTENT (%) □			
						20	40	60	80
0		ASPHALT 4"							
		Lt. brown fine SAND and LIMESTONE fragments	SS 1	12-10-9-9	19				
			SS 2	5-8-4-3	12				
5		Dk. brown PEAT	SS 3	1-1-1-1	2				
			SS 4	1-2-2-3	4				
		Gray fine SAND, trace to little organics	SS 5	6-4-3-3	7				
10									
			SS 6	10-17-18-20	35				
15		Lt. gray LIMESTONE, some sand							
			SS 7	8-8-8-7	16				
20									
			SS 8	8-6-6-6	12				
25									
			SS 9	5-4-1-3	5				
30									
			SS 10	1-W.O.R.-14	0				
35									

(Continued Next Page)

Disclaimer Nutting Engineers of Florida, Inc. accepts no liability for the consequences of the independent interpretation of drilling logs by others.



1310 Neptune Drive
Boynton Beach, FL., 33426

BORING NUMBER B-4

PAGE 2 OF 2

PROJECT NUMBER 14436.42CLIENT Chen Moore & Associates, Inc.PROJECT NAME Bayshore Drive 18" Forcemain RehabilitationPROJECT LOCATION Bayshore Drive, Fort Lauderdale, Florida

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL	MC	LL	
						20	40	60	80
						☐ FINES CONTENT (%) ☐			
						20	40	60	80
35		Lt. gray LIMESTONE, some sand <i>(continued)</i>							
40		Gray fine SAND	SS 11	2-5-4-8	9	▲			
45			SS 12	15-19-3-3	22		▲		
50		Lt. gray SANDSTONE, some sand lenses	SS 13	2-5-7-7	12	▲			
55			SS 14	50/3"	100+				>>▲
60			SS 15	7-4-3-4	7	▲			
65			SS 16	5-9-7-4	16		▲		
70			SS 17	12-12-15-26	27			▲	
75			SS 18	5-3-2-3	5	▲			

Bottom of hole at 75.0 feet.

Disclaimer Nutting Engineers of Florida, Inc. accepts no liability for the consequences of the independent interpretation of drilling logs by others.

5/8/2020 1:34 PM

p. 510



1310 Neptune Drive
Boynton Beach, FL, 33426

BORING NUMBER B-5

PAGE 1 OF 2


PROJECT NUMBER 14436.42
CLIENT Chen Moore & Associates, Inc. PROJECT NAME Bayshore Drive 18" Forcemain Rehabilitation
PROJECT LOCATION Bayshore Drive, Fort Lauderdale, Florida

DATE STARTED 6/12/18 COMPLETED 6/12/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown
DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:
LOGGED BY Dancor Group CHECKED BY C. Gworek ☒ AT TIME OF DRILLING 5.3 ft ft
APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL	MC	LL	
						20	40	60	80
						□ FINES CONTENT (%) □			
						20	40	60	80
0		Dk. brown fine SAND, trace limestone and root	SS 1	3-8-13-11	21		▲		
		Lt. brown fine SAND and LIMESTONE fragments	SS 2	8-6-5-6	11		▲		
5		Gray fine SAND, some shell and limestone fragments	SS 3	5-3-1-W.O.R.	4	▲			
			SS 4	1-1-1-1	2	▲			
			SS 5	2-3-3-5	6		▲		
10									
		Dk. brown PEAT and SILT	SS 6	2-2-2-2	4	▲			
15			SS 7	3-3-5-2	8		▲		
			SS 8	3-3-2-11	5	▲			
20		Lt. gray LIMESTONE, some sand	SS 9	6-5-7-9	12		▲		
			SS 10	9-8-7-9	15		▲		
25									
			SS 11	11-11-11-15	22		▲		
30									
			SS 12	50/5"	100+				>>▲
35									

(Continued Next Page)

Disclaimer Nutting Engineers of Florida, Inc. accepts no liability for the consequences of the independent interpretation of drilling logs by others.

 Nutting Engineers <small>of Florida, Inc., Established 1967 Your Project Is Our Commitment</small>		1310 Neptune Drive Boynton Beach, FL, 33426		BORING NUMBER B-5 PAGE 2 OF 2		
CLIENT <u>Chen Moore & Associates, Inc.</u>		PROJECT NUMBER <u>14436.42</u>				
PROJECT LOCATION <u>Bayshore Drive, Fort Lauderdale, Florida</u>		PROJECT NAME <u>Bayshore Drive 18" Force Main Rehabilitation</u>				
DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲ 10 20 30 40 PL MC LL 20 40 60 80 □ FINES CONTENT (%) □ 20 40 60 80
35		Lt. gray LIMESTONE, some sand <i>(continued)</i>				
40			SS 13	50/2"	100+	>>▲
45			SS 14	50/1"	100+	>>▲
50		Lt. gray fine SAND, some limestone fragments	SS 15	3-2-3-7	5	▲
55			SS 16	4-5-3-2	8	▲
60			SS 17	6-4-6-2	10	▲
65			SS 18	5-4-4-6	8	▲
70		Lt. gray SANDSTONE and SAND	SS 19	6-14-10-2	24	▲
75			SS 20	8-25-18-20	43	▲

Bottom of hole at 75.0 feet.

Disclaimer Nutting Engineers of Florida, Inc. accepts no liability for the consequences of the independent interpretation of drilling logs by others.

LIMITATIONS OF LIABILITY

WARRANTY

We warrant that the services performed by Nutting Engineers of Florida, Inc. are conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession in our area currently practicing under similar conditions at the time our services were performed. **No other warranties, expressed or implied, are made.** While the services of Nutting Engineers of Florida, Inc. are a valuable and integral part of the design and construction teams, we do not warrant, guarantee or insure the quality, completeness, or satisfactory performance of designs, construction plans, specifications we have not prepared, nor the ultimate performance of building site materials or assembly/construction.

SUBSURFACE EXPLORATION

Subsurface exploration is normally accomplished by test borings; test pits are sometimes employed. The method of determining the boring location and the surface elevation at the boring is noted in the report. This information is represented in the soil boring logs and/or a drawing. The location and elevation of the borings should be considered accurate only to the degree inherent with the method used and may be approximate.

The soil boring log includes sampling information, description of the materials recovered, approximate depths of boundaries between soil and rock strata as encountered and immediate depth to water data. The log represents conditions recorded specifically at the location where and when the boring was made. Site conditions may vary through time as will subsurface conditions. The boundaries between different soil strata as encountered are indicated at specific depths; however, these depths are in fact approximate and dependent upon the frequency of sampling, nature and consistency of the respective strata. Substantial variation between soil borings may commonly exist in subsurface conditions. Water level readings are made at the time and under conditions stated on the boring logs. Water levels change with time, precipitation, canal level, local well drawdown and other factors. Water level data provided on soil boring logs shall not be relied upon for groundwater based design or construction considerations.

LABORATORY AND FIELD TESTS

Tests are performed in *general* accordance with specific ASTM Standards unless otherwise indicated. All criteria included in a given ASTM Standard are not always required and performed. Each test boring report indicates the measurements and data developed at each specific test location.



ANALYSIS AND RECOMMENDATIONS

The geotechnical report is prepared primarily to aid in the design of site work and structural foundations. Although the information in the report is expected to be sufficient for these purposes, it shall not be utilized to determine the cost of construction nor to stand alone as a construction specification. Contractors shall verify subsurface conditions as may be appropriate prior to undertaking subsurface work.

Report recommendations are based primarily on data from test borings made at the locations shown on the test boring reports. Soil variations commonly exist between boring locations. Such variations may not become evident until construction. Test pits sometimes provide valuable supplemental information that derived from soil borings. If variations are then noted, the geotechnical engineer shall be contacted in writing immediately so that field conditions can be examined and recommendations revised if necessary.

The geotechnical report states our understanding as to the location, dimensions and structural features proposed for the site. **Any significant changes of the site improvements or site conditions must be communicated in writing to the geotechnical engineer immediately** so that the geotechnical analysis, conclusions, and recommendations can be reviewed and appropriately adjusted as necessary.

CONSTRUCTION OBSERVATION

Construction observation and testing is an important element of geotechnical services. The geotechnical engineer's field representative (G.E.F.R.) is the "owner's representative" observing the work of the contractor, performing tests and reporting data from such tests and observations. **The geotechnical engineer's field representative does not direct the contractor's construction means, methods, operations or personnel.** The G.E.F.R. does not interfere with the relationship between the owner and the contractor and, except as an observer, does not become a substitute owner on site. The G.E.F.R. is responsible for his/her safety, but has no responsibility for the safety of other personnel at the site. The G.E.F.R. is an important member of a team whose responsibility is to observe and test the work being done and report to the owner whether that work is being carried out in general conformance with the plans and specifications. The enclosed report may be relied upon solely by the named client.

SAND/SILT

N-VALUE (bpf)	RELATIVE DENSITY
0 - 4	Very Loose
5 - 10	Loose
11 - 29	Medium
30 - 49	Dense
>50	Very dense
100	Refusal

CLAY/SILTY CLAY

N-VALUE (bpf)	UNCONFINED COMP. STRENGTH (tsf)	CONSISTENCY
<2	<0.25	v. Soft
2 - 4	0.25 - 0.50	Soft
5 - 8	0.50 - 1.00	Medium
9 - 15	1.00 - 2.00	Stiff
16 - 30	2.00 - 4.00	v. Stiff
>30	>4.00	Hard

ROCK

N-VALUE (bpf)	RELATIVE HARDNESS	ROCK CHARACTERISTICS
N ≥ 100	Hard to v. hard	Local rock formations vary in hardness from soft to very hard within short vertical and horizontal distances and often contain vertical solution holes of 3 to 36 inch diameter to varying depths and horizontal solution features. Rock may be brittle to split spoon impact, but more resistant to excavation.
25 ≤ N ≤ 100	Medium hard to hard	
5 ≤ N ≤ 25	Soft to medium hard	

PARTICLE SIZE

Boulder	>12 in.
Cobble	3 to 12 in.
Gravel	4.76 mm to 3 in.
Sand	0.074 mm to 4.76 mm
Silt	0.005 mm to 0.074 mm
Clay	<0.005 mm

DESCRIPTION MODIFIERS

0 - 5%	Slight trace
6 - 10%	Trace
11 - 20%	Little
21 - 35%	Some
>35%	And

Major Divisions		Group Symbols	Typical names	Laboratory classification criteria									
Coarse grained soils (More than half of material is larger than No. 200 sieve size)	Gravels (More than half of coarse fraction is larger than No. 4 sieve size)	Clean gravels (little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4, $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 6 Not meeting all gradation requirements for GW								
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines									
		Gravels with fines (Appreciable amount of fines)	GW*	<table><tr><td>d</td><td>Silty gravels, gravel-sand-silt mixtures</td></tr><tr><td>u</td><td></td></tr></table>		d	Silty gravels, gravel-sand-silt mixtures	u		<table><tr><td>Aterberg limits below "A" line or P.L. less than 4</td><td rowspan="2">Above "A" line with P.L. between 4 and 7 are borderline cases requiring use of dual symbols.</td></tr><tr><td>Aterberg limits above "A" line with P.L. greater than 7</td></tr></table>	Aterberg limits below "A" line or P.L. less than 4	Above "A" line with P.L. between 4 and 7 are borderline cases requiring use of dual symbols.	Aterberg limits above "A" line with P.L. greater than 7
			d	Silty gravels, gravel-sand-silt mixtures									
	u												
	Aterberg limits below "A" line or P.L. less than 4	Above "A" line with P.L. between 4 and 7 are borderline cases requiring use of dual symbols.											
	Aterberg limits above "A" line with P.L. greater than 7												
	GC	Clayey gravels, gravel-sand-clay mixtures											
	Sands (More than half of coarse fraction is smaller than No. 4 sieve size)	Clean sands (little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines	$C_u = \frac{D_{60}}{D_{10}}$ greater than 6, $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 6 Not meeting all gradation requirements for SW								
			SP	Poorly graded sands, gravelly sands, little or no fines									
Sands with fines (Appreciable amount of fines)		SM*	<table><tr><td>d</td><td>Silty sands, sand-silt mixtures</td></tr><tr><td>u</td><td></td></tr></table>	d		Silty sands, sand-silt mixtures	u		<table><tr><td>Aterberg limits below "A" line or P.L. less than 4</td><td rowspan="2">Limits plotting in hatched zone with P.L. between 4 and 7 are borderline cases requiring use of dual system.</td></tr><tr><td>Aterberg limits above "A" line with P.L. more than 7</td></tr></table>	Aterberg limits below "A" line or P.L. less than 4	Limits plotting in hatched zone with P.L. between 4 and 7 are borderline cases requiring use of dual system.	Aterberg limits above "A" line with P.L. more than 7	
		d	Silty sands, sand-silt mixtures										
u													
Aterberg limits below "A" line or P.L. less than 4		Limits plotting in hatched zone with P.L. between 4 and 7 are borderline cases requiring use of dual system.											
Aterberg limits above "A" line with P.L. more than 7													
SC	Clayey sands, sand-clay mixtures												
Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows: Less than five percent.....GW, GP, SW, SP More than 12 percent.....GM, GC, SM, SC 5 to 12 percent.....Borderline cases requiring dual system**													
Fine grained soils (More than half of material is smaller than No. 200 sieve size)	Silt and clay (Liquid limit less than 50)	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity	<p>Plasticity Index</p> <p>Liquid Limit</p> <p>Plasticity Chart</p>									
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays										
		OL	Organic silts and organic silty clays of low plasticity										
	Silt and clay (Liquid limit greater than 50)	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts										
		CH	Inorganic clays of high plasticity, fat clays										
		OH	Organic clays of medium to high plasticity, organic silts										
	Highly organic soils	PT	Peat and other highly organic soils										

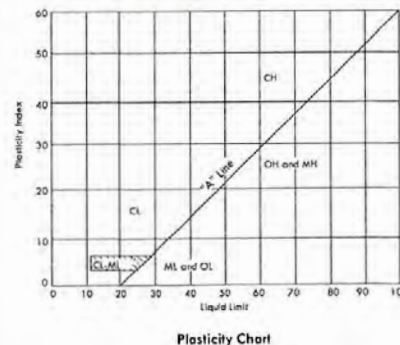


EXHIBIT K

PREAPPROVED MANUFACTURERS LIST



CITY OF FORT LAUDERDALE PREAPPROVED MANUFACTURERS LIST



Manufacturer		Wastewater	
		Model #	Comments
Air Release	ARI	D-020 SS	Combination
ARV Vault	US Foundry	7665 Sewer Lid	
Auto Blow Off	Hydro Guard	N/A	N/A
Casing End Seals	Advance Products	AC and AW	
	Cascade Water Works	CCES	
	CCI Pipeline	ESW/ESC	
	Power Seal	4810 ES	
Casing Spacer	Advance Products	S/12	
	Cascade Water Works	CCS	
	CCI Pipeline	CCS 12	
Fittings M/I	American	Class 350	P-401 Lined
	Sigma	Class 350	P-401 Lined
	Star	Class 350	P-401 Lined
	Tyler Union & Clow	Class 350	P-401 Lined
Flow Meter	Neptune	N/A	
Hydrants	Mueller	N/A	
DIP MJ Restraint	EBBA Iron Inc.	Series 1100	
	Uni-Flange	1400	
	Sigma	Series D	
	Star	Series 3000	
	Tyler Union	TufGrip Series TLD	
	EBBA Iron Inc.		
DIP Bell Joint Restraints	EBAA Iron Inc.	Series 1500 TD	
4"-12"	Uni-Flange	Series 1390	
	Sigma	Series PWP	
	Smith Blair	Series 165	
	Star	Series 3100	
DIP Bell Restraints 16"	EBAA Iron Inc.		
	Sigma		
	Star		
DIP Bell Restraint	American	Fast Grip Gasket	
	U. S. Pipe	Field lok 350 Gasket	
PVC Pipe MJ Restraints	EBBA Iron Inc.	Series 2000 PU	
	Uni-Flange	Series 1500	
	Sigma	Series SICE	
	Star	Series 4000	
	Tyler Union	Series TLP	
PVC Bell Joint	EBBA Iron Inc.	1500	
	Uni-Flange	Series 1390	
	Sigma	Series PWP	
	Smith Blair	Series 165	
	Star	Series 1100 C	
	Tyler Union	Tuff Grip 300 C	
PVC Bell Joint	Sigma	PV Lok PWP	
	Smith Blair	Series 165	
	Star	Series 1100 C	
PVC 900 DR18 Bell &	JM Eagle	C-900	Green
	Natl Pipe & Plastic Inc	C-900	Green
	N American Pipe Corp	C-900	Green
HDPE Drill	JM Eagle	HDPE	Green-DR11
	Performance Pipe	Driscopipes 4300	Green-DR11
	Poly Pipe, Inc.	EHMW	Green-DR11
	CertainTeed	Certa-Lok C900/RJ	Green
DIP Pipe	American	P-401 Lined	Green
	U. S. Pipe	P-401 Lined	Green
Service Saddles	Ford	FC202	
	JCM	Series 406	
	Romac	202 NS	
	Smith Blair	317	
	Mueller	DR2S	
Service Saddles HDPE	Ford	FCP 202	SDR9-SDR 17
	Romac	Series 202 N-H	SDR9-SDR 17
	Smith Blair	Series 317-1 for HDPE	SDR9-SDR 17
Corporation Ball Stops	Ford	N/A	
	Mueller	N/A	
PE Tubing	Endot	IPS SDR9	Green
	Drisco	IPS SDR9	Green
	Charter Plastics	PE3408/3608 IPS SDR9	Green
Poly Service Clamp	Ford	FSC w/full wrap gskt	3" wide for CTS

18" FORCE MAIN REPLACEMENT ACROSS THE
N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.
CFL PROJECT NO. 12389

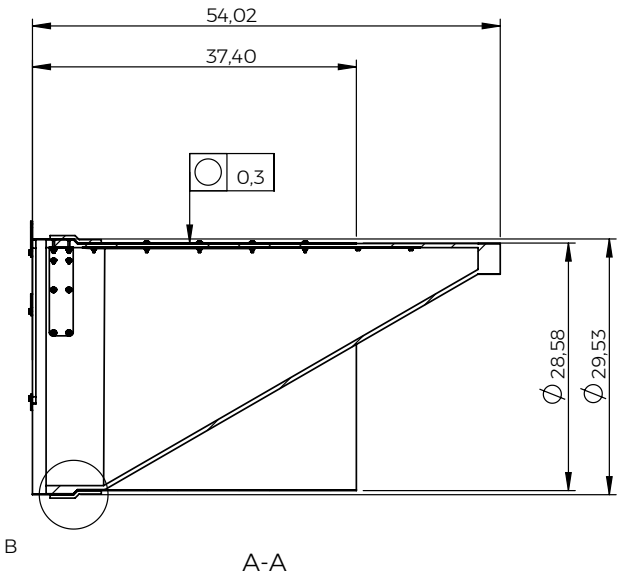
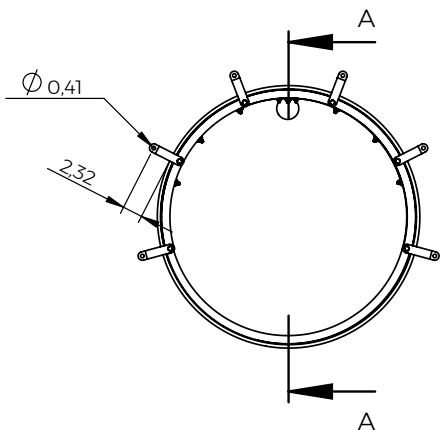


**CITY OF FORT LAUDERDALE
PREAPPROVED MANUFACTURERS LIST**

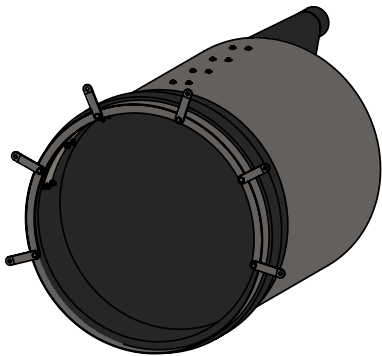
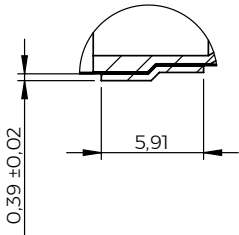


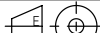

	Manufacturer	Wastewater	
		Model #	Comments
	Smith Blair	244 full circle redi clp	3" wide for CTS
Line Stops	JCM		Stainless Saddles
	Romac		Stainless Saddles
Tapping Sleeves	JCM	432 S. S.	
	Romac	SST	
Tapping Valves	American	American	
	Mueller	Mueller	
	Kennedy	Kennedy	
Check Valve	American	2100 Series	Rubber seal disc.
	Clow	159-02	14"-30"
	Clow	1106LW	2"-12"
Gate Valves	Mueller	N/A	
4" up	American	N/A	
	Clow	N/A	
	Kennedy	N/A	
Plug Valves	Dezurik	PEF	
	Val-Matic	Cam Centric	
	Clow		
	American		
Valve Box	Tyler Union	6850 Sewer	"SEWER" lid
	Mueller	10364 Sewer	"SEWER" lid
	Star	VB 001	"SEWER" lid
	Sigma	VB 261	"SEWER" lid
Pipe SDR 26 Gravity	JM Eagle	SDR26 Green	
	Natl Pipe & Plastics Inc	SDR26 Green	
	N. Am. Pipe Corp	SDR26 Green	
Fittings for SDR26	Harco	SDR26 Gasketed	
	JM Eagle	SDR26 Gasketed	
	Multi Fittings Corp	SDR26 Gasketed	
	Tigre USA, Inc	SDR26 Gasketed	
Manhole Lids	USF Fabrication, Inc	USF-170E	
Adjustment Rings	Ladtech, Inc	24R, 24S	With rope sealant CS2455
	Concrete riser rings	2" thru 6" risers	Not over 18 " of risers
	Brick & Mortar	Brick & Mortar	Not over 18 " of brick riser
Precast Concrete	Allied	2 coat (8 mil each) coat tar epoxy	
	Delzotto	"	"
	Dura Stress	"	"
	Hanson	"	"
	Mack	"	"
	Old Castle	"	"
Liners	GU liner	GU Liner	GU Barrel Liner
	AGRU liner	AGRU Liner	lines
Wetwell/Valve Box Concrete Coatings	Sewper Coat		
Wetwell/Valve Box Hatches Coatings	Epoxytech-Euroflex		
Wetwell/Valve Box Concrete Coatings	Raven		
Wetwell/Valve Box Concrete Coatings	Strong Seal		
Wetwell/Valve Box Concrete Coatings			
Jointing Material		Ram-Nek	101/103
Hatches	Halliday Product	Aluminum Hatches	Wet well hatches must have
	US Fabrication	Aluminum Hatches	Wet well hatches must have
Tracing Wire	Main lines & Services	Green	6 GA
	Directional Drills	Copperhead	Green
Tracing Wire Splice	Wire Connection	6 GA wire nut	N/A
	Waterproofing Conn.	SA-102	Up to 3 - 10 GA wires
ID Marking	3" Metallic Tape	3" x 1000' Det. Tape	Force Main buried
Backflows	Watts	N/A	
	Febco	N/A	
	Ames	N/A	
	Wilkins	N/A	
PRV's	Clay		
	Bermad		
Liftstation Pumps	Flygt		
	Wilo-EMU		
	HOMA		

18" FORCE MAIN REPLACEMENT ACROSS THE
N. RIVER FROM NE 9TH ST. TO N. BIRCH RD.
CFL PROJECT NO. 12389



DETAIL B
SCALE 1 : 10



Designed By RB	Approved By RB	Created Date 2017-09-20	Units [inch]	General Tolerance SS-ISO 2768-1 m	Scale 1:20		
Material AISI 304 / AISI 316			Comments			Project Number	
Weight [Lbs] 194		Box Volume [ft³] 28	Description WaStop NPS 30" Short				
 www.wapro.com							
		Article Number ws750-S-SH			Rev 2017-09-12	Sheet 1 (1) p. 518	

© 2017 Wapro AB. This document is subject to copyrights owned by Wapro AB. All amendments, republication, retransmission, and/or reproduction of all or any part of the document is expressly prohibited, unless the copyright owner or its material has expressly granted its prior written consent. All other rights are reserved.

STATEMENT OF QUALIFICATION CERTIFICATION

Please Note: All fields below must be completed. If the field does not apply to you, please note N/A in that field.

If you are a foreign corporation, you may be required to obtain a certificate of authority from the department of state, in accordance with Florida Statute §607.1501 (visit <http://www.dos.state.fl.us/>).

Company: (Legal Registration) _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone No. _____ FAX No. _____ Email: _____

Does your firm qualify for MBE or WBE status: MBE _____ WBE _____

ADDENDUM ACKNOWLEDGEMENT - Proposer acknowledges that the following addenda have been received and are included in the proposal:

<u>Addendum No.</u>	<u>Date Issued</u>	<u>Addendum No.</u>	<u>Date Issued</u>
_____	_____	_____	_____
_____	_____	_____	_____

VARIANCES: State any variations to specifications, terms and conditions in the space provided below or reference in the space provided below all variances contained on other pages of bid, attachments or bid pages. No variations or exceptions by the Proposer will be deemed to be part of the bid submitted unless such variation or exception is listed and contained within the bid documents and referenced in the space provided below. If no statement is contained in the below space, it is hereby implied that your bid/proposal complies with the full scope of this solicitation. If this section does not apply to your bid, simply mark N/A. **If submitting your response electronically through BIDSYNC you must click the exception link if any variation or exception is taken to the specifications, terms and conditions.**

The below signatory hereby agrees to furnish the following article(s) or services at the price(s) and terms stated subject to all instructions, conditions, specifications addenda, legal advertisement, and conditions contained in the bid/proposal. I have read all attachments including the specifications and fully understand what is required. By submitting this signed proposal I will accept a contract if approved by the City and such acceptance covers all terms, conditions, and specifications of this bid/proposal. The below signatory also hereby agrees, by virtue of submitting or attempting to submit a response, hereby agrees that in no event shall the City's liability for respondent's indirect, incidental, consequential, special or exemplary damages, expenses, or lost profits arising out of this competitive solicitation process, including but not limited to public advertisement, bid conferences, site visits, evaluations, oral presentations, or award proceedings exceed the amount of five hundred dollars (\$500.00). This limitation shall not apply to claims arising under any provision of indemnification or the City's protest ordinance contained in this competitive solicitation.

Submitted by:

Name (printed)

Signature

Date:

Title

Revised 4/15/15

E-VERIFY AFFIRMATION STATEMENTRFP/Bid /Contract No: Project Description:

Contractor/Proposer/Bidder 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 Contractor/Proposer/Bidder to perform employment duties within Florida during the term of the Contract, and,
- (b) all persons (including subcontractors/vendors) assigned by Contractor/Proposer/Bidder to perform work pursuant to the Contract.

The Contractor/Proposer/Bidder 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.

Contractor/Proposer/ Bidder Company Name: Authorized Company Person's Signature: Authorized Company Person's Title: Date:

5

CONTRACT PAYMENT METHOD

The City of Fort Lauderdale has implemented a Procurement Card (P-Card) program which changes how payments are remitted to its vendors. The City has transitioned from traditional paper checks to credit card payments via MasterCard or Visa as part of this program.

This allows you as a vendor of the City of Fort Lauderdale to receive your payments fast and safely. No more waiting for checks to be printed and mailed.

In accordance with the contract, payments on this contract will be made utilizing the City's P-Card (MasterCard or Visa). Accordingly, bidders must presently have the ability to accept these credit cards or take whatever steps necessary to implement acceptance of a card before the start of the contract term, or contract award by the City.

All costs associated with the Contractor's participation in this purchasing program shall be borne by the Contractor. The City reserves the right to revise this program as necessary.

By signing below you agree with these terms.

Please indicate which credit card payment you prefer:

☐ MasterCard

☐ Visa

Company Name

Name (Printed)

Signature

Date

Title

6

5

TRENCH SAFETY

Bidder acknowledges that included in the appropriate bid items of his bid and in the Total Bid Price are costs for complying with the Florida Trench Safety Act, Florida Statutes 553.60 – 553.64. The bidder further identifies the costs of such compliance to be summarized below:

Trench Safety Measure (Description)	Units of Measure (LF/SF)	Unit (Quantity)	Unit Cost	Extended Cost
A. <input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
B. <input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
C. <input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
D. <input type="text"/>	<input type="text"/>	<input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>

Total: \$

The bidder certifies that all trench excavation done within his control in excess of five feet (5') in depth shall be in accordance with the Occupational Safety and Health Administration's excavation safety standards, C.F.R. s. 1926.650 Subpart P., and the Florida Trench Safety Act, Florida Statutes 553.60-553.64.

Failure to complete the above may result in the bid being declared non-responsive.

DATE:
(SIGNATURE)

STATE OF: COUNTY OF:

PERSONALLY APPEARED BEFORE ME, the undersigned authority,

(Name of Individual Signing)

who, after first being duly sworn by me,
 affixed his/her signature in the space provided above on this
 day of , 20.

NOTARY PUBLIC

My Commission Expires:

6

5

NON-COLLUSION STATEMENT:

By signing this offer, the vendor/contractor certifies that this offer is made independently and *free* from collusion. Vendor shall disclose below any City of Fort Lauderdale, FL officer or employee, or any relative of any such officer or employee who is an officer or director of, or has a material interest in, the vendor's business, who is in a position to influence this procurement.

Any City of Fort Lauderdale, FL officer or employee who has any input into the writing of specifications or requirements, solicitation of offers, decision to award, evaluation of offers, or any other activity pertinent to this procurement is presumed, for purposes hereof, to be in a position to influence this procurement.

For purposes hereof, a person has a material interest if they directly or indirectly own more than 5 percent of the total assets or capital stock of any business entity, or if they otherwise stand to personally gain if the contract is awarded to this vendor.

In accordance with City of Fort Lauderdale, FL Policy and Standards Manual, 6.10.8.3,

3.3. City employees may not contract with the City through any corporation or business entity in which they or their immediate family members hold a controlling financial interest (e.g. ownership of five (5) percent or more).

3.4. Immediate family members (spouse, parents and children) are also prohibited from contracting with the City subject to the same general rules.

Failure of a vendor to disclose any relationship described herein shall be reason for debarment in accordance with the provisions of the City Procurement Code.

NAME**RELATIONSHIPS**

-

In the event the vendor does not indicate any names, the City shall interpret this to mean that the vendor has indicated that no such relationships exist.

6

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT

MINORITY BUSINESS ENTERPRISE (MBE) - WOMEN BUSINESS ENTERPRISE (WBE)

PRIME CONTRACTOR IDENTIFICATION FORM

In order to assist us in identifying the status of those companies doing business with the City of Fort Lauderdale, this form must be completed and returned with your bid package.

Name of Firm:

Address of Firm:

Telephone Number:

Name of Person Completing Form:

Title:

Signature:

Date:

City Project Number:

City Project Description:

Please check the item(s) which properly identify the status of your firm:

- ☐ Our firm is not a MBE or WBE.
- ☐ Our firm is a MBE, as at least 51 percent is owned and operated by one or more socially and economically disadvantaged individuals.
- ☐ American Indian ☐ Asian ☐ Black ☐ Hispanic
- ☐ Our firm is a WBE, as at least 51 percent is owned and operated by one or more women.
- ☐ American Indian ☐ Asian ☐ Black ☐ Hispanic



MBE/WBE CONTRACTOR INFORMATION

The City, in a continuing effort, is encouraging the increased participation of minority and women-owned businesses in Public Works Department related contracts. Along those lines, we are requiring that each firm provide documentation detailing their own programs for utilizing minority and women-owned businesses.

Submit this information as a part of this bid package and refer to the checklist, to ensure that all areas of concern are covered. The low responsive bidder may be contacted to schedule a meeting to discuss these objectives. It is our intention to proceed as quickly as possible with this project, so your cooperation in this matter is appreciated.

CONTRACTOR CHECKLIST

- ☐ List Previous City of Fort Lauderdale Contracts

	5
	6

- ☐ Number of Employees in your firm
--Percent (%) Women
--Percent (%) Minorities
--Job Classifications of Women and Minorities

	5
	6

- ☐ Use of minority and/or women subcontractors on past projects.

	5
	6

- ☐ Nature of the work subcontracted to minority and/or women-owned firms.

	5
	6

- ☐ How are subcontractors notified of available opportunities with your firm?

	5
	6

☐ Anticipated amount to be subcontracted on this project.

	5
	6

☐ Anticipated amount to be subcontracted to minority and/or women-owned businesses on this project.

	5
	6

6

5

**CONTRACTOR'S CERTIFICATE OF COMPLIANCE WITH
NON-DISCRIMINATION PROVISIONS OF THE CONTRACT**

The completed and signed form should be returned with the Contractor's submittal. If not provided with submittal, the Contractor must submit within three business days of City's request. Contractor may be deemed non-responsive for failure to fully comply within stated timeframes.

Pursuant to City Ordinance Sec. 2-187(c), bidders must certify compliance with the Non-Discrimination provision of the ordinance.

The Contractor shall not, in any of his/her/its activities, including employment, discriminate against any individual on the basis of race, color, national origin, religion, creed, sex, disability, sexual orientation, gender, gender identity, gender expression, or marital status.

1. The Contractor certifies and represents that he/she/it will comply with Section 2-187, Code of Ordinances of the City of Fort Lauderdale, Florida, as amended by Ordinance C-18-33 (collectively, "Section 2-187").
2. The failure of the Contractor to comply with Section 2-187 shall be deemed to be a material breach of this Agreement, entitling the City to pursue any remedy stated below or any remedy provided under applicable law.
3. The City may terminate this Agreement if the Contractor fails to comply with Section 2-187.
4. The City may retain all monies due or to become due until the Contractor complies with Section 2-187.
5. The Contractor may be subject to debarment or suspension proceedings. Such proceedings will be consistent with the procedures in section 2-183 of the Code of Ordinances of the City of Fort Lauderdale, Florida.

Authorized Signature

Print Name and Title

Date

6



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

ADDENDUM NO. 1

ITB No. 12368-903
TITLE: Fiveash Water Treatment Plant (WTP) Filter Media Rehabilitation
P12485

ISSUED: February 12, 2020

This addendum is being issued to make the following change(s):

1. Pre-Bid Meeting Date Change:

ORIGINAL:

February 18, 2020 at 10:30 AM

REVISED:

February 19, 2020 at 10:30AM

All other terms, conditions, and specifications remain unchanged.

Tanisha Boynton
Senior Procurement Specialist

Company Name: _____
(please print)

Bidder's Signature: _____

Date: _____



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

ADDENDUM NO. 2

RFP No. 12374-906
TITLE: Bayshore Drive Intracoastal Force Main Crossing
P12389

ISSUED: February 13, 2020

This addendum is being issued to make the following change(s):

1. Correct Project Information:

ORIGINAL:

ITB No. 12368-903
TITLE: Fiveash Water Treatment Plant (WTP) Filter Media Rehabilitation
P12485

REVISED:

RFP No. 12374-906
TITLE: Bayshore Drive Intracoastal Force Main Crossing
P12389

All other terms, conditions, and specifications remain unchanged.

Tanisha Boynton
Senior Procurement Specialist

Company Name: _____
(please print)

Bidder's Signature: _____

Date: _____



FINANCE DEPARTMENT

RFP PRE-PROPOSAL MEETING SIGN-IN SHEET



DATE: 02/19/2020

TIME: 10:30

☒ AM

☐ PM

OPENING DATE: 03/13/2020

PROCUREMENT CONTACT: Tanisha Boynton, Senior Procurement Specialist

RFP#: 12374-906

RFP TITLE: Bayshore Drive Intracoastal Force Main Crossing P12389

NAME	COMPANY	PHONE	EMAIL
Tanisha Boynton	City of Fort Lauderdale	954-828-4797	Tboynton@fortlauderdale.gov
Michael Jacobson	WMA Cons LLC	954-427-0230	whic@wmacons.com
JORGE BAEZ	FERREIRA CONSTRUCTION	305-605-6900	jbaez@ferreiraconstruction.com
Kodolpo Remon	300 Engineering	786-352-6788	remon@300engineering.com
Michael Janowski	Ric-Man Intl	954-426-1042	Michael@Ric-Man.us
Jose Custodio	WSP WSP	787-246-7264	jose.custodio@wsp.com
Rafael Vega	RK-MAN CONSTRUCTION FL	954-426-1221	RAFAEL@RK-MANFL.COM
ROBERT DAVIST	RK-IC	754-228-3101	rdavist@rk.com
Pop Mattingly	RK-IC	954-829-3711	rmattingly@rk.com
Kris Samples	Mckim & Creed	904-020-3200	ksamples@mckimcreed.com
Saul Bilancieri	Murphy Medina	754-422-6357	SaulB@MurphyMedina.com
Werner Reinert	WSP	305-389-0530	WERNER.REINERT@WSP.COM

Form approved By: Jodi S. Hart, Chief Procurement Officer | Page: 1 of 1 | Rev: 3 | Revision Date: 04/16/2018 | Author: LP Q:

\\PURCHASING\FINAL FORMS\FINAL FORMS - ISO COMPLIANT\Approved Forms\RFP Documents\RFP Pre-Proposal Meeting Sign-In Sheet



FINANCE DEPARTMENT

RFP PRE-PROPOSAL MEETING SIGN-IN SHEET



DATE: 02/19/2020

TIME: 10:30

☒ AM ☐ PM

OPENING DATE: 03/13/2020

PROCUREMENT CONTACT: Tanisha Boynton, Senior Procurement Specialist

RFP#: 12374-906

RFP TITLE: Bayshore Drive Intracoastal Force Main Crossing P12389

NAME	COMPANY	PHONE	EMAIL
Tanisha Boynton	City of Fort Lauderdale	954-828-4797	Tboynton@fortlauderdale.gov
Alex Diaz	Davez Contractor	954-495-0396	ADiaz@davezcontractor.com
Kris Samples	McKim & Creed	904-620-3206	ksamples@mckimcreed.com
ERNEST CANO	CEC CONSTRUCTION	(305) 310-5389	CONSTRUCTION@CECCONSTRUCT.COM
Teedee Phillips	National Trash Service	954-740-9695	teedee@nationaltrashservice.com
Randy Gonzalez	David Mancini & Sons	766 320 4350	Rgonzalez@dmcsi.co
James Till	Lanzo	954 979 0802	Estimating@Lanzo.org
Francisco Rios	CFL	954-828-5807	frios@fortlauderdale.gov
Scott Teschke	CA	954-828-6191	STESCHKE@carumcommunity.org

Form approved By: Jodi S. Hart, Chief Procurement Officer | Page: 1 of 1 | Rev: 3 | Revision Date: 04/16/2018 | Author: LP Q:

\\PURCHASING\FINAL FORMS - ISO COMPLIANT\Approved Forms\RFP Documents\RFP Pre-Proposal Meeting Sign-In Sheet



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

ADDENDUM NO. 3

RFP No. 12374-906
TITLE: Bayshore Drive Intracoastal Force Main Crossing
P12389

ISSUED: March 3, 2020

This addendum is being issued to make the following change(s):

1. REVISED EXHIBIT "A" DESIGN CRITERIA:

ORIGINAL:

Section III Project Requirements: Detailed Description

Detailed Description

Exhibit B includes technical specifications that describe the material quality standards and performance criteria for this Project. Exhibit C includes conceptual layouts that illustrate the project intent. These conceptual layouts are provided to convey sufficient information to allow the Respondent to prepare a response to the CITY's RFP.

It is recognized that the proposed work has the potential to adversely impact the aquatic environment of the Atlantic ICW, as well as to adversely impact the properties bordering the project area. Use of the horizontal directional drilling (HDD) method of pipe installation is proposed to avoid such impacts. However, it is also recognized that the existing utilities and site constraints of the Project present limitations for HDD installation and that certain precautionary measures during Open Cut (Trench) construction may be implemented which are fully protective of the environment and of the residential properties. Therefore, the CITY is requiring prospective DBFs to provide qualifications and price proposals for both HDD and open cut construction.

REVISED:

Section III Project Requirements: Detailed Description

Detailed Description

Exhibit B includes technical specifications that describe the material quality standards and performance criteria for this Project. Exhibit C includes conceptual layouts that illustrate the project intent. These conceptual layouts are provided to convey sufficient information to allow the Respondent to prepare a response to the CITY's RFP.



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

It is recognized that the proposed work has the potential to adversely impact the aquatic environment of the Atlantic ICW, as well as to adversely impact the properties bordering the project area. Use of the horizontal directional drilling (HDD) method of pipe installation is proposed to avoid such impacts. **Use of the open cut (trench) method for installation of the force main should be limited to those areas where HDD is not feasible or for making connections to the system.**

All other information in this section remains the same.

2. ADDITIONAL SPECIFICATIONS:

02751 Preparatory Cleaning, Root and Tuberculation Removal
02752 Pipe Inspection (Mains and Laterals)
02765 Cured-In-Place Pipe Lining

3. CADD FILES PROVIDED

All other terms, conditions, and specifications remain unchanged.

Tanisha Boynton
Senior Procurement Specialist

Company Name: _____
(please print)

Bidder's Signature: _____

Date: _____

**SECTION 02751
PREPARATORY CLEANING, ROOT AND TUBERCULATION REMOVAL**

**PART 1
GENERAL**

1.1 SCOPE

- A. This Section covers the preparatory cleaning of sewer lines and manholes as needed prior to the internal survey of the sewer lines by closed-circuit television. It also covers the preparatory cleaning, root and tuberculation removal of sewer lines and the cleaning of manholes prior to rehabilitation. The contractor shall furnish all necessary material, labor, equipment and services required for cleaning the specific sewer lines.
- B. Sewer Line Cleaning. The intent of sewer line cleaning is to remove foreign materials from the lines and restore the sewer to a minimum of 95% of the original carrying capacity or as required for proper seating of internal pipe joint sealing packers or performance of other specified work. It is recognized that there are some conditions such as broken pipe, tuberculation and major blockages that prevent cleaning from being accomplished or where additional damage would result if cleaning were attempted or continued. Should such conditions be encountered, the contractor will not be required to clean those specific sewer sections. If, in the course of normal cleaning operations, damage does result from preexisting and unforeseen conditions such as broken pipe, the contractor will not be held responsible.
- C. The designated sewer sections shall be cleaned using hydraulically propelled, high-velocity jet, or mechanically powered equipment. The equipment shall dislodge, transport and remove all sludge, mud, sand, gravel, rocks, bricks, grease, roots, sticks, tubercles and all other debris from the interior of the sewer pipe and manholes. The equipment and methods selected shall be based on the conditions of lines and manholes at the time the work commences and shall be satisfactory to the owner. If cleaning of an entire section cannot be successfully performed from one manhole, the equipment shall be set up on the other manhole and cleaning again attempted. If, again, successful cleaning cannot be performed or the equipment fails to traverse the entire manhole section, the cleaning effort shall be stopped and sufficient inspection performed so that the owner can be notified of the reason for inability to continue.
- D. During all cleaning and preparation operations all necessary precautions shall be taken to protect the sewer from damage. During these operations, precautions shall also be taken to insure that no damage is caused to public or private property adjacent to or served by the sewer or its branches.
- E. Satisfactory precautions shall be taken in the use of cleaning equipment. When hydraulically propelled cleaning tools (which depend upon water pressure to provide their cleaning force) or tools which retard the flow in the sewer line are used, precautions shall be taken to insure that the water pressure created does not damage or cause flooding of public or private property being served by the sewer. When possible, the flow of sewage in the sewer shall be utilized to provide the necessary pressure for hydraulic cleaning devices. The contractor shall employ operational hydrant meters to be obtained from the owner, and shall obtain water only from the owner's hydrants. No fire hydrant shall be obstructed in case of a fire in the area served by the hydrant.

PART 2 PRODUCT (NOT USED)

PART 3 EXECUTION

3.1 MATERIAL REMOVAL

- A. All sludge, dirt, sand, rocks, grease, roots, tubercles and other solid or semisolid material resulting from the cleaning operation shall be removed at the downstream manhole of the section being cleaned. Passing material from manhole section to manhole section, which could cause line stoppages, accumulations of sand in wet wells, or damage pumping equipment, shall not be permitted.
- B. Under no circumstances shall sludge, tubercles or other debris removed during these operations be dumped or spilled into the streets, ditches, storm drains or other sanitary sewers. The contractor shall remove from the site and properly dispose of all solids or semi-solids recovered during the cleaning operation. The contractor shall obtain permits and make arrangements as required to properly dispose of solids.
- C. The contractor is advised that he shall not dispose of this material by legal or illegal dumping on private or public property, by sale to others, or any means other than those given above.
- D. The general requirements for vehicles hauling such waste materials are as follows: Transport vehicles must be of 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 drainage, and that they are cleaned as often as is necessary to prevent deposit of material on roadways. Vehicles must be loaded within legal weight limits and operated safely within all traffic and speed regulations.
- E. The routes used by the contractor for the conveyance of this material on a regular basis shall be subject to approval by the governing authority having jurisdiction over such routes.
- F. All solids or semisolids resulting from the cleaning operations shall be removed from the site and disposed of by the contractor in a legal and sanitary manner as approved by appropriate authorities, at the contractor's cost. Copies of records of all disposals shall be furnished to the owner, indicating disposal site, date, amount and a brief description of material disposed. All materials shall be removed from the site no less often than at the end of each workday.

3.2 ROOT AND TUBERCLES REMOVAL

- A. Roots shall be removed in the designated sections and manholes where root intrusion is indicated on the work order. Special attention should be exercised during the cleaning operation to assure almost complete removal of roots from the joints. Any roots which could prevent the proper survey or rehabilitation shall be removed. Procedures may include the use of mechanical equipment such as rodding machines, bucket machines and winches using root cutters and porcupines, and equipment such as high-velocity jet cleaners.

- B. Contractor shall carefully evaluate the extent of tuberculation encountered in a pipe prior to proceeding with removal of tubercles. Use of remote power-driven cutting or chain devices during removal of tubercles must be performed avoiding collapse of the host pipe. Contractor must vet the equipment and proposed extent of tubercles removal and obtain authorization from the Project Manager before proceeding with the Work. In order to minimize the risk of sewer collapse during tuberculation removal it would be preferable to leave some of the existing tuberculation in place and proceed with subsequent lining of the host pipe by using a smaller diameter cure-in-place liner. Contractor shall consult with Project Manager on a case by case basis to get approval on how much removal would be acceptable based on the existing pipe diameter, flow and overall condition of the pipe.
- C. Contractor shall have all materials on site that are required to perform lining immediately after tubercles are removed to avoid any delay in necessary lining activities that could compromise the integrity of the host pipe.

3.3 ACCEPTANCE OF CLEANING OPERATION

- A. Acceptance of sewer line cleaning shall be made upon the successful completion of the television survey and shall be to the satisfaction of the owner. Liner installation shall not be initiated until the owner has reviewed the post-cleaning television survey tapes and has accepted the cleaning. If television survey shows the cleaning to be unsatisfactory, the contractor shall be required to reclean and reinspect the sewer line until the cleaning is shown to be satisfactory.
- B. In the event that special cleaning involving the mechanical removal of roots, grease, and/or tuberculation has been authorized, acceptance of sewer line cleaning shall be made upon the successful completion of the post-cleaning television survey and shall be to the satisfaction of the owner. Liner installation shall not be initiated until the owner has reviewed the post-cleaning television surveys and has accepted the cleaning.
- C. In addition, on all those lines which have sags or dips, to an extent that the television camera lens becomes submerged for three (3) or more feet during the television inspection, the contractor shall pull down the water, or draft the water by means of high-velocity jet cleaners. Water removal shall be performed until the television camera lens will no longer submerge. This requirement may be waived by the owner if the water, in which the camera lens is submerged, is clear enough to allow the identification of pipe defects, cracks, holes and location of service taps.

- END OF SECTION -

SECTION 02752
PIPE INSPECTION (MAINS AND
LATERALS)

PART 1 GENERAL

1.1 SCOPE

- A. The work consists of furnishing all labor, materials, accessories, equipment, tools, transportation, services and technical competence for performing all operations required to execute the survey to inspect the entire barrel of the forcemain, main line sewers, the pipe connections to the manholes, the lateral connections, and lateral piping using pan and tilt cameras for both mains and laterals.
- B. The survey shall show all defects of the forcemain.

1.2 GENERAL

- A. After Preparatory Cleaning (including special cleaning involving the mechanical removal of roots, grease, and/or tuberculation where authorized), and before and after rehabilitation work, the pipe sections shall be visually surveyed by means of closed-circuit television, the owner may be present at the inspections. The survey shall encompass the entire length of the subaqueous crossing and continue a minimum of fifty feet on each side of the crossing.
- B. Pre videos are those videos that the owner has requested of the contractor to video. Post construction videos are those videos taken after a repair. All videos in PACP, LACP formats and the associated reports are to be submitted, in color, indexed and tabulated to the owner. Only pre videos as described above will be payable, all other videos (such as work videos, post videos) are to be included with the respective rehabilitation items in the bid form. Pre videos will only be paid for once per line.
- C. All inspection information furnished by the contractor shall be written to digital media and shall be submitted in printed hard copy and electronic data format utilizing **WinCan™ V8**. The **WinCan™ software** shall support the NASSCO PACP and LACP coding. The records shall include, but not be limited to the following for mains and laterals: graphic inspection reports, still pictures of each defect, still pictures above ground of all cleanout locations or projected cleanout locations and others as requested, above ground pictures of sonde locations, and infiltration reports. Main and lateral reports will at a minimum be required to have the following tabulated in a spreadsheet format acceptable to the owner: Lift station number, manhole numbers, main footage, lateral location on the main footage, side of the main the sewer lateral is located on as observed from the upstream manhole looking towards the downstream manhole, lateral count on the run, pipe sizes for all piping surveyed (mains and laterals), notation whether a cleanout is visible, lined or unlined pipe, house address (with lateral survey), LF surveyed, **and the contractor comments on suggested rehabilitation required**. All the reports, videos and suggestions are to be tabulated and turned in for the city to review.

- D. All video files and reports shall be labeled consistent with stationing provided in the design plans.

1.3 EQUIPMENT

- A. The television cameras used for the surveys shall be specifically designed and constructed for the surveys and shall be of the pan and tilt type. Lighting for the camera shall be suitable to allow a clear picture of the entire periphery of the pipe. The camera shall be operative in 100% humidity conditions. The camera, television monitor, and other components of the video system shall be capable of producing a minimum 700 line resolution color video picture. The contractor shall maintain camera in clear focus at all times. Picture quality and definition shall be to the satisfaction of the owner; and if unsatisfactory, equipment shall be removed and replaced with adequate equipment at no additional cost to the owner.
- B. The video camera shall include a titler feature capable of showing on the tape the following information:
 - 1. City and State
 - 2. Date/Time
 - 3. Contractor's Name
 - 4. Line Size, Material, and Depth
 - 5. Manhole Identification (both manholes)
 - 6. On-going Footage Counter

1.4 SUBMITTALS

- A. The contractor shall submit shop drawings and other information. The contractor's submittals shall include sample spreadsheet tabulation, sample video & reports for mains and laterals. No video surveys will take place until submittals are approved by the owner. The approved submittals will become the benchmark for all future video acceptance and or rejection. Rejected work will be redone at no additional cost to the owner.

PART 2 PRODUCTS (NOT

USED) PART 3 -- EXECUTION

3.1 PRECONSTRUCTION SURVEY

- A. Procedure
 - 1. Prior to any repair work, the entire sewer line shall be televised as stated in 1.2A. Videotaping shall commence prior to entering the pipe.
 - 2. The camera shall be moved through the line in either direction at a moderate rate, stopping when necessary to permit proper documentation of the sewer's condition. In no case shall the television camera be pulled at a speed greater than 30 feet per minute. Manual winches, power winches, TV cable, powered rewinds and tractors or other devices that do not obstruct the camera view or interfere with proper documentation of the sewer conditions shall be used to move the camera through the sewer line. If the camera is being pulled through the sewer line by a hydraulic cleaning unit hose the cleaning nozzle shall be located a minimum of eight (8) feet away from the camera to allow

a clear, unobstructed view. Jet nozzle shall be used in front of camera while televising through a dip to draft out water. If, during the survey operation, the television camera will not pass through the entire forcemain span the contractor shall set up his equipment so that the survey can be performed from the opposite side, no additional payment for this setup will be made.

3. Movement of the television camera shall be temporarily halted for a minimum of five seconds at each visible point source of infiltration and/or inflow until the leakage rate from that source is quantified. The camera shall be stopped at all connections and the service lateral shall be inspected with the pan and tilt camera and look up the lateral and at the entire main / lateral connection. The camera shall also be stopped at active service connections where flow is discharging. If the discharge persists, the property involved shall be checked to determine whether or not the discharge is sewage. If no flows are being discharged from the building, it shall be considered that the observed flow is infiltration/inflow.

B. Field Documentation

1. Television Inspection Forms (Survey Logs). Printed and electronically stored location records shall be kept by the contractor and will clearly show the location in relation stationing of each defect observed during survey. The television inspection forms to be utilized by the contractor shall be those mandated by NASSCO's PACP and LACP. Both the "Header" and "Details" information of the form shall be entered as indicated in the PACP standards. The survey logs shall include, but not be limited to the following information:

- a. Correct pipe segment/manhole numbers
- b. Correct address of manhole location
- c. Pipe size, length and material
- d. Manhole depth (up and downstream)
- e. Lift station service area number
- f. Video number and index
- g. Footage locations, descriptions and estimated leak rates for visible point sources of infiltration inflow.
- h. Footage locations and descriptions of structural defects such as obstructions, any remaining root intrusion, offset joints, cracked pipe, fractured pipe, holes, collapses, sags, protruding service connections and/or blockages in the pipe.

The terminology to be used shall follow NASSCO's PACP and LACP standards. All information will be recorded and a copy of such electronic records and a hard copy will be supplied to the owner, indexed and tabulated.

2. Photographs: Digital photographs of the video shall be taken by the contractor and included in the digital WinCan report. Photographs will include, pipe defects, manhole connections, lateral connections, property line cleanouts, or property line sonde locates. Above ground pictures of any sonde locates are to be included in the reports.

3. Locating: Sonde locating is required as part of the tv survey for mains and laterals, to locate any point repairs that are necessary..
4. Video Recordings: The purpose of video recording shall be to supply a visual and audio record of problem areas of the lines that may be replayed. Recording playback shall be at the same speed that it was recorded. Slow motion or stop motion playback features shall be supplied by the contractor. Once recorded, the video and reports become property of the owner. The contractor shall have all video and necessary playback equipment readily accessible for review by the owner during the project.

Videos displaying poor video quality will be deemed unacceptable and no payments will be made until lines are retelevised and a new video is submitted. Poor quality refers to, but is not limited to, the following: grease or debris on the lens, camera under water, picture too dark, excessive camera speed through the line, lines improperly cleaned, poor/no audio, etc.

5. Audio. All video shall have audio record. As a preamble, at the beginning of the video, the contractor shall state the following: "(Contractor's Name) is performing a pre/post TV survey for Job No. _____ (provided by the owner)". State date, time, operator's name, area, upstream manhole number to downstream manhole number, pipe size and material, upstream manhole depth, and TV survey will be from up- to downstream, or down- to upstream. The contractor shall verbally state station and position of all laterals and defects. At the end of each line, state: "End of line", upstream manhole number to downstream manhole number, and total linear footage.

3.2 POST CONSTRUCTION SURVEY

A. Procedure

1. The same procedures shall be used as indicated in PRECONSTRUCTION SURVEY.
2. In addition, the contractor shall stop camera at all point repairs, sectional repairs, lateral connection repairs and reinstated laterals, and inspect entire repaired pipe section and all material ends and connections. Close attention is required for the inspection of all overlapping materials, manhole connections and lateral connections.
3. The contractor shall invert white foreground to black as needed in the line section with light background.
4. In the case of a post-liner survey, the contractor shall fully televise the ends of the all liners at the manholes, main/lateral connections and upstream lateral liner ends so that the finished ends of the liner to the host pipe can be evaluated.

B. Documentation

1. The same documentation shall be provided as indicated in PRECONSTRUCTION SURVEY.

- END OF SECTION -



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

ADDENDUM NO. 4

RFP No. 12374-906
TITLE: Bayshore Drive Intracoastal Force Main Crossing
P12389

ISSUED: March 4, 2020

This addendum is being issued to make the following change(s):

1. Clarification: Property Coverage (Builder's Risk)

In relation to the Builder's Risk Coverages, specifically Flood and Windstorm Coverage, the City has agreed to reduce the 100% requirement.

The City can accept a reduced percentage as long as your insurance company documents that there is flood/windstorm coverage. There does not appear to be much exposure for this project, 50% is acceptable.

All other terms, conditions, and specifications remain unchanged.

Tanisha Boynton
Senior Procurement Specialist

Company Name: _____
(please print)

Bidder's Signature: _____

Date: _____



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

ADDENDUM NO. 5

RFP No. 12374-906
TITLE: Bayshore Drive Intracoastal Force Main Crossing
P12389

ISSUED: March 11, 2020

This addendum is being issued to make the following change(s):

1. Bids Due Date Change:

Original Due Date: March 13, 2020 at 2:00PM

Revised Due Date: March 20, 2020 at 2:00PM

All other terms, conditions, and specifications remain unchanged.

Tanisha Boynton
Senior Procurement Specialist

Company Name: _____
(please print)

Bidder's Signature: _____

Date: _____



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

ADDENDUM NO. 6

RFP No. 12374-906
TITLE: Bayshore Drive Intracoastal Force Main Crossing
P12389

ISSUED: March 12, 2020

This addendum is being issued to make the following change(s):

1. DELETED/REMOVED:

Technical Specification 02765 Cured-In-Place Pipe Lining is hereby removed from this solicitation. Instead the City will require the DBF design, size, install and test the CIPP liner in accordance with ASTM Standard F1216 for a Pressure Pipe in a fully deteriorated state with a working pressure of 40 PSI.

Note: The Price Proposal remains the same.

All other terms, conditions, and specifications remain unchanged.

Tanisha Boynton
Senior Procurement Specialist

Company Name: _____
(please print)

Bidder's Signature: _____

Date: _____



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

ADDENDUM NO. 7

RFP No. 12374-906
TITLE: Bayshore Drive Intracoastal Force Main Crossing
P12389

ISSUED: March 17, 2020

This addendum is being issued to make the following change(s):

1. Bids Due Date Change:

Original Bids Due Date: March 20, 2020 at 2:00PM

New Bids Due Date: April 28, 2020 at 2:00PM

All other terms, conditions, and specifications remain unchanged.

Tanisha Boynton
Senior Procurement Specialist

Company Name: _____
(please print)

Bidder's Signature: _____

Date: _____



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

ADDENDUM NO. 8

RFP No. 12374-906
TITLE: Bayshore Drive Intracoastal Force Main Crossing
P12389

ISSUED: April 24, 2020

This addendum is being issued to make the following change(s):

1. Note:

This solicitation replaces 12374-906.

Please be advised that effective immediately, and until further notice, all Invitation to Bids, Request For Proposals, Request For Qualifications, and other solicitations let by the City of Fort Lauderdale will be opened electronically via BIDSYNC.COM at the date and time indicated on the solicitation. This notice supersedes any indication on any current unopened solicitation that may give a specific location for the solicitation opening. All openings will be held on the BIDSYNC.COM platform. Once the Procurement Specialist opens the solicitation, the bid tabulations may be viewed immediately on a computer, laptop, cell phone, or any other device with WiFi access. The opening may also be viewed in real time through a "Webex meeting" or similar type platform.

Anyone requesting assistance or having further inquiry in this matter must contact the Procurement Specialist indicated on the solicitation, via the question and Answer forum on Bidsync.com before the Last Day for Questions indicated in the Solicitation.

2. Solicitation Number Changed:

Original Solicitation Number: 12374-906 R2

Revised Solicitation Number: 12374-906 C19

3. Bids Due Date Change:

Original Bids Due Date: April 28, 2020 at 2:00PM

New Bids Due Date: May 1, 2020 at 2:00PM

All other terms, conditions, and specifications remain unchanged.

Tanisha Boynton
Senior Procurement Specialist



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

Company Name: _____
(please print)

Bidder's Signature: _____

Date: _____



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

ADDENDUM NO. 9

RFP No. 12374-906
TITLE: Bayshore Drive Intracoastal Force Main Crossing
P12389

ISSUED: April 27, 2020

This addendum is being issued to make the following change(s):

1. Bid Due Date Change:

Original: May 1, 2020 at 2:00PM

New Bids Due Date: May 7, 2020 at 2:00PM to allow offers more time to submit proposals via BidSync.

2. Bid Opening Information:

Bid Opening will be conducted via WebEx view instructions

1. Join via telephone by dialing 1-510-338-9438
 - a. When prompted enter the unique Meeting Access Code followed by #.
 - b. When prompted enter an Attendee ID Or press # if you don't know your Attendee ID
 - c. No Videoconferencing or Screensharing available with this option.

Meeting number (access code): 626 539 652

Meeting password: rgC677KiiJ8

[Join meeting](#)

Join by phone

Tap to call in from a mobile device (attendees only)

[+1-510-338-9438](tel:+15103389438) USA Toll

[+1-617-315-0704](tel:+16173150704) USA Toll (Boston)

[Global call-in numbers](#)



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

Join from a video system or application

Dial 626539652@cof.my.webex.com

You can also dial 173.243.2.68 and enter your meeting number.

Join using Microsoft Lync or Microsoft Skype for Business

All other terms, conditions, and specifications remain unchanged.

Tanisha Boynton
Senior Procurement Specialist

Company Name: _____
(please print)

Bidder's Signature: _____

Date: _____



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

ADDENDUM NO. 10

RFP No. 12374-906
TITLE: Bayshore Drive Intracoastal Force Main Crossing
P12389

ISSUED: May 8, 2020

This addendum is being issued to make the following change(s):

1. Bid Due Date Change:

Original: May 7, 2020 at 2:00PM

New Bids Due Date: May 15, 2020 at 2:00PM to allow offers more time to submit proposals and proposal bond via BidSync.

2. Bid Opening Information:

Bid Opening will be conducted via WebEx view instructions

1. Join via telephone by dialing 1-510-338-9438
 - a. When prompted enter the unique Meeting Access Code followed by #.
 - b. When prompted enter an Attendee ID Or press # if you don't know your Attendee ID
 - c. No Videoconferencing or Screensharing available with this option.

Meeting number (access code): 626 539 652

Meeting password: rgC677KiiJ8

[Join meeting](#)

Join by phone

Tap to call in from a mobile device (attendees only)

[+1-510-338-9438](tel:+15103389438) USA Toll

[+1-617-315-0704](tel:+16173150704) USA Toll (Boston)

[Global call-in numbers](#)



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

Join from a video system or application

Dial [291386229@cof.my.webex.com](tel:291386229)

You can also dial 173.243.2.68 and enter your meeting number.

Join using Microsoft Lync or Microsoft Skype for Business

3. Page 1, Section 1.2 Submission Deadline:

Original Language Deleted In Its Entirety

1.2 Submission Deadline

Responses shall be delivered during the City's normal business hours in a sealed envelope. The sealed envelope should be marked on the outside: RFP No. 12374-906, Bayshore Drive Intracoastal Force Main Crossing.

Location: Fort Lauderdale City Hall
Attention: Procurement Services Division
100 N. Andrews Avenue, #619,
Fort Lauderdale, FL 33301

Day/Date: **March 13, 2020**

Time: 2:00 PM EST

At this time and place, the responses will be publicly opened, and the names of the firms will be read. After the deadline, responses will not be accepted. Firms are responsible for making certain that their proposal is received at the location specified by the due date and time. The City is not responsible for delays caused by any mail, package or courier service, including the U.S. mail, or caused by any other occurrence or condition. The City's normal business hours are Monday through Friday, 8:00 a.m. through 5:00 p.m. excluding holidays observed by the City.

Please go to <https://www.fortlauderdale.gov/departments/human-resources/recruitment-testing-selection/employment-benefits> for a complete list of all City observed holidays

Revised Language- Change To:

1.2 Submission Deadline

Responses shall be submitted electronically via BidSync (www.bidsync.com) in response to RFP No. 12374-906, Bayshore Drive Intracoastal Force Main Crossing prior to the designated bids due date and time indicated in the solicitation.



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

Please be advised that effective immediately, and until further notice, all Invitation to Bids, Request For Proposals, Request For Qualifications, and other solicitations let by the City of Fort Lauderdale will be opened electronically via BIDSYNC.COM at the date and time indicated on the solicitation. This notice supersedes any indication on any current unopened solicitation that may give a specific location for the solicitation opening. All openings will be held on the BIDSYNC.COM platform. Once the Procurement Specialist opens the solicitation, the bid tabulations may be viewed immediately on a computer, laptop, cell phone, or any other device with WiFi access. The opening may also be viewed in real time through a "Webex meeting" or similar type platform.

Anyone requesting assistance or having further inquiry in this matter must contact the Procurement Specialist indicated on the solicitation, via the question and Answer forum on Bidsync.com before the Last Day for Questions indicated in the Solicitation."

Please go to <https://www.fortlauderdale.gov/departments/human-resources/recruitment-testing-selection/employment-benefits> for a complete list of all City observed holidays

4. Page 6, Section 2, 2.1 Definitions

Original Definition Deleted In Its Entirety

Guaranteed Maximum Price (GMP) – the mutually agreed upon contract price to be paid to the DBF for the work is reimbursed on a time and materials basis, with the DBF agreeing to complete the work without additional payment, if a fixed price ceiling is reached. The guaranteed maximum price is not subject to increase, except as expressly allowed by the City. Savings below the maximum guaranteed are shared between owner and DBF, whereas the DBF assumes the responsibility for any overrun beyond the guaranteed maximum price.

Revised Definition - Change To:

Guaranteed Maximum Price (GMP) – the mutually agreed upon contract price to be paid to the DBF for the work with the DBF agreeing to complete the work without additional payment. The guaranteed maximum price is not subject to increase, except as expressly allowed by the City. Savings below the maximum guaranteed are shared between owner and DBF, whereas the DBF assumes the responsibility for any overrun beyond the guaranteed maximum price.

5. Page 9 of RFP: Section 2.7 Proposal Bond Requirements

Original Proposal Bond Requirements Change From:

2.7 Proposal Bond

A certified check, cashier's check or bank officer's check, for **five percent (5%)** of the Price Proposal, made payable to the City of Fort Lauderdale, Florida, or proposal bond in such amount, shall accompany each proposal as evidence of the good faith and responsibility of the proposer. The check or bond shall be retained by the City as liquidated damages should the proposer refuse to or fail to enter into a contract for the execution of the



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

work embraced in this proposal, in the event the proposal of the proposer is accepted. Retention of such amount shall not be construed as a penalty or forfeiture.

The above bond or check shall be a guarantee that the proposer will, if necessary, promptly execute a satisfactory contract and furnish good and sufficient bonds. As soon as a satisfactory contract has been executed and the bonds furnished and accepted, the check or bond accompanying the proposal of the successful proposer will be returned to him/her. The certified or other checks or bid bonds of the unsuccessful proposers will be returned to them upon the acceptance of the proposal of the successful proposer. If the successful proposer shall not enter into, execute, and deliver such a contract and furnish the required bonds within fifteen (15) days after receiving notice to do so, the certified or other check or bid bond shall immediately become the property of the City of Fort Lauderdale as liquidated damages.

Additional insurance and bonds may be required for the construction phase of the project.

Revised Proposal Bond Language - Change To:

2.7 Proposal Bond

A bond, for **five percent (5%)** of the Price Proposal, shall accompany each proposal as evidence of the good faith and responsibility of the proposer.

Proposers can submit proposal bond:

- 1) Proposers may **electronically upload** their original executed proposal bond on Bidsync to accompany their electronic proposal. Proposal bond shall be written by a surety insurer authorized to do business in the State of Florida as surety, in accordance with Section 255.05, Florida Statutes. Insufficient proposal bond surety shall automatically constitute a failure on the part of the Consultant and shall be grounds for rejection of your proposal.

The bond shall be retained by the City as liquidated damages should the proposer refuse to or fail to enter into a contract for the execution of the work embraced in this proposal, in the event the proposal of the proposer is accepted. Retention of such amount shall not be construed as a penalty or forfeiture.

The above bond shall be a guarantee that the proposer will, if necessary, promptly execute a satisfactory contract and furnish good and sufficient bonds. As soon as a satisfactory contract has been executed and the bonds furnished and accepted, proposal bond accompanying the proposal of the successful proposer will be returned to him/her. If the successful proposer shall not enter into, execute, and



City of Fort Lauderdale • Procurement Services Division
100 N. Andrews Avenue, 619 • Fort Lauderdale, Florida 33301
954-828-5933 Fax 954-828-5576
purchase@fortlauderdale.gov

deliver such a contract and furnish the required bonds within fifteen (15) days after receiving notice to do so, proposal bond shall immediately become the property of the City of Fort Lauderdale as liquidated damages. Retention of such amount shall not be construed as a penalty or forfeiture.

Additional insurance and bonds may be required for the construction phase of the project.

6. Page 25, Section 4.1.6 Number of Copies
Original Requirements - Delete First Paragraph

4.1.6 Number of Copies

Submitters must submit one **(1) original, and one (1) copy, plus four (4) electronic PDF copy on USB drives** in a sealed package delivered to: City of Fort Lauderdale, City Hall, Division of Procurement Services, 100 N. Andrews Avenue, Room 619, Fort Lauderdale, FL 33301. The name and address of the submitter should appear on the outside of the submittals and the package should include the RFP number and title. The submittal copy shall be identical in content. Submitter's cost incurred in responding to this RFP is the submitter's alone and the City does not accept liability for any such cost. The City will not and shall not be required to return any item submitted.

Revised Number of Copies Requirement - Change To:

4.1.6 Please be advised that effective immediately, and until further notice, all Technical and Price Proposals offers to this Request For Proposal, shall be submitted electronically via BidSync and will be opened electronically via BIDSYNC.COM at the date and time indicated on the solicitation.
PAPER BID SUBMITTALS WILL NOT BE ACCEPTED. BIDS MUST BE SUBMITTED ELECTRONICALLY VIA BIDSYNC.COM

All other terms, conditions, and specifications remain unchanged.

Tanisha Boynton
Senior Procurement Specialist

Company Name: _____
(please print)

Bidder's Signature: _____

Date: _____

5

Question and Answers for Bid #12374-906 R2 - Bayshore Drive Intracoastal Force Main Crossing - Design Build P12389

Overall Bid Questions

Question 1

Given the most recent addendum, are hard copies/etc. no longer required and we are to just submit our proposal through BidSync? (Submitted: Apr 24, 2020 9:20:24 AM EDT)

Answer

- Due to Covid-19, all proposals must be submitted electronically through BidSync. (Answered: Apr 24, 2020 11:49:38 AM EDT)

Question 2

Where would we upload documents? (Submitted: Apr 24, 2020 2:21:20 PM EDT)

Answer

- In BidSync. Please reach out to BidSync Customer Service 1-800-990-9339 for assistance on how to upload your firms proposal. (Answered: Apr 24, 2020 3:05:42 PM EDT)

Question 3

When downloading the new solicitation (Bid No 12374-906 R2), it does not include the previous Questions and Answers section from the original solicitation (Bid No 12374-906). Are those original Questions and Answers considered binding to the new solicitation? (Submitted: Apr 27, 2020 8:30:45 AM EDT)

Answer

- Yes, the previous questions and answers are considered binding to this replacement solicitation. (Answered: Apr 27, 2020 9:11:29 AM EDT)

Question Deadline: Apr 27, 2020 5:00:00 PM EDT

6