

Solicitation 12286-293

G.T. Lohmeyer Wasterwater Treatment Plant Rehab of PCCP (Sequence B)

Bid Designation: Public



City of Fort Lauderdale

Bid 12286-293**G.T. Lohmeyer Wasterwater Treatment Plant Rehab of PCCP (Sequence B)**

Bid Number 12286-293
 Bid Title G.T. Lohmeyer Wasterwater Treatment Plant Rehab of PCCP (Sequence B)

Bid Start Date May 9, 2019 9:20:23 AM EDT
 Bid End Date Jun 18, 2019 2:00:00 PM EDT
 Question & Answer End Date Jun 3, 2019 5:00:00 PM EDT

Bid Contact Jim Hemphill
 Sr. Procurement Specialist
 Procurement Department
 954-828-5143
 jhemphill@fortlauderdale.gov

Contract Duration One Time Purchase
 Contract Renewal Not Applicable
 Prices Good for 120 days
 Pre-Bid Conference May 20, 2019 10:00:00 AM EDT
 Attendance is optional
 Location: G.T. Lohmeyer WasteWater Treatment Plant
 1st floor Training Room
 1765 SE 18th Street, Fort Lauderdale, FL 33316
 NOTE: Only approved planholders are allowed to attend.

Bid Comments This project is located at George T. Lohmeyer Wastewater Treatment Plant, 1765 SE 18th Street, in the City of Fort Lauderdale. The work to be accomplished under this contract includes, but is not limited to provide development, labor, material, and equipment to by-pass pump, shore, dewater, protect, drain, temporarily support and relocate conflicting utilities, remove, replace, test, dispose, and restore disturbed areas for the prestressed concrete cylinder pipe conveying pretreated raw sewage from both reactor one and reactor two outlet boxes conveying clarifier influent wastewater to battery 3 clarifier splitter box. The prestressed concrete cylinder pipe (PCCP) will be replaced with ductile iron pipe (DIP) or structurally lined. There are approximately 360 linear feet of 42-inch, 48-inch, and 66-inch diameter of new ductile iron pipe; and approximately 170 linear feet of 66-inch diameter PCCP to be structurally lined. There is approximately 300 linear feet of 6-inch diameter fiberglass pipe conveying odor control chlorine solution originating from the chlorine building's west exterior and terminating near reactor two's outlet box; the replacement pipe material shall be schedule 80 polyvinyl chloride. There is approximately 120 linear feet of 3-inch diameter fiberglass pipe conveying odor control chlorine solution originating from the chlorine building's west exterior and terminating near sludge pump station No. 3; the replacement pipe material shall be schedule 80 polyvinyl chloride. There is approximately 170 linear feet of 8-inch diameter ductile iron pipe above grade in an open trough to be replaced with ductile iron pipe.
 Added on May 17, 2019:
 Please note that all plans are included on BIDSYNC for this project, therefore, If you downloaded the plans you are an approved Planholder
 Added on May 20, 2019:
 Pre-bid Sign in Sheets have been added to the Documents Page

Addendum # 1

New Documents

Addendum 1.doc

Previous End Date Jun 11, 2019 2:00:00 PM EDT

New End Date Jun 18, 2019 2:00:00 PM EDT

Addendum # 2

New Documents Addendum 2.pdf

Addendum # 3

New Documents Addendum 3.pdf

Item Response Form

Item **12286-293--01-01 - Base Bid: Mobilization and Demobilization**

Lot Description Base Bid

Quantity **1 lump sum**

Unit Price

Delivery Location **City of Fort Lauderdale**
[See ITB Specifications](#)
 See ITB Specifications
 Fort Lauderdale FL 33301
 Qty 1

Description

This item includes the costs for all bonds, insurance, temporary construction facilities, storage, testing, temporary construction facilities, sanitary facilities, project coordination, and closeout, preconstruction photography and videos, cleanup and demobilization. The lump sum price in the proposal for this item shall not exceed 8 percent of the total price of Base Bid items 2, 3 and 4.

Item **12286-293--01-02 - Base Bid: Pipe Replacements**

Lot Description Base Bid

Quantity **1 lump sum**

Unit Price

Delivery Location **City of Fort Lauderdale**
[See ITB Specifications](#)
 See ITB Specifications
 Fort Lauderdale FL 33301
 Qty 1

Description

This item includes the costs to des, labor, material, and equipment to bypass pump, shore, dewater, protect, drain, temporarily support and relocate conflicting utilities, remove, replace, test, dispose, and restore disturbed areas for the prestressed concrete cylinder pipe conveying pretreated raw sewage from both reactor one and reactor two outlet boxes conveying clarifier influent wastewater to battery 3 clarifier splitter box. The prestressed concrete cylinder pipe (PCCP) will be replaced with ductile iron pipe (DIP) or structurally lined. There are approximately 360 linear feet of 42-inch, 48-inch, and 66-inch diameter of new ductile iron pipe; and approximately 170 linear feet of 66-inch diameter PCCP to be structurally lined. There is approximately 300 linear feet of 6-inch diameter fiberglass pipe conveying odor control chlorine solution originating from the chlorine buildings west exterior and terminating near reactor two 1/2s outlet box; the replacement pipe material shall be schedule 80 polyvinyl chloride. There is approximately 120 linear feet of 3-inch diameter fiberglass pipe conveying odor control chlorine solution originating from the chlorine buildings west exterior and terminating

near sludge pump station No. 3; the replacement pipe material shall be schedule 80 polyvinyl chloride. There is approximately 170 linear feet of 8 inch diameter ductile iron pipe above grade in an open trough to be replaced with ductile iron pipe.

Item	12286-293--01-03 - Base Bid: Internally Bonded Carbon Fiber Reinforced Polymer Lining
Lot Description	Base Bid
Quantity	1 lump sum
Unit Price	<input type="text"/>
Delivery Location	City of Fort Lauderdale
	See ITB Specifications
	See ITB Specifications
	Fort Lauderdale FL 33301
	Qty 1

Description

This item included the costs to develop, furnish, and install internally bonded carbon fiber reinforced polymer to Prestressed Concrete Cylinder Pipe as per project drawing C-10 and specification section 13030.

Item	12286-293--01-04 - Base Bid: Temporary By Pass Pumping
Lot Description	Base Bid
Quantity	1 lump sum
Unit Price	<input type="text"/>
Delivery Location	City of Fort Lauderdale
	See ITB Specifications
	See ITB Specifications
	Fort Lauderdale FL 33301
	Qty 1

Description

This item includes the costs to develop, furnish, install, field test, operate, monitor, and remove temporary by-pass pumping systems in accordance with Contract Documents for temporary by-pass pumping system including pumps, pump drives, piping, piping restraints, pipe supports, cross-over steps, piping headers, fittings, valves, flow meters, controls, wiring, fuel, power unit, and any other related accessories required to provide a complete operating system identified in specification section 02659 and on drawings G-2 and G-3.

**CITY OF FORT LAUDERDALE
CONTRACT AND SPECIFICATIONS PACKAGE**

BID NO. 12286-293

PROJECT NO. 11773-Sequence B

**G.T. LOHMEYER WASTEWATER
TREATMENT PLANT REHABILITATION OF
PCCP (Sequence B)**



PROJECT MANAGER: Axel Rivera
Project Manager II

PROCUREMENT SPECIALIST: James Hemphill
Asst. Procurement and Contracts Manager

Telephone: (954) 828-5143 E-mail: jhemphill@fortlauderdale.gov

TABLE OF CONTENTS

<u>Description</u>	<u>Pages</u>
I. BID INFORMATION	
Invitation to Bid	ITB-1 thru ITB-2
Instruction to Bidders	IB-1 thru IB-6
Special Conditions	SC-1 thru SC-6
II. CERTIFICATION OF RESTRICTIONS ON LOBBYING	CRL-1
III. CONSTRUCTION AGREEMENT (SAMPLE).....	C-1 thru C-39
IV. GENERAL CONDITIONS	GC-1 thru GC-11
V. SOIL INVESTIGATION REPORT (8/3/2015)	27
VI. TECHNICAL SPECIFICATIONS	
DIVISION 1 – GENERAL REQUIREMENTS	
01010 Summary	4
01014 Construction Constraints	2
01025 Measurement and Payment.....	6
01026 Applications for Payment	4
01035 Change Order Procedures.....	8
01038 Requests for Information	4
01170 Special Provisions	6
01200 Project Meetings.....	4
01300 Submittals.....	14
01310 Construction Scheduling.....	9
01370 Schedule of Values.....	2
01630 Substitutions and Product Options.....	2
01700 Contract Closeout.....	2
01720 Project Record Documents.....	4
01740 Warranties and Bonds	3
DIVISION 2 – SITE CONSTRUCTION	
02050 Demolition and Modifications	4
02140 Dewatering and Drainage (Soil Boring Report appended)	16
02200 Earthwork	4
02221 Trenching, Backfilling and Compaction.....	5
02270 Erosion and Sedimentation Control	2
02500 Pavement	4
02616 Ductile Iron Pipe and Fittings	14
02659 Temporary By-Pass Pumping Systems.....	7
02901 Miscellaneous Work and Cleanup.....	2

<u>Description</u>	<u>Pages</u>
DIVISION 9 – FINISHES	
09902 Painting	8
DIVISION 13 – SPECIAL CONSTRUCTION	
13030 Internally Bonded Carbon Fiber Reinforced Polymer Lining.....	12
DIVISION 15 – MECHANICAL	
15064 Plastic Pipe Fittings	6

Note: The following documents are available electronically for completion.

[CITB Prime Contractor ID](#)
[CITB Questionnaire Sheets](#)
[CITB Trench Safety](#)
[CITB Non-Collusion Statement](#)
[Non-Discrimination Certification](#)
[Contract Payment Method](#)
[CITB Construction Bid Certification](#)

These documents **must** be returned with your bid along with proof of insurance, and proof of required licenses/certifications.

ax

INVITATION TO BID

Sealed bids will be received electronically until 2:00 P.M., local time, on **Tuesday June 11, 2019**, and opened immediately thereafter in the 5th Floor Conference Room, City Hall, 100 North Andrews Avenue, Fort Lauderdale, Florida, 33301, for **BID NO., 12286-293, PROJECT NO., 11773-Sequence B, G.T. Lohmeyer Wastewater Treatment Plant Rehabilitation of PCCP (Sequence B)**

This project consists of Drawing File No. 4-136-67, 35 sheets.

This project is located at George T. Lohmeyer Wastewater Treatment Plant, 1765 SE 18th Street, in the City of Fort Lauderdale. The work to be accomplished under this contract includes, but is not limited to provide develop, labor, material, and equipment to by-pass pump, shore, dewater, protect, drain, temporarily support and relocate conflicting utilities, remove, replace, test, dispose, and restore disturbed areas for the prestressed concrete cylinder pipe conveying pretreated raw sewage from both reactor one and reactor two outlet boxes conveying clarifier influent wastewater to battery 3 clarifier splitter box. The prestressed concrete cylinder pipe (PCCP) will be replaced with ductile iron pipe (DIP) or structurally lined. There are approximately 360 linear feet of 42-inch, 48-inch, and 66-inch diameter of new ductile iron pipe; and approximately 170 linear feet of 66-inch diameter PCCP to be structurally lined. There is approximately 300 linear feet of 6-inch diameter fiberglass pipe conveying odor control chlorine solution originating from the chlorine building's west exterior and terminating near reactor two's outlet box; the replacement pipe material shall be schedule 80 polyvinyl chloride. There is approximately 120 linear feet of 3-inch diameter fiberglass pipe conveying odor control chlorine solution originating from the chlorine building's west exterior and terminating near sludge pump station No. 3; the replacement pipe material shall be schedule 80 polyvinyl chloride. There is approximately 170 linear feet of 8-inch diameter ductile iron pipe above grade in an open trough to be replaced with ductile iron pipe.

NOTE: Payment on this contract will be made by Check/Visa or MasterCard.

Licensing Requirements: Contractor must possess a certified general contractor license, a certified underground utility and excavation contractor licenses, or a certified "Plant Construction" License issued by the Florida Department of Business and Professional Regulation, as appropriate, is required for this project. Additionally, a Professional Engineer certified in the State of Florida will be required for the development of temporary systems such as the dewatering, excavation support, bypass pumping, and others as described within the specifications.

Pre-Bid Meeting/Site visit: - A pre-bid meeting and/or site visit will be held on **Monday May 20th, 2019, at 10:00 a.m., local time, at George T. Lohmeyer Wastewater Treatment Plant, 1765 SE 18th Street, Fort Lauderdale FL, 33316. NOTE: Only Planholders are allowed to attend.**

While attendance is not mandatory, it is strongly suggested that all Contractors attend the pre-proposal conference and/or site visit since tours at other times might not be available. It will be the sole responsibility of the bidder to inspect the City's location(s)/facilities and 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. Submission of a proposal will be considered evidence that the proposer has familiarized himself with the nature and extent of the work, equipment, materials, and labor required.

Bidding blanks may be obtained **free of charge** at BIDSYNC.COM.

It will be the sole responsibility of the bidder to ensure that his bid is submitted prior to the bid opening date and time listed. **PAPER BID SUBMITTALS WILL NOT BE ACCEPTED. BIDS MUST BE SUBMITTED ELECTRONICALLY VIA BIDSYNC.COM**

Bid Security: A certified check, cashier's check, bank officer's check or bid bond for **FIVE** percent (**5%**) of the bid amount, made payable to the City of Fort Lauderdale, Florida, shall accompany each proposal.

Bid Bonds:

Bidders can submit bid bonds for projects four different ways:

- 1) BidSync allows bidders to submit bid bonds electronically directly through their system using **Surety 2000**. For more information on this feature and to access it, contact BIDSYNC customer care department.
- 2) Bidders may **upload** their original executed bid bond on BIDSYNC to accompany their bids with the electronic proposal, and deliver the original, signed and sealed hard copy within five (5) business days after bid opening, with the company name, bid number and title clearly indicated.
- 3) Bidders can **hand deliver** their bid bond in a sealed envelope to the Finance Department, Procurement Services Division, 100 North Andrews Avenue, Room 619, Fort Lauderdale, FL 33301-1016, before time of bid opening, with the company name, bid number and title clearly indicated on the envelope.
- 4) Bidders can **mail** their bid bond to the Finance Department, Procurement Services Division, 100 North Andrews Avenue, Room 619, Fort Lauderdale, FL 33301-1016, before time of bid opening, with the company name, bid number and title clearly indicated on the envelope.

Certified Checks, Cashier's Checks and Bank Drafts

These **cannot** be submitted via BIDSYNC, nor are their images allowed to be uploaded and submitted with your electronic bid. These forms of securities, as well as hard copy bid bonds, must be received on or before the Invitation to Bid (ITB) opening date and time, at the Finance Department/Procurement Services Division, 100 North Andrews Avenue, Room 619, Fort Lauderdale, FL 33301-1016, with the bid number and title clearly indicated on the envelope.

It is the bidder's sole responsibility to ensure that his bid bond or other bid security is received by the Procurement Services Division before time of bid opening. Failure to adhere to this requirement may be grounds to consider the bid as non-responsive.

The City of Fort Lauderdale reserves the right to waive any informality in any or all bids and to reject any or all bids.

For information concerning technical specifications, please utilize the question/answer feature provided by BIDSYNC 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 BIDSYNC 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.

INSTRUCTIONS TO BIDDERS

The following instructions are given for the purpose of guiding bidders in properly preparing their bids or proposals. These directions have equal force and weight with the specifications and strict compliance is required with all of these provisions.

QUALIFICATIONS OF BIDDERS – No proposal will be accepted from, nor will any contract be awarded to, any person who is in arrears to the CITY OF FORT LAUDERDALE, upon any debt or contract, or who has defaulted, as surety or otherwise, upon any obligation to the City, or who is deemed irresponsible or unreliable by the City Commission of Fort Lauderdale.

PERSONAL INVESTIGATION - Bidders 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 Contractor from any risk or from fulfilling all terms of the contract.

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 bidder, in writing, at least ten (10) days prior to the time set for opening proposals. After proposals are opened, the bidders shall abide by the decision of the Engineer as to such interpretation.

ADDENDA AND INTERPRETATIONS - No interpretations of the meaning of the plans, specifications or other contract documents will be made orally to any bidder. Prospective bidders must request such interpretation in writing as instructed in the bid package. 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 will only be transmitted by written addendum. **It is the bidder's responsibility to verify if addendums have been issued in BIDSYNC.COM.** Failure of any bidder to receive any such addenda or interpretation shall not relieve any bidder from any obligation under his bid as submitted. All addenda so issued shall become a part of the contract document. **Bidder** shall verify **in BIDSYNC.COM** that he has all addenda before submitting a bid.

LEGAL CONDITIONS - Bidders are notified to familiarize themselves with the provisions of the laws of the State of Florida relating to hours of labor on municipal work, and with the provisions of the laws of the State of Florida and the Charter and the ordinances of the City of Fort Lauderdale.

PUBLIC ENTITY CRIMES - 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 bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids 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 thirty-six (36) months from the date of being placed on the convicted vendor list.

FORMS OF PROPOSALS - Each proposal and its accompanying statements must be made on the blanks provided. **THE FORMS MUST BE SUBMITTED ELECTRONICALLY, IN GOOD ORDER WITH ALL BLANKS COMPLETED,** and must show the name of the bidder and a statement as to its contents. **FORMS OF PROPOSALS (CONTINUED)** - 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.

INSURANCE - Contractor shall provide and shall require all of its sub-contractors to provide, pay for, and maintain in force at all times during the term of the Agreement, such insurance, including Property Insurance (Builder's Risk), Commercial General Liability Insurance, Business Automobile Liability Insurance, Workers' Compensation Insurance, Employer's Liability Insurance, and Umbrella/Excess Liability, as stated below. Such policy or policies shall be issued by companies authorized to do business in the State of Florida and having agents upon whom service of process may be made in the State of Florida.

BID BOND - A certified check, cashier's check or bank officer's check, for the sum set forth in the advertisement, made payable to the City of Fort Lauderdale, Florida, or bid bond in such amount, shall accompany each proposal as evidence of the good faith and responsibility of the bidder. The check or bond shall be retained by the City as liquidated damages should the bidder 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 bidder 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 bidder 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 bidder will be returned to him. The certified or other checks or bid bonds of the unsuccessful bidders will be returned to them upon the acceptance of the bid of the successful bidder. If the successful bidder shall not enter into, execute, and deliver such a contract and furnish the required bonds within ten (10) 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. Retention of such amount shall not be construed as a penalty or forfeiture.

FILLING IN BIDS - All prices must be electronically submitted in the proposal pages, and all proposals must fully cover all items for which proposals are asked and no other. Bidders are required to state the names and places of residence of all persons interested, and if no other person is interested, the bidder shall distinctly state such fact and shall state that the proposal is, in all respects, fair and without collusion or fraud. Where more than one person is interested, it is required that all persons interested or their legal representative make all verification and subscribe to the proposal.

PRICES QUOTED: Deduct any discount offered and quote firm net unit prices. In the case of a discrepancy in computing the amount of the bid, the unit price quoted will govern. All prices quoted shall be F.O.B. destination, freight prepaid (Bidder pays and bears freight charges, Bidder owns goods in transit and files any claims), unless otherwise stated in Special Conditions. Each item must be bid separately. No attempt shall be made to tie any item or items contained in the ITB with any other business with the City.

BIDS FIRM FOR ACCEPTANCE: Bidder warrants, by virtue of bidding, that his bid and the prices quoted in his bid 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 ITB. 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.

ADDITIONAL ITEMS OR SERVICES: The City may require additional items or services of a similar nature, but not specifically listed in the contract. The Contractor agrees to provide such items or services, and shall provide the City prices on such additional items or services. 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 Contractor thirty (30) days written notice.

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 Contractor shall be paid for the deleted portion on the basis of the estimated percentage of completion of such portion.

If the Contractor 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, and a budget has been established for that task or project, the Contractor will submit a revised budget to the City for approval prior to proceeding with the work.

CAUSES FOR REJECTION - No proposal will be canvassed, considered or accepted which, in the opinion of the City Commission, is informal or unbalanced, or contains inadequate or unreasonable prices for any items; each item must carry its own proportion of the cost as nearly as is practicable. Any alteration, erasure, interlineation, or failure to specify bids for all items called for in the schedule shall render the proposal informal.

REJECTION OF BIDS - The City reserves the right to reject any bid if the evidence submitted by the bidder, or if the investigation of such bidder, fails to satisfy the City that such bidder 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 bidders. 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.

BID PROTEST PROCEDURE - Any 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 follow the protest procedure as found in the city's procurement ordinance within five (5) days after a notice of intent to award is posted on the city's web site at the following link: <http://www.fortlauderdale.gov/departments/finance/procurement-services/notices-of-intent-to-award>.

The complete protest ordinance may be found on the city's web site at the following link: https://library.municode.com/fl/fort_lauderdale/codes/code_of_ordinances?nodeId=COOR_CH2A_D_ARTVFI_DIV2PR_S2-182DIREPR

WITHDRAWALS - Any bidder may, without prejudice to himself, withdraw his 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.

CONTRACT - The bidder 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 ten (10) 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 lowest bidder who is reliable, responsible, and responsive in the opinion of the City Commission, and that bidder shall fulfill every stipulation and obligation as if such bidder were the original party to whom award was made.

The contract shall provide that the Contractor agrees to correct any defective or faulty work or material, which may appear within one (1) year after completion of the work and receipt of final payment.

ENFORCEMENT OF SPECIFICATIONS - Copies of the specifications will be placed in the hands of all the assistants to the Engineer and Inspectors employed on the work, who shall enforce each and every requirement of the contract. Such assistants shall have no authority to vary from such requirements.

COPIES OF DRAWING PLANS - Copies of the drawing plans are on file in the Public Works Department, City Hall, 4th Floor, 100 N. Andrews Avenue, Fort Lauderdale, Florida 33301.

SURETY BOND – The Contractor 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 (2018), as may be amended or revised, as security for the faithful performance and payment of all of the Contractor'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 Contractor, 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 Contractor 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 Contractor. A bond written by a surety, which becomes disqualified to do business in the State of Florida, shall automatically constitute a failure on the part of the Contractor to meet the above requirements.

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 Contractor 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.

AUDIT OF CONTRACTOR'S RECORDS - Upon execution of the Contract, the City reserves the right to conduct any necessary audit of the Contractor's records. Such an audit, or audits, may be conducted by the City or its representatives at any time prior to final payment, or thereafter, for a period up to three (3) years. The City may also require submittal of the records from either the Contractor, the Subcontractor, or both. For the purpose of this Section, records shall include all books of account, supporting documents and papers deemed necessary by the City to assure compliance with the contract provisions. Failure of the Contractor or Subcontractor to comply with these requirements may result in disqualification or suspension from bidding for future contracts or disapproval as a Subcontractor at the option of the City.

The Contractor shall assure that each of its Subcontractors will provide access to its records pertaining to the project upon request by the City.

PERIODIC ESTIMATE FOR PARTIAL PAYMENT - After the Contractor has submitted a periodic estimate for partial payment, approved and certified by the Public Works Department, the City shall make payment in the manner provided in the Contract Documents and in accordance with Florida's Prompt Payment Act, Section 218, Florida Statutes.

RESERVATION FOR AWARD AND REJECTION OF BIDS - The City reserves the right to accept or reject any or all bids, part of bids, and to waive minor irregularities or variations to specifications contained in bids, and minor irregularities in the bidding process. The City also reserves the right to award the contract on a split order basis, lump sum basis, individual item basis, or such combination as shall best serve the interest of the City. The City reserves the right to make an award to the responsive and responsible bidder whose product or service meets the terms, conditions, and specifications of the ITB and whose bid is considered to best serve the City's interest. In determining the responsiveness of the offer and the responsibility of the Bidder, the following shall be considered when applicable: the ability, capacity and skill of the Bidder to perform as required; whether the Bidder can perform promptly, or within the time specified, without delay or interference; the character, integrity, reputation, judgment, experience and efficiency of the Bidder; the quality of past performance by the Bidder; the previous and existing compliance by the Bidder with related laws and ordinances; the sufficiency of the Bidder's financial resources; the availability, quality and adaptability of the Bidder's supplies or services to the required use; the ability of the Bidder to provide future maintenance, service or parts; the number and scope of conditions attached to the bid.

EARLY PROJECT COMPLETION INCENTIVE

The City reserves the right to negotiate incentives for early deliverables with the awarded vendor. The City is under no obligation to offer any such incentive.

MINORITY AND WOMEN BUSINESS ENTERPRISE PARTICIPATION AND BUSINESS - It is the desire of the City of Fort Lauderdale to increase the participation of minority (MBE) and women-owned (WBE) businesses in its contracting and procurement programs. While the City does not have any preference or set aside programs in place, it is committed **to a policy of equitable participation for these firms**. The City of Fort Lauderdale wants to increase the participation of Minority Business Enterprises (MBE), Women Business Enterprises (WBE), and Small Business Enterprises (SBE) in its procurement activities. If your firm qualifies in accordance with the below definitions please indicate in the space provided in this ITB.

Minority Business Enterprise (MBE) "A Minority Business" is a business enterprise that is owned or controlled by one or more socially or economically disadvantaged persons. Such disadvantage may arise from cultural, racial, chronic economic circumstances or background or other similar cause. Such persons include, but are not limited to: Blacks, Hispanics, Asian Americans, and Native Americans.

The term "Minority Business Enterprise" means a business at least fifty-one percent (51%) of which is owned by minority group members or, in the case of a publicly owned business, at least fifty-one percent (51%) of the stock of which is owned by minority group members. For the purpose of the preceding sentence, minority group members are citizens of the United States who include, but are not limited to: Blacks, Hispanics, Asian Americans, and Native Americans.

Women Business Enterprise (WBE) a "Women Owned or Controlled Business" is a business enterprise at least fifty-one percent (51%) of which is owned by females or, in the case of a publicly owned business, at least fifty-one percent (51%) of the stock of which is owned by females.

Small Business Enterprise (SBE) "Small Business" means a corporation, partnership, sole proprietorship, or other legal entity formed for the purpose of making a profit, which is independently

owned and operated, has either fewer than 100 employees or less than \$1,000,000 in annual gross receipts.

BLACK includes persons having origins in any of the Black racial groups of Africa.

WHITE includes persons whose origins are Anglo-Saxon and Europeans and persons of Indo-European decent including Pakistani and East Indian.

HISPANIC includes persons of Mexican, Puerto Rican, Cuban, Central and South American, or other Spanish culture or origin, regardless of race.

NATIVE AMERICAN includes persons whose origins are American Indians, Eskimos, Aleuts, or Native Hawaiians.

ASIAN AMERICAN includes persons having origin in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.

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.

LOBBYING ACTIVITIES - **ALL CONTRACTORS PLEASE NOTE:** Any contractor submitting a response to this solicitation must comply, if applicable, with City of Fort Lauderdale Ordinance No. C-00-27 & Resolution No. 07-101, Lobbying Activities. Copies of Ordinance No., C-00-27, and Resolution No. 07-101, may be obtained from the City Clerk's Office on the 7th Floor of City Hall, 100 N. Andrews Avenue, Fort Lauderdale, Florida. The ordinance may also be viewed on the City's website at http://www.fortlauderdale.gov/clerk/LobbyistDocs/lobbyist_ordinance.pdf.

SPECIAL CONDITIONS

01. PURPOSE

The City of Fort Lauderdale, Florida (City) is seeking bids from qualified bidders, hereinafter referred to as the Contractor, to provide Rehabilitation of Prestressed Concrete Cylinder Pipe for the City's Public Works Department, in accordance with the terms, conditions, and specifications contained in this Invitation To Bid (ITB).

02. TRANSACTION FEES

The City of Fort Lauderdale uses BidSync (www.bidsync.com) to distribute and receive bids and proposals. There is no charge to vendors/contractors to register and participate in the solicitation process, nor will any fees be charged to the awarded contractor.

03. SUBMISSION OF BIDS

It is the sole responsibility of the Contractor to ensure that their bid is submitted electronically through BidSync at www.bidsync.com and that any bid security not submitted via BidSync reaches the City of Fort Lauderdale, Procurement Services Division, 6th floor, Room 619, 100 N. Andrews Avenue, Fort Lauderdale, FL 33301, in a sealed envelope marked on the outside with the ITB solicitation number and Contractor's name, no later than the time and date specified in this solicitation. **PAPER BID SUBMITALS WILL NOT BE ACCEPTED. PLEASE SUBMIT YOUR BID RESPONSE ELECTRONICALLY.**

04. INFORMATION OR CLARIFICATION

For information concerning procedures for responding to this solicitation, contact **James Hemphill Asst. Procurement and Contracts Mang.**, at (954) 828-5143 or email at jhemphill@fortlauderdale.gov. Such contact shall be for clarification purposes only.

For information concerning technical specifications please utilize the question/answer feature provided by BidSync 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 BidSync 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, and the equipment, materials, and labor required. The entire bid response must be submitted in accordance with all specifications contained in this solicitation. The questions and answers submitted in BidSync shall become part of any contract that is created from this ITB.

04. CONTRACT TIME

- 5.1 The Contractor recognizes that TIME IS OF THE ESSENCE. The Work shall commence within 30 calendar days (21 working days) of the date of the Notice to Proceed.
- 5.2 The Work shall be Substantially Completed within 360 calendar days (257 working days) after the date when the Contract Time commences to run as provided in the Notice to Proceed.

- 5.3 The Work shall be finally completed on the Final Completion Date and ready for final payment in accordance with this Agreement within 420 calendar days (300 working days) after the date when the Contract Time commences to run as provided in the Notice to Proceed.

The City of Fort Lauderdale reserves the right to waive any informality in any bid and to reject any or all bids. The City of Fort Lauderdale reserves the right to reduce or delete any of the bid items.

At time of award of contract, the City reserves the right to set a maximum dollar 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. All quantities are estimated and the City reserves the right to increase, reduce, or eliminate the contract quantities in any amount.

The undersigned bidder affirms that he has or will obtain all equipment necessary to complete the work described, that he has or will obtain all required permits and licenses from the appropriate agencies, and that his firm is authorized to do business in the State of Florida.

06. BID SECURITY

A certified check, cashier's check, bank officer's check or bid bond for **FIVE** percent (5%) of the bid amount, made payable to the City of Fort Lauderdale, Florida, shall accompany each proposal.

07. REQUIRED LICENSES/CERTIFICATIONS

Contractor must possess a certified general contractor license, a certified underground utility and excavation contractor licenses, or a certified "Plant Construction" License issued by the Florida Department of Business and Professional Regulation, as appropriate, is required for this project. Additionally, a Professional Engineer certified in the State of Florida will be required for the develop of temporary systems such as the dewatering, excavation support, bypass pumping, and others as described within the specifications. **Note: Contractor must have proper licensing and be able to provide evidence of same, if requested, at time of award.**

08. SPECIFIC EXPERIENCE REQUIRED

The following expertise is required to be considered for this contract. Specific references attesting to this expertise must be submitted with bid.

Contractor must have experience in the construction of large diameter wastewater piping 36" or greater, and construction on an operating Wastewater Treatment Plant. Bidder shall submit, with the offer, written evidence of its qualifications and ability to begin construction, to perform in a satisfactory manner, and to complete all of the work covered by the Contract within the time specified in the Solicitation. Bidder shall submit proof of the construction of a minimum of 3 similar projects accumulating to at least 1,500LF of large diameter (36" or greater) ductile iron wastewater pipe on an operating wastewater treatment plant within the past 10 years. Include the owner's name, address, phone number, pipe diameters, and lengths.

Bidder shall submit proof of construction experience for a minimum of three (3) projects of similar scope and scale (or larger) and shall, for each project listed, identify location; dates of construction; project name and overall scope; scope of work that was self-performed by Contractor; and client's name, address, telephone number and e-mail address.

NOTE: REFERENCES SHALL NOT INCLUDE ONLY CITY OF FORT LAUDERDALE

EMPLOYEES OR WORK PERFORMED FOR THE CITY. THE CITY IS ALSO INTERESTED IN WORK EXPERIENCE AND REFERENCES FROM ENTITIES OTHER THAN THE CITY OF FORT LAUDERDALE.

By signing this bid solicitation, contractor is affirming that this expertise will be provided for this contract at no additional charge.

09. BID ALLOWANCE

Allowance for permits: Payments will be made to the contractor 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.

Allowance	\$
Additional equipment rental allowance	\$ 20,000.00
Additional labor allowance	\$ 80,000.00
Additional material allowance	\$ 70,000.00
Permit fee allowance	\$40,000.00
Additional Professional Services	\$30,000.00
TOTAL	\$240,000.00

Note: *The City will add this allowance to your bid.*

10. INSURANCE REQUIREMENTS (See Article 10, Bonds and Insurance, of the Contract for details)
Insurance

- 10.1 As a condition precedent to the effectiveness of this Agreement, during the term of this Agreement and during any renewal or extension term of this Agreement, the Contractor, at the Contractor's sole expense, shall provide insurance of such types and with such terms and limits as noted below. Providing proof of and maintaining adequate insurance coverage are material obligations of the Contractor. The Contractor shall provide the City a certificate of insurance evidencing such coverage. The Contractor's insurance coverage shall be primary insurance for all applicable policies. The limits of coverage under each policy maintained by the Contractor shall not be interpreted as limiting the Contractor's liability and obligations under this Agreement. All insurance policies shall be from insurers authorized to write insurance policies in the State of Florida and that possess an A.M. Best rating of A-, VII or better. All insurance policies are subject to approval by the City's Risk Manager.

The coverages, limits, and endorsements required herein protect the interests of the City, and these coverages, limits, and endorsements may not be relied upon by the Contractor for assessing the extent or determining appropriate types and limits of coverage to protect the Contractor against any loss exposure, whether as a result of this Agreement or otherwise. The requirements contained herein, as well as the City's review or acknowledgement, are 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 and coverages are required:

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

Policy must include coverage for Contractual Liability and Independent Contractors.

The City and the City's officers, 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 Contractor. The coverage shall contain no special limitation on the scope of protection afforded to the City or the City's officers, employees, and volunteers.

10.1.2 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.

10.1.3 Workers' 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 Contractor waives, and the Contractor shall ensure that the Contractor's 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 Contractor 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.

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 to the City a Certificate of Insurance having 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 of Insurance shall indicate whether coverage is provided under a claims-made or occurrence form. If any coverage is provided on a claims-made form, the Certificate of Insurance must show a retroactive date, which shall be the effective date of the initial contract or prior.
- f. The City shall be named as an Additional Insured on the General Liability policy,
- g. The City shall be granted a Waiver of Subrogation on the Contractor's Workers' Compensation insurance policy.
- h. The title of the Agreement, Bid/Contract number, event dates, or other identifying reference must be listed on the Certificate of Insurance.

The Certificate Holder should read as follows:

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

The Contractor has the sole responsibility for the payment of 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 evidence of an Umbrella/Excess insurance policy to comply with this requirement.

The Contractor's insurance coverage shall be primary insurance as applied to the City and the City's officers, employees, and volunteers. Any insurance or self-insurance maintained by the City covering the City, the City's officers, employees, or volunteers shall be non-contributory.

Any exclusion or provision in the insurance maintained by the Contractor that excludes coverage for work contemplated in this Agreement shall be 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, or until this Agreement is terminated, whichever is later. Any lapse in coverage shall be considered breach of contract. In addition, Contractor must provide to the City 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.

The Contractor shall provide notice of any and all claims, accidents, and any other occurrences associated with this Agreement shall be provided to the Contractor's insurance company or companies and the City's Risk Management office as soon as practical.

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

10.1.4 ADDITIONAL REQUIRED COVERAGES (for specialty contracts as determined by Risk Management)

10.1.4.9 Pollution and Remediation Legal Liability (Hazardous Materials)

For the purpose of this section, the term “hazardous materials” includes all materials and substances that are designated or defined as hazardous by Florida or federal law or by the rules or regulations of Florida or any federal agency. If work being performed involves hazardous materials, the Contractor shall procure and maintain any or all of the following coverage, which will be specifically addressed upon review of exposure.

10.1.4.10 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.

NOTE: CITY PROJECT NUMBER AND NAME MUST APPEAR ON EACH CERTIFICATE, AND THE CITY OF FORTLAUDERDALE MUST BE NAMED ON THE CERTIFICATE AS AN “ADDITIONAL INSURED” ON ALL LIABILITY POLICIES, WITH THE EXCEPTION OF WORKERS’ COMPENSATION.

A Sample Insurance Certificate shall be included with the proposal to demonstrate the firm’s ability to comply with insurance requirements. Provide a previous certificate or other evidence listing the insurance companies’ names for all required coverage, and the dollar amounts of the coverage.

11. PERFORMANCE AND PAYMENT BOND: 100% **Number of awards anticipated: One**

12. CITY PROJECT MANAGER

The Project Manager is hereby designated by the City as Axel E. Rivera, P.E., whose address is 100 North Andrews, 4th Floor, Fort Lauderdale, FL 33301, telephone number: (954) 828-5128, and email address is axrivera@fortlauderdale.gov. 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.

13. LIQUIDATED DAMAGES *(See Article 16, Liquidated Damages, of the Contract for details)*

Upon failure of the Contractor to complete the Work within the time specified for completion, the Contractor shall pay to the City the sum of **Fifteen Hundred Dollars (\$1,500.00)** 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 Contractor. (See Article 16, Liquidated Damages Clause, of the Contract)

14. PAYMENT *(See Article 7, Payment, of the Contract for other details)*

The City shall make payment to the Contractor through utilization of the City’s P-Card Program. The City has implemented a Purchasing Card (P-Card) Program utilizing both VISA and MASTERCARD networks. Purchases from this contract will be made

utilizing the City's Purchasing Card. Contractor will receive payment from the purchasing card in the same manner as other credit card purchases. Accordingly, bidders must presently have the ability to accept these credit cards or take whatever steps necessary to implement the ability before the start of the contract term, or contract award by the City. The City reserves the right to revise this program as necessary. 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.

15. WORK SCHEDULE (including overtime hours):

Regular work hours: **8:00 am to 5:00 pm, Monday through Friday.**

City Inspector Hours: **8:00 am to 4:30 pm, Monday through Friday.**

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

16. INSPECTION OVERTIME COST: \$100.00 / hr.

DRAFT CITY OF FORT LAUDERDALE
CONSTRUCTION AGREEMENT

THIS AGREEMENT made and entered into this _____ day of _____, 20____, by and between the City of Fort Lauderdale, a Florida municipal corporation (City) and _____, (Contractor), (parties);

WHEREAS, the City desires to retain a contractor for the Project as expressed in its Invitation to Bid No., _____, Project Number, _____, which was opened on _____; and,

WHEREAS, the Contractor has expressed its willingness and capability to perform the necessary work to accomplish the Project.

NOW, THEREFORE, the City and the Contractor, in consideration of the mutual covenants and conditions contained herein and for other good and valuable consideration, the receipt and sufficiency is hereby acknowledged, agree as follows:

ARTICLE 1 – DEFINITIONS

Whenever used in this Agreement or in other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural forms:

- 1.1 Agreement – This written Agreement between the City and the Contractor covering the work to be performed including other Contract Documents that are attached to or incorporated in the Agreement.
- 1.2 Application for Payment – The form accepted by the City which is to be used by the Contractor in requesting progress or final payment and which is to include such supporting documentation as is required by the Contract Documents
- 1.3 Approve – The word approve is defined to mean review of the material, equipment or methods for general compliance with design concepts and with the information given in the Contract Documents. It does not imply a responsibility on the part of the City to verify in every detail conformance with plans and specifications.
- 1.4 Bid – The offer or Bid of the Contractor submitted on the prescribed form setting forth the total prices for the Work to be performed.
- 1.5 Bid Documents – This Agreement, advertisement for Invitation to Bids, the Instructions to Bidders, the Bid Form (with supplemental affidavits and agreements), the Contract Forms, General Conditions, the Supplementary Conditions, the Specifications, and the Plans, which documents all become an integral part of the Contract Documents.
- 1.6 Certificate of Substantial Completion - Certificate provided by the City certifying that all Work, excluding the punch list items, has been completed, inspected, and accepted by the City.

- 1.7 Change Order - A change order is defined as a written order to a contractor approved by the City, authorizing a revision of an underlying agreement between the City and a contractor that is directly related to the original scope of work or an adjustment in the original contract price or the contract time directly related to the original scope of work, issued on or after the effective date of the contract.
- 1.8 City – The City of Fort Lauderdale, Florida, including but not limited to its employees, agents, officials, representatives, contractors, subcontractors, volunteers, successors and assigns, with whom the Contractor has entered into the Agreement and for whom the Work is to be provided.
- 1.9 Contract Documents – The Contract Documents shall consist of this Agreement, Exhibits to this Agreement, Public Construction Bond, Performance Bond, Payment Bond and Certificates of Insurance, Notice of Award and Notice to Proceed, General Conditions as amended by the Special Conditions, Technical Specifications, Plans/Drawings, Addenda, Bid Form and supplement Affidavits and Agreements, all applicable provisions of State and Federal Law and any modification, including Change Orders or written amendments duly delivered after execution of Agreement, Invitation to Bid, Instructions to Bidders and Bid Bond, Contractor's response to the City's Invitation to Bid, Schedule of Completion, Schedule of Values, all amendments, modifications and supplements, change orders and work directive changes issued on or after the Effective Date of the Agreement, as well as any additional documents that are required to be submitted under the Agreement.

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 Agreement. A copy of all permits shall be given to the City for inclusion in the Contract Documents. Terms of permits shall be met prior to acceptance of the Work and release of the final payment.

- 1.10 Contract Price – The monies payable to the Contractor by the City under the Contract Documents and in accordance with the line item unit prices listed in the Bid.
- 1.11 Contract Time – The number of calendar days stated in the Agreement for the completion of the Work. The dates on which the work shall be started and shall be completed as stated in the Notice to Proceed.
- 1.12 Contractor – The person, firm, company, or corporation with whom the City has entered into the Agreement, including but not limited to its employees, agents, representatives, contractors, subcontractors, their subcontractors and their other successors and assigns.
- 1.13 Day – A calendar day of twenty-four (24) hours ending at midnight.
- 1.14 Defective – An adjective which when modifying the word "Work" refers to work that is unsatisfactory, faulty, or deficient, or does not conform to the Contract Documents or does not meet the requirements of any inspection, test or approval referred to in the Contract Documents, or has been damaged prior to the Project Manager's recommendation of final payment.

- 1.15 Effective Date of the Agreement – The effective date of the agreement shall be the date the City Commission approves the work. The contractor shall provide all required payment and performance bonds and insurances to the City within ten (10) Calendar days following the City Commission approval. Upon verification of all bonds and insurances, the City will issue a notice to proceed (NTP) to the Contractor. Contract time will commence on the date when the Notice to Proceed is issued. The Contractor shall commence the work immediately upon receipt of the Notice to Proceed. Failure of the contractor to proceed with the work will constitute non-performance of the Contractor and would be ground for termination of the contract per ARTICLE 17 of the Agreement.
- 1.16 Final Completion Date – The date the Work is completed, including completion of the final punch list, and delivered along with those items specified in the Contract Documents and is accepted by the City.
- 1.17 Hazardous Materials (HAZMAT) - Any solid, liquid, or gaseous material that is toxic, flammable, radioactive, corrosive, chemically reactive, or unstable upon prolonged storage in quantities that could pose a threat to life, property, or the environment defined in Section 101(14) of Comprehensive Environmental Response, Compensation and Liability Act of 1980 and in 40 CFR 300.6. Also defined by 49 CFR 171.8 as a substance or material designated by the Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce and which has been so designated.
- 1.18 Hazardous Substance - As defined by Section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act; any substance designated pursuant to Section 311(b) (2) (A) of the Clean Water Act; any element, compound, mixture, solution or substance designated pursuant to Section 102 identified under or listed pursuant to Section 3001 of the Solid Waste Disposal Act {but not including any waste listed under Section 307[a] of the Clean Water Act}; any hazardous air pollutant listed under Section 112 of the Clean Air Act; and any imminently hazardous chemical substance or mixture pursuant to Section 7 of the Toxic Substances Control Act. The term does not include petroleum, including crude oil or any fraction thereof, which is not otherwise specifically listed or designated as a hazardous substance in the first sentence of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).
- 1.19 Hazardous Waste - Those solid wastes designated by OSHA in accordance with 40 CFR 261 due to the properties of ignitability, corrosivity, reactivity, or toxicity. Any material that is subject to the Hazardous Waste Manifest requirements of the EPA specified in 40 CFR Part 262.
- 1.20 Holidays - Those designated non-work days as established by the City Commission of the City of Fort Lauderdale.
- 1.21 Inspection – The term “inspection” and the act of inspecting as used in this Agreement is defined to mean the examination of construction to ensure that it conforms to the design concept expressed in the plans and specifications. This term shall not be construed to mean supervision, superintending and/or overseeing.

- 1.22 Notice of Award - The written notice by City to the Contractor stating that upon compliance by the Contractor with the conditions precedent enumerated therein, within the time specified that the City will sign and deliver this Agreement.
- 1.23 Notice to Proceed – A written notice given by the City to the Contractor fixing the date on which the Contract Time will commence to run and on which the Contract Time will end.
- 1.24 Plans - The drawings which show the character and scope of the work to be performed and which have been prepared or approved by the City and are referred to in the Contract Documents.
- 1.25 Premises (otherwise known as Site or Work Site) – means the land, buildings, facilities, etc. upon which the Work is to be performed.
- 1.26 Project – The total construction of the Work to be provided as defined in the Contract Documents.
- 1.27 Project Manager - 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.
- 1.28 Punch List - The City's list of Work yet to be done or be corrected by the Contractor, before the Final Completion date can be determined by the City.
- 1.29 Record Documents - A complete set of all specifications, drawings, addenda, modifications, shop drawings, submittals and samples annotated to show all changes made during the construction process.
- 1.30 Record Drawings or "As-Builts" - A set of drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor. These documents will be signed and sealed by the Engineer of Record or a Professional Land Surveyor licensed in the State of Florida.
- 1.31 Substantially Completed Date – A date when the Contractor has requested in writing, stating that the Work is substantially completed and is ready for an inspection and issuance of a final punch list for the Project.
- 1.32 Work – The entire completed delivered product or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of performing services, furnishing labor and furnishing and incorporating material and equipment into the product, all as required by the Contract Documents.

ARTICLE 2 – SCOPE OF WORK

- 2.1 The Contractor shall complete all work as specified or indicated in the Contract Documents. The Project for which the Work under the Contract Documents may be the whole or only part is generally described as follows:

PROJECT NAME
ITB # PROJECT #

- 2.2 All Work for the Project shall be constructed in accordance with the Drawings and Specifications. The Work generally involves:

PROJECT DESCRIPTION

[Need brief description of project including but not limited to:

- Location
- Components
- Intent

And Delete this note before placing in Bid Documents]

- 2.3 Within ten (10) days of the execution of this Agreement, the Contractor shall submit a Construction Schedule, Schedule of Values and a listing of those subcontractors that will be utilized by the Contractor. The general sequence of the work shall be submitted by the Contractor and approved by the City before any work commences. The City reserves the right to issue construction directives necessary to facilitate the Work or to minimize any conflict with operations.

ARTICLE 3 – PROJECT MANAGER

- 3.1 The Project Manager is hereby designated by the City as [REDACTED], whose address is 100 N. Andrews Avenue, 4th Floor, Fort Lauderdale, FL 33301, telephone number: (954) 828-[REDACTED], and email address is [REDACTED]@fortlauderdale.gov. 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.

ARTICLE 4 – CONTRACT DOCUMENTS

The Contract Documents which comprise the entire Agreement between the City and Contractor are attached to this Agreement, are made a part hereof and consist of the following:

- 4.1 This Agreement.
- 4.2 The Contract Documents may only be altered, amended, or repealed in accordance with the specific provisions of the terms of this Agreement.
- 4.3 Exhibits to this Agreement: (Plans sheets [] to [] inclusive).

- 4.4 Public Construction Bond, Performance Bond, Payment Bond and Certificates of Insurance.
- 4.5 Notice of Award and Notice to Proceed.
- 4.6 General Conditions as amended by the Special Conditions.
- 4.7 Technical Specifications.
- 4.8 Plans/Drawings.
- 4.9 Addenda number _____ through _____, inclusive.
- 4.10 Bid Form and supplement Affidavits and Agreements.
- 4.11 All applicable provisions of State and Federal Law.
- 4.12 Invitation to Bid No., _____, Instructions to Bidders, and Bid Bond.
- 4.13 Contractor's response to the City's Invitation to Bid No., _____, dated _____.
- 4.14 Schedule of Completion and Schedule of Values.
- 4.15 All amendments, modifications and supplements, change orders and work directive changes issued on or after the Effective Date of the Agreement.
- 4.16 Any additional documents that are required to be submitted under the Agreement.
- 4.17 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 Agreement. A copy of all permits shall be given to the City for inclusion in the Contract Documents. Terms of permits shall be met prior to acceptance of the Work and release of the final payment.

In the event of any conflict between the documents or any ambiguity or missing specification or instruction, the following priority is established:

- a. Specific direction from the City Manager (or designee).
- b. Approved change orders, addenda or amendments.
- c. Specifications (quality) and Drawings (location and quantity).
- d. Supplemental conditions or special terms.
- e. General Terms and Conditions.
- f. This Agreement dated _____ and any attachments.
- g. Invitation to Bid No., _____, and the specifications prepared by the City.

- h. Contractor's response to the City's Invitation to Bid No., _____, dated _____.
- i. Schedule of Values.
- j. Schedule of Completion.

If during the performance of the Work, Contractor finds a conflict, error or discrepancy in the Contract Documents, Contractor shall so report to the Project Manager, in writing, at once and before proceeding with the Work affected shall obtain a written interpretation or clarification from the City.

It is the intent of the specifications and plans to describe a complete Project to be constructed in accordance with the Contract Documents. Any Work that may reasonably be inferred from the specifications or plans as being required to produce the intended result shall be supplied whether or not it is specifically called for. When words which have a well-known technical or trade meaning are used to describe Work, materials, or equipment, such works shall be interpreted in accordance with such meaning. Reference to standard specifications, manuals or codes of any technical society, organization or associations, or to the code of any governmental authority whether such reference be specific or implied, shall mean the latest standard specification, manual or code in effect as of the Effective Date of this Agreement, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall change the duties and responsibilities of the City, the Contractor, or any of their agents or employees from those set forth in the Contract Documents.

ARTICLE 5 – CONTRACT TIME

- 5.1 The Contractor recognizes that **TIME IS OF THE ESSENCE**. The Work shall commence within _____ calendar days of the date of the Notice to Proceed.
- 5.2 The Work shall be Substantially Completed within _____ calendar days after the date when the Contract Time commences to run as provided in the Notice to Proceed.
- 5.3 The Work shall be finally completed on the Final Completion Date and ready for final payment in accordance with this Agreement within _____ calendar days after the date when the Contract Time commences to run as provided in the Notice to Proceed.

ARTICLE 6 – CONTRACT PRICE

- 6.1 City shall pay Contractor for performance of the Work in accordance with Article 7, subject to additions and deletions by Change Order, as provided for in this Agreement.
- 6.2 The parties expressly agree that the Contract Price, which shall not exceed the amount of \$_____, constitutes the total maximum compensation payable to Contractor for performing the Work, plus any Work done pursuant to a Change Order. The Contract Price is in accordance with the line item unit prices listed in the Bid. Line items are based on a unit price cost multiplied by a defined quantity. Any

additional duties, responsibilities and obligations assigned to or undertaken by Contractor shall be at Contractor's expense without change to the Contract Price.

- 6.3 The Contract Price constitutes the compensation payable to Contractor for performing the Work plus any Work done pursuant to a Change Order. All duties, responsibilities and obligations assigned to or undertaken by Contractor shall be at Contractor's expense without change in the Contract price.

ARTICLE 7 – PAYMENT

- 7.1 Contractor shall submit Applications for Payment in accordance with the Contract Documents. Applications for Payment will be processed by City as provided in the General Conditions.
- 7.2 Progress Payments. City shall make progress payments on account of the Contract Price on the basis of Contractor's monthly Applications for Payment, which shall be submitted by the Contractor between the first (1st) and the tenth (10th) day after the end of each calendar month for which payment is requested. All progress payments will be made on the basis of the progress of the Work completed.
- 7.3 Prior to Final Completion, progress payments will be made in an amount equal to ninety percent (90%) of the value of Work completed less in each case the aggregate of payments previously made.
- 7.4 Final Payment. Upon final completion of the Work in accordance with the General Conditions, as may be supplemented, the City shall pay Contractor an amount sufficient to increase total payments to one-hundred percent (100%) of the Contract Price. However, not less than ten percent (10%) of the Contract Price shall be retained until Record Drawings (as-builts), specifications, addenda, modifications and shop drawings, including all manufacturers' instructional and parts manuals are delivered to and accepted by the City.
- 7.5 City may withhold, in whole or in part, payment to such extent as may be necessary to protect itself from loss on account of:
- 7.5.1 Defective work not remedied.
 - 7.5.2 Claims filed or reasonable evidence indicating probable filing of claims by other parties against Contractor or City because of Contractor's performance.
 - 7.5.3 Failure of Contractor to make payments properly to Subcontractors or for material or labor.
 - 7.5.4 Damage to another contractor not remedied.
 - 7.5.5 Liquidated damages and costs incurred by Consultant for extended construction administration, if applicable.
 - 7.5.6 Failure of Contractor to provide any and all documents required by the Contract Documents.

When the above grounds are removed or resolved satisfactory to the Project Manager, payment shall be made in whole or in part.

- 7.6 The City shall make payment to the Contractor in accordance with the Florida Prompt Payment Act, Section 218.70, Florida Statutes.
- 7.7 The City shall make payment to the Contractor through utilization of the City's P-Card Program. The City has implemented a Purchasing Card (P-Card) Program utilizing both VISA and MASTERCARD networks. Purchases from this contract will be made utilizing the City's Purchasing Card. Contractor will receive payment from the purchasing card in the same manner as other credit card purchases. Accordingly, bidders must presently have the ability to accept these credit cards or take whatever steps necessary to implement the ability before the start of the contract term, or contract award by the City. The City reserves the right to revise this program as necessary. 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.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

In order to induce the City to enter into this Agreement, Contractor makes the following representations upon which the City has relied:

- 8.1 Contractor is qualified in the field of public construction and in particular to perform the Work and services set forth in this Agreement.
- 8.2 Contractor has visited the Work Site, 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 Proposed Price and that the project can be completed for the Proposed Price submitted within the Contract Time as defined in this Agreement. Furthermore, Contractor warrants and confirms that he is totally familiar with, understands and obligates Contractor to comply with all federal, state and local laws, ordinances, rules, regulations and all market conditions that affect or may affect the cost and price of materials and labor needed to fulfill all provisions of this Agreement or that in any manner may affect cost, progress or performance of the Work.
- 8.3 The Contractor has satisfied itself as to the nature and location of the Work under the Contract Documents, the general and local conditions of the Project, 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.
- 8.4 The Contractor has also studied carefully all reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Works, and finds and has further determined that no conditions exist that would in any manner affect the Proposed Price and that the project can be completed for the Proposed Price submitted.

- 8.5 Contractor has made or caused to be made examinations, investigations, tests and studies of such reports and related data in addition to those referred to in Paragraphs 8.2, 8.3 and 8.4 above as he deems necessary for the performance of the Work at the Contract Prices, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents; and no additional examinations, investigations, tests, reports or similar data are, or will be, required by Contractor for such purposes.
- 8.6 Contractor has correlated the results of all such observations, examinations, investigations, tests, reports and data with the terms and conditions of the Contract Documents.
- 8.7 Contractor has given City written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution by City is acceptable to the Contractor.
- 8.8 Labor
- 8.8.1 The Contractor shall provide competent, suitable qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. The Contractor shall at all times maintain good discipline and order at the site.
- 8.8.2 The Contractor shall, at all times, have a competent superintendent, capable of reading and thoroughly understanding the drawings and specifications, as the Contractor's agent on the Work, who shall, as the Contractor's agent, supervise, direct and otherwise conduct the Work.
- 8.8.3 The Contractor shall designate the superintendent on the job to the City, in writing, immediately after receipt of the Notice to Proceed. The Contractor understands and agrees that the superintendent's physical presence on the job site is indispensable to the successful completion of the Work. If the superintendent is frequently absent from the job site, the Project Manager may deliver written notice to the Contractor to stop work or terminate the Contract in accordance with Article 17.
- 8.8.4 The Contractor shall assign personnel to the job site that have successfully completed training programs related to trench safety, confined space and maintenance of traffic. A certified "competent person" shall be assigned to the job site. Personnel certified by the International Municipal Signal Associations with Florida Department of Transportation qualifications are required relative to maintenance of traffic. Failure to pursue the Work with the properly certified supervisory staff may result in notice to stop work or terminate the Contract in accordance with Article 17.
- 8.9 Materials:
- 8.9.1 The Contractor shall furnish all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water and sanitary facilities and all other facilities and incidentals necessary for the execution, testing, initial operation and completion of Work.

- 8.9.2 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 Contractor; the City reserves the right to approve all suppliers and materials.
- 8.10 Work Hours: 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 a.m. and 6:00 p.m., Monday through Friday. The Contractor 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 Contractor 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 Contractor and no extra payment shall be made to the Contractor for overtime work. It shall be noted that the City's Inspector work hours are from 8:00 a.m. to 4:30 p.m. and any Work requiring inspection oversight being performed outside of this timeframe shall be paid for by the Contractor as Inspector overtime. The cost to the Contractor to reimburse the City for overtime inspection 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 Contractor at the actual rate accrued.
- 8.11 Patent Fee and Royalties: The Contractor 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 Contractor hereby expressly binds himself or itself to indemnify and save harmless the City from all such claims and fees and from any and all suits and action 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.
- 8.12 Permits: The Contractor shall obtain and pay for all permits and licenses. There shall be no allowance for Contractor markup, overhead or profit for permits and licenses. The Contractor shall pay all government charges which are applicable at the time of opening of proposals. It shall be the responsibility of the Contractor to secure and pay for all necessary licenses and permits of a temporary nature necessary for the prosecution of Work.
- 8.13 Law and Regulations: The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations applicable to the Work. If the Contractor observes that the specifications or plans are at variance therewith, the Contractor shall give the Project Manager prompt written notice thereof, and any necessary changes shall be adjusted by any appropriate modifications. If the Contractor performs any work knowing or having reason to know that it is contrary to such laws, ordinances, rules and regulations, and without such notice to the Project Manager, the Contractor shall bear all costs arising therefrom; however, it shall not be the Contractor's primary responsibility to make certain that the specifications and plans are in accordance with such laws, ordinances, rules and regulations.

- 8.14 Taxes: The Contractor shall pay all sales, consumer, use and other similar taxes required to be paid by him in accordance with the laws of the City of Fort Lauderdale, County of Broward, State of Florida.
- 8.15 Contractor Use of Premises: The Contractor shall confine construction equipment, the storage of materials and equipment and the operations of workmen to areas permitted by law, ordinances, permits and/or the requirements of the Contract Documents, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment.

The Contractor shall not enter upon private property for any purpose without first securing the permission of the property owner in writing and furnishing the Project Manager with a copy of said permission. This requirement will be strictly enforced, particularly with regard to such vacant properties as may be utilized for storage or staging by the Contractor.

The Contractor shall conduct his work in such a manner as to avoid damage to adjacent private or public property. Any damage to existing structures or work of any kind, including permanent reference markers or property corner markers, or the interruption of a utility service, shall be repaired or restored promptly at no expense to the City or property owner.

The Contractor will preserve and protect all existing vegetation such as trees, shrubs and grass on or adjacent to the site which do not reasonably interfere with the construction, as determined by the Project Manager. The Contractor will be responsible for repairing or replacing any trees, shrubs, lawns and landscaping that may be damaged due to careless operation of equipment, stockpiling of materials, tracking of grass by equipment or other construction activity. The Contractor will be liable for, or will be required to replace or restore at no expense to the City all vegetation not protected or preserved as required herein that may be destroyed or damaged.

During the progress of the work, the Contractor shall keep the premises free from accumulations of waste materials, rubbish and debris resulting from the Work. At the completion of the Work, the Contractor shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials and shall leave the site clean and ready for occupancy by the City. The Contractor shall restore to their original condition those portions of the site not designated for alteration by the Contract Documents at no cost to the City.

- 8.16 Project Coordination: The Contractor shall provide for the complete coordination of the construction effort. This shall include, but not necessarily be limited to, coordination of the following:
- 8.16.1 Flow of material and equipment from suppliers.
 - 8.16.2 The interrelated work with affected utility companies.
 - 8.16.3 The interrelated work with the City where tie-ins to existing facilities are required.
 - 8.16.4 The effort of independent testing agencies.
 - 8.16.5 Notice to affected property owners as may be directed by the Project Manager.

8.17 Project Record Documents and Final As-Builts (Record Drawings): Contractor shall be responsible for maintaining up-to-date redline as-built drawings, on site, at all times during construction. All as-built information shall be surveyed and verified by a professional land surveyor registered in the State of Florida. Contractor shall provide the City with a minimum of three (3) sets of signed and sealed record drawings (Final As-Builts) and a CD of the electronic drawings files created in AutoCad 2014 or later. All costs associated with survey work required for construction layout and as-built preparation shall be the responsibility of the Contractor.

8.18 Safety and Protection:

8.18.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. The Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

- 8.18.1.1 All employees working on the project and other persons who may be affected thereby.
- 8.18.1.2 All the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site.
- 8.18.1.3 Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

8.18.2 The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. The Contractor shall notify owners of adjacent property and utilities when execution of the Work may affect them at least seventy-two (72) hours in advance (unless otherwise required). All damage, injury or loss to any property caused, directly or indirectly, in whole or in part by the Contractor, any subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, shall be remedied by the Contractor. The Contractor's duties and responsibilities for safety and protection of the Work shall continue until such time as all the Work is completed and accepted by the City.

8.19 Emergencies: In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the City is obligated to act to prevent threatened damage, injury or loss. The Contractor shall give the Project Manager prompt written notice of any significant changes in the Work or deviations from the Contract Documents caused thereby.

8.20 Risk of Loss: The risk of loss, injury or destruction shall be on the Contractor until acceptance of the Work by the City. Title to the Work shall pass to the City upon acceptance of the Work by the City.

- 8.21 Environmental: The Contractor has fully inspected the Premises and agrees, except as to the presence of any asbestos, to accept the Premises in an "as is" physical condition, without representation or warranty by the City of any kind, including, without limitation, any and all existing environmental claims or obligations that may arise from the presence of any "contamination" on, in or about the Premises. Further, Contractor and all entitles claiming by, through or under the Contractor, releases and discharges the City, from any claim, demand, or cause of action arising out of or relating to the Contractor's use, handling, storage, release, discharge, treatment, removal, transport, decontamination, cleanup, disposal and/or presence of any hazardous substances including asbestos on, under, from or about the Premises. The Contractor shall have no liability for any pre-existing claims or "contamination" on the Premises.

The Contractor shall not use, handle, store, discharge, treat, remove, transport, or dispose of Hazardous Substances including asbestos at, in, upon, under, to or from the Premises until receipt of instructions from the City. At such time, a City approved Change Order, which shall not include any profit, shall authorize the Contractor to perform such services.

The Contractor shall immediately deliver to the Project Manager complete copies of all notices, demands, or other communications received by the Contractor from any governmental or quasi-governmental authority or any insurance company or board of fire underwriters or like or similar entities regarding in any way alleged violations or potential violations of any Environmental Law or otherwise asserting the existence or potential existence of any condition or activity on the Premises which is or could be dangerous to life, limb, property, or the environment.

For other and additional consideration, the Contractor hereby agrees, at its sole cost and expense, to indemnify and protect, defend, and hold harmless the City and its respective employees, agents, officials, officers, representatives, contractors and subcontractors, successors, and assigns (hereafter the "City") from and against any and all claims, demands, losses, damages, costs, expenses, including but not limited to mitigation, restoration, and natural restoration expenses, liabilities, assessments, fines, penalties charges, administrative and judicial proceedings and orders, judgments, causes of action, in law or in equity, remedial action requirements and/or enforcement actions of any kind (including, without limitation, attorneys' fees and costs) directly or indirectly arising out of or attributable to, in whole or in part, the Contractor's use, handling, storage, release, threatened release, discharge, treatment, removal, transport, decontamination, cleanup, disposal and/or presence of a Hazardous Substance (excluding asbestos) on, under, from, to or about the Premises or any other activity carried on or undertaken on or off the Premises by the Contractor or its employees, agents or subcontractors, in connection with the use, handling, storage, release, threatened release, discharge, treatment, mitigation, natural resource restoration, removal, transport, decontamination, cleanup, disposal and/or presence or any Hazardous Substance including asbestos located, transported, or present on, undue, from, to, or about the Premises. This indemnity is intended to be operable under 42 U.S.C. sections 9607, as amended, and any successor section.

The scope of the indemnity obligations includes, but is not limited to: (a) all consequential damages; (b) the cost of any required or necessary repair, cleanup, or detoxification of the applicable real estate and the preparation and implementation of any closure, remedial or other required plan, including without limitation; (i) the costs of

removal or remedial action incurred by the United States government or the State of Florida or response costs incurred by any other person, or damages from injury to destruction of, or loss of, natural resources, including the cost of assessing such injury, destruction, or loss, incurred pursuant to the Comprehensive Environmental Response, Compensation and Liability Act, as amended; (ii) the clean-up costs, fines, damages, or penalties incurred pursuant to any applicable provisions of Florida law; and (iii) the cost and expenses of abatement, correction or cleanup, fines, damages, response costs, or penalties which arise from the provisions of any other statute, law, regulation, code ordinance, or legal requirement state or federal; and (c) liability for personal injury or property damage arising under any statutory or common law tort theory, including damages assessed for the maintenance of a public private nuisance, response costs, or for the carrying on of an abnormally dangerous activity.

8.22 No Extended Damages: For other and additional good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the Contractor covenants and agrees that in the event of any delay of construction or for any other reason or allegation or claim, and notwithstanding the reason of the delay, reason, claim or allegation or who caused them or the construction delay or whether they were caused by the City, that there will be no entitlement to Contractor to or for any direct or indirect financial damages or losses for extended corporate overhead impact, extended project overhead impacts, project support services, mobilization or demobilization or by whatever other label or legal concept or theory and types of names or labels or basis such claims may have, or any business damages or losses of whatever type or nature, and Contractor hereby waives any right to make any such claim or claims. This provision will have application and effect when construction delays are anticipated and agreed upon by both the City and the Contractor.

8.23 No Liens: If any Subcontractor, supplier, laborer, or materialmen of Contractor or any other person directly or indirectly acting for or through Contractor files or attempts to file a mechanic's or construction lien against the real property on which the work is performed or any part or against any personal property or improvements or claim against any monies due or to become due from the City to Contractor or from Contractor to a Subcontractor, for or on account of any work, labor, services, material, equipment, or other items furnished in connection with the Work or any Change Order, Contractor agrees to satisfy, remove, or discharge such lien or claim at its own expense by bond, payment, or otherwise within twenty (20) days of the filing or from receipt of written notice from the City.

Additionally, until such time as such lien or claim is satisfied, removed or discharged by Contractor, all monies due to Contractor, or that become due to Contractor before the lien or claim is satisfied, removed or otherwise discharged, shall be held by City as security for the satisfaction, removal and discharge of such lien and any expense that may be incurred while obtaining such. If Contractor shall fail to do so, City shall have the right, in addition to all other rights and remedies provided by this Agreement or by law, to satisfy, remove, or discharge such lien or claim by whatever means City chooses at the entire and sole cost and expense of Contractor which costs and expenses shall, without limitation, include attorney's fees, litigation costs, fees and expenses and all court costs and assessments.

8.24 Weather Emergencies: Upon issuance of a Hurricane Watch by the National Weather Service, the Contractor 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 Contractor 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 Contractor has not already done so, the Contractor 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 Contractor to any additional compensation. Contractor shall be entitled to request an extension in time for completion of the Work, in accordance with the provisions of Article 15 of this Agreement, equal to the time he is shut down for implementation of the preparedness plan, the duration of the storm and a reasonable period to restore the Premises.

- 8.25 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 this 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 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 Contractor 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 CONTRACTOR shall use its reasonable efforts to minimize such delays. The CONTRACTOR shall promptly provide an estimate of the anticipated additional time required to complete the Project.

- 8.26 Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assisted Contracts: The recipient shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of any DOT-assisted contract or in the administration of its DBE program or the requirements of 49 CFR part 26. The recipient shall take all necessary and reasonable steps under 49 CFR part 26 to ensure nondiscrimination in the award and administration of DOT-assisted contracts. The recipient's DBE program, as required by 49 CFR part 26 and as

approved by DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification to the recipient of its failure to carry out its approved program, the Department may impose sanctions as provided for under part 26 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31 U.S.C. 3801 *et seq.*).

Additionally, the contractor assures that they, the sub recipient or the subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate. (This additional language must be included in each subcontract the prime contractor signs with a subcontractor.)

ARTICLE 9 – CITY’S RESPONSIBILITIES

- 9.1 The City shall furnish the data required of the City under the Contract Documents promptly and shall make payments to the Contractor promptly after they are due as provided in Article 7.
- 9.2 The City’s duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in the Contract Documents.
- 9.3 Technical Clarifications and Interpretations:
 - 9.3.1 The City shall issue, with reasonable promptness, such written clarifications or interpretations of the Contract Documents as it may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. Should the Contractor fail to request interpretation of questionable items in the Contract Documents, the City shall not entertain any excuse for failure to execute the Work in a satisfactory manner.
 - 9.3.2 The City shall interpret and decide matters concerning performance under the requirements of the Contract Documents, and shall make decisions on all claims, disputes or other matters in question. Written notice of each claim, dispute or other matter will be delivered by claimant to the other Party but in no event later than five (5) days after the occurrence of event, and written supporting data will be submitted to the other Party within five (5) days after such occurrence. All written decisions of the City on any claim or dispute will be final and binding.
- 9.4 The Contractor shall perform all Work to the reasonable satisfaction of the City in accordance with the Contract Documents. In cases of disagreement or ambiguity, the City shall decide all questions, difficulties, and disputes of whatever nature, which may arise under or by reason of this Agreement or the quality, amount and value of the Work, and the City’s decisions on all claims, questions and determination are final.

ARTICLE 10 – BONDS AND INSURANCE

10.1 Public Construction and Other Bonds: The Contractor shall furnish Public Construction or Performance and Payment Bonds (“Bond”), each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all the Contractor’s obligations under the Contract Documents. These Bonds shall remain in effect until at least one (1) year after the date of final payment, except as otherwise provided by law. All Bonds shall be furnished and provided by the surety and shall be in substantially the same form as prescribed by the Contract Documents and be executed by such sureties as (i) are licensed to conduct business in the State of Florida, and (ii) are named in the current list of Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department and (iii) otherwise meet the requirements set forth herein that apply to sureties. All Bonds signed by an agent must be accompanied by a certified copy of the authority to act.

10.1.1 Performance Bond: A Corporate Surety Bond legally issued, meeting the approval of, and running to the City in an amount not less than the Contract Price of such improvements, conditioned that the Contractor shall maintain and make all repairs to the improvements constructed by the Contractor at their own expense and free of charge to the City, for the period of one (1) year after the date of acceptance of the Work within such period by reason of any imperfection of the material used or by reason of any defective workmanship, or any improper, imperfect or defective preparation of the base upon which any such improvement shall be laid.

The Contractor 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 (2014), as may be amended or revised, as security for the faithful performance and payment of all of the Contractor’s obligations under the Contract Documents.

10.2 Disqualification of Surety: If the Surety on any Bond furnished by the Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in the State of Florida or it ceases to meet the requirements of clauses (i) and (ii) of Paragraph 10.1, the Contractor shall within five (5) days thereafter substitute another Bond and Surety, both of which shall be acceptable to the City.

10.3 Insurance

10.3.1 As a condition precedent to the effectiveness of this Agreement, during the term of this Agreement and during any renewal or extension term of this Agreement, the Contractor, at the Contractor’s sole expense, shall provide insurance of such types and with such terms and limits as noted below. Providing proof of and maintaining adequate insurance coverage are material obligations of the Contractor. The Contractor shall provide the City a certificate of insurance evidencing such coverage. The Contractor’s insurance coverage shall be primary insurance for all applicable policies. The limits of coverage under each

policy maintained by the Contractor shall not be interpreted as limiting the Contractor's liability and obligations under this Agreement. All insurance policies shall be from insurers authorized to write insurance policies in the State of Florida and that possess an A.M. Best rating of A-, VII or better. All insurance policies are subject to approval by the City's Risk Manager.

The coverages, limits, and endorsements required herein protect the interests of the City, and these coverages, limits, and endorsements may not be relied upon by the Contractor for assessing the extent or determining appropriate types and limits of coverage to protect the Contractor against any loss exposure, whether as a result of this Agreement or otherwise. The requirements contained herein, as well as the City's review or acknowledgement, are 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 and coverages are required:

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

Policy must include coverage for Contractual Liability and Independent Contractors.

The City and the City's officers, 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 Contractor. The coverage shall contain no special limitation on the scope of protection afforded to the City or the City's officers, employees, and volunteers.

10.3.3 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.

10.3.4 Workers' 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 Contractor waives, and the Contractor shall ensure that the Contractor's 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 Contractor 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.

Insurance Certificate Requirements

- i. 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.
- j. The Contractor shall provide to the City a Certificate of Insurance having a thirty (30) day notice of cancellation; ten (10) days' notice if cancellation is for nonpayment of premium.
- k. 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.
- l. 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.
- m. The Certificate of Insurance shall indicate whether coverage is provided under a claims-made or occurrence form. If any coverage is provided on a claims-made form, the Certificate of Insurance must show a retroactive date, which shall be the effective date of the initial contract or prior.
- n. The City shall be named as an Additional Insured on the General Liability policy, with the exception of Workers' Compensation.
- o. The City shall be granted a Waiver of Subrogation on the Contractor's Workers' Compensation insurance policy.
- p. The title of the Agreement, Bid/Contract number, event dates, or other identifying reference must be listed on the Certificate of Insurance.

The Certificate Holder should read as follows:

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

The Contractor has the sole responsibility for the payment of 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 evidence of an Umbrella/Excess insurance policy to comply with this requirement.

The Contractor's insurance coverage shall be primary insurance as applied to the City and the City's officers, employees, and volunteers. Any insurance or self-insurance maintained by the City covering the City, the City's officers, employees, or volunteers shall be non-contributory.

Any exclusion or provision in the insurance maintained by the Contractor that excludes coverage for work contemplated in this Agreement shall be 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, or until this Agreement is terminated, whichever is later. Any lapse in coverage shall be considered breach of contract. In addition, Contractor must provide to the City 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.

The Contractor shall provide notice of any and all claims, accidents, and any other occurrences associated with this Agreement shall be provided to the Contractor's insurance company or companies and the City's Risk Management office as soon as practical.

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

10.3.5 ADDITIONAL COVERAGES (for specialty contracts as determined by Risk Management)

10.3.5.1 Aircraft Liability

Coverage must be afforded in an amount not less than \$5,000,000 per occurrence for any aircraft operations.

10.3.5.2 Crane and Rigging Liability

Coverage must be afforded for any crane operations under the Commercial General or Business Automobile Liability policy as necessary, in line with the limits of the associated policy.

10.3.5.3 Cyber Liability

Coverage must be afforded in an amount not less than \$1,000,000 per loss for negligent retention of data as well as notification and related costs for actual or alleged breaches of data.

10.3.5.4 Fidelity/Dishonesty and/or Commercial Crime

Coverage must be afforded in an amount not less than \$1,000,000 per loss for dishonest acts of the Contractor's employees, including but not limited to theft of money, personal property, vehicles, materials, supplies, equipment, tools, etc. Third-party coverage must be included under the policy.

10.3.5.5 Garage Keepers Legal Liability

Coverage shall be purchased for the Contractor's liability for damage or other loss, including comprehensive and collision risks, to the vehicles while in the care, custody, and control of the Contractor. Coverage form must be on a direct primary basis with limits equal to the highest possible replacement cost value of vehicles in the care, custody, and control of the Contractor at any one time.

10.3.5.6 Garage Liability

Coverage must be afforded in an amount not less than \$1,000,000 per occurrence and must cover the Contractor and the Contractor's employees for the Contractor's garage and related operations while any and all vehicles covered under this Agreement are in the care, custody, and control of the Contractor.

10.3.5.7 Liquor Liability

Contractor shall provide evidence of coverage for liquor liability in an amount not less than \$1,000,000 per occurrence. If the Commercial General Liability policy covers liquor liability (e.g. host or other coverage), the Contractor shall provide written documentation to confirm that coverage already applies to this Agreement.

10.3.5.8 Physical Abuse, Sexual Misconduct, and Sexual Molestation

Contractor shall provide evidence of coverage in an amount not less than \$500,000 per occurrence.

10.3.5.9 Pollution and Remediation Legal Liability (Hazardous Materials)

For the purpose of this section, the term "hazardous materials" includes all materials and substances that are designated or defined as hazardous by Florida or federal law or by the rules or regulations of Florida or any federal agency. If work being performed involves hazardous materials, the Contractor shall procure and maintain any or all of the following coverage, which will be specifically addressed upon review of exposure.

10.3.5.10 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.

10.3.5.11 Asbestos Liability Coverage

For sudden and gradual occurrences and in an amount not less than \$1,000,000 per claim arising out of work performed under this Agreement.

10.3.5.12 Disposal Coverage

The Contractor shall designate the disposal site and furnish a Certificate of Insurance from the disposal facility for Environmental Impairment Liability Insurance, covering liability for sudden and accidental occurrences in an amount not less than \$1,000,000 per

claim and shall include liability for non-sudden occurrences in an amount not less than \$1,000,000 per claim.

10.3.5.13 Hazardous Waste Transportation Coverage

The Contractor shall designate the hauler and furnish a Certificate of Insurance from the hauler for Automobile Liability insurance with Endorsement MCS90 for liability arising out of the transportation of hazardous materials in an amount not less than \$1,000,000 per claim limit and provide a valid EPA identification number.

10.3.5.14 Professional Liability and/or Errors and Omissions

Coverage must be afforded for Wrongful Acts in an amount not less than \$1,000,000 each claim and \$2,000,000 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.

10.3.5.15 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

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.

10.3.5.16 Property Coverage (on-going basis)

Coverage must be afforded in an amount not less than 100% of the replacement value of the property 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
- Any separate Flood and/or Windstorm deductibles are subject to approval by the City

This policy shall insure the interests of the owner and Lessee in the property against all risk of physical loss and damage, and name the City as a loss payee.

The Contractor shall, at the Contractor's own expense, take all reasonable precautions to protect the Premises from damage or destruction.

10.3.5.17 Watercraft Liability

Coverage must be afforded in an amount not less than \$1,000,000 per occurrence and must cover the utilization of watercraft, including Bodily Injury and Property Damage arising out of ownership, maintenance, or use of any watercraft, including owned, non-owned, and hired.

Coverage may be provided in the form of an endorsement to the Commercial General Liability policy, or in the form of a separate policy covering Watercraft Liability or Protection and Indemnity for Bodily Injury and Property Damage.

NOTE: CITY PROJECT NUMBER AND NAME MUST APPEAR ON EACH CERTIFICATE, AND THE CITY OF FORTLAUDERDALE MUST BE NAMED ON THE CERTIFICATE AS AN "ADDITIONAL INSURED" ON ALL LIABILITY POLICIES, WITH THE EXCEPTION OF WORKERS' COMPENSATION.

A Sample Insurance Certificate shall be included with the proposal to demonstrate the firm's ability to comply with insurance requirements. Provide a previous certificate or other evidence listing the insurance companies' names for all required coverage, and the dollar amounts of the coverage.

ARTICLE 11- WARRANTY AND GUARANTEE, TESTS AND INSPECTIONS, CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

11.1 Warranty: The Contractor warrants and guarantees to the City that all Work will be in accordance with the Contract Documents and will not be defective. Prompt notice of all defects shall be given to the Contractor. All defective work, whether or not in place, may be rejected, corrected or accepted as provided in this Article.

11.1.1 Warranty of Title: The Contractor warrants to the City that it possesses good, clear and marketable title to all equipment and materials provided and that there are no pending liens, claims or encumbrances against the equipment and materials.

11.1.2 Warranty of Specifications: The Contractor warrants that all equipment, materials and workmanship furnished, whether furnished by the Contractor, its subcontractors or suppliers, will comply with the specifications, drawings and other descriptions supplied or adopted and that all services will be performed in a workmanlike manner.

11.1.3 Warranty of Merchantability: The Contractor warrants that any and all equipment to be supplied pursuant to this Agreement is merchantable, free from defects, whether patent or latent in material or workmanship, and fit for the ordinary purposes for which it is intended.

11.2 Tests and Inspections: Contractor shall retain the services of an independent, certified, testing lab to perform all testing as required by the specifications, Contract drawings, and any applicable permitting agency. Contractor shall provide evidence of certification to the City before the work and testing is done. Testing results shall be submitted to the Engineer for review and approval at the time the results are provided to the Contractor. The Contractor shall give the Project Manager and City Inspector a minimum of twenty-four (24) hours' advanced notice of readiness of the Work for all required inspections, tests, or approvals and shall notify all applicable permitting agencies in a timely manner based on requirements set forth in the permit documents.

11.2.1 Neither observations by the Project Manager nor inspections, tests or approvals by others shall relieve the Contractor from its obligations to perform the Work in accordance with the Contract Documents.

11.3 Uncovering Work: If any work that is to be inspected, tested or approved is covered without approval or consent of the Project Manager, it must, if requested by the Project Manager, be uncovered for observation and/or testing. Such uncovering and replacement shall be at the Contractor's sole expense unless the Contractor has given the Project Manager timely notice of the Contractor's intention to cover such Work and the Project Manager has not acted with reasonable promptness in response to such notice.

11.3.1 If the Project Manager considers it necessary or advisable that Work covered in accordance with Paragraph 11.2.1, 11.2.2 and 11.2.3 be observed by the City or inspected or tested by others, the Contractor at the City's request, shall uncover, expose or otherwise make available for observation, inspection or testing as the Project Manager may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, the Contractor shall bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, including compensation for additional professional services, and an appropriate deductive Change Order shall be issued. If, however, such work is not found to be defective, the Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection testing and reconstruction if he makes a claim therefore as provided in Articles 14 and 15.

11.4 City May Stop the Work: If the Work is defective, or the Contractor fails to supply sufficient skilled supervisory personnel or workmen or suitable materials or equipment or the work area is deemed unsafe, the City may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the City to stop the Work shall not give rise to any duty on the part of the City to exercise this right for the benefit of the Contractor or any other party. The City will not award any increase in Contract Price or Contract Time if the Work is stopped due to the circumstances described herein.

- 11.5 Correction or Removal of Defective Work Before Final Payment: If required by the Project Manager, the Contractor shall promptly, without cost to the City and as Specified by the Project Manager, either correct any defective Work, whether or not fabricated, installed or completed, or if the Work has been rejected by the City remove it from the site and replace it with non-defective Work.
- 11.6 One Year Correction Period After Final Payment: If within one (1) year after the date of final acceptance, or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, any work is found to be defective, the Contractor shall promptly, without cost to the City and in accordance with the City's written instructions, either correct such defective Work, or, if it has been rejected by the City, remove it from the site and replace it with non-defective Work.

If The Contractor does not promptly comply with the terms of such instructions or in an emergency where delay would cause serious risk of loss or damage, the City may have the defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs for such removal and replacement, including compensation for additional professional services, shall be paid by the Contractor.

- 11.7 Acceptance of Defective Work, Deductions: If, instead of requiring correction or removal and replacement of defective Work, the City, at the city's sole option, prefers to accept it, the City may do so. In such a case, if acceptance occurs prior to the Project Manager's recommendation of final payments, a Change Order shall be issued incorporating the necessary revisions in the Contracts Documents, including appropriate reduction in the Contract Price; or if the acceptance occurs after such recommendation, an appropriate amount shall be paid by the Contractor to the City.
- 11.8 City May Correct Defective Work: If the Contractor fails within a reasonable time after written notice of the Project Manager to proceed to correct defective Work or to remove and replace rejected Work as required by the Project Manager in accordance with Paragraph 11.5, or if the Contractor fails to perform the Work in accordance with the Contract Documents, the City may, after seven (7) days written notice to the Contractor, correct and remedy any such deficiency. In exercising its rights under this paragraph, the City shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, the City may exclude the Contractor from all or part of the site, take possession of all or part of the Work, suspend the Contractor's services related thereto and take possession of the Contractor's tools, construction equipment and materials stored at the site or elsewhere. The Contractor shall allow the City's representative agents and employees such access to the site as may be necessary to enable the City to exercise its rights under this paragraph. All direct and indirect costs of the City in exercising such rights shall be charged against the Contractor in an amount verified by the Project Manager, and a Change Order shall be issued incorporating the necessary revisions in the Contract Documents and a reduction in the Contract Price. Such direct and indirect costs shall include, in particular but without limitation, compensation for additional professional services required and costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of the Contractor's defective Work. The Contractor shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by the City of the City's right hereunder.

ARTICLE 12 – INDEMNIFICATION

- 12.1 Disclaimer of Liability: The City shall not at any time, be liable for injury or damage occurring to any person or property from any cause, whatsoever, arising out of Contractor's construction and fulfillment of this agreement.
- 12.2 Indemnification: For other, additional good valuable consideration, the receipt and sufficiency of which is hereby acknowledged:
- 12.2.1 Contractor shall, at its sole cost and expense, indemnify and hold harmless the City, its representatives, employees and elected and appointed officials from or on account of all claims, damages, losses, liabilities and expenses, direct, indirect or consequential including but not limited to fees and charges of engineers, architects, attorneys, consultants and other professionals and court costs arising out of or in consequence of the performance of this Agreement at all trial and appellate levels. Indemnification shall specifically include but not be limited to claims, damages, losses, liabilities and expenses arising out of or from (a) the negligent or defective design of the project and Work of this Agreement; (b) any act, omission or default of the Contractor, its Subcontractors, agents, servants or employees; (c) any and all bodily injuries, sickness, disease or death; (d) injury to or destruction of tangible property, including any resulting loss of use; (e) other such damages, liabilities, or losses received or sustained by any person or persons during or on account of any operations connected with the construction of this Project including the warranty period; (f) the use of any improper materials; (g) any construction defect including both patent and latent defects; (h) failure to timely complete the work; (i) the violation of any federal, state, county or city laws, ordinances or regulations by Contractor, its subcontractors, agents, servants, independent contractors or employees; (j) the breach or alleged breach by Contractor of any term of the Agreement, including the breach or alleged breach of any warranty or guarantee.
- 12.2.2 Contractor agrees to indemnify, defend, save and hold harmless the City, its officers, agents and employees, from all damages, liabilities, losses, claims, fines and fees, and from any and all suits and actions of every name and description that may be brought against City, its officers, agents and employees, on account of any claims, fees, royalties, or costs for any invention or patent and/or for the infringement of any and all copyrights or patent rights claimed by any person, firm, or corporation.
- 12.2.3 Contractor shall pay all claims, losses, liens, settlements or judgments of any nature in connection with the foregoing indemnifications including, but not limited to, reasonable attorney's fees and costs for trials and appeals.
- 12.2.4 If any Subcontractor, supplier, laborer, or materialmen of Contractor or any other person directly or indirectly acting for or through Contractor files or attempts to file a mechanic's or construction lien against the real property on which the work is performed or any part or against any personal property or improvements thereon or make a claim against any monies due or to become due from the City to Contractor or from Contractor to a Subcontractor, for or on account of any work, labor, services, material, equipment, or other items

furnished in connection with the Work or any change order, Contractor agrees to satisfy, remove, or discharge such lien or claim at its own expense by bond, payment, or otherwise within five (5) days of the filing or from receipt of written notice from the City.

Additionally, until such time as such lien or claim is satisfied, removed or discharged by Contractor, all monies due to Contractor, or that become due to Contractor before the lien or claim is satisfied, removed or otherwise discharged, shall be held by City as security for the satisfaction, removal and discharge of such lien and any expense that may be incurred while obtaining the discharge. If Contractor shall fail to do so, City shall have the right, in addition to all other rights and remedies provided by this Agreement or by law, to satisfy, remove, or discharge such lien or claim by whatever means City chooses at the entire and sole cost and expense of Contractor which costs and expenses shall, without limitation, include attorney's fees, litigation costs, fees and expenses and all court costs and assessments, and which shall be deducted from any amount owing to Contractor. In the event the amount due Contractor is less than the amount required to satisfy Contractor's obligation under this, or any other article, paragraph or section of this Agreement, the Contractor shall be liable for the deficiency due the City.

12.2.5 The Contractor and the City agree that Section 725.06(2), Florida Statutes controls the extent and limits of the indemnification and hold harmless provisions of this Agreement, if any, and that the parties waive any defects in the wording of this Article that runs afoul of said statutory section.

ARTICLE 13 – CHANGES IN THE WORK

- 13.1 Without invalidating this Agreement, the City may, at any time or from time to time order additions, deletions or revisions in the Work through the issuance of Change Orders. Upon receipt of a Change Order, the Contractor 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 as provided in Article 14 or Article 15 on the basis of a claim made by either Party.
- 13.2 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 the Contractor.
- 13.3 If notice of any change affecting the general scope of the Work or change in the Contract Price is required by the provisions of any Bond to be given to the Surety, it will be the Contractor's responsibility to so notify the Surety, and the amount of each applicable Bond shall be adjusted accordingly. The Contractor shall furnish proof of such adjustment to the City.

ARTICLE 14 – CHANGE OF CONTRACT PRICE

Change of Contract Price, approved by City, shall be computed as follows:

- 14.1 Cost of the Work: The term “Cost of the Work” means the sum of all direct costs necessarily incurred and paid by Contractor in the proper performance of the Work. Except as otherwise may be agreed to in writing by the City, these costs shall be in amounts no higher than those prevailing in the City and shall include only the following items and shall not include any of the costs itemized in Paragraph 14.3:
- 14.1.1 Payroll costs for employees in the direct employ of the Contractor in the performance of the Work under schedules of job classifications agreed upon by the City and the Contractor. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus and cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, worker’s compensation, health and retirement benefits, bonuses, sick leave, vacation and applicable holiday pay.
- 14.1.2 Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage, and required suppliers and field services. All cash discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to the City, and the Contractor shall make provisions so that they may be obtained.
- 14.1.3 Supplemental costs including the following:
- 14.1.3.1 Cost, including transportation and maintenance of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work.
 - 14.1.3.2 Rentals of all construction equipment and machinery and the parts whether rented from the Contractor or others in accordance with rental agreements approved by the City, and the costs of transporting, loading, unloading, installation, dismantling and removal. The rental of any such equipment, machinery or parts shall cease when the use is no longer necessary for the Work.
 - 14.1.3.3 Sales, consumer, use or similar taxes related to the Work and for which the Contractor is liable, imposed by laws and regulations.
 - 14.1.3.4 Royalty payments and fees for permits and licenses.
 - 14.1.3.5 The cost of utilities, fuel and sanitary facilities at the Work site.
 - 14.1.3.6 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

14.1.3.7 Cost of premiums for additional bonds and insurance required because of changes in the Work.

14.2 The Contract Price may only be increased by a Change Order when Work is modified in accordance with Article 13 and approved by the City in writing. Any claim for an increase in the Contract Price resulting from a Change Order shall be based on written notice delivered to the Project Manager within ten (10) days of the occurrence of the Change Order giving rise to the claim. Notice of the amount of the claim with supporting data shall be included in the Change Order and delivered within twenty (20) days of such occurrence unless Project Manager allows an additional period of time to ascertain accurate cost data. Any change in the Contract Price resulting from any such claim shall be incorporated in the Change Order. **IT IS EXPRESSLY AND SPECIFICALLY AGREED THAT ANY AND ALL CLAIMS FOR CHANGES TO THE CONTRACT PRICE SHALL BE WAIVED IF NOT SUBMITTED IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THIS SECTION.**

14.3 Not Included in the Cost of the Work: The term "cost of the Work" shall not include any of the following:

14.3.1 Payroll costs and other compensation of the Contractor's officers executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditor, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by the Contractor whether at the site or in the Contractor's principal or branch office for general administration of the work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 14.1.1, all of which are to be considered administrative costs covered by the Contractor's fee.

14.3.2 Expenses of the Contractor's principal and branch offices other than the Contractor's office at the site.

14.3.3 Any part of the Contractor's capital expenses, including interest on the Contractor's capital employed for the Work and charges against the Contractor for delinquent payments.

14.3.4 Cost of premiums for all bonds and for all insurance whether or not the Contractor is required by the Contract Documents to purchase and maintain the same.

14.3.5 Costs due to the negligence of the Contractor, any subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

14.3.6 Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 14.1

14.4 Basis of Compensation: The Contractor's compensation, allowed to the Contractor for overhead and profit, shall be determined as follows:

14.4.1 A mutually acceptable negotiated fee:

14.4.1.1 For costs incurred under Paragraphs 14.1.1 and 14.1.2, the Contractor's fee shall not exceed five percent (5%).

14.4.1.2 No fee shall be payable on the basis of costs itemized under Paragraphs 14.1.3.1, 14.1.3.2, 14.1.3.3, 14.1.3.4, 14.1.3.5, 14.1.3.6, 14.1.3.7, 14.3.1, 14.3.2, 14.3.3, 14.3.4, 14.3.5 and 14.3.6.

14.4.1.3 The amount of credit to be allowed by the Contractor to the City for any such change which results in a net decrease plus a deduction in the Contractor's fee by an amount equal to five percent (5%) for the net decrease.

14.4.1.4 When both additions and credits are involved in any one change the combined overhead and profit shall be figured on the basis of net increase if any, however, not to exceed five percent (5%) of the agreed compensation. Profit will not be paid on any Work not performed.

14.5 Cost Breakdown Required: Whenever the cost of any Work is to be determined pursuant to this Article, the Contractor will submit in form acceptable to the City an itemized cost breakdown together with supporting documentation. Whenever a change in the Work is to be based upon mutual acceptance of a lump sum, whether the amount is an addition, credit, or no-charge-in-cost, the Contractor shall submit an estimate substantiated by a complete itemized breakdown:

14.5.1 The breakdown shall list quantities and unit prices for materials, labor, equipment and other items of cost.

14.5.2 Whenever a change involves the Contractor and one (1) or more subcontractors and the change is an increase in the agreed compensation, the overhead and profit percentage for the Contractor and each subcontractor shall be itemized separately.

14.6 Time for the City to Approve Extra Work: Any Extra Work in an amount up to and not exceeding a cumulative amount of \$25,000 for a specific project can be approved by the City Manager and shall require a written Change Order proposal to be submitted to the Public Works Director for submittal and approval by the City Manager. Extra Work exceeding the cumulative amount of \$25,000 for a specific project must be approved by the City Commission and a written Change Order proposal must be submitted to the Public Works Director for submittal and approval by the City Manager and City Commission. No financial or time claim for delay to the project resulting from the Change Order approval process outlined above under Section 14.6 will be allowed.

ARTICLE 15 – CHANGE OF THE CONTRACT TIME

- 15.1 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.
- 15.2 The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of the Contractor if a claim is made there for as provided in Paragraph 15.1. Such delays shall include but not be limited to, acts or neglect by the City, or to fires, floods, labor disputes, epidemics, abnormal weather conditions, or acts of God.
- 15.3 All time limits stated in the Contract Documents are of the essence. The provisions of this Article 15 shall not exclude recovery for damages for delay by the Contractor.
- 15.4 Delays caused by or resulting from entities, contractors or subcontractors who are not affiliated with the CONTRACTOR (non-affiliated Contractors) shall not give rise to a claim by the CONTRACTOR for damages for increases in material and/or labor costs. Such entities, contractors and subcontractors include, but are not limited to, the City's contractors and subcontractors, Florida Power and Light Company, AT&T and Florida East Coast Railway, LLC.
- 15.5 Rights of Various Interests: Whenever work being done by City's forces or by other contractors is contiguous to or within the limits of work covered by this Contract, the respective rights of the various interests involved shall be established by the Project Manager to secure the completion of the various portions of the work in general harmony.

ARTICLE 16 – LIQUIDATED DAMAGES

- 16.1 Upon failure of the Contractor to complete the Work within the time specified for completion, the Contractor shall pay to the City the sum of **Hundred/Thousand Dollars (\$ 00.00)** 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 Contractor. Should an act of God or the acts or omissions of the City, its agents or representatives, in derogation to the terms of this Agreement cause the delay, the Contractor shall not be responsible for the delay nor liquidated damages. Liquidated damages are 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 damages and the cost and effect of the failure of the Contractor to complete the Work 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 Contractor the amount of liquidated damages, and if the amount retained by the City is insufficient to pay in full such liquidated damages, the Contractor shall pay all

liquidated damages in full. The Contractor shall be responsible for reimbursing the City, in addition to liquidated damages or other damages for delay, for all costs of engineering, architectural 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 Contractor whichever is later. Delays caused by or resulting from entities, contractors or subcontractors who are not affiliated with the Contractor shall not give rise to a claim by Contractor for damages for increase in material and/or labor costs. Such entities, contractors and subcontractors include, but are not limited to, the City's contractors and subcontractors, Florida Power and Light Company, AT&T, and Florida East Coast Railway, LLC.

- 16.2 No Extended Damages: For other and additional good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the Contractor covenants and agrees that in the event of any delay of construction or for any reason, allegation or claim, and notwithstanding the reason of the delay, reason, claim or allegation or who caused them or the construction delay or whether they were caused by the City, that there will be no entitlement to Contractor to or for any direct or indirect financial damages or losses for extended corporate overhead impact, extended project overhead impacts, project support services, mobilization or demobilization or by whatever other label or legal concept or theory and types of names or labels or basis such claims may have, or any business damages or losses of whatever type or nature, and Contractor hereby waives any right to make any such claim or claims. This provision will have application and effect when construction delays are anticipated and agreed upon by both the City and the Contractor.

ARTICLE 17 – SUSPENSION OF WORK AND TERMINATION

- 17.1 City May Suspend Work: The City may, at any time and without cause, suspend the Work or any portion of the Work for a period of not more than ninety (90) days by notice in writing to the Contractor which shall fix the date on which Work shall be resumed. The Contractor shall resume the Work on the date fixed. The Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension, if the Contractor makes a claim as provided in Articles 14 and 15.
- 17.2 City's Right to Terminate Contract: The City may terminate this Agreement upon fifteen (15) calendar days' written notice upon the occurrence of any one or more of the following events:
- 17.2.1 If the Contractor commences a voluntary case or a petition is filed against the Contractor, under any chapter of the Bankruptcy Code, or if the Contractor takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency.
- 17.2.2 If the Contractor makes a general assignment for the benefit of creditors.
- 17.2.3 If a trustee, receiver, custodian or agent of the Contractor is appointed under applicable law or under Contract, whose appointment or authority to take charge of property of the Contractor is for the purpose of enforcing a lien

against such property or for the purpose of general administration of such property for the benefit of the Contractor's creditors.

17.2.4 If Contractor fails to begin the Work within fifteen (15) calendar days after the Project Initiation Date, or fails to perform the Work with sufficient workers and equipment or with sufficient materials to ensure the prompt completion of the Work, or shall perform the Work unsuitably, or cause it to be rejected as defective and unsuitable, or shall discontinue the prosecution of the Work pursuant to the accepted schedule or if Contractor shall fail to perform any material term set forth in the Contract Documents, or from any other cause whatsoever shall not carry on the Work in an acceptable manner, Project Manager may give notice in writing to Contractor and its Surety of such delay, neglect or default, specifying the same.

17.2.5 If the Contractor repeatedly fails to make prompt payments to subcontractors or for labor, material or equipment.

17.2.6 If the Contractor repeatedly disregards proper safety procedures.

17.2.7 If the Contractor disregards any local, state or federal laws or regulations.

17.2.8 If the Contractor otherwise violates any provisions of this Agreement.

17.3 If Contractor, within a period of ten (10) calendar days after such notice, shall not proceed in accordance therewith, the City may exclude the Contractor from the Work site and take the prosecution of the Work out of the hands of the Contractor, and take possession of the Work and all of the Contractor's tools, appliances, construction equipment and machinery at the site and use them without liability to the City for trespass or conversion, incorporate in the Work all materials and equipment stored at the site or for which the City has paid the Contractor but which are stored elsewhere, and finish the Work as the City may deem expedient. In this instance, the Contractor shall not be entitled to receive any further compensation until the Work is finished.

17.3.1 If after notice of termination of Contractor's right to proceed, it is determined for any reason that Contractor was not in default, the rights and obligations of City and Contractor 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 17.5 below.

17.3.2 Upon receipt of Notice of Termination pursuant to Sections 17.2 or 17.5, Contractor shall promptly discontinue all affected work unless the Notice of Termination directs otherwise and deliver or otherwise make available to City 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.

17.4 If the Contractor commits a default due to its insolvency or bankruptcy, the following shall apply:

17.4.1 Should this Agreement be entered into and fully executed by the parties, funds released and the Contractor (Debtor) files for bankruptcy, the following shall occur:

17.4.1.1 In the event the Contactor files a voluntary petition under 11 U.S.C. 301 or 302, or an order for relief is entered under 11 U.S.C. 303, the Contractor shall acknowledge the extent, validity, and priority of the lien recorded in favor of the City. The Contractor further agrees that in the event of this default, the City shall, at its option, be entitled to seek relief from the automatic stay pursuant to 11 U.S.C. 362. The City shall be entitled to relief from the automatic stay pursuant to 11 U.S.C. 362(d) (1) or (d) (2), and the Contactor agrees to waive the notice provisions in effect pursuant to 11 U.S.C. 362 and any applicable Local Rules of the United States Bankruptcy Court. The Contactor acknowledges that such waiver is done knowingly and voluntarily.

17.4.1.2 Alternatively, in the event the City does not seek stay relief, or if stay relief is denied, the City shall be entitled to monthly adequate protection payments within the meaning of 11 U.S.C. 361. The monthly adequate protection payments shall each be in an amount determined in accordance with the Note and Mortgage executed by the Contractor in favor of the City.

17.4.1.3 In the event the Contractor files for bankruptcy under Chapter 13 of Title 11, United States Code in addition to the foregoing provisions, the Contractor agrees to cure any amounts in arrears over a period not to exceed twenty-four (24) months from the date of the confirmation order, and such payments shall be made in addition to the regular monthly payments required by the Note and mortgage. Additionally, the Contractor shall agree that the City is over secured and, therefore, entitled to interest and attorney's fees pursuant to 11 U.S.C. 506(b). Such fees shall be allowed and payable as an administrative expense. Further, in the event the Contractor has less than five (5) years of payments remaining on the Note, the Contractor agrees that the treatment afforded to the claim of the City under any confirmed plan of reorganization shall provide that the remaining payments shall be satisfied in accordance with the Note, and that the remaining payments or claim shall not be extended or amortized over a longer period than the time remaining under the Note.

17.4.2 Should this Agreement be entered into and fully executed by the parties, and the funds have not been forwarded to Contractor, the following shall occur:

17.4.2.1 In the event the Contractor files a voluntary petition pursuant to 11 U.S.C. 301 or 302, or an order for relief is entered under 11 U.S.C. 303., the Contractor acknowledges that the commencement of a bankruptcy proceeding constitutes an event of default under the terms of this Agreement. Further, the Contractor acknowledges that this Agreement constitutes an executory contract within the meaning of 11 U.S.C. 365. The Contractor acknowledges that this Agreement is not capable of being assumed pursuant to 11 U.S.C. 365(c)(2), unless the

City expressly consents in writing to the assumption. In the event the City consents to the assumption, the Contractor agrees to file a motion to assume this Agreement within ten (10) days after receipt of written consent from the City, regardless of whether the bankruptcy proceeding is pending under Chapter 7, 11, or 13 of Title 11 of the United States Code. The Contractor further acknowledges that this Agreement is not capable of being assigned pursuant to 11 U.S.C. 365(b)(1).

- 17.5 Termination for Convenience: This Contract may be terminated for convenience in writing by City upon thirty (30) days written notice to Contractor (delivered by certified mail, return receipt requested) of intent to terminate and the date on which such termination becomes effective. In such case, Contractor shall be paid for all work executed and expenses incurred prior to termination in addition to termination settlement costs reasonably incurred by Contractor relating to commitments which had become firm prior to the termination. Payment shall include reasonable profit for work/services satisfactorily performed. No payment shall be made for profit for work/services which have not been performed.
- 17.6 Where the Contractor's service have been so terminated by the City, the termination shall not affect any rights of the City against the Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due the Contractor by the City will not release the Contractor from liability.
- 17.7 The Contractor has no right, authority or ability to terminate the Work except for the wrongful withholding of any payments due the Contractor from the City.

ARTICLE 18 – DISPUTE RESOLUTION

- 18.1 Resolution of Disputes: 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 Contract Administrator and Contractor shall be submitted to the Consultant 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 Consultant for resolution. The parties may agree to a proposed resolution at any time without the involvement and determination of the Consultant.
- 18.1.1 Consultant shall notify Contract Administrator and Contractor in writing of Consultant's decision within twenty-one (21) calendar days from the date of the submission of the question, claim, difficulty or dispute, unless Consultant requires time to gather information or allow the parties to provide additional information.
- 18.1.2 In the event the determination of a dispute by the Consultant under this Article is unacceptable to any of the parties hereto, the party objecting to the determination must notify the other party and the City Manager, in writing within ten (10) days after receipt of the determination. The notice must state

the basis of the objection and the proposed resolution. Final resolution of such dispute shall be made by the City Manager. The City Manager's decision shall be final and binding on the parties.

18.1.3 All non-technical administrative disputes (such as billing and payment) shall be determined by Contract Administrator.

18.1.4 During the pendency of any dispute and after a determination thereof, Contractor, Consultant, and Contract Administrator shall act in good faith to mitigate any potential damages including utilization of construction schedule changes and alternate means of construction. During the pendency of any dispute arising under this Agreement, other than termination herein, Contractor shall carry on the Work and adhere to the progress schedule. The Work shall not be delayed or postponed pending resolution of any disputes or disagreements.

18.1.5 For any disputes which remain unsolved, within sixty (60) calendar days after Final Completion of the Work, the parties shall participate in mediation to address all unresolved disputes. A mediator shall be mutually agreed upon by the parties. Should any objection not be resolved in mediation, the parties retain all their legal rights and remedies under applicable law. If a party objecting to a determination, fails to comply in strict accordance with the requirements of this Article, said party specifically waives all of its rights provided hereunder, including its rights and remedies under applicable law.

ARTICLE 19 – NOTICES

19.1 All notices required by any of the Contract Documents shall be in writing and shall be deemed delivered upon mailing by certified mail, return receipt requested to the following:

To the City:

City Manager
City of Fort Lauderdale
100 North Andrews Avenue
Fort Lauderdale, Florida 33301

with copy to the:

Project Manager and City Attorney
City of Fort Lauderdale
100 North Andrews Avenue
Fort Lauderdale, Florida 33301

To the Contractor:

ARTICLE 20 – LIMITATION OF LIABILITY

- 20.1 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 \$1,000. For other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Contractor expresses its willingness to enter into this Agreement with the knowledge that the Contractor's recovery from the City to any action or claim arising from the Agreement is limited to a maximum amount of \$1,000, which amount shall be reduced by the amount actually paid by the City to the Contractor 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 as set forth in Section 768.28, Florida Statutes, or to extend the City's liability beyond the limits established in said Section 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.
- 20.2 No Extended Damages: For other and additional good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, the Contractor covenants and agrees that in the event of any delay of construction or for any reason, allegation or claim, and notwithstanding the reason of the delay, reason, claim or allegation or who caused them or the construction delay or whether they were caused by the City, that there will be no entitlement to Contractor to or for any direct or indirect financial damages or losses for extended corporate overhead impact, extended project overhead impacts, project support services, mobilization or demobilization or by whatever other label or legal concept or theory and types of names or labels or basis such claims may have, or any business damages or losses of whatever type or nature, and Contractor hereby waives any right to make any such claim or claims. This provision will have application and effect when construction delays are anticipated and agreed upon by both the City and the Contractor.

ARTICLE 21 – GOVERNING LAW

- 21.1 This Agreement shall be governed by the laws of the State of Florida. Both Parties agree that the courts of the State of Florida shall have jurisdiction of any claim arising in connection with this Agreement. Venue for any claim, objection or dispute arising out of this Agreement shall be in Broward County, Florida. **By entering into this Contract, Contractor and City hereby expressly waive any rights either party may have to a trial by jury or any civil litigation related to, or arising out of the Project. Contractor shall specifically bind all subcontractors to the provisions of this Contract.**

ARTICLE 22 – MISCELLANEOUS

- 22.1 The duties and obligations imposed by this Agreement and the rights and remedies available to the parties and, in particular but without limitation, the warranties, guaranties and obligations imposed upon the Contractor and all of the rights and remedies available to the City, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are

otherwise imposed or available by laws or regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents, and the provisions of this Paragraph will survive final payment and termination or completion of this Agreement.

- 22.2 The Contractor shall not assign or transfer this Agreement or its rights, title or interests. The obligations undertaken by the Contractor pursuant to this Agreement shall not be delegated or assigned to any other person or firm. Violation of the terms of this Paragraph shall constitute a material breach of Agreement by the Contractor and the City any, at its discretion, cancel this Agreement and all rights, title and interest of the Contractor which shall immediately cease and terminate.
- 22.3 The Contractor and its employees, volunteers and agents shall be and remain an independent contractors and not agents or employees of the City with respect to all of the acts and services performed by and under the terms of this Agreement. This Agreement shall not in any way be constructed to create a partnership, association or any other kind of joint undertaking or venture between the Parties.
- 22.4 The City reserves the right to audit the records of the Contractor relating in any way to the Work to be performed pursuant to this Agreement at any time during the performance and term of this Agreement and for a period of three (3) years after completion and acceptance by the City. If required by the City, the Contractor agrees to submit to an audit by an independent certified public accountant selected by the City. The Contractor shall allow the City to inspect, examine and review the records of the Contractor at any and all times during normal business hours during the term of this Agreement.
- 22.5 The remedies expressly provided in this Agreement to the City shall not be deemed to be exclusive but shall be cumulative and in addition to all other remedies in favor of the City now or later existing at law or in equity.
- 22.6 Should any part, term or provisions of this Agreement be decided by the courts to be invalid, illegal or in conflict with any state or federal law, the validity of the remaining portion or provision shall not be affected.
- 22.7 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.

22.8 Public Entity Crimes: In accordance with the Public Crimes Act, Section 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, 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 by Contractor shall result in cancellation of the City purchase and may result in Contractor debarment.

22.9 Attorney Fees: If CITY or CONSULTANT incurs any expense in enforcing the terms of this Agreement through litigation, the prevailing party in that litigation shall be reimbursed for all such costs and expenses, including but not limited to court costs, and reasonable attorney fees incurred during litigation.

22.10 Public Records

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 PRRCONTRACT@FORTLAUDERDALE.GOV, 954-828-5002, CITY CLERK'S OFFICE, 100 N. ANDREWS AVENUE, FORT LAUDERDALE, FLORIDA 33301.

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.

Project Name
(Contractor)
Project #

CITY

IN WITNESS OF THE FOREGOING, the parties have set their hands and seals the day and year first above written.

CITY OF FORT LAUDERDALE, a municipal
corporation of the State of Florida

By: _____
LEE R. FELDMAN, City Manager

(CORPORATE SEAL)

ATTEST:

By: _____
JEFFREY A. MODARELLI
City Clerk

Approved as to Legal Form:

By: _____
RHONDA MONTOYA HASAN
Assistant City Attorney

CONTRACTOR

WITNESSES:

CONTRACTOR.,
a Florida corporation.

By _____

Print Name_____
PRINT NAME_____
Title

ATTEST:

BY: _____

Print Name_____
PRINT NAME_____
Secretary

(CORPORATE SEAL)

STATE OF FLORIDA:
COUNTY OF BROWARD:

The foregoing instrument was acknowledged before me this _____ day of _____, 2018, by _____ (Name), as _____ (Title) of _____ (CONTRACTOR), a Florida corporation, on behalf of the Corporation.

SEAL

Notary Public, State of Florida_____
Name of Notary Typed, Printed or Stamped☐ Personally Known or ☐ Produced Identification:

Type of Identification Produced: _____

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 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 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 - 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)

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 aid 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 - 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.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

TABLE OF CONTENTS

**GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT**

<u>DESCRIPTION</u>	<u>Page</u>
I. BID INFORMATION (ITEMS I. THROUGH V. NOT INCLUDED HEREIN)	
Invitation to Bid	ITB-1
Instruction to Bidders.....	IB-1 thru IB-4
II. PROPOSAL PAGES	
Proposal	P-1 thru P-3
Questionnaire Sheet	P-4 thru P-5
Trench Safety	P-6
III. CONTRACTOR IDENTIFICATION	
Minority Business Enterprise.....	MBE-1 thru MBE-2
Non-Collusion Statement.....	NCS-1
IV. CONSTRUCTION AGREEMENT (SAMPLE)	C-1 thru C-36
V. GENERAL CONDITIONS	GC-1 thru GC-9
VI. SPECIFICATIONS	
DIVISION 1 – GENERAL REQUIREMENTS	
01010 – Summary of Work (certification forms included)	
01014 – Construction Constraints	
01025 – Measurement and Payment	
01026 – Applications for Payment	
01035 – Change Order Procedures	
01038 – Requests for Information	
01170 – Special Provisions	
01200 – Project Meetings	
01300 – Submittals	
01310 – Construction Scheduling	
01370 – Schedule of Values	
01630 – Substitutions and Product Options	
01700 – Contract Closeout	
01720 – Project Record Documents	
01740 – Warranties and Bonds	

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

DIVISION 2 – SITE WORK

02050 – Demolition and Modifications
02140 – Dewatering and Drainage (Soil Boring Report appended)
02200 – Earthwork
02221 – Trenching, Backfilling and Compaction
02270 – Erosion and Sedimentation Control
02500 – Pavement
02616 – Ductile Iron Pipe and Fittings
02659 – Temporary By-Pass Pumping Systems
02901 – Miscellaneous Work and Cleanup

DIVISION 9 – FINISHES

09902 – Painting

DIVISION 13 – SPECIAL CONSTRUCTION

13030 – Internally Bonded Carbon Fiber Reinforced Polymer Lining

DIVISION 15 – MECHANICAL

15064 – Plastic Pipe and Fittings

DRAWINGS (BOUND SEPARATELY) File No. 4-136-67 consisting of 35 sheets (including cover).

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 01010
SUMMARY OF WORK

PART 1 GENERAL

1.01 LOCATION OF WORK

- A. The work of this Contract is located at George T. Lohmeyer Wastewater Treatment Plant, 1765 SE 18th Street, Fort Lauderdale, Florida 33316.

1.02 SCOPE OF WORK

1.03 WORK SEQUENCE

- A. Furnish all labor, materials, equipment and incidentals required to install and test the large diameter influent pipe replacement Work in its entirety as shown on the Drawings and as specified herein.
- B. The Work includes design, labor, material, and equipment to by-pass pump, shore, dewater, protect, drain, temporarily support and relocate conflicting utilities, remove, replace, test, dispose, and restore disturbed areas for the prestressed concrete cylinder pipe conveying pretreated raw sewage from both reactor one and reactor two outlet boxes conveying clarifier influent wastewater to battery 3 clarifier splitter box. The prestressed concrete cylinder pipe (PCCP) will be replaced with ductile iron pipe (DIP) or structurally lined. There are approximately 360 linear feet of 42-inch, 48-inch, and 66-inch diameter of new ductile iron pipe; and approximately 200 linear feet of 66-inch diameter PCCP to be structurally lined. There is approximately 600 linear feet of two 6-inch diameter fiberglass pipe conveying odor control chlorine solution originating from the chlorine building's west exterior and terminating near reactor two's outlet box; the replacement pipe material shall be schedule 80 polyvinyl chloride. There is approximately 120 linear feet of 3-inch diameter fiberglass pipe conveying odor control chlorine solution originating from the chlorine building's west exterior and terminating near sludge pump station No. 3; the replacement pipe material shall be schedule 80 polyvinyl chloride. There is approximately 170 linear feet of 8-inch diameter ductile iron pipe above grade in an open trough to be replaced with ductile iron pipe. The work specifics include, but are not necessarily limited to, the following:
1. Design, furnish, install, field test, operate, monitor, maintain, and remove temporary by-pass pumps, fuel, power unit, hydraulic hose, pipe, valve, flow meter, support, and accessories.
 - a. The temporary by-pass pumping systems shall divert flow for the work sequence configurations shown on the drawings and specified in Sections 01014 and 02659.
 2. Remove and dispose of the existing 48-inch/66-inch diameter clarifier influent PCCP from reactor two outlet box to a point near the east face of sludge pump station No. 3; and install ductile iron replacement pipe.
 3. Structurally line with internally bonded carbon fiber reinforced polymer lining the existing 66-inch diameter clarifier influent PCCP from a point near the east face of the sludge pump station No. 3 to battery 3 clarifier.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

4. Remove and dispose of the existing 6-inch diameter fiberglass odor control chlorine solution pipe from the chlorine building west exterior to reactor two's outlet box; and install 6-inch diameter Schedule 80 PVC replacement pipe.
 5. Remove and dispose of the existing 3-inch diameter fiberglass odor control chlorine solution pipe from the chlorine building west exterior to sludge pump station No. 3; and install 3-inch diameter Schedule 80 PVC replacement pipe.
 6. Remove and install 8-inch diameter ductile iron pipe above grade in an open trough of clarifier Nos. 5 and 7.
 7. Restoration of asphalt, striping, curb, sidewalk, fencing, swale and sod, and stone hardscape.
 8. Temporary relocation, re-installation, and by-pass, as necessary, of the existing potable water, non-potable water, chlorine solution and public address system utilities may be required to perform the Work detailed in the Contract Documents. The cost of the relocation, re-installation, and by-pass will be considered incidental to the construction of the Work and is the responsibility of the Contractor.
- C. Perform Work within constraints specified in Section 01014.
- D. Zero Dust Area: The Contractor shall provide zero dust during work in these areas. Concrete dust and dust from dirt will adversely affect the existing cryogenic plant operation.
- E. Stringent Daily Housekeeping: The Contractor shall maintain daily housekeeping around the cryogenic plant work areas. Housekeeping requirements shall be strictly enforced.
- F. No Smoking/Flame/Spark Area: The Contractor shall not smoke, or cause spark or flame in or around the cryogenic plant. The Contractor shall become familiar with the cold temperature burns, over-pressurization expansion, vapors, and combustion hazards associated with liquid oxygen. The Contractor shall comply with OSHA Safety regulations and any state and local safety regulations.
- G. No Excessive Vibration Area: Vibration is an issue that must not impact the cryogenic facility operation. There shall be a 12/72 hour rule: Cryogenic (Liquid Oxygen) facility can be shut down for no more than twelve (12) hours to allow work that may cause excessive vibration near the facility. The facility will then need to be returned to operation for at least seventy-two (72) hours before another twelve-hour shut-down can occur.
- 1.04 CONTRACTOR'S USE OF PREMISES
- A. Contractor shall be aware that this is an operating wastewater treatment plant which must be kept in service on a continuous basis.
- B. Coordinate use of premises with other contractors and the City.
- C. Contractor shall assume full responsibility for security of all their materials and equipment stored on the site and all their subcontractors' materials and equipment stored on the site.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- D. If directed by the City, move any stored items which interfere with operations of City or other contractors.
- E. Obtain and pay for use of additional storage or work areas if needed to perform the Work.
- F. Contractor shall be responsible for any structural damage caused by their work.

1.05 CITY OCCUPANCY

- A. City will occupy premises during performance of the work for the conduct of all necessary plant operations. Coordinate all construction operations with the City to minimize conflict and to facilitate City usage.

1.06 SUBSTANTIAL COMPLETION

- A. When Contractor considers the entire Work ready for its intended use, Contractor shall notify the City in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that City issue a certificate of Substantial Completion.
- B. Promptly after Contractor's notification, City and Contractor shall make an inspection of the Work to determine the status of completion. If City does not consider the Work substantially complete, City will notify Contractor in writing giving the reasons therefor.
- C. If City considers the Work substantially complete, City will deliver a Certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment.
- D. City shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

1.07 PARTIAL UTILIZATION BY CITY

- A. Prior to Substantial Completion of all the Work, City may use or occupy the following substantially completed parts of the Work which City and Contractor agree constitute separately functioning and usable parts of the Work that can be used by City for its intended purpose without significant interference with Contractor's performance of the remainder of the Work,
 - 1. New 42-inch diameter DIP clarifier influent from reactor one outlet box to reactor two outlet box.
 - 2. New 48-inch/64-inch diameter DIP clarifier influent from reactor two outlet box to battery 3 clarifier.
 - 3. Structurally lined 66-inch diameter PCCP clarifier influent from reactor two outlet box to battery 3 clarifier.
 - 4. New 6-inch diameter Schedule 80 PVC odor control chlorine solution from the chlorine building to reactor two's outlet box..

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

5. New 3-inch diameter Schedule 80 PVC odor control chlorine solution pipe from the chlorine building west exterior to sludge pump station No. 3.
6. New 8-inch diameter ductile iron pipe above grade in an open trough of clarifier Nos. 5 and 7.

B. Such partial utilization by the City is subject to the following conditions:

1. When Contractor considers that a part of the Work listed in Paragraph 1.07.A is substantially complete, Contractor and City will follow the procedures of Paragraph 1.06. for that part of the Work.
2. Within a reasonable time after either such request, City and Contractor shall make an inspection of that part of the Work to determine its status of completion. If City does not consider that part of the Work to be substantially complete, City will notify Contractor in writing giving the reasons therefore. If City considers that part of the Work to be substantially complete, the provisions of Paragraph 1.06 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

END OF SECTION

CONTRACTOR'S CERTIFICATION OF FINAL PAYMENT

Project Number

Location

_____ agrees to accept the sum
(CONTRACTOR)

of \$ _____ as full and final payment for all work under its

Contract dated _____

with the _____
(CITY)

for the construction of _____
(PROJECT)

_____ certifies that all
(CONTRACTOR)
construction has been completed in substantial compliance with the Contract Documents, and
that all labor, equipment, materials and Subcontractors have been or will be paid in
accordance with the requirements of the Contract Documents, and the requirements of the
General Laws of the _____.

_____ CONTRACTOR

BY: _____ DATED: _____

Certificate of Substantial Completion

Project:	City:	City's Contract No.:
Contract:		Date of Contract:
Contractor:		Project No.:

This [tentative] [definitive] Certificate of Substantial Completion applies to:

- ☐ All Work under the Contract Documents: ☐ The following specified portions:

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of City, Contractor and City Engineer, and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby declared and is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

A [tentative] [revised tentative] [definitive] list of items to be completed or corrected, is attached hereto. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

The responsibilities between CITY and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties shall be as provided in the Contract Documents except as amended as follows:

- ☐ Amended Responsibilities ☐ Not Amended

City's Amended Responsibilities:

Contractor's Amended Responsibilities:

The following documents are attached to and made part of this Certificate:

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

Executed by City Engineer

Date

Accepted by Contractor

Date

Accepted by City

Date

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 01014
CONSTRUCTION CONSTRAINTS

PART 1 GENERAL

1.01 SITE CONDITIONS

- A. Several areas of construction under this contract must be coordinated with the Plant Operating Personnel and accomplished in a logical order to maintain the process flow through the plant and to allow construction to be completed within the time allowed by Contract Documents. Coordinate the activities with the other contractors, if any, to allow orderly and timely completion of all the work.
- B. When access through construction areas must be disrupted, provide alternate acceptable access for the plant operators or other contractors.
- C. Coordinate the activities in the interface or common areas with other contractors and the plant operators. Submit to the City a description and schedule as to how the common areas will be utilized, recognizing the required coordination with other contractors and the plant operators.
- D. Various interconnections within the plant will depend on the closure of various valves and gates. Coordinate with plant operations to have plant operations personnel perform any such closure. Contractor's schedule shall allow ten (10) working days for plant operations to attain the shut-off needed to perform the work.
- E. When the work requires an existing facility to be taken out of operation, temporarily or permanently, notify the City and plant operators two (2) weeks in advance. This notice is in addition to the ten (10) working days Contractor is to allow for plant operations to raise and lower slide gate adjustable weirs. Open and close sluice gates. Drain pipe lines of pretreated raw sewage and clarifier influent to perform the Work.
- F. Where water is required in large quantity for preoperational testing or other use, purchase it from the City. Contractor may install the City-furnished meter at the nearest fire hydrant. Pay all fees and water usage charges. The plant water, if requested promptly by Contractor, may be available for limited use at plant operations' discretion.

1.02 SUBMITTALS

- A. Within thirty (30) days after the Notice to Proceed, Contractor shall submit to the City for approval work plan(s) giving a detailed description of the sequence and responsibility of work activities demonstrating compliance with all the construction constraints of this Section. Work shall not begin on any existing component until the work plans addressing all the construction constraints of this Section have been approved by the City.
- B. Within thirty (30) days after the Notice to Proceed, Contractor shall submit to the City for approval Maintenance of Traffic (MOT) plans for maintaining accessibility for plant operations and deliveries throughout performance of the Work. Underground construction work shall not begin until the MOT's have been approved by the City.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

1.03 CONSTRUCTION CONSTRAINTS

- A. The following is a list of constraints that must be implemented into the Contractor's overall plan of construction. This list does not release the Contractor from the responsibility to coordinate the Work in any manner which will ensure project completion within the time allowed.
1. 42-inch diameter clarifier influent from reactor one outlet box to reactor two outlet box.
 - a. Contractor shall design, install, test and start up the temporary bypass pumping system for "Work Sequence B" specified in Paragraph 1.04.A.1.a and b prior to starting work on the 42-inch diameter clarifier influent from reactor one outlet box to reactor two outlet box.
 2. 48-inch/66-inch diameter clarifier influent (MLSS) from reactor two to the distribution chamber at battery 3 clarifiers.
 - a. Contractor shall design, install, test and start up the temporary bypass pumping system for "Work Sequence B" specified in Paragraphs 1.04.A.1.a and b prior to starting work on the 48-inch/66-inch diameter clarifier influent (MLSS) from reactor two to battery 3 clarifiers.

1.04 TEMPORARY BYPASS PUMPING SYSTEMS

- A. Contractor shall design, furnish, install, field test, operate, monitor, and temporary bypass pumping systems for each work sequence of construction, as specified in Section 02659, before starting any work on that respective work sequence. The following by-pass pumping systems are required (See also Section 02659):
1. Work Sequence B
 - a. Pump to match varying influent flow to Reactor 2, between 2.5 mgd and 20 mgd, from the outlet box of reactor one to the distribution chamber at battery 3 clarifiers. The system shall remain fully functional and in operation during any work on the 42-inch diameter influent to clarifier battery 3.
 - b. Pump to match varying influent flow to Reactor 1, between 2.5 mgd and 20 mgd, from the outlet box of reactor two to the distribution chamber at battery 3 clarifiers. The system shall remain fully functional and in operation during any work on the 48-inch/66-inch diameter influent to clarifier battery 3.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 01025
MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes specification for the measurement and payment of the various elements of the Work; with provisions applicable to lump sum prices, unit prices, and allowances, if applicable.
- B. In the case of conflict between this Section and the measurement methods specified in the individual technical Sections, the measurement methods in the technical specifications shall govern.
- C. The Contractor shall receive no payment for any portion of the Work until it is installed. The only exception to this is payment for stored materials on site if the Contract provides for the payment of stored materials. Partial payment may be requested for items partially installed.

1.02 RELATED WORK

- A. Schedule of Values is included in Section 01370
- B. Applications for Payment are included in Section 01026.
- C. Construction Agreement and General Conditions

1.03 LUMP SUM ITEMS

- A. Lump Sum measurement will be for the entire item, unit of work, structure, or combination thereof, as specified and as indicated in the Proposal. Measurement and payment for all bid items indicated as Lump Sums shall include the cost of all labor, materials and equipment necessary to furnish, install, clean, test, and place each bid item into operation; including permitting, general conditions, overhead and profit.
- B. Progress payments will be based on the Schedule of Values prepared by the Contractor and approved by the City before acceptance of the first Application for Payment.
- C. In order for the Contractor to request progress payments against Lump Sum items, Contractor shall provide a breakdown in sufficient measurable detail that is acceptable to the City.
- D. Measurement
 - 1. Measurement shall be based on the estimated percent complete of each item of the Schedule of Values, as determined by the City.
- E. Payment
 - 1. Payment will be made at the lump sum price proportional to the completion percentages approved by the City.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

1.04 UNIT PRICE ITEMS

- A. Quantity and measurement estimates stated in the Proposal are estimates for bidding purposes only. Actual payments shall be based on actual quantities installed, in-place, as measured and/or verified by the City.
- B. Unless otherwise provided in the General Conditions, the bid unit prices shall be in effect throughout the contract duration, regardless of variances between the estimated quantities and the actual installed quantities.
- C. The Contractor shall make no claim, nor receive any compensation, for anticipated profits, loss of profit, damages, or any extra payment due to any difference between the amounts of work actually completed, or materials or equipment furnished, and the estimated quantities
- D. Unless otherwise approved by the City, any unit quantities exceeded may not be invoiced until the estimated quantity is increased by contract change order.
- E. Contractor shall assist City by providing necessary equipment, workers, and survey personnel as required to measure quantities.
- F. Measured quantities shall be rounded to the nearest whole integer, unless the value of the unit price exceeds \$100, in which case measured quantities shall be rounded to the nearest half unit.
- G. Measurement
 - 1. Measurement for progress payment shall be made by, or approved by, the City based on the estimated effective quantity installed. The effective quantity installed represents the actual units or quantities installed, adjusted for incomplete elements or components.
 - 2. Unless otherwise provided for in the Proposal unit price items are all-inclusive of all related work, direct and indirect, to provide a complete and functional item. For example, underground pipe installation would include trenching, shoring, dewatering, bedding, installation, backfill, testing, flushing, disinfection, and commissioning; including all labor, materials and equipment necessary to furnish, install, clean, test, and place into operation; including permitting, general conditions, overhead and profit.
 - 3. The final measurement shall be based on actual quantities, jointly measured by Contractor and City, complete, fully tested and placed into service.
- H. Payment
 - 1. Progress payments shall be in accordance with the contract documents based on estimated effective quantities installed, paid at the bid unit price.
 - 2. The final payment shall be based on actual quantities, fully installed, tested and placed into service, paid at the bid unit price.

1.05 ALLOWANCES

- A. Allowances, if any, specified in the Contract Documents and indicated in the Proposal are considered provisional amounts to be used only if needed. Allowances are exclusive of work

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

indicated in the Contract Documents for which payment is included under other items in the Proposal. No work may be performed under an allowance without prior written approval of the City.

- B. Any unused balance of the allowances shall revert to the City upon completion of the project. Prior to final payment, the original amount provided for allowances shall be adjusted to actual costs by deductive Change Order, adjusting the contract price, accordingly.
- C. The Contractor shall make no claim, nor receive any compensation, for anticipated profits, loss of profit, damages, or any extra payment due to any unexpended portion of the allowances.
- D. The Contractor is to include time for allowance work in the construction schedule. No adjustment of Contract Time shall be allowed for any work performed under allowance items.
- E. Allowance items shall be included in the Schedule of Values.
- F. The allowable costs for work performed under an Allowance item shall be as specified in the specific measurement and payment provisions.

1.06 UNITS OF MEASURE

- A. Units of measure shown on the Proposal shall be as follows unless otherwise specified. All methods of measurement shall be approved by the City.
 - 1. Acre (AC) – Field Measure
 - 2. Allowance (AL)
 - 3. Cubic Yard (CY) – Field measure within limits specified or shown or measured in vehicle by volume as specified
 - 4. Each (EA) – Field Count
 - 5. Gallon (GAL) – Field Measure
 - 6. Hour (HR)
 - 7. Pound (LB) – Weight Measure by Scale
 - 8. Linear Foot (LF) – Field Measure
 - 9. Lump Sum (LS) – Unit is one. No measurement will be made.
 - 10. Square Foot (SF) – Field Measure
 - 11. Square Yard (SY) – Field Measure
 - 12. Ton (TON) – Weight Measure by Scale

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 PROPOSAL ITEMS

A. Bid Items

1. Item No. 1 – Mobilization and De-mobilization (LS)
 - a. This item includes the costs for all bonds, insurance, temporary construction facilities, storage, testing, temporary construction facilities, sanitary facilities, project coordination, Contractor costs associated with permit acquisition and close-out, pre-construction photography and videos, project signs, clean-up and de-mobilization.
 - b. The lump sum price in the Proposal for this item shall not exceed 8% of the total price of Base Bid Items 2 and 3. Partial payments for this item will be made as follows:
 - 1) 25% at 5% Construction Complete
 - 2) 50% at 10% Construction Complete
 - 3) 75% at 25% Construction Complete
 - 4) 100% at 100% Construction Complete
2. Item No. 2 – Pipe Replacement (LS)
 - a. This item includes the costs to design, furnish, install, monitor, maintain, and remove temporary earthwork excavation support systems. Design, furnish, install, operate, maintain, and remove temporary dewatering systems. Provide labor, material, and equipment to drain and properly dispose of raw wastewater liquid and solids, temporarily support and relocate conflicting utilities, remove, replace, test, dispose, and restore disturbed areas and asphalt, asphalt markings, concrete sidewalks, gravel hardscape in accordance with the Contract Documents for the prestressed concrete cylinder pipe conveying pretreated raw sewage from both reactor one and reactor two outlet boxes conveying clarifier influent wastewater to battery 3 clarifier splitter box. The prestressed concrete cylinder pipe (PCCP) will be replaced with ductile iron pipe (DIP) or structurally lined. There are approximately 360 linear feet of 42-inch, 48-inch, and 66-inch diameter of new ductile iron pipe. There is approximately 600 linear feet of two 6-inch diameter fiberglass pipe conveying odor control chlorine solution originating from the chlorine building's west exterior and terminating near reactor two's outlet box; the replacement pipe material shall be schedule 80 polyvinyl chloride. There is approximately 120 linear feet of 3-inch diameter fiberglass pipe conveying odor control chlorine solution originating from the chlorine building's west exterior and terminating near sludge pump station No. 3; the replacement pipe material shall be schedule 80 polyvinyl chloride. There is approximately 170 linear feet of existing 8-inch diameter ductile iron pipe and supports above grade in an open trough to be replaced with new ductile iron pipe and pipe supports.
3. Item No. 3 – Structurally Line PCCP (LS)
 - a. This item includes the costs to design, furnish, install structural lining in accordance with the Contract Documents for portions of prestressed concrete cylinder pipe from reactor two outlet box conveying clarifier influent wastewater to battery 3 clarifier splitter box. There is approximately 200 linear feet of 66-inch prestressed concrete cylinder pipe to be cleaned, solids removed, and structurally lined with internally bonded carbon fiber reinforced polymer lining.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

4. Item No. 4 – Temporary By-Pass Pumping (LS)
 - a. This item includes the costs to design, furnish, install, field test, operate, monitor, and remove temporary by-pass pumping systems in accordance with Contract Documents for temporary by-pass pumping system including pumps, pump drives, piping, piping restraints, pipe supports, cross-over steps, piping headers, fittings, valves, flow meters, controls, wiring, fuel, power unit, and any other related accessories required to provide a complete operating system identified in specification section 02659 and on drawings G-2 and G-3.

B. Allowance Items

1. Item No. 5 – Additional Materials (AL)
 - a. This item is intended to reimburse the Contractor for additional materials including purchase, delivery, handling and storage at actual costs for additional work that may be authorized but is not identified on the Contract Documents.
 - b. The Contractor markup percentage entered for this bid item at the time of the bid include all direct and indirect cost associated with labor, benefits, and profit.
 - c. The Contractor shall provide documentation upon request verifying actual cost. Only documentation substantiated by the Contractor and approved by the City will be paid as part of this bid item. Contractor and City's Construction Manager must first negotiate additional Work and Contractor shall obtain written authorization from City Manager and/or designee prior to incurring cost under this Item.
2. Item No. 6 – Additional Labor (AL)
 - a. This item is intended to reimburse the Contractor for additional labor at actual costs for additional work that may be authorized but is not identified in the Contract Documents.
 - b. The Contractor markup percentage entered for this bid item at the time of the bid include all direct and indirect cost associated with labor, benefits, and profit.
 - c. The Contractor shall provide documentation upon request verifying actual cost. Only documentation substantiated by the Contractor and approved by the City will be paid as part of this bid item. Contractor and City's Construction Manager must first negotiate additional Work and Contractor shall obtain written authorization from City Manager and/or designee prior to incurring cost under this Item.
3. Item No. 7 – Additional Equipment Rental (AL)
 - a. This item is intended to reimburse the Contractor for additional equipment rental at actual costs for additional work that may be authorized but is not identified in the Contract Documents.
 - b. The Contractor markup percentage entered for this bid item at the time of the bid include all direct and indirect cost associated with labor, benefits, and profit.
 - c. The Contractor shall provide documentation upon request verifying actual cost. Only documentation substantiated by the Contractor and approved by the City will be paid as part of this bid item. Contractor and City's Construction Manager must first negotiate additional Work and Contractor shall obtain written authorization from City Manager and/or designee prior to incurring cost under this Item.
4. Item No.8 – Additional Professional Services (AL)
 - a. This item is intended to reimburse the Contractor for additional professional services at actual costs for additional work that may be authorized but is not identified in the Contract Documents.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- b. This item shall not be used for the professional services required for temporary dewatering (02140), temporary excavation support (02200), temporary by-pass pumping (02659), or internally bonded carbon fiber reinforced polymer lining (13030).
 - c. The Contractor markup percentage entered for this bid item at the time of the bid include all direct and indirect cost associated with labor, benefits, and profit.
 - d. The Contractor shall provide documentation upon request verifying actual cost. Only documentation substantiated by the Contractor and approved by the City will be paid as part of this bid item. Contractor and City's Construction Manager must first negotiate additional Work and Contractor shall obtain written authorization from City Manager and/or designee prior to incurring cost under this Item.
- 5. Item No. 9 – Permitting Fees (AL)
 - a. This item is intended to reimburse the Contractor for fees required by the permitting agencies for the various permits for the project.
 - b. The Contractor shall be reimbursed for the actual fees assessed by the permitting agencies to execute the permits for the project. This includes the overall building permit for the general contractor as well as permits for the various subcontractors. This includes the Broward County development review fee.
 - c. Payment shall be limited to amount reflected in receipts from the permitting agency.

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 01026
APPLICATIONS FOR PAYMENT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Submit Applications for Payment to the City in accordance with the schedule established by the Contract Agreement between City and Contractor.
- B. The accepted Schedule of Values, Section 01370, shall be used as the basis for the Contractor's Application for Payment.

1.02 RELATED WORK

- A. Construction Agreement and General Conditions.
- B. Schedule of Values are included in Section 01370.
- C. Construction Photographs are included in Section 01300.
- D. Construction Scheduling is included in Section 01310.
- E. Contract Closeout is included in Section 01700.

1.03 SUBMITTALS

- A. Submit applications typed on forms provided by the City with itemized data typed on 8-1/2-in by 11-in or 8-1/2-in by 14-in white paper continuation sheets.
- B. Provide itemized data on continuation sheet.
 - 1. Format, schedules, line items and values: Those of the Schedule of Values accepted by the City.
- C. Provide construction photographs in accordance with Section 01300.

1.04 PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT

- A. Application Form
 - 1. Fill in required information, including that for Change Orders executed prior to date of submittal of application.
 - 2. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.
 - 3. Execute certification with signature of a responsible officer of Contract firm.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

B. Continuation Sheets

1. Fill in total list of all scheduled component items of Work, with item number and scheduled dollar value for each item.
2. Fill in dollar value in each column for each scheduled line item when work has been performed or products stored.
3. List each Change Order executed prior to date of submission, at the end of the continuation sheets.
 - a. List by Change Order Number and description, as for an original component item of work.

1.05 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

- A. When the City requires substantiating data, submit suitable information, with a cover letter identifying.
 1. Project.
 2. Application number and date.
 3. Detailed list of enclosures.
 4. For stored products:
 - a. Item number and identification as shown on application.
 - b. Description of specific material.
- B. Submit one copy of data and cover letter for each copy of application.
- C. Beginning with the second Application for Payment, as a prerequisite for payment, submit a "Surety Acknowledgement of Payment Request" letter showing amount of progress payment which the Contractor is requesting.
- D. Maintain an updated set of drawings to be used as record drawings in accordance with the Agreement. As a prerequisite for monthly progress payments, exhibit the updated record drawings for review by the City.

1.06 PREPARATION OF APPLICATION FOR FINAL PAYMENT

- A. Fill in Application form as specified for progress payments.
- B. Submit contract close-out documents in accordance with Section 01700.
- C. Submit all Project Record Documents in accordance with Sections 01700 and 01720.

1.07 SUBMITTAL PROCEDURE

- A. Submit Applications for Payment at least ten (10) days before the date stipulated in the Agreement (but not more often than once a month) to the City for review, filled out and signed by the Contractor covering the Work completed as of the date of the Application and

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

accompanied by the construction schedule, updated to indicate the progress of the Work through the date of the Application.

- B. Number: Four copies of each Application.
- C. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that City has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect City's interest therein, all of which must be satisfactory to City.
- D. City will, within 5 days after receipt of each Application for Payment, either recommend payment or return the Application to Contractor indicating in writing City's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
- E. City's recommendation of any payment requested in an Application for Payment will constitute a representation, based on City's observations of the executed Work as an experienced and qualified design professional, and on City's review of the Application for Payment and the accompanying data and schedules, that to the best of City's knowledge, information and belief:
1. The Work has progressed to the point indicated;
 2. The quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities, and any other qualifications stated in the recommendation); and
 3. The conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is City's responsibility to observe the Work.
- F. By recommending any such payment City will not thereby be deemed to have represented that:
1. Inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work; or
 2. There may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by the City or entitle the City to withhold payment to Contractor.
- G. Neither City's review of Contractor's Work for the purposes of recommending payments nor City's recommendation of any payment, including final payment, will impose responsibility on City to supervise, direct, or control the Work, or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to City free and clear of any Liens.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- H. City may refuse to recommend the whole or any part of any payment if, in City's opinion, it would be incorrect to make the representations. City may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in City's opinion to protect the City from loss because:
1. The Work is defective, or completed Work has been damaged, requiring correction or replacement;
 2. The Contract Price has been reduced by Change Orders; or
 3. The City has been required to correct defective Work or complete Work in accordance with the Agreement.
- I. After Contractor has, in the opinion of the City, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all O&M manuals, warranties, bonds, certificates or other evidence of insurance, certificates of inspection, record documents, and other documents, Contractor may make application for final payment following the procedure for progress payments.
- J. The final Application for Payment shall be accompanied (except as previously delivered) by all documentation called for in the Contract Documents, and by consent of the surety to final payment.
- K. If, on the basis of City's observation of the Work during construction and final inspection, and City's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, City is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, City will, within ten days after receipt of the final Application for Payment, indicate in writing City's recommendation of payment and present the Application for Payment. Otherwise, City will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 01035
CHANGE ORDER PROCEDURES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Promptly implement change order procedures.
 - 1. Provide full written data required to evaluate changes.
 - 2. Maintain detailed records of work done on a time-and-material/ force account basis.
 - 3. Provide full documentation to City on request.
- B. Designate in writing the member of Contractor's organization:
 - 1. Who is authorized to accept changes in the work.
 - 2. Who is responsible for informing others in the Contractor's employ of the authorization of changes in the work.
- C. City will designate in writing the person who is authorized to execute Change Orders.

1.02 RELATED REQUIREMENTS

- A. Conditions of the Contract are included in Article 13 of the Agreement.
 - 1. Methods of determining cost or credit to City resulting from changes in work made on a time and material basis.
 - 2. Contractor's claims for additional costs.
- B. Applications for Payment are included in Section 01026.
- C. Schedule of Values are included in Section 01370.
- D. Substitutions are included in Section 01630.
- E. Project Record Documents are included in Section 01720.

1.03 DEFINITIONS

- A. Change Order: See Contract for Construction.
- B. Work Change Directive: A written order to the Contractor, signed by City, which amends the Contract Documents as described and authorizes the Contractor to proceed with a change which affects the Contract Sum or the Contract Time, for inclusion in a subsequent Change Order.
- C. Field Order: A written order to the Contractor signed by the City and the Contractor, which is issued to interpret/clarify the Contract Documents, order minor changes in the work and/or

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

memorialize trade-off agreements. The work described by a Field Order is to be accomplished without change to the Contract Sum, Contract Time, and/or claims for other costs.

1.04 PRELIMINARY PROCEDURES

- A. City may initiate changes by submitting a Request for Proposal (RFP) to Contractor. Request will include:
 - 1. Detailed description of the Change.
 - 2. Supplementary or revised Drawings and Specifications.
 - 3. The projected time span for making the change and a specific statement as to whether overtime work is, or is not authorized.
 - 4. Such request is for information only and is not an instruction to execute the changes, nor to stop work in progress.
- B. Contractor may initiate changes by submitting a written notice to City, containing:
 - 1. Description of the proposed changes.
 - 2. Statement of the reason for making the changes.
 - 3. Statement of the effect on the Contract Sum and the Contract Time.
 - 4. Statement of the effect on the work of separate contractors.
 - 5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

1.05 WORK CHANGE DIRECTIVE AUTHORIZATION

- A. City may issue a Work Change Directive for Contractor to proceed with a change for subsequent inclusion in a Change Order.
- B. The Work Change Directive will describe changes in the work, both additions and deletions, with attachments of revised Contract Documents to define details of the change and will designate the method of determining any change in the Contract Sum and any change in Contract Time.
- C. City will sign and date the Work Change Directive as authorization for the Contractor to proceed with the changes.
- D. Contractor may sign and date the Work Change Directive to indicate agreement with the terms therein.

1.06 DOCUMENTATION OF PROPOSALS AND CLAIMS

- A. Contractor's written notice to the City for claims shall be submitted within the times specified in the Agreement as follows:
 - 1. Article 8.25 for Contract Time claims arising from Force Majeure;

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

2. Article 9.3 for claims arising from technical clarifications and interpretations;
 3. Article 14.2 for Contract Price claims arising from changes other than technical clarifications or interpretations; and
 4. Article 15.1 for Contract Time claims arising from changes other than Force Majeure.
- B. Support each quotation for a lump-sum proposal and for each unit price which has not previously been established, with sufficient substantiating data to allow City to evaluate the quotation.
- C. On request, provide additional data to support time and cost computations
1. Labor required.
 2. Equipment required.
 3. Products required.
 - a. Recommended source of purchase and unit cost.
 - b. Quantities required.
 4. Taxes, insurance and bonds.
 5. Credit for work deleted from Contract, similarly documented.
 6. Overhead and profit.
 7. Justification for any change in Contract Time.
- D. Support each claim for additional costs and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal, plus additional information.
1. Name of the City's authorized agent who ordered the work and date of the order.
 2. Dates and times work was performed and by whom.
 3. Time record, summary of hours worked and hourly rates paid.
 4. Receipts and invoices for:
 - a. Equipment used, listing dates and times of use.
 - b. Products used, listing of quantities.
 - c. Subcontracts.
- E. Document requests for Substitutions for Products as specified in Section 01630.
- 1.07 PREPARATION OF CHANGE ORDERS AND FIELD ORDERS
- A. The City will prepare each Change Order. The City will prepare each Field Order.
- B. The Change Order will describe the changes in the work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- C. The Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.
- D. The Field Order will describe interpretations or clarifications of Contract Documents, order minor changes in the work, and/or memorialize trade-off agreements.
- E. Field Orders work will be accomplished without change in the Contract Sum, Contract Time, and/or claims for other costs.

1.08 LUMP-SUM/FIXED PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
 - 1. City's Proposal Request and Contractor's responsive Proposal as mutually agreed between City and Contractor.
 - 2. Contractor's Proposal for a change, as recommended by City.
- B. City will sign and date the Change Order as authorization for the Contractor to proceed with the changes.
- C. Contractor will sign and date the Change Order to indicate agreement with the terms therein.

1.09 UNIT PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
 - 1. City's definition of the scope of the required changes.
 - 2. Contractor's Proposal for a change, as recommended by City.
 - 3. Survey of completed work.
- B. The amounts of the unit prices to be:
 - 1. Those stated in the Agreement.
 - 2. Those mutually agreed upon between City and Contractor.
- C. When quantities of each of the items affected by the Change Order can be determined prior to start of the work:
 - 1. City will sign and date the Change Order as authorization for Contractor to proceed with the changes.
 - 2. Contractor will sign and date the Change Order to indicate agreement with the terms therein.
- D. When quantities of the items cannot be determined prior to start of the work:
 - 1. City will issue a Work Change Directive directing Contractor to proceed with the change on the basis of unit prices, and will cite the applicable unit prices.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

2. At completion of the change, City will determine the cost of such work based on the unit prices and quantities used.
 - a. Contractor shall submit documentation to establish the number of units of each item and any claims for a change in Contract Time.
3. City will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
4. City will sign and date the Change Order to indicate their agreement with the terms therein.

1.10 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/WORK DIRECTIVE
CHANGE AUTHORIZATION

- A. City will issue a Work Change Directive directing Contractor to proceed with the changes.
- B. At completion of the change, submit itemized accounting and supporting data as provided in the Article "Documentation of Proposals and Claims" of this Section.
- C. City will determine the allowable cost of such work, as provided in General Conditions and Supplementary Conditions.
- D. City will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
- E. City and Contractor will sign and date the Change Order to indicate their agreement therewith.

1.11 CORRELATION WITH CONTRACTOR'S SUBMITTALS

- A. Periodically revise Schedule of Values and Request for Payment forms to record each Change Order as a separate item of work, and to record the adjusted Contract Sum.
- B. Periodically revise the Construction Schedule to reflect each Change Order affecting the Contract Time.
- C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

FIELD ORDER

PROJECT: _____ FIELD ORDER NO: _____

DATE: _____

CONTRACT: _____

CITY: _____ CITY'S PROJECT NO: _____

TO: _____ CONTRACT DATE: _____

This Field Order is issued to interpret/clarify the Contract Documents, order minor changes in the work and/or memorialize trade-off agreements. Both parties hereby agree that the work described by this Field Order is to be accomplished without change in Contract Sum, Contract Time, and/or claims for other costs.

DESCRIPTION: (Here insert a written description of the interpretation, change or agreement.)

CITY'S ENGINEER: _____ CONTRACTOR: _____

BY: _____ BY: _____

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

WORK CHANGE DIRECTIVE

PROJECT:

DATE OF ISSUANCE:

CITY:

Project No.

CONTRACTOR:

DATE OF ISSUANCE:

You are directed to proceed with the following changes(s):

Description: _____

Purpose of Work Directive Change: _____

Attachment(s) (list documents supporting change): _____

If a claim is made that the above change(s) have affected Contract Price or Contract Time, any claim for a Change Order based thereon will involve one of the following methods of determining the effect of the change(s).

Method of determining change in
Contract Price:

☐ Time and Materials

☐ Unit Prices

☐ Cost plus fixed fee

Method of determining change in Contract
Time:

☐ Contractor's records

☐ City's records

☐ Other _____

The estimated increase (decrease in Contract
Price: \$ _____

The estimated increase (decrease) in Contract
Time is: _____ days.

If the change involves an increase, the
estimated amount is not to be exceeded without
further authorization.

If the change involves an increase, the
estimated time is not to be exceeded without
further authorization.

Once the Work covered by the directive is completed or final cost and time determined, Contractor should submit documentation for inclusion in a Change Order.

THIS IS DIRECTIVE TO PROCEED WITH A CHANGE THAT MAY AFFECT THE CONTRACT PRICE OR THE CONTRACT TIME. A CHANGE ORDER, IF ANY, SHOULD BE CONSIDERED PROMPTLY.

RECOMMENDED BY:

APPROVED BY:

By: _____

City Engineer

City

Date: _____

Date: _____

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

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GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 01038
REQUESTS FOR INFORMATION

PART 1 GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. This Section specifies the general methods and requirements of Requests for Information (RFIs).

1.02 RELATED WORK

- A. Additional requirements may be specified in the General Conditions.
- B. Submittals are included in Section 01300
- C. Project Record Documents are included in Section 01720.

1.03 REQUESTS FOR INFORMATION

- A. When the CONTRACTOR believes that additional information or clarification of a contract requirement is needed, the CONTRACTOR may initiate a Request for Information
- B. The RFI process shall be limited to the clarification of technical and/or administrative matters. While the response to an RFI might lead to a change in the contract scope, cost or time, RFIs are not a substitute to the notification requirements stipulated in the Contract.
- C. A response to an RFI may authorize minor changes to the contract consistent with the terms of the contract.
- D. A response to an RFI is not an authorization to perform any additional work that would require a change order or written amendment to the contract. If the Contractor believes the response an RFI requires a change to the contract, Contractor shall promptly provide written notice to the City in accordance with the Contract.
- E. RFIs are not a substitute for the Submittals process specified elsewhere.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 ORIGINATION

- A. The Contactor shall originate RFIs using the form appended to this Section.
 - 1. RFIs shall be numbered consecutively. In the event that an answered RFI results in a follow-up inquiry, the follow-up shall maintain the same number as the original, appended with a suffix.
 - 2. Include Specification Section(s), Drawing(s), or detail(s) for which information is requested.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

3. Attach drawings, sketches, photographs or other relevant information.
 4. If the question concerns an interpretation of the Contract Documents, enter the Contractor's interpretation.
 5. Indicate the date by which the Contractor requests a reply.
 6. Sign the upper portion of the form.
- B. RFIs may not be submitted by subcontractors or suppliers. When a subcontractor or supplier generates a request for information or clarification to the Contractor, Contractor shall incorporate such requests into the required format, assign the next number, and sign.
- C. Contractor shall maintain a log of all RFIs including the date originated, date delivered, and date answered.

3.02 PROCESSING

- A. Contractor shall submit all RFIs to the City for processing.
- B. Technical RFIs will generally be reviewed and answered by the City.
- C. Administrative RFIs will generally be reviewed and answered by the City.
- D. The City will generally respond to RFIs within seven calendar days of receipt – depending on the complexity of the inquiry.

3.03 RESPONSES

- A. If the RFI contains sufficient clarity, the City will insert a response in the lower portion of the RFI form, sign and date the response; and, return the completed form to the Contractor.
- B. If the RFI does not contain sufficient clarity, the City may request additional information from the Contractor.
- C. City will maintain a log of all RFIs including the date received and date returned to Contractor.

3.04 RECORD INFORMATION

- A. Contractor shall include all clarifications obtained through the RFI process into the record information in accordance with Section 01720.

END OF SECTION
(Standard RFI Form Follows)

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

Request for Information

Project Name: _____
Contract No.: _____ Other Proj. No.: _____
Contractor: _____ RFI No.: _____
_____ Date: _____

Subject: _____
Spec Section: _____ Drawing: _____ Detail: _____

QUESTION:

If the above question concerns an interpretation of the Contract Documents, the Contractor's interpretation is:

Please Respond by This Date: _____
Submitted by Contractor: _____ Date: _____
Received by _____: _____ Date: _____

RESPONSE:

By: _____ Date: _____

Distribution: Contractor, City, File, Field, RFI Notebook

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

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GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 01170
SPECIAL PROVISIONS

PART 1 GENERAL

1.01 PRIORITY OF CONTRACT DOCUMENTS

- A. In the event of a conflict or discrepancy among the provisions of the Contract Documents, or between the provisions of the Contract Documents and any referenced standard, or code of any technical society, organization or association, the provision that takes precedence is the more stringent provision or the provision that presumptively causes a higher level of performance. If there is any conflict or discrepancy between codes of any technical society, organization or association, or between Laws and Regulations, the higher performance requirement shall be binding on the Contractor, unless otherwise directed by the City. In accordance with the intent of the Contract Documents, the Contractor accepts that compliance with the priority order specified above shall not justify an increase in Contract Price or an extension in Contract Time nor limit in any way, the Contractor's responsibility to comply with all Laws and Regulations at all times.

1.02 STATUS OF THE CITY'S CONSULTANT DURING CONSTRUCTION

- A. The City's Consultant will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

1.03 MAINTENANCE OF EXISTING UTILITY SERVICE AND EXISTING WASTEWATER TREATMENT PLANT OPERATION

- A. Cooperate at all times with the City in order to maintain plant operation with the least amount of interference and interruption possible. Public health and safety considerations and FDEP permit compliance shall exceed all others and the Contractor's schedule, plan and work shall, at all times, be subject to alteration and revision if necessary for public health and safety considerations and FDEP permit compliance.
- B. Contractor is cautioned that this work is being performed on the site of an operating wastewater treatment plant. Take whatever precautions are necessary to maintain the flow of wastewater, electrical source, etc., to keep the plant in operation, where such operation is affected by the work. Should a partial or total shutdown be unavoidable, notify the City 72 hours in advance.
- C. In no case will the Contractor be permitted to interfere with any existing service until all materials, supplies, equipment, tools and incidentals necessary to complete the work are on the job site.
- D. The City reserves the right to require the Contractor to work 24 hours per day in all cases where interferences with existing utility service may result in health hazards, offensive conditions or serious inconveniences to persons served by the system.

1.04 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

- A. Informational Submittals:

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

1. Copies of permits and approvals for construction as required by laws and regulations and governing agencies.
 2. Temporary Construction:
 - a. Parking area plans;
 - b. Layout of Contractor's field office, storage area(s), and staging area(s);
 - c. Fencing and protective barrier locations and details;
 - d. Maintenance of traffic plan(s); and
 - e. Maintenance of plant operations (MOPO) plan.
- B. Temporary Utilities:
1. Electric power will be available at or near the site. Determine type and amount available and make arrangements for obtaining temporary electric power service, metering equipment, and pay all costs for the electric power used during the Contract period, except for portions of the Work accepted by the City as substantially complete.
 - a. The cost of electric power used in performance and acceptance testing will be borne by the Contractor.
 2. Provide temporary lighting to meet all applicable safety requirements to allow erection, application, or installation of materials and equipment, and observation or inspection of the Work.
 3. Provide temporary heating, ventilating and air condition as required to maintain adequate environmental conditions in existing heated, ventilated and air conditioned spaces, and to maintain adequate environmental conditions for installation of materials, and to protect materials, equipment and finishes from damage due to temperature or humidity.
 - a. Provide adequate forced air ventilation of enclosed areas to cure installed materials, to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors, or gases.
 - b. Pay all costs of installation, maintenance, operation, and removal.
 4. Hydrant water is available from nearby hydrants. Secure written permission for connection, meter installation and use from the water department, and meet requirements for use.
 - a. Use only special hydrant-operating wrenches to open hydrants. Make certain that hydrant valve is open full, since cracking the valve causes damage to the hydrant. Repair or replace damaged hydrants and notify the appropriate agency as quickly as possible. Hydrants shall be completely accessible to the fire department at all times.
 5. Provide and maintain sanitary facilities for Contractor's employees, Subcontractors, and all other on-site personnel. Service, clean, and maintain facilities and enclosures.
 6. Furnish and maintain on site, adequate fire protection equipment capable of extinguishing incipient fires. Comply with the applicable parts of NFPA 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations, latest edition.
- C. Temporary Storage and Material Handling
1. Coordinate temporary storage facilities with the storage requirements of the manufacturer.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

2. Coordinate location(s) of temporary storage yards and temporary storage buildings with plant operations prior to releasing any materials for delivery.
 3. Provide necessary equipment and personnel to unload all items delivered to the site.
 4. Deliver products to the site in manufacturer's original sealed containers or other packing systems, complete with instructions for handling, storing, unpacking, protecting and installing.
 5. Store and protect products in accordance with the manufacturer's instructions, with seals and labels intact and legible. Instructions shall be carefully followed and a written record of this kept by the Contractor. Arrange storage to permit access for inspection.
 6. Schedule deliveries to reduce long term on-site storage prior to installation and/or operation. Coordinate delivery with installation to ensure minimum holding time for items that are hazardous, flammable, easily damaged or sensitive to deterioration.
 7. All items delivered to the site shall be unloaded and placed in a manner which will not hamper City's operations, the Contractor's normal construction operation or those of subcontractors and other contractors and will not interfere with the flow of necessary traffic.
 8. Promptly inspect shipment to assure that products comply with requirements, quantities are correct and items are undamaged. For items furnished by others (i.e., City, other Contractors), perform inspection in the presence of the City. Notify City verbally, and in writing, of any problems. If any item has been damaged, such damage shall be repaired at no additional cost to the City.
 9. All paint and other coating products shall be stored in areas protected from the weather. Follow all storage requirements set forth by the paint and coating manufacturers.
- D. Coordinate with plant operations for parking for employees working on the Project. Control vehicular and equipment parking at all times to preclude interference with City's operations, access by emergency vehicles, and construction operations.
- E. Provide covered dumpster(s) of adequate size for construction debris. Empty dumpsters on a regular basis and as directed by the City. Dumpsters shall not exceed their capacities at any time.
- F. Remove each temporary facility complete when need for its service has ended and as approved by the City. Coordinate removal of temporary facilities with authorities having jurisdiction.
1. Restore all improvements damaged by the installation, operation, and removal of the temporary facilities. Obtain prior approval from City for restoration work.

1.05 CONNECTIONS TO EXISTING SYSTEMS

- A. Perform all work necessary to locate, excavate and prepare for connections to the terminus of the existing systems all as shown on the Drawings or where directed by the City. The cost for this work and for the actual connection to the existing systems shall be included in the bid for the project and shall not result in any additional cost to the City.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

1.06 PROVISIONS FOR THE CONTROL OF DUST

- A. Sufficient precautions shall be taken during construction to minimize the amount of dust created. Wetting down the site may be required or as directed by the City to prevent dust as a result of vehicular traffic.

1.07 WATER POLLUTION CONTROL

- A. Divert sanitary sewage and non-storm waste flow interfering with construction and requiring diversion to sanitary sewers. Do not cause or permit action to occur which would cause an overflow to existing waterways.
- B. Prior to commencing construction, obtain the City's agreement with detailed plans showing procedures intended to handle and dispose of sewage, and stormwater flow, including dewatering pump discharges.
- C. Comply with procedures outlined in U.S. Environmental Protection Agency manuals entitled, "Guidelines for Erosion and Sedimentation Control Planning," and "Implementation, Processes, Procedures, and Methods to Control Pollution Resulting from All Construction Activity".
- D. Do not dispose of volatile wastes, such as mineral spirits, oils, chemicals or paint thinner in storm or sanitary drains. Disposal of wastes into streams or waterways is prohibited. Provide acceptable containers for collection and disposal of volatile waste materials.

1.08 OBSTRUCTIONS

- A. The attention of the Contractor is drawn to the fact that during excavation at the Project site, the possibility exists of the Contractor encountering various water, wastewater, chemical, electrical, or other lines not shown on the Drawings. Exercise extreme care before and during excavation to locate and flag these lines so as to avoid damage to the existing lines. Should damage occur to an existing line, repair the line at no cost to the City. If temporary relocation and subsequent reinstallation of such utilities is required, such costs shall be borne by the Contractor and shall be incidental to the Work and shall be included as part of the respective bid item for the project and shall not result in additional costs to the City.
- B. It is the responsibility of the Contractor to ensure that all utility or other poles, the stability of which may be endangered by the close proximity of excavation, are temporarily stayed in position while work proceeds in the vicinity of the pole and that the utility or other companies concerned be given reasonable advance notice of any such excavation by the Contractor.

1.09 SLEEVES AND OPENINGS

- A. Perform all cutting, coring and rough and finish patching required in existing construction for the Work.

1.10 WEATHER PROTECTION

- A. In the event of inclement weather, the Contractor shall protect the Work and materials from damage or injury from the weather. If, in the opinion of the City, any portion of the Work or materials has been damaged by reason of failure on the part of the Contractor to so protect the

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

Work, such Work and materials shall be removed and replaced with new materials and Work to the satisfaction of the City.

1.11 CLEANING

- A. Execute cleaning during progress of the Work and at completion of the Work, as required by this Section and as required by the cleaning requirements for specific products or work.
- B. Conduct cleaning and disposal operations to comply with codes, ordinances, regulations and anti-pollution laws.
- C. Use only those cleaning materials and methods which:
 - 1. Will not create hazards to health or property and which will not damage surfaces;
 - 2. Are recommended by the manufacturer of the surface material to be cleaned; and
 - 3. Are for surfaces recommended by the cleaning material manufacturer.
- D. Cleaning During Construction:
 - 1. Execute periodic cleaning to keep the work, the site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations.
 - 2. Provide on-site containers for the collection of waste materials, debris and rubbish.
 - 3. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas away from the site.
 - 4. Clean interior spaces prior to the start of finish painting and continue cleaning on an as-needed basis until painting is finished.
 - 5. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly-coated surfaces.
- E. Final Cleaning
 - 1. Employ skilled workmen for final cleaning.
 - 2. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels and other foreign materials from sight-exposed interior and exterior surfaces.
 - 3. Wash and shine glazing and mirrors.
 - 4. Polish glossy surfaces to a clear shine.
 - 5. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds.
 - 6. Prior to final completion, or City occupancy, conduct an inspection of sight-exposed interior and exterior surfaces and all work areas, to verify that the entire work is clean.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

1.12 EMERGENCY PHONE NUMBERS AND ACCIDENT REPORTS

- A. Emergency phone numbers (fire, medical, police) shall be posted at the Contractor's phone and its location known to all.
- B. Accidents shall be reported immediately to the City by messenger or phone.
- C. All accidents shall be documented and a fully detailed written report submitted to the City after each accident.

PART 2 PRODUCT (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 01200
PROJECT MEETINGS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The City will schedule and administer pre-construction meeting, periodic progress meetings and specially called meetings throughout progress of the work.
 - 1. Prepare agenda for meetings.
 - 2. Make physical arrangements for meetings.
 - 3. Preside at meetings.
 - 4. Record the minutes; include significant proceedings and decisions.
 - 5. Reproduce and distribute copies of minutes after each meeting.
 - a. To participants in the meeting.
 - b. To parties affected by decisions made at the meeting.
- B. Representatives of the Contractor, subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.

1.02 RELATED REQUIREMENTS

- A. Instructions to Bidders.
- B. Construction Schedules are included in Section 01310.
- C. Shop Drawings, Working Drawings and Samples are included in Section 01300.
- D. Project Record Documents are included in Section 01720.
- E. Operating and Maintenance Data is included in Section 01730.

1.03 PRE-CONSTRUCTION MEETING

- A. A preconstruction meeting will be held no later than 15 days after date of Notice to Proceed.
- B. Location: A central site designated by the City.
- C. Attendance:
 - 1. City's Representative.
 - 2. Resident Project Representative.
 - 3. Contractor's Project Manager and Superintendent.
 - 4. Major Subcontractors.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

5. Major suppliers.
6. Utilities
7. Others as appropriate.

D. Suggested Agenda:

1. Distribution and discussion of:
 - a. List of major subcontractors and suppliers.
 - b. Projected Construction Schedules.
2. Critical work sequencing.
3. Major deliveries and priorities.
4. Project Coordination.
 - a. Designation of responsible personnel.
5. Procedures and processing of:
 - a. Field decisions.
 - b. Proposal requests.
 - c. Submittals.
 - d. Change Orders.
 - e. Applications for Payment.
6. Adequacy of distribution of Contract Documents.
7. Procedures for maintaining Record Documents.
8. Use of premises:
 - a. Office, work and storage areas.
 - b. City's requirements.
9. Construction facilities, controls and construction aids.
10. Temporary utilities.
11. Housekeeping procedures.

1.04 PROGRESS MEETINGS

- A. Periodic progress meetings will be held every 30 days with the first meeting 30 days after the pre-construction meeting or 30 days after the date of Notice to Proceed.
- B. Additional specially called meetings will be coordinated as required by progress of the Work.
- C. Location of the meetings: Project field office of Contractor or City.
- D. Attendance
 1. City's Representative.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

2. Resident Project Representative.
3. Contractor's Project Manager and Superintendent.
4. Subcontractors as appropriate to the agenda.
5. Suppliers as appropriate to the agenda.
6. Others as appropriate.

E. Suggested Agenda:

1. Review, approval of minutes of previous meeting.
2. Review of work progress since previous meeting.
3. Review of projected work through to the following meeting.
4. Field observations, problems and conflicts.
5. Problems which could impede Construction Schedule.
6. Review of off-site fabrication, delivery schedules.
7. Corrective measures and procedures to regain projected schedule.
8. Revisions to Construction Schedule.
9. Coordination of schedules.
10. Review submittal schedules; expedite as required.
11. Maintenance of quality standards.
12. Pending changes and substitutions.
13. Review proposed changes for:
 - a. Effect on Construction Schedule and on completion date.
 - b. Effect on other contracts of the project.
14. Other business.

F. Contractor shall attend progress meetings and be prepared to:

1. Discuss each relevant agenda item.
2. Provide an updated construction schedule at each progress meeting in accordance with Section 01310.
3. Provide an updated submittal log at each progress meeting in accordance with Section 01300.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 01300
SUBMITTALS

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. This Section includes the requirements for compiling, processing and transmitting submittals required for execution of the project.
- B. Submittals are categorized into two types: Action Submittals and Informational Submittals, as follows:
 - 1. Action Submittal: Written and graphic information submitted by the Contractor that requires the City's approval. The following are examples of action submittals:
 - a. Shop drawings (including working drawings and product data).
 - b. Samples.
 - c. Operation & maintenance manuals.
 - d. Site Usage Plan (Contractor's staging - including trailer siting and material laydown area).
 - e. Schedule of values.
 - 2. Informational Submittal: Information submitted by the Contractor that does not require the City's approval. The following are examples of informational submittals:
 - a. Shop drawing schedule.
 - b. Construction schedule.
 - c. Statements of qualifications.
 - d. Health and Safety Plans.
 - e. Construction photography and videography.
 - f. Work plans.
 - g. Maintenance of traffic plans.
 - h. Outage requests.
 - i. Proposed testing procedures.
 - j. Test records and reports.
 - k. Vendor training outlines/plans.
 - l. Test and start-up reports.
 - m. Certifications.
 - n. Record Drawings.
 - o. Record Shop Drawings.
 - p. Submittals required by laws, regulations and governing agencies.
 - q. Submittals required by funding agencies.
 - r. Other requirements found within the technical specifications.
 - s. Warranties and bonds.
 - t. As-built surveys.
 - u. Contract close-out documents.

1.02 RELATED WORK

- A. Additional requirements may be specified in the Agreement and the General Conditions of the Contract.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- B. Additional submittal requirements may be specified in the respective technical Specification Sections.
- C. Operation and Maintenance manuals are included in Section 01730.
- D. Contract closeout submittals are included in Section 01700.
- E. Warranties and Bonds are included in the Agreement and General Conditions of the Contract.
- F. Applications for Payment are included in Section 01026.
- G. Construction Schedules are included in Section 01310.
- H. Project Record Documents are included in Section 01720.
- I. Requests for Information are included in Section 01038.

1.03 CONTRACTOR'S RESPONSIBILITIES

- A. All submittals shall be clearly identified as follows:
 - 1. Date of submission.
 - 2. Project number.
 - 3. Project name.
 - 4. Contractor identification:
 - a. Contractor
 - b. Supplier
 - c. Manufacturer
 - d. Manufacturer or supplier representative.
 - 5. Identification of the product.
 - 6. Reference to Contract drawing(s).
 - 7. Reference to specification section number, page and paragraph(s).
 - 8. Reference to applicable standards, such as ASTM or Federal Standards numbers.
 - 9. Indication of Contractor's approval.
 - 10. Contractor's Certification statement.
 - 11. Identification of deviations from the Contract Documents, if any.
 - 12. Reference to previous submittal (for resubmittals).
- B. Submittals shall be clear and legible, and of sufficient size for legibility and clarity of the presented data.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- C. Submittal Log. Maintain a log of all submittals. The submittal log shall be kept accurate and up to date. This log should include the following items (as applicable):
1. Description.
 2. Submittal number.
 3. Date transmitted to the City.
 4. Date returned to Contractor (from City).
 5. Status of Submittal (Approved/Not Approved/etc.).
 6. Date of Resubmittal to City and Return from City (if applicable and repeat as necessary).
 7. Date material released for fabrication.
 8. Projected (or actual) delivery date.
- D. Numbering System. Utilize a 9-character submittal identification numbering system in the following manner:
1. The first character shall be a D, S, M or I which represents Shop Drawing (including working drawings and product data), Sample, Manual (Operating & Maintenance) or Informational, respectively.
 2. The next five digits shall be the applicable Section Number.
 3. The next two digits shall be the numbers 01 to 99 to sequentially number each separate item or drawing submitted under each specific Specification Section, in the order submitted.
 4. The last character shall be a letter, A to Z, indicating the submission (or resubmission) of the same submittal, i.e., "A" = 1st submission, "B" = 2nd submission, "C" = 3rd submission, etc. A typical submittal number would be as follows:
 - a. D-03300-08-B
 - b. D = Shop Drawing
 - c. 03300 = Section for Concrete
 - d. 08 = the eighth different submittal under this section
 - e. B = the second submission (first resubmission) of that particular shop drawing.
- E. Variances:
1. Notify the City in writing, at the time of submittal, of any deviations in the submittals from the requirements of the Contract Documents
 2. Notify the City in writing, at the time of re-submittal (resubmission), of all deviations from previous submissions of that particular shop drawing, except those deviations which are the specific result of prior comments from the City.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

F. Action Submittals:

1. Shop Drawings, Working Drawings, Product Data and Samples:
 - a. Shop Drawings:
 - 1) Shop drawings as defined in the Agreement, and as specified in individual Sections include, but are not necessarily limited to, custom prepared data such as fabrication and erection/installation (working) drawings, scheduled information, setting diagrams, actual shop work manufacturing instructions, custom templates, valve schedule, wiring diagrams, coordination drawings, equipment inspection and test reports, including performance curves and certifications, as applicable to the work.
 - 2) Contactor shall verify all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data, and coordinate each item with other related shop drawings and the Contract requirements.
 - 3) All details on shop drawings shall show clearly the relation of the various parts to the main members and lines of the structure and where correct fabrication of the work depends upon field measurements, such measurements shall be made and noted on the drawings before being submitted.
 - 4) All shop drawings submitted by subcontractors and vendors shall be reviewed by the Contractor for field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data, and that it has been coordinated with other related shop drawings and the Contract requirements. Submittals directly from subcontractors or vendors will not be accepted by the City.
 - 5) The Contractor shall be responsible the accuracy of the subcontractor's or vendor's submittal; and, for their submission in a timely manner to support the requirements of the Contractor's construction schedule. Shop drawings found to be inaccurate or otherwise in error shall be returned to the subcontractor or vendor to correct before submission to the City. All shop drawings shall be approved by the Contractor.
 - 6) Delays to construction due to the untimely submission of submittals will constitute inexcusable delays, for which Contactor shall not be eligible for additional cost nor additional contract time. Inexcusable delays consist of any delay within the Contactor's control.
 - 7) Submittals for equipment specified under Divisions 11, 13, 14, 15 and 16 shall include a listing of installations where identical or similar equipment manufactured by that manufacturer has been installed and in operation for a period of at least five years.
 - b. Working Drawings:
 - 1) Detailed installation drawings (sewers, equipment, piping, electrical conduits and controls, HVAC work, and plumbing, etc.) shall be prepared and submitted for review and approval by the City prior to installing such work. Installation drawings shall be to-scale and shall be fully dimensioned.
 - 2) Piping working drawings shall show the laying dimensions of all pipes, fittings, valves, as well as the equipment to which it is being connected. In addition, all pipe supports shall be shown.
 - 3) Equipment working drawings shall show all equipment dimensions, anchor bolts, support pads, piping connections and electrical connections. In addition, show clearances required around such equipment for maintenance of the equipment.
 - 4) Electrical working drawings shall show conduits, junction boxes, disconnects, control devices, lighting fixtures, support details, control panels, lighting and

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

power panels, and Motor Control Centers. Coordinate all locations with the Contract Documents and the Contractor's other working drawings.

c. Product Data:

- 1) Product data, as specified in individual Specification Sections, include, but are not limited to, the manufacturer's standard prepared data for manufactured products (catalog data), such as the product specifications, installation instructions, availability of colors and patterns, rough-in diagrams and templates, product photographs (or diagrams), wiring diagrams, performance curves, quality control inspection and reports, certifications of compliance (as specified or otherwise required), mill reports, product operating and maintenance instructions, recommended spare parts and product warranties, as applicable.

d. Samples:

- 1) Furnish, samples required by the Contract Documents for the City's approval. Samples shall be delivered to the City as specified or directed. Unless specified otherwise, provide at least two samples of each required item. Materials or equipment for which samples are required shall not be used in the work unless and until approved by the City.
- 2) Samples specified in individual Specification Sections, include, but are not limited to: physical examples of the work (such as sections of manufactured or fabricated work), small cuts or containers of materials, complete units of repetitively-used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effect, graphic symbols, and other specified units of work.
- 3) Approval of a sample shall be only for the characteristics or use named in such approval and shall not be construed to change or modify the Contract Requirements.
- 4) Approved samples not destroyed in testing shall be sent to the City or stored at the site of the work. Approved samples of the hardware in good condition will be marked for identification and may be used in the work. Materials and equipment incorporated in work shall match the approved samples. Samples which fail testing or are not approved will be returned to the Contractor at his expense, if so requested at time of submission.

e. Professional Engineer (P.E.) Certification Form:

- 1) If specifically required in any of the technical Specification Sections, submit a Professional Engineer (P.E.) Certification for each item required, using the form appended to this Section, signed and sealed by the P.E. licensed or registered in the state wherein the work is located.

2. Contractor's Certification:

- a. Each shop drawing, working drawings, product data, and sample shall have affixed to it the following Certification Statement:
 - 1) "Certification Statement: by this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements."
- b. Shop drawings, working drawings, and product data sheets 11-in x 17-in and smaller shall be bound together in an orderly fashion and bear the above Certification Statement on the cover sheet. The transmittal cover sheet for each identified shop drawing shall fully describe the packaged data and include a listing of all items within the package.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

3. The review and approval of shop drawings, working drawings, product data, or samples by the City shall not relieve the Contractor from the responsibility for the fulfillment of the terms of the Contract. All risks of error and omission are assumed by the Contractor and the City will have no responsibility therefor.
4. Project work, materials, fabrication, and installation shall conform to approved shop drawings (including working drawings and product data) and applicable samples.
5. No portion of the work requiring a shop drawing (including working drawings and product data) or sample shall be started, nor shall any materials be fabricated or installed before approval of such item. Procurement, fabrication, delivery or installation of products or materials that do not conform to approved shop drawings shall be at the Contractor's risk. Furthermore, such products or materials delivered or installed without approved shop drawings, or in non-conformance with the approved shop drawings will not be eligible for progress payment until such time as the product or material is approved or brought into compliance with approved shop drawings. The City will not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.
6. Site Usage:
 - a. Submit a proposed site staging plan, including but not limited to the location of office trailers, storage trailers and material laydown. Such plan shall be a graphic presentation (drawing) of the proposed locations; and, shall include on-site traffic modifications, and temporary utilities, as may be applicable.

G. Informational Submittals:

1. Shop drawing schedule:
 - a. Within ten (10) days of the execution of the Agreement, the Contractor shall prepare and submit a schedule indicating when shop drawings are required to be submitted to support the as-planned construction schedule. The submittal schedule shall allow sufficient time for preparation and submittal, review and approval, and fabrication and delivery to support the construction schedule.
2. Construction schedule:
 - a. Prepare and submit construction schedules and monthly status reports as specified in the Agreement and Section 01310.
3. Statements of Qualifications:
 - a. Provide evidence of qualification, certification, or registration, as required in the Contract Documents, to verify qualifications of licensed land surveyor, professional engineer, materials testing laboratory, specialty subcontractor, technical specialist, consultant, specialty installer, and other professionals.
4. Preconstruction Video and Construction Photographs:
 - a. The Contractor shall have an average of 24 color photographs per month made of the work during its progress and 24 color photographs of the completed facilities. The photographs shall be of such views and taken at such times as the City directs.
 - b. All photographic work shall be done by a qualified, established commercial photographer acceptable to the City. Three prints of each photograph shall be furnished promptly, but no later than with each monthly pay estimate, to the City, and each print shall have:

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- 1) A glossy finish and be mounted in plastic sleeving on a substantial backing.
 - 2) Overall dimensions of 8 x 10-in with 1-1/4-in flexible binding margin on the long top side to permit storage in standard 3-ring binders.
 - 3) An attached label, approximately 2-1/4-in wide by 1-3/4-in high containing thereon in neat lettering: Contractor's name; short description of the view; photograph number and the date taken; and the Photographer's firm name.
 - c. Contractor shall also provide two electronic CD-ROM disks each with a proof set of all photographs in JPG format to the City each month.
 - d. A video tape, in digital format, survey of the site prior to construction will be conducted by the Contractor, in conjunction with the City two (2) certified copies of the Contractor's video survey will be provided to the City.
5. Work plans:
- a. Prepare and submit copies of all work plans needed to demonstrate to the City that Contractor has adequately thought-out the means and methods of construction and their interface with existing facilities.
6. Maintenance of traffic plans:
- a. Prepare maintenance of traffic plans where and when requested by the City to maintain accessibility for wastewater treatment plant deliveries, maintenance and operations.
7. Outage requests:
- a. Provide sufficient notification of any outages required (electrical, flow processes, etc) as may be required to tie-in new work into existing facilities. Unless specified otherwise elsewhere, a minimum of seven calendar days' notice shall be provided.
8. Proposed testing procedures:
- a. Prepare and submit testing procedures it proposes to use to perform testing required by the various technical specifications.
9. Test records and reports:
- a. Provide copies of all test records and reports as specified in the various technical specifications.
10. Vendor training outlines/plans
- a. At least two weeks before scheduled training of City's personnel, provide lesson plans for vendor training in accordance with the specification for O&M manuals.
11. Test and start-up reports:
- a. Manufacturers shall perform all pre-start-up installation inspection, calibrations, alignments, and performance testing as specified in the respective Specification Section. Provide copies of all such test and start-up reports.
12. Certifications:
- a. Provide various certifications as required by the technical specifications. Such certifications shall be signed by an officer (of the firm) or other individual authorized to sign documents on behalf of that entity.
 - b. Certifications may include, but are not limited to:
 - 1) Welding certifications and welders' qualifications.
 - 2) Certifications of Installation, Testing and Training for all equipment.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- 3) Material Testing reports furnished by an independent testing firm.
 - 4) Certifications from manufacturer(s) for specified factory testing.
 - 5) Certifications required to indicate compliance with any sustainability or LEEDS accreditation requirements indicated in the Contract Documents.
13. Record Drawings:
- 1) No later than Substantial Completion, submit a record of all changes during construction not already incorporated into drawings – in accordance with Specification on Project Record Documents.
14. Submittals required by laws, regulations and governing agencies:
- 1) Prepare and submit all documentation required by state or local law, regulation or government agency directly to the applicable agency. This includes, but is not limited to, notifications, reports, certifications, certified payroll (for projects subject to wage requirements) and other documentation required to satisfy all requirements. Provide to City one copy of each submittal made in accordance with this paragraph.
15. Other requirements of the Specification Sections:
- a. Comply with all other requirements of the Specifications.
 - b. Warranties and bonds:
 - 1) Assemble a book(let) of all warranties and bonds as specified in the various Specifications and in accordance with the Agreement and provide to the City.
 - c. As-built surveys:
 - 1) Engage the services of a licensed land surveyor and provide an as-built survey of the constructed pipe.
 - d. Contract close-out documents:
 - 1) Submit Contract documentation as indicated in the Specification for Contract Close-out.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 SUBMITTAL SCHEDULE

- A. Within ten (10) days of the execution of the Agreement, the Contractor shall prepare and submit a submittal schedule indicating when shop drawings are required to be submitted to support the as-planned construction schedule for review by the City. Incorporate comments from the City into a revised submittal schedule.
- B. Maintain the submittal schedule and provide sufficient copies for review by City. An up-to-date submittal schedule shall be provided at each project progress meeting.

3.02 TRANSMITTALS

- A. Prepare separate transmittal sheets for each submittal. Each transmittal sheet shall include at least the following: the Contractor's name and address, City's name, project name, project number, submittal number, description of submittal and number of copies submitted.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- B. Submittals shall be transmitted or delivered directly to the office of the City, as indicated in the Contract Documents or as otherwise directed by the City.

3.03 PROCEDURES

A. Action Submittals:

1. Contractor's responsibilities:

- a. Coordination of Submittal Times: Prepare and transmit each submittal sufficiently in advance of performing the related work or other applicable activities, or within the time specified in the individual work of other related Sections, so that the installation will not be delayed by processing times including disapproval and resubmittal (if required). Coordinate with other submittals, testing, purchasing, fabrication, delivery and similar sequenced activities. Extensions to the Contract Time will not be approved for the Contractor's failure to transmit submittals sufficiently in advance of the Work.
- b. The submittals of all shop drawings (including working drawings and product data) shall be sufficiently in advance of construction requirements to allow for possible need of re-submittals, including the specified review time for the City.
- c. No less than 30 calendar days will be required for City's review time for shop drawings and O&M manuals involving only one engineering discipline. No less than 45 calendar days will be required for City's review time for shop drawings and O&M manuals that require review by more than one engineering discipline. Resubmittals will be subject to the same review time.
- d. Submittals of operation and maintenance data shall be provided within 30 days of approval of the related shop drawing(s).
- e. Before submission to the City, review shop drawings as follows:
 - 1) make corrections and add field measurements, as required
 - 2) use any color for its notations except red (reserved for the City's notations) and black (to be able to distinguish notations on black and white documents)
 - 3) identify and describe each and every deviation or variation from Contract documents or from previous submissions, except those specifically resulting from a comment from the City on a previous submission
 - 4) include the required Contractor's Certification statement
 - 5) provide field measurements (as needed)
 - 6) coordinate with other submittals
 - 7) indicate relationships to other features of the Work
 - 8) highlight information applicable to the Work and/or delete information not applicable to the Work
- f. Submit the following number of copies:
 - 1) Shop drawings (including working drawings and product data) – Submit no fewer than six, and no more than nine; five of which will be retained by the City.
 - 2) Samples – three
 - 3) Site Usage Plan – three copies
 - 4) Schedule of values – four copies
- g. If Contractor considers any correction indicated on the shop drawings to constitute a change to the Contract Documents, provide written notice thereof to the City immediately; and do not release for manufacture before such notice has been approved by the City.
- h. When the shop drawings have been completed to the satisfaction of the City, carry out the construction in accordance therewith; and make no further changes therein except upon written instructions from the City.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

2. City's Responsibilities:
 - a. City will not review shop drawings (including working drawings and product data) that do not include the Contractor's approval stamp. Such submittals will be returned to the Contractor, without action, for correction.
 - b. Partial shop drawings (including working drawings and product data) will not be reviewed. If, in the opinion of the City, a submittal is incomplete, that submittal will be returned to the Contractor for completion. Such submittals may be returned with comments from City indicating the deficiencies requiring correction.
 - c. If shop drawings (including working drawings and product data) meet the submittal requirements, City will forward copies to appropriate reviewer(s). Otherwise, noncompliant submittals will be returned to the Contractor without action - with the City retaining one copy.
 - d. Submittals which are transmitted in accordance with the specified requirements will be reviewed by the City within the time specified herein. The time for review will commence upon receipt of submittal by City.
3. Review of Shop Drawings (Including Working Drawings and Product Data) and Samples:
 - a. The review of shop drawings, working drawings, data and samples will be for general conformance with the design concept and Contract Documents. They shall not be construed:
 - 1) as permitting any departure from the Contract requirements
 - 2) as relieving the Contractor of responsibility for any errors, including details, dimensions, and materials
 - 3) as approving departures from details furnished by the City, except as otherwise provided herein
 - b. The Contractor remains responsible for details and accuracy, for coordinating the work with all other associated work and trades, for selecting fabrication processes, for techniques of assembly, and for performing work in a safe manner.
 - c. If the shop drawings (including working drawings and product data) or samples as submitted describe variations and indicate a deviation from the Contract requirements that, in the opinion of the City are in the interest of the City and are so minor as not to involve a change in Contract Price or Contract Time, the City may return the reviewed drawings without noting an exception.
 - d. Only the City will utilize the color "RED" in marking submittals.
 - e. Shop drawings will be returned to the Contractor with one of the following codes.
 - 1) Code 1 - "APPROVED" - This code is assigned when there are no notations or comments on the submittal. When returned under this code the Contractor may release the equipment and/or material for manufacture.
 - 2) Code 2 - "APPROVED AS NOTED" - This code is assigned when a confirmation of the notations and comments IS NOT required by the Contractor. The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product.
 - 3) Code 3 - "APPROVED AS NOTED/CONFIRM" - This combination of codes is assigned when a confirmation of the notations and comments is required by the Contractor. The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product. This confirmation shall specifically address each omission and nonconforming item that was noted. Confirmation is to be received by the City within 15 calendar days of the date of the City's transmittal requiring the confirmation.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- 4) Code 4 - "APPROVED AS NOTED/RESUBMIT" - This combination of codes is assigned when notations and comments are extensive enough to require a resubmittal of the entire package. This resubmittal is to address all comments, omissions and non-conforming items that were noted. Resubmittal is to be received by the City within 30 calendar days of the date of the City's transmittal requiring the resubmittal.
- 5) Code 5 - "NOT APPROVED" - This code is assigned when the submittal does not meet the intent of the contract documents. The Contractor must resubmit the entire package revised to bring the submittal into conformance. It may be necessary to resubmit using a different manufacturer/vendor to meet the requirements of the contract documents.
- 6) Code 6 - "COMMENTS ATTACHED" - This code is assigned where there are comments attached to the returned submittal, which provide additional data to aid the Contractor.
- 7) Code 7 - "RECEIPT ACKNOWLEDGED (Not subject to City's Review or Approval)" - This code is assigned to acknowledge receipt of a submittal that is not subject to the City's review and approval, and is being filed for informational purposes only. This code is generally used in acknowledging receipt of means and methods of construction work plans, field conformance test reports, and health and safety plans.
- 8) Codes 1 through 5 designate the status of the reviewed submittal with Code 6 showing there has been an attachment of additional data.
- f. Repetitive Reviews: Shop drawings, O&M manuals and other submittals will be reviewed no more than twice at the City's expense. All subsequent reviews will be performed at the Contractor's expense. Reimburse the City for all costs for the third and subsequent reviews.
4. Electronic Transmission:
 - a. Action Submittals may be transmitted by electronic means provided the following conditions are met:
 - 1) The City opts to provide a File Transfer Protocol (FTP) site for the project.
 - 2) The above-specified transmittal form is included.
 - 3) All other requirements specified above have been met including, but not limited to, coordination by the Contractor, review and approval by the Contractor, and the Contractor's Certification.
 - 4) The submittal contains no pages or sheets large than 11 x 17 inches.
 - 5) With the exception of the transmittal sheet, the entire submittal is included in a single file.
 - 6) The electronic files are PDF format (with printing enabled).
 - 7) In addition, transmit three hard-copy (paper) originals to the City.
 - 8) The City's review time will commence upon receipt of the hard copies of the submittal.
 - 9) For Submittals that require certification, corporate seal, or professional embossment (i.e., P.E.s, Surveyors, etc) transmit at least two hard-copy originals to the City. In addition, provide additional photocopied or scanned copies, as specified above, showing the required certification, corporate seal, or professional seal.

B. Informational Submittals:

1. Contractor's Responsibilities:

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- a. Coordination of submittals is the same as that for action submittals.
 - b. Number of copies: Submit three copies, unless otherwise indicated in individual Specification Sections.
 - c. Refer to individual Specification Sections for specific submittal requirements.
2. City's Responsibilities:
- a. The City will review each informational submittal within 15 days. If the informational submittal complies with the Contract requirements, City will file for the project record. City may elect not to respond to Contractor regarding informational submittals meeting the Contract requirements.
 - b. If an informational submittal does not comply with the Contract requirements, City will respond accordingly to the Contractor within 15 days. Thereafter, the Contractor shall perform the required corrective action, including retesting, if needed, until the submittal, in the opinion of the City, is in conformance with the Contract Documents.
3. Electronic Transmission:
- a. Informational submittals may be transmitted by electronic means providing all of the following conditions are met:
 - 1) The City opts to provide a File Transfer Protocol (FTP) site for the project.
 - 2) The above-specified transmittal form is included.
 - 3) The submittal contains no pages or sheets large than 11 x 17 inches.
 - 4) With the exception of the transmittal sheet, the entire submittal is included in a single file.
 - 5) The electronic files are PDF format (printing enabled).
 - 6) For Submittals that require certification, corporate seal, or professional embossment (i.e., P.E.s, Surveyors, etc)) transmit two hard-copy originals to the City.

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

P.E. CERTIFICATION FORM

The undersigned hereby certifies that he/she is a professional engineer registered in the State of Florida and that he/she has been employed by

_____ to design
(Name of Contractor)

(Insert P.E. Responsibilities)

In accordance with Specification Section _____ for the

_____.
(Name of Project)

The undersigned further certifies that he/she has performed the said design in conformance with all applicable local, state and federal codes, rules and regulations; and, that his/her signature and P.E. stamp have been affixed to all calculations and drawings used in, and resulting from, the design.

The undersigned hereby agrees to make all original design drawings and calculations available to the

(Insert Name of City)

or City's representative within seven days following written request therefor by the City.

P.E. Name

Contractor's Name

Signature

Signature

Address

Title

Address

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

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GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 01310
CONSTRUCTION SCHEDULING

PART 1 GENERAL

1.01 PROGRAM DESCRIPTION

- A. A Critical Path Method (CPM) construction schedule shall be used to control the Work and to provide a basis for determining job progress. The construction schedule shall be prepared and maintained by the Contractor. All work shall be done in accordance with the established CPM schedule. The Contractor and all subcontractors shall cooperate fully in developing the construction schedule and in executing the work in accordance with the CPM schedule.
- B. The construction schedule shall consist of a computerized CPM network (diagram of activities) presented in a time-scaled graphic (print-out) with reports, as specified herein.

1.02 QUALIFICATIONS

- A. The Contractor shall have the capability of preparing and utilizing the specified CPM schedule, or engage the services of a specialized scheduling professional to do so. Within seven days of the award of contract, provide a résumé or qualifications statement for the individual within the Contractor's organization, or the outside consultant, who is being proposed as the responsible party for development and maintenance of the CPM schedule. The résumé or qualifications statement shall demonstrate that the proposed responsible party has successfully developed and maintained CPM schedules for at least three construction projects of the same size or greater than this project. The proposed responsible party for the CPM schedule is subject to approval by the City. If the proposed responsible party for the CPM schedule is not approved by the City, Contractor shall resubmit a more-appropriate candidate for approval.

1.03 SUBMITTALS

- A. Contractor shall submit Interim, Preliminary, Baseline (also known as "as-planned") CPM schedules, revisions, and Monthly Status Reports, all including graphics, reports, and narratives, and an as-built schedule, as specified herein.

PART 2 PRODUCTS

2.01 SOFTWARE

- A. Unless otherwise approved by the City, the computer-based schedule shall be generated using Primavera Contractor or Primavera P6 Professional Project Management by Oracle, or Microsoft Project.

2.02 NETWORK REQUIREMENTS

- A. Each schedule submittal shall contain the following identifying information:
 - 1. Project Title and City's Contract Number.
 - 2. Contractor's name.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

3. All Contract milestones, as specified.
 4. The project calendar(s) (including work week and holidays).
 5. Type of submittal (e.g., Interim, Preliminary, Baseline or Monthly Status Report).
 6. A summary of the contract milestones.
 7. Data date and run (print) date.
- B. The network of activities shall show the order and inter-dependence of activities; and, show the sequence in which the work is to be accomplished, as planned by the Contractor. The basic concept of a network analysis diagram shall be followed to show how each activity is dependent on preceding activities (predecessors) and following activities (successors).
- C. Detailed network activities shall include, but are not limited to:
1. Mobilization activities.
 2. Procurement activities (submittals, review and approval, fabrication, and delivery).
 3. Permitting and regulatory activities.
 4. Right-of-way activities (including utility agreements that require others to relocate existing utilities that affect the project).
 5. Construction activities (including demolition, rehabilitation, new construction and testing).
 6. Maintenance of existing facilities.
 7. Test and start-up activities (including testing, start-up, training, performance testing, and commissioning).
 8. Contract milestones (fixed and floating).
 9. Specified sequences, outages and coordination activities, and
 10. Any other activities needed to properly identify the scope of work and contract requirements.
- D. All activities shall be sufficiently identified and/or described so that the scope of work of each activity is clear. All work tasks shall be broken down into appropriate scopes and durations to facilitate monitoring progress. Unless otherwise approved by the City, no activities shall have durations of more than one month; except for off-site activities such as procurement and delivery of materials and equipment - or administrative or management activities that span the project duration that do not reflect earned progress.
- E. Network activities shall be organized (grouped) by phases (or stages), physical areas, buildings, elevations, or other portions of the project.
- F. Separate network activities shall be provided for each significant identifiable function in each trade area in each facility. Separate network activities shall be provided for subcontractors.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- G. The number of network activities, sufficiency of description, and level of breakdown shall be subject to the City's review and approval to confirm conformance with the specified requirements.
- H. The format of the schedule network graphic shall be a time-scaled logic diagram - with a list of network activities and the specified data fields presented adjacent to the graphic display.
- I. The following general requirements also apply to the network diagram:
 - 1. The Critical Path (the sequence of project network activities that add up to the longest overall duration and thereby determines the shortest time possible to complete the project) shall be identified - preferably in 'red'.
 - 2. Unless otherwise approved by the City, the Contractor's work schedule shall be based on 'normal work week' as defined in the Contract Documents – (typically 40 hours per week, consisting of five 8-hour days).
 - 3. The graphics shall indicate the calendar(s) on which activity durations are based (i.e., 5-day workweek or 7 calendar day week). When multiple calendars or work weeks are used, the graphics shall clearly indicate which calendars are used where.
 - 4. The project calendar shall include exclusions for holidays observed by the Contractor and those indicated in the Contract Documents.
- J. Each network activity shall have the following information (fields) listed alongside the activity on the graphic display.
 - 1. Activity ID – a manually assigned designation (numeric or alphanumeric). The Contractor should use a logical approach to assigning identification to network activities to facilitate grouping (sorting) of activities.
 - 2. Activity Description.
 - 3. Original Duration – including allowances for adverse weather interruptions – normal for the project location. Normal weather shall mean seasonally average weather conditions, as recorded by NOAA.
 - 4. Percent complete – the Contractor's estimated percent complete for each network activity as of the data date for the respective report.
 - 5. Remaining Duration - a calculated value based on Original Duration of each network activity and the estimated percent of completion for each activity.
 - 6. Early Start Date.
 - 7. Early Finish Date.
 - 8. Late Start Date.
 - 9. Late Finish Date.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

10. Total Float.

2.03 SUBMITTAL REQUIREMENTS

A. Each schedule submittal shall include the following elements:

1. Graphics – unless otherwise approved by the City, the network graphics shall be printed in color on 11-inch by 17-inch sheets; including a list of activities and the specified data fields.
2. Narrative:
 - a. The Narrative shall consist of a written report by the Contractor providing an overview of the schedule – specific to each submittal.
 - b. The Narratives for developmental submittals, i.e., Interim and Preliminary, shall describe the Contractor's approach to executing the project Work.
 - c. The Narrative for the Baseline Schedule shall:
 - 1) Explain key activities and assumptions on which the schedule is based.
 - 2) Describe the Critical Path.
 - 3) Discuss key deliveries that might adversely affect the project schedule; and,
 - 4) Explain the Contractor's approach to adverse weather interruptions – normal for the project location. Normal weather shall mean seasonally average weather conditions, as recorded by NOAA.
 - d. The Narratives provided with Monthly Status Reports (updates) shall update the topics from the Baseline Schedule Narrative, and also identify:
 - 1) Any changes the Contractor has made to the CPM logic (including any added, modified or deleted activities.
 - 2) Added activities for shop drawing re-submittals.
 - 3) Any delays that have been encountered, and
 - 4) Remedial actions or recovery steps the Contractor will employ to arrest and/or recover from such delays.

B. Reports:

1. The following reports are required to be submitted with Baseline Schedule, when a major revision is made to the schedule, and when requested by the City.
 - a. Activity – a report listing all network activities, sorted by activity ID.
 - b. Early Start – a report listing all network activities, sorted by Early Start date.
 - c. Total Float – a report listing all network activities, sorted by Total Float (ascending from low to high).
 - d. Predecessor/Successor – a report of all activities, sorted by Activity ID that lists all predecessor and successor activities for each network activity.

2.04 ACCEPTABILITY

- A. The Contractor shall submit the CPM schedule submittals, as specified, and resubmit as needed, until they are in compliance with Contract requirements.
- B. The City's review of the Contractor's construction schedule submittals will only be for conformance with the Contract requirements – including but not limited to contract time and work sequences specified in the contract documents. The City's review of the schedule shall not include the Contractor's means and methods of construction or safety. The City's concurrence,

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

acceptance, or approval of the Contractor's schedule submittals will not relieve the Contractor from responsibility for complying with the Contract Scope, Contract Time or any other contract requirement. Any indication of concurrence, acceptance, or approval of the Contractor's schedule will only indicate a general conformance with the Contract Requirements.

- C. City's review of the Contractor's construction schedule submittals shall not relieve the Contractor from responsibility for any deviations from the Contract Documents unless the Contractor has in writing called City's attention to such deviations at the time of submission and City has given written concurrence to the specific deviations, nor shall any concurrence by the City relieve Contractor from responsibility for errors and omissions in the submittals. Concurrence of the CPM Activity Network by the City is advisory only and shall not relieve the Contractor of responsibility for accomplishing the Work within the Contract completion date(s).
- D. Concurrence, acceptance, or approval of the Contractor's CPM schedule by the City in no way makes the City an insurer of the CPM schedule's success, nor liable for time or cost overruns resulting therefrom.
- E. Failure to include any element of work required for the performance of this Contract will not excuse the Contractor from completing all Work required within the Contract completion date(s), notwithstanding the review of the network by the City.
- F. CPM schedules that contain activities with negative float, or which extend beyond the contract completion date, will not be acceptable.
- G. Except where earlier completions are specified, CPM schedules which show completion of all work prior to the contract completion date may be indicated; however, in no event shall they constitute a basis for claim for delay by the Contractor.

PART 3 EXECUTION

3.01 IMPLEMENTATION SCHEDULE

A. Interim Schedule

- 1. Within 10 days following the execution of the Agreement, submit an Interim Schedule indicating the planned operations during the first 60 calendar days after Notice to Proceed. In addition, the Contractor shall submit the narrative indicating its general approach for the balance of the project.
- 2. While the Preliminary schedule is being developed, the Contractor shall update the Interim schedule on a monthly basis – indicating actual progress - until the Preliminary schedule is submitted.

B. Preliminary Schedule

- 1. Within 15 days following the receipt of Notice to Proceed, submit a proposed Preliminary Schedule to the City. The Preliminary Schedule shall consist of a draft computer-generated CPM-schedule showing the entire Scope of Work. The Preliminary Schedule shall not include any actual progress earned during development of the schedule (i.e., Data Date set at the Notice to Proceed date). In addition, the Contractor shall submit the narrative indicating its general approach for the balance of the project.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

2. Within 15 days of submittal of the Preliminary Schedule (i.e., within 30 days of receipt of the Notice to Proceed), meet with the City to discuss the review comments.
3. Once the Preliminary Schedule is submitted, Contractor shall discontinue updating the Interim Schedule. Provide monthly updates of the Preliminary Schedule until concurrence, acceptance, or approval of the Baseline Schedule.

C. Baseline (As-Planned) Schedule:

1. With 10 days of the review meeting on the Preliminary Schedule submittal, the Contractor shall incorporate the City's comments into the network and submit a Baseline Schedule. In addition, the Contractor shall submit the narrative and reports as described in Paragraph 2.03 above. Resubmit the Baseline Schedule, narrative and reports as necessary until it is deemed acceptable as stated in paragraph 2.04, above.
2. Upon concurrence, acceptance, or approval of the Contractor's initial Baseline Schedule, with the Data Date set at the Notice to Proceed date, it shall be recognized as the basis against which the Contractor's progress shall be measured.

D. Monthly Schedule Updates and Status Reports:

1. Monthly Schedule Updates and Status Reports shall include updated graphics and a narrative. In addition, if requested by the City, Contractor shall provide copies of one or more of the standard reports listed in 2.03.B.
2. The Contractor shall provide Monthly Schedule Updates and Status Reports with each application for payment. Unless approved otherwise by the City, the Data Date for the Monthly Status Reports shall be the end date of the respective payment period.
3. Once the initial Baseline Schedule is complete, Monthly Schedule Updates and Status Reports shall be based on the accepted Baseline Schedule.
4. Prior to generating each month's status report, meet with the Construction Manager to agree to the percent complete of each network activity.

E. As-Built Schedule:

1. Upon achieving Substantial Completion, the Contractor shall submit an as-built schedule, showing all activities from the Notice to Proceed through Substantial Completion. In addition, provide the reports listed in 2.03.B. A Narrative is not required.

3.02 DELIVERABLES

- A. Unless approved otherwise by the City, all schedule submittals shall be printed in color on sheets 11-in by 17-in and may be divided into as many separate sheets as required.
- B. Interim Schedule: Submit three copies to the City.
- C. Preliminary Schedule: Submit three hard (paper) copies to the City.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- D. Baseline Schedule: Submit three hard (paper) copies, and one electronic copy (PDF) to the City.
- E. Monthly Schedule Updates and Status Reports: Submit three hard (paper) copies and one electronic copy on CD (PDF) to the City.
- F. As-Built Schedule: Submit one hard (paper) copy and one electronic copy (PDF) to the City.

3.03 PROGRESS REPORTING

- A. Progress under the accepted CPM schedule shall be reported monthly by the Contractor by submitting a Monthly Schedule Update and Status Report. Each activity shall be updated to reflect the actual progress (percent complete) and the actual dates activities were started and completed, as applicable.
- B. The Monthly Schedule Update and Status Report shall include an update of the computer-generated network graphics and a Narrative report.
- C. The Monthly Schedule Update and Status Report will be discussed at each progress meeting.

3.04 RESPONSIBILITY FOR SCHEDULE COMPLIANCE

- A. Whenever it becomes apparent from the current CPM schedule and CPM Status Report that delays to the critical path have resulted and the contract completion date will not be met, or when so directed by the City, submit to the City for approval, a written statement of the steps intended to take to remove or arrest the delay to the critical path in the approved schedule at no additional cost to the City, including:
 - 1. Increase construction manpower in such quantities and crafts.
 - 2. Increase the number of working hours per shift, shifts per day, working days per week.
 - 3. Increase the amount of construction equipment, and/or
 - 4. Reschedule activities to maximize the concurrence of activities and comply with the revised schedule.
- B. If when so requested by the City, failure to submit a written statement of the steps intended to take or should fail to take such steps as approved by the City, the City may direct the Contractor to increase the level of effort in man-power (trades), equipment and work schedule (overtime, weekend and holiday work, etc) to be employed by the Contractor in order to remove or arrest the delay to the critical path in the accepted schedule and the Contractor shall promptly provide such level of effort at no additional cost to the City.

3.05 ADJUSTMENT OF CONTRACT SCHEDULE AND COMPLETION TIME

- A. If the Contractor wants or needs to make changes in their execution of the construction schedule that would affect the accepted CPM schedule, the Contractor shall notify the City in writing stating what changes are proposed and the reasons for the changes. If the City accepts such changes, the Contractor shall revise and submit a revised schedule for acceptance - without additional cost to the City. The CPM schedule shall be adjusted by the Contractor only after

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

prior acceptance of their proposed changes. Adjustments may consist of changing portions of the activity sequence, activity durations, division of accepted activities, or other adjustments as may be accepted by the City; however, the addition of extraneous, non-working activities and activities that add unacceptable restraints to the CPM schedule will not be allowed.

- B. Shop drawings that are not approved on the first submittal will require the addition of network activities for the resubmittals.
- C. Equipment that does not pass the specified tests will require the addition of network activities for the retesting.
- D. The contract completion time will be adjusted only for causes specified in this Contract. In the event the Contractor requests an extension of any contract completion date, the Contractor shall furnish such justification and supporting evidence as the City may deem necessary to determine whether the Contractor is entitled to an extension of time under the provisions of this Contract. After receipt of such justification and supporting evidence, the City shall perform an assessment or evaluation of the appropriate change in contract time based upon the currently accepted CPM schedule and on all data relevant to the extension. Inexcusable delays (attributable to the Contractor) and non-critical delays (delays to activities which, according to the CPM schedule, do not affect any contract completion date shown by the Critical Path) shall not be the basis for a change in contract time. The City will provide a written recommendation based on its assessment, with a copy to the Contractor. The Contractor shall not change any fixed contract milestones or required completion dates without the approval of the City, evidenced by the execution of a contract change order. However, the Contractor should make note of such requests for changes in contract time in the narrative of monthly schedule status reports.
- E. Each request for change in any contract completion date shall be submitted by the Contractor to the City in accordance with the notification requirements stipulated in the Contract Documents. No time extension will be granted for requests that are not submitted in accordance with the Contract requirements.
- F. Total float in the accepted CPM network belongs to the project; i.e., either the City or Contractor may take advantage of available total float on a first-come, first-served basis. Therefore, without obligation to extend either the overall completion date, or any intermediate completion dates set out in the CPM network, the City may initiate changes to the work or delay work that absorb available total float existing at the time of the change or delay. City initiated changes or delays that affect the Critical Path on the accepted CPM network shall be the sole grounds for extending (or contracting) contract completion dates or fixed milestones.

3.06 COORDINATING SCHEDULES WITH OTHER CONTRACT SCHEDULES

- A. Where work is to be performed under this Contract concurrently with or contingent upon work performed on the same facilities or area under other contracts, the Contractor's CPM Schedule shall be coordinated with the schedules of the other contracts. Obtain the schedules of the other appropriate contracts from the City for the preparation and updating of the CPM schedule and make the required changes in the schedule when indicated by changes in corresponding schedules.
- B. In case of interference between the operations of different contractors, the City will determine the work priority of each contractor and the sequence of work necessary to expedite the completion of the entire project. In all such cases, the decision of the City shall be accepted as

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

final. The temporary delay of the Contractor's work due to such circumstances shall not be considered as justification for claims for additional compensation.

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

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GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 01370
SCHEDULE OF VALUES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Submit a Schedule of Values allocated to the various portions of the work, within the timeframe specified in the Agreement.
- B. Upon request of the City provide supporting data which will substantiate the correctness of values.
- C. The accepted Schedule of Values shall be used only as the basis for the Contractor's Applications for Payment.

1.02 RELATED REQUIREMENTS

- A. Contract Agreement and General Conditions.
- B. Application for Payment is included in Section 01026.

1.03 FORM AND CONTENT OF SCHEDULE OF VALUES

- A. Type schedule on an 8-1/2-in by 11-in or 8-1/2-in by 14-in white paper furnished by the City; Contractor's standard forms and automated printout will be considered for approval by the City upon Contractor's request. Identify schedule with:
 - 1. Title of Project and location.
 - 2. City and Project Number.
 - 3. Name and Address of Contractor.
 - 4. Contract designation.
 - 5. Date of submission.
- B. 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 construction.
- C. For each major line item list sub-values of major products or operations under the item.
- D. Each item shall include a directly proportional amount of the Contractor's overhead and profit.
- E. The sum of all values listed in the schedule shall equal the total Contract Price.
- F. Contractor's Schedule of Values will be acceptable to the City and City as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 01630
SUBSTITUTIONS AND PRODUCT OPTIONS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Furnish and install products specified, under options and conditions for substitutions stated in this Section.
- B. Whenever a product, material or item of equipment is specified or described by using the name of a proprietary product or the name of a particular manufacturer or vendor, followed by the phrase "or equal," the specific item mentioned shall be the basis upon which bids are to be prepared, and shall be understood as establishing the type, function, dimension, appearance and quality desired. Other manufacturer's or vendor's products not named will be considered as substitutions, provided the required information is submitted in the manner set forth in this section and provided the substitution will not require substantial revision to the Contract Documents.

1.02 RELATED WORK

- A. Substitutions during the Bidding Period are included in the General Conditions.
- B. Bid Form is included in the Proposal.
- C. Delivery Storage and Handling is included in Section 01170.

1.03 SUBMITTAL OF LIST OF PROPOSED SUBSTITUTIONS

- A. Bidders shall submit their list of proposed substitutions in accordance with the General Conditions.

1.04 CONTRACTOR'S OPTIONS

- A. For Products specified only by reference standard, select product meeting that standard, by any manufacturer.
- B. For Products specified by naming several products or manufacturers, select any one of products and manufacturers named which complies with Specifications.
- C. For products specified by naming one or more products or manufacturers and stating "or equal," submit a request for substitution, for any product or manufacturer which is not specifically named.
- D. For products specified by naming only one product and manufacturer, there is no option and no substitution will be allowed.

1.05 SUBSTITUTIONS AFTER THE BID

- A. In order for substitutions to be considered after the Bid, the Contractor shall submit, within 30 days of issuance of Notice of Award, complete data as set forth herein to permit complete

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

analysis of all proposed substitutions noted on their substitutions list. No substitution after the Bid will be considered unless the Contractor provides the required data in accordance with the requirements of this Section within the 30 day period.

B. Submit separate request for each substitution. Support each request with:

1. Complete data substantiating compliance of proposed substitution with requirements stated in Contract Documents:
 - a. Product identification, including manufacturer's name and address.
 - b. manufacturer's literature; identify:
 - 1) Product description.
 - 2) Reference standards.
 - 3) Performance and test data.
 - 4) Operation and maintenance data.
 - c. Samples, as applicable.
 - d. Name and address of similar projects on which product has been used, and date of each installation.
2. Itemized comparison of the proposed substitution with product specified; List significant variations. Substitution shall not change design intent and shall perform equal to that specified.
3. Data relating to impact on construction schedule occasioned by the proposed substitution.
4. Any effect of substitution on separate contracts.
5. List of changes required in other work or products.
6. Accurate cost data comparing proposed substitution with product specified.
 - a. Amount of any net change to Contract Sum.
7. Designation of required license fees or royalties.
8. Designation of availability of maintenance services, sources of replacement materials.

C. Substitutions will not be considered for acceptance when:

1. They are indicated or implied on shop drawings or product data submittals without a formal request from the Contractor.
2. They are requested directly by a subcontractor or supplier.
3. Acceptance will require substantial revision of the Contract Documents.

D. Requests for substitutions submitted after Notice of Award will not be considered unless evidence is submitted to the City that all of the following circumstances exist:

1. The specified product is unavailable for reasons beyond the control of the Contractor. Such reasons shall consist of strikes, bankruptcy, discontinuance of manufacturer, or acts of God.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

2. The Contractor placed, or attempted to place, orders for the specified products within 10 days after Notice of Award.
 3. Request for substitution is made in writing to the City within 10 days of the date on which the Contractor ascertains that he cannot obtain the item specified.
 4. Complete data as set forth herein to permit complete analysis of the proposed substitution is submitted with the request.
- E. The City's decision regarding evaluation of substitutions shall be considered final and binding. Requests for time extensions and additional costs based on submission of, acceptance of, or rejection of substitutions will not be allowed.

1.06 CONTRACTOR'S REPRESENTATION

- A. In making formal request for substitution, Contractor represents that:
1. They have investigated the proposed product and determined that it is equal to or superior in all respects to that specified.
 2. They will provide the same warranties and/or bonds for substitution as for the product specified.
 3. They will coordinate installation of accepted substitution into the Work, and will make such changes as may be required for the Work to be complete in all respects.
 4. They waive claims for additional costs caused by substitution which may subsequently become apparent.
 5. Cost data is complete and includes related costs under the Contract, but not:
 - a. Costs under separate contracts.
 - b. City's costs for redesign or revision of Contract Documents.

1.07 CITY'S DUTIES

- A. Review Contractor's requests for substitutions with reasonable promptness.
- B. Notify Contractor, in writing, of decision to accept or reject requested substitution.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

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GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 01700
CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. This Section specifies administrative, verification and procedural requirements for project closeout, including but not limited to:
 - 1. Final cleaning (Section 01170).
 - 2. Project Record Documents (Section 01720).
 - 3. Spare parts and maintenance materials (spare paint, lubricants, special tools) (Section 01730 and applicable Sections in Technical Divisions 08 through 16).
 - 4. Record Shop Drawings (Section 01300).
 - 5. Warranties, guarantees, and bonds (Agreement, Section 01740, and applicable Sections in Technical Divisions 08 through 16).
 - 6. Reconciliation of final accounting, final change order, Application for Final Payment (Section 01026) and Contractor's releases.
 - 7. As-built construction schedule (Section 01310).
 - 8. Permit close-outs including Certificate of Occupancy or Certificate of Completion.

1.02 RELATED WORK

- A. Operation and Maintenance (O&M) data and manuals (Section 01730) and applicable Sections in Technical Divisions.
- B. Certified Surveyor documentation submittals (Article 8.17 of the Agreement).

1.03 CLOSEOUT PROCEDURES

- A. Provide all deliverables as specified, prior to submitting the Application for Final Payment.
- B. Provide submittals to City that are required by governing or other authorities having applicable jurisdiction including but not limited to permit close out information, certificates of occupancy, etc. prior to submitting the Application for Final Payment.
- C. Submit Application for Final Payment identifying total adjusted Contract Sum, previous payments and sum remaining due, following submittal and approval of Record Documents and Record Drawings.
- D. Submit Contractor's Final Release and Release of Liens and Consent of the Surety to Final Payment with the Application for Final Payment.
- E. Contractor to complete final cleaning prior to submitting the Application for Final Payment.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

Contract Closeout

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Exhibit 2
151 of 310

p. 151

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 01720
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 SCOPE

- A. The Contractor shall keep and maintain at the job site a copy of contract documents, marked up to indicate all changes made during the course of a project, as specified herein.

1.02 RELATED REQUIREMENTS

- A. Contract close-out submittals are included in Section 01700.
- B. Warranties and bonds are included in Section 01740.
- C. As-built construction schedules are included in Section 01310.
- D. As-built surveys are included in the Agreement.
- E. Record shop drawings are included in Sections 01300.

1.03 REQUIREMENTS INCLUDED

- A. Contractor shall maintain a record copy of the Contract Drawings, marked up to indicate all changes made during the course of the project:
- B. Contractor shall assemble copies of the following documents for turnover to the City at the end of the project, as specified.
 - 1. Field Orders, Design Modifications, and RFIs
 - 2. Field Test records
 - 3. Permits and permit close-outs (final approvals)
 - 4. Certificate of Occupancy or Certificate of Completion, as applicable
 - 5. Laboratory test reports (e.g., bacteriological and primary & secondary water quality)
 - 6. Certificates of Compliance for materials and equipment
 - 7. Record Shop Drawings
 - 8. Samples

1.04 RECORD DRAWINGS

- A. The Contractor shall annotate (mark-up) the Contract Drawings to indicate all project conditions, locations, configurations, and any other changes or deviations that vary from the original Contract Drawings. Special attention shall be given to recording the locations (horizontal and vertical) and material of all buried utilities that are installed or encountered

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

during construction – whether or not they were indicated on the Contract Drawings. The record information added to the drawings may be supplemented by detailed sketches, if necessary, to clearly indicate the Work as constructed.

- B. These annotated Contract Drawings constitute the Contractor's Record Drawings and are actual representations of as-built conditions, including all revisions made necessary by change orders, design modifications, requests for information and field orders.
- C. Record drawings shall be accessible to the City at all times during the construction period.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 MAINTENANCE OF RECORD DOCUMENTS AND SAMPLES

- A. Store documents and samples in Contractor's on-site field office apart from documents used for construction.
- B. Maintain documents in a clean, dry, legible, condition and in good order. Do not use record documents for construction purposes.
- C. Make documents and sample available for inspection by the City at all times.
- D. Up-to-dated Record Drawings is a pre-requisite of processing periodic monthly pay applications.

3.02 RECORD INFORMATION

- A. Use the color Red (indelible ink) to record information on the Drawings and Specifications,
- B. Label each document "PROJECT RECORD" in neat large printed letters.
- C. Unless otherwise specified elsewhere, notations shall be affixed to hardcopies of documents.
- D. Record information contemporaneously with construction progress.
- E. Legibly mark drawings with as-built information:
 - 1. Elevations and dimensions of structures and structural elements.
 - 2. All underground utilities (piping and electrical), structures, and appurtenances
 - a. Changes to existing structure, piping and appurtenance locations.
 - b. Record horizontal and vertical locations of underground structures, piping, utilities and appurtenances, referenced to permanent surface improvements.
 - c. Record actual installed pipe material, class, size, joint type, etc.
- F. Do not conceal any work until the required information is acquired.
- G. Items to be recorded include, but are not limited to:

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

1. Location of internal utilities and appurtenances concealed in the construction – referenced to visible and accessible features.
 2. Field changes of dimensions and/or details
 - a. Interior equipment and piping relocations.
 - b. Architectural and structural changes, including relocation of doors, windows, etc.
 - c. Architectural schedule changes.
- H. Changes made by Field Order, Change Order, design modification, and RFI.
- I. Details not indicated on the original Contract Drawings.

3.03 SUBMITTAL

- A. Monthly applications for payment will be contingent upon up-to-date Record Drawings. If requested by the City, Contractor shall provide a copy of the Record Drawings, or present them for review prior to processing monthly applications for payment.
- B. Upon substantial completion of the Work and prior to final acceptance, the Contractor shall finalize and deliver a complete set of Record Drawings to the City conforming to the construction records of the Contractor. The set of documents shall consist of corrected and annotated documents showing the as-installed equipment, the recorded locations of the Work, and all other as-built conditions. Unless specified otherwise elsewhere, Record Drawings shall be in the form of a set of prints with annotations carefully and neatly superimposed on the drawings in red.
- C. The information submitted by the Contractor into the Record Drawings and Record Documents will be assumed to be correct, and the Contractor shall be responsible for the accuracy of such information, and shall bear the costs resulting from the correction of incorrect data.
- D. Delivery of Record Drawings and Record Documents to the City will be a prerequisite to final payment.

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

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GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 01740
WARRANTIES AND BONDS

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.

1.02 RELATED WORK

- A. Refer to Conditions of Contract for the general requirements relating to warranties and bonds.
- B. General closeout requirements are included in Section 01700 Project Closeout.
- C. Additional requirements for warranties for the work and products and installations that are specified to be warranted are included in the individual Sections.
- D. Additional certifications and other commitments and agreements for continuing services to City are specified in the individual Sections.

1.03 SUBMITTALS

- A. Submit written warranties to the City prior to the date fixed for Substantial Completion. If the Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the work, or a designated portion of the work, submit written warranties upon request of the City.
- B. When a designated portion of the work is completed and occupied or used by the City, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the City within 15 days of completion of that designated portion of the Work.
- C. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the City for approval prior to final execution.
- D. Refer to individual Sections for specific content requirements, and particular requirements for submittal of special warranties.
- E. At Final Completion compile two copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
- F. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents and sized to receive 8-1/2-in by 11-in paper.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- G. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the Section in which specified and the name of the product or work item.
- H. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address and telephone number of the installer, supplier and manufacturer.
- I. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS", the project title or name and the name, address and telephone number of the Contractor and equipment supplier.
- J. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

1.04 WARRANTY REQUIREMENT

- A. Related Damages and Losses: When correcting warranted work that has failed, remove and replace other work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted work.
- B. Reinstatement of Warranty: When work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that work covered by a warranty has failed, replace or rebuild the work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective work regardless of whether the City has benefited from use of the work through a portion of its anticipated useful service life.
- D. City's Recourse: Written warranties made to the City are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the City can enforce such other duties, obligations, rights, or remedies.
- E. Rejection of Warranties: The City reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the contract Documents.
- F. The City reserves the right to refuse to accept work for the project where a special warranty, certification, or similar commitment is required on such work or part of the work, until evidence is presented that entities required to countersign such commitments are willing to do so.
- G. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the work that incorporates the products, nor does it relieve suppliers, manufacturers and subcontractors required to countersign special warranties with the Contractor.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

1.05 MANUFACTURERS CERTIFICATIONS

- A. Where required, the Contractor shall supply evidence, satisfactory to the City, that the Contractor can obtain manufacturers' certifications as to the Contractor's installation of equipment.

1.06 DEFINITIONS

- A. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the City.
- B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the City.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

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GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 02050
DEMOLITION AND MODIFICATIONS

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and demolish, modify, remove and dispose of work shown on the Drawings and as specified herein.
- B. Included, but not limited to, are demolition, modifications and removal of existing materials, equipment or work necessary to install the new work as shown on the Drawings and as specified herein and to connect with existing work in approved manner.
- C. Demolition, modifications and removals which may be specified under other Sections shall conform to requirements of this Section.
- D. Demolition and modifications include:
 - 1. Existing underground 30-inch, 42-inch, 48-inch, and 66-inch diameter prestressed cylindrical concrete pipe (PCCP).
 - 2. Existing 6-inch diameter fiberglass reinforced pipe (FRP).
 - 3. Existing 48-inch diameter ductile iron flanged pipe.
 - 4. Above ground portion of the existing 48-inch diameter ductile iron pipe, push joint, with EBAA Series 1700 restraint harness; and ductile iron 90 degree bend fittings, with EBAA Series 1100 megalugs.
- E. Blasting and the use of explosives will not be permitted for any demolition work.
- F. Vibration is an issue that must not impact the cryogenic (liquid oxygen) facility operation. There shall be a 12/72 hour rule: Cryogenic facility can be shut down for no more than twelve (12) hours to allow work that may cause excessive vibration near the facility. The facility will then need to be returned to operation for at least seventy-two (72) hours before another twelve hour shut-down can occur.

1.02 RELATED WORK

- A. Summary of Work is included in Section 01010.
- B. Submittals are included in Section 01300.
- C. Construction Schedule is included in Section 01310.
- D. Excavation and Backfill is included in Section 02221.
- E. Erosion and Sedimentation Control is included in Section 02270.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

1.03 SUBMITTALS

- A. Submit, in accordance with Section 01300, six copies of proposed methods and operations of demolition of the structures and modifications prior to the start of work. Include in the schedule the coordination of shutoff, capping and continuation of utility service as required.
- B. Furnish a detailed sequence of demolition and removal work to ensure the uninterrupted progress of the City's operations. Sequence shall be compatible with sequence of construction and shutdown coordination requirements as specified in Section 01014.
- C. Before commencing demolition work, all modifications necessary to bypass the affected structures shall be completed. Actual work shall not begin until the City has inspected and approved the modifications and authorized commencement of the demolition work in writing.

1.04 JOB CONDITIONS

- A. Protection:
 - 1. Execute the demolition and removal work to prevent damage or injury to structures, occupants thereof and adjacent features which might result from falling debris or other causes, and so as not to interfere with the use, and free and safe passage to and from adjacent structures.
 - 2. Closing or obstructing of roadways, sidewalks and passageways adjacent to the work by the placement or storage of materials will not be permitted and all operations shall be conducted with a minimum interference to traffic on these ways.
 - 3. Erect and maintain barriers, lights, sidewalk sheds and other required protective devices.
- B. Scheduling:
 - 1. Carry out operations so as to avoid interference with operations and work in the existing facilities.
- C. Notification:
 - 1. At least 48 hours prior to commencement of a demolition or removal, notify the City in writing of proposed schedule therefore. City shall inspect the existing equipment and to identify and mark those items which are to remain the property of the City. No removals shall be started without the permission of the City.
- D. Conditions of Structures:
 - 1. The City assumes no responsibility for the actual condition of the structures to be demolished or modified.
 - 2. Conditions existing at the time of inspection for bidding purposes will be maintained by the City insofar as practicable. However, variations within a structure may occur prior to the start of demolition work.
- E. Repairs to Damage:

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

1. Promptly repair damage caused to adjacent facilities by demolition operation when directed by City and at no additional cost to the City. Repairs shall be made to a condition at least equal to that which existed prior to construction.

F. Traffic Access:

1. Conduct demolition and modification operations and the removal of equipment and debris to ensure minimum interference with roads, streets, walks both onsite and offsite and to ensure minimum interference with plant operations.
2. Special attention is directed towards maintaining safe and convenient access to the existing facilities by plant personnel and plant associated vehicles.
3. Do not close or obstruct streets, walks or other occupied or used facilities without permission from the City. Furnish alternate routes around closed or obstructed traffic in access ways.

1.05 DISPOSAL OF MATERIAL

- A. Salvageable material and equipment listed hereinafter shall become the property of the City. Dismantle all such items to a size that can be readily handled and deliver them to a designated storage area.
- B. The following materials and items of equipment shall remain the property of the City and stored where directed on the site. Any such material damaged due to improper handling will not be accepted and the replacement value of the material deducted from the payment to the Contractor.
 1. Existing strap-on flow meter and remote transmitter.
- C. All other material and items of equipment shall become the Contractor's property and must be removed from the site.
- D. The storage or sale of removed items on the site will not be allowed.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 GENERAL

- A. All materials and equipment identified to remain the property of the City shall be carefully removed, so as not to be damaged, cleaned and stored on or adjacent to the site in a protected place specified by the City or loaded onto trucks provided by the City.
- B. Dispose of all demolition materials, equipment, debris and all other items not identified to remain the property of the City, off the site and in conformance with all existing applicable laws and regulations.
- C. Pollution Controls

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

1. Use water sprinkling, temporary enclosures and other suitable methods to limit the amount of dust and dirt rising and scattering in the air to the lowest practical level. Comply with governing regulations pertaining to environmental protection.
 - a. Do not use water when it may create hazardous or objectionable conditions such as flooding and pollution.
 - b. Clean adjacent structures, facilities, and improvements of dust, dirt and debris caused by demolition operations. Return adjacent areas to conditions existing prior to the start of the work.

3.02 MECHANICAL REMOVALS

- A. Mechanical removals shall consist of dismantling and removing of existing septic systems, piping, pumps, motors, equipment and other appurtenances as specified, shown, or required for the completion of the work. It shall include cutting, capping, and plugging as required, except that the cutting of existing piping for the purpose of making connections thereto will be included under Division 15.
- B. Existing process, water, chemical, gas, fuel oil and other piping not required for the new work shall be removed where shown or where it will interfere with new work. Piping not indicated to be removed or which does not interfere with new work shall be removed to the nearest solid support, capped and left in place. Chemical and fuel lines and tanks shall be purged and made safe prior to removal or capping. Where piping that is to be removed passes through existing walls, it shall be cut off and properly capped on each side of the wall.
- C. When underground piping is to be altered or removed, the remaining piping shall be properly capped. Abandoned underground piping may be left in place unless it interferes with new work or is shown or specified to be removed.
- D. Any changes to potable water piping and other plumbing system work shall be made in conformance with all applicable codes and under the same requirements as other underground piping. All portions of the potable water system that have been altered or opened shall be pressure tested and disinfected in accordance with local codes. Other plumbing piping shall be pressure tested only.

3.03 CLEAN-UP

- A. Remove from the site all debris resulting from the demolition operations as it accumulates. Upon completion of the work, all materials, equipment, waste and debris of every sort shall be removed and premises shall be left, clean, neat and orderly.

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 02140
DEWATERING AND DRAINAGE

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Design, furnish, install, operate, monitor, maintain and remove a temporary dewatering system as required to lower and control water levels below subgrades of excavations and to permit construction to proceed in-the-dry.
- B. Furnish, maintain and remove temporary surface water control measures adequate to drain and remove surface water entering excavations.
- C. Retain the services of a professional engineer registered in the State in which the work will occur to prepare dewatering and drainage system designs and submittals described herein.
- D. Work shall include the design, equipment, materials, installation, protection, and monitoring of geotechnical instrumentation required to monitor the performance of the dewatering and drainage system as required herein.
- E. Collect and properly dispose of all discharge water from the dewatering and drainage systems in accordance with the provisions of local codes. Under no circumstances shall water from dewatering systems be discharged into the existing or new sanitary sewer systems.
- F. Obtain and pay for all permits required for dewatering and drainage systems.
- G. Repair damage caused by dewatering and drainage system operations.

1.02 RELATED WORK

- A. Submittals are included in Section 01300.
- B. Earthwork is included in Section 02200.
- C. Trenching, Backfilling and Compaction is included in Section 02221.
- D. Sedimentation and Erosion Control are included in Section 02270.
- E. Paving is included in Section 02500.
- F. Restoration is included in Section 02901.

1.03 SUBMITTALS

- A. Dewatering and drainage system designs shall be prepared by a licensed professional engineer retained by the Contractor. The Contractor shall submit an original and three copies of the licensed professional engineer's certification on the PE form specified in Section 01300. The Contractor shall also submit qualifications as required herein.
- B. The Contractor shall submit a dewatering and drainage system best management practices (BMP) plan prior to the start of excavation expected to include dewatering operations. The plan

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

shall include a description of the proposed dewatering system and include the proposed installation methods to be used for dewatering and drainage system elements.

- C. The submittal shall show the areas and depths of excavation to be dewatered.
- D. Do not proceed with any excavation or dewatering activities until the dewatering submittals has been reviewed by the City.

1.04 QUALITY ASSURANCE

- A. Regulations: Perform all work in accordance with current applicable regulations and codes of all Federal, State and local agencies.
- B. The Contractor shall have at least 5 years of experience with work compatible to the Work shown and specified, employing labor and supervisory personnel who are similarly experienced in this type of Work.
- C. The Contractor's design engineer shall be registered in the State in which the work is located and have a minimum of 5 years of professional experience in the design and construction of dewatering and drainage systems and shall have completed not less than 5 successful dewatering and drainage projects of equal type, size, and complexity to that require for the work.

1.05 DESIGN REQUIREMENTS

- A. The Contractor is responsible for the proper design and implementation of methods for controlling surface water and groundwater.
- B. The primary purpose of the groundwater control system is to preserve the natural undisturbed condition of the subgrade soils in the areas of the proposed excavations. Prior to excavation, the Contractor shall lower the groundwater below the lowest excavation subgrade elevation. Additional groundwater lowering may be necessary, depending on construction methods and equipment used and the prevailing groundwater and soil conditions. The Contractor is responsible for lowering the groundwater as necessary to complete construction in accordance with the Drawings and Specifications at no additional cost to the City.
- C. The Contractor shall be responsible for damage to properties, buildings or structures, sewers and other utility installations, pavements and work that may result from dewatering or surface water control operations.
- D. Submittal review and field monitoring activities by the City shall not relieve the Contractor of his/her responsibilities for the work.

1.06 DEFINITIONS

- A. Where the phrase "in-the-dry" is used in this Section, it shall be defined as an excavation subgrade where the groundwater level has been lowered below the lowest level of the excavation, is stable with no ponded water, mud, or muck, is able to support construction equipment without rutting or disturbance and is suitable for the placement and compaction of fill material, pipe or concrete foundations.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

1.07 CONTAMINATED GROUNDWATER

- A. If the Contractor suspects, witnesses, or identifies groundwater contamination at any time during the performance of the Work, Contractor shall stop dewatering operations and notify the City immediately.
- B. If analytical testing by the City or the City-designated laboratory or subcontractor documents and indicates elevated concentrations above FDEP action levels, per Chapter 62-777 of the Florida Administrative Code, dewatering operations will be suspended until appropriate treatment and/or construction measures can be implemented. Contractor shall not resume operations until notified to do so in writing by the City. Dewatering activities in the affected area will not proceed until review of the matter by the agency having jurisdiction is resolved and written authorization is issued.
- C. Treatment of the groundwater may include three options depending on the magnitude of the contamination in the trench or as determined by the agency having jurisdiction: Granular activated carbon (GAC) treatment vessels; mobile air-stripping units; or vacuum truck removal and disposal. Such treatment shall be performed by qualified groundwater remediation subcontractors approved by the City. Effluent water from the treatment system will be analyzed by the City or the City-designated laboratory or subcontractor to confirm that concentrations are below regulatory limits. Effluent water will then be directed to an alternate location approved by the agency having jurisdiction.
- D. Costs for treatment of contaminated groundwater, if required, will be reimbursed via the additional labor, additional material and/or additional equipment pay items as applicable.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Piping, pumping equipment and all other materials required to provide control of surface water and groundwater in excavations shall be suitable for the intended purpose.
- B. Standby pumping systems and a source of standby power shall be maintained at all sites.

PART 3 EXECUTION

3.01 GENERAL

- A. Control surface water and groundwater such that excavation to final grade is made in-the-dry, the natural undisturbed condition of the subgrade soils are maintained, and softening and/or instability or disturbance due to the presence or seepage of water does not occur. All construction and backfilling shall proceed in-the-dry and flotation of completed portions of work shall be prohibited.
- B. Methods of groundwater control may include but are not limited to perimeter trenches and sump pumping, perimeter groundwater cutoff, well points, ejectors and combinations thereof.
- C. Where groundwater levels are above the proposed bottom of excavation level, a pumped dewatering system will be required for predrainage of the soils prior to excavation, and for

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

maintaining the lowered groundwater level until construction has been completed to such an extent that the structure, pipeline or fill will not be floated or otherwise damaged.

- D. It is expected that the type of system, spacing of dewatering units and other details of the work will have to be varied depending on soil/water conditions at a particular location.
- E. All work included in this Section shall be done in a manner which will protect adjacent structures and utilities and shall not cause loss of ground or disturbance to the pipe bearing soils or to soils which support overlying or adjacent structures.
- F. Locate groundwater control system components where they will not interfere with construction activities adjacent to the work area or interfere with plant operations. Excavations for sumps or drainage ditches shall not be made within or below 1H:1V slopes extending downward and out from the edges of existing or proposed foundation elements or from the downward vertical footprint of the pipe.

3.02 SURFACE WATER CONTROL

- A. Construct surface water control measures, including dikes, ditches, sumps and other methods to prevent, as necessary, flow of surface water into excavations and to allow construction to proceed without delay.
- B. Remove surface runoff controls when no longer needed.
- C. Seal off or beam catch basins in the area of construction to prevent discharge of untreated dewatering effluent or runoff from unstabilized construction areas into storm drains.
- D. All drain inlets or catch basins used for dewatering discharge shall be provided with silt sediment removal barriers as approved by the City. All barriers shall be cleaned regularly to avoid sediment discharge into the storm drain system. Construction activities will be stopped at no cost to the City until sediment controls are properly maintained, installed, and in compliance with the dewatering permit.

3.03 EXCAVATION DEWATERING

- A. At all times during construction, provide and maintain proper equipment and facilities to promptly remove and properly dispose of all water entering excavations. Excavations shall be maintained in-the-dry. Groundwater levels shall be kept below the lowest excavation level.
- B. Excavation dewatering shall maintain the subgrade in a natural undisturbed condition and until the fill, structure or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural elevations.
- C. Dewatering shall at all times be conducted in such a manner as to preserve the natural undisturbed condition of the subgrade soils at the proposed bottom of excavation.
- D. If the subgrade of the trench or excavation bottom becomes disturbed due to inadequate dewatering or drainage, excavate below normal grade as directed by the City and refill with structural fill, screened gravel or other material as approved by the City at the Contractor's expense.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- E. It is expected that the initial dewatering plan may have to be modified to suit the variable soil/water conditions to be encountered during construction. Dewater and excavate, at all times, in a manner which does not cause loss of ground or disturbance to the pipe bearing soil or soil which supports overlying or adjacent structures.
- F. Pumping from the dewatering system shall be continuous until pipe or structure is adequately backfilled. Stand-by pumps shall be provided.
- G. Drainage shall be disposed of in an approved area. Existing or new sanitary sewers shall not be used to dispose of drainage.
- H. WELL POINT SYSTEMS
- I. Where necessary, install a vacuum wellpoint system around the excavation to dewater the excavation. Each wellpoint and riser pipe shall be surrounded by a sand filter. Sand shall be of such a gradation that, after initial development of the wellpoints, the quantity and size of soil particles discharged shall be negligible. Wellpoint systems shall be capable of operating continuously under the highest possible vacuum.
- J. Installation of well point systems shall be in accordance with the approved submittal in the presence of the City.

3.04 DISPOSAL OF WATER

- A. All water generated, pumped, or removed from excavations as a result of excavation dewatering activities shall be collected, containerized, and managed prior to discharge and or treatment at an approved discharge point or facility, in accordance with Broward County Code of Ordinances, Article V, Section 27-193(a), 27-193(b)(3)a and 27-196. The Contractor shall secure, obtain, and pay for all necessary local, state, and federal permits, licenses, fess, and or approvals to discharge water or perform onsite or offsite treatment and disposal. Treat water collected by dewatering operations as required by regulatory agencies, prior to discharge.
- B. Discharge water as permitted, and in regulatory compliance with Contractor obtained permits/licenses. All discharge activities shall be performed so as to prevent silt and sediment discharge and eliminate any soil erosion or flooding, or otherwise damage existing facilities, completed Work, or adjacent property.
- C. Affected storm sewer outfalls shall be protected with floating silt booms as approved by the Broward County Development and Environmental Regulation Division (BC DERD) and the City. All accumulated debris resulting from the dewatering discharge collecting in the boom shall be removed on a daily basis.
- D. Visible silt plumes emanating from the area around the outfalls will be considered a failure of the silt and sediment removal measures and may result in a Notice of Violation issued by BC DERD. The Contractor will be responsible for all fines associated with the violation of the dewatering permit conditions issued to the Contractor.
- E. Existing or new sanitary sewers shall not be used to dispose of drainage.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

3.05 REMOVAL OF SYSTEMS

- A. At the completion of the excavation and backfilling work, and when approved by the City, all pipe, wellpoints, pumps, generators, other equipment and accessories used for the groundwater and surface water control systems shall be removed from the site. All materials and equipment shall become the property of the Contractor. All areas disturbed by the installation and removal of groundwater control systems shall be restored to their original condition.
- B. Where well points are pulled, holes shall be filled with sand.

3.06 AVAILABLE INFORMATION

- A. Soil borings dated May 21, 2013 from Tierra South Florida, Inc. are appended to this section for general informational purposes only and are not part of the Contract Agreement

END OF SECTION



May 21, 2013

Craven Thompson & Associates, Inc.
3563 NW 53rd Street
Fort Lauderdale, Florida 33309

Attn: Mr. Thomas C. Shahan, PSM

Re: Geotechnical Engineering Services
GT Lohmeyer WWTP Process Pipe Replacement
Fort Lauderdale, Florida
TSF File No. 7111-13-088

Dear Tom:

TIERRA SOUTH FLORIDA, Inc. (TSF) is pleased to present the results of our Geotechnical Engineering Services Report for the referenced project. This report includes the results of field and laboratory testing, and geotechnical recommendations for the proposed pipe replacement.

EXECUTIVE SUMMARY

An exploration and evaluation of the subsurface conditions have been completed for the proposed pipe replacement within the GT Lohmeyer WWTP in Fort Lauderdale, Florida. In general, beneath a thin topsoil layer, the subsurface conditions generally consisted of sand with limerock (SP) followed by sand (SP) and limestone extending to the boring termination depth of 25 feet below existing grades. Some borings indicated the presence of silt (ML) within the upper 10 feet. Very loose sandy material, weight of hammer (WOH), was noted directly above the limestone layer. The ground water was encountered at depths of between about 6 and 10 feet below exiting grade.

The owner/designer should not rely solely on this Executive Summary and must read and evaluate the entire contents of this report prior to utilizing our engineering recommendations.

PROJECT INFORMATION

Project Authorization

TSF has completed a geotechnical exploration for the proposed pipe replacement within the GT Lohmeyer WWTP in Fort Lauderdale, Florida. Our services were authorized by Craven Thompson & Associates, Inc via signed agreement dated March 25st, 1013.

Project Description

Our understanding of the project is based on information provided by Craven Thompson & Associates, Inc. The project includes replacement of about 1,100 linear feet of pipe, to include 30 to 66-inch diameter pipes, averaging 10 feet deep. The pipe replacement will follow 4 separate sequencing of construction. The project is located within the GT Lohmeyer WWTP Facility located at 1765 SE 18th Street in Fort Lauderdale, Florida.

The geotechnical recommendations presented in this report are based on the available project information, building location, and the subsurface materials described in this report. If any of the noted information is incorrect, please inform TSF in writing so that we may amend the recommendations presented in this report if appropriate and if desired by the client. TSF will not be responsible for the implementation of its recommendations when it is not notified of changes in the project.

Purpose and Scope of Services

The purpose of this study was to explore the subsurface conditions at the site to enable an evaluation of acceptable construction and site development considerations.

Our scope of services included the drilling of two (2) Standard Penetration Test (SPT) borings to depth of 25 feet, performed 4 corrosion series tests along the proposed pipe replacement, plus the preparation of this geotechnical report.

The scope of services did not include an environmental assessment for determining the presence or absence of wetlands or hazardous or toxic materials in the soil, bedrock, surface water, groundwater, or air on or below, or around this site. Any statement in this report or on the boring logs regarding odors, colors, and unusual or suspicious items or conditions are strictly for informational purposes. Prior to further development of this site, an environmental assessment is advisable.

SUBSURFACE CONDITIONS

Subsurface Conditions

Subsurface conditions at the site were explored with a total of two (2) Standard Penetration Test (SPT) borings to depth of 25 feet below grade using a CME-45 drill rig. Samples of the in-place materials were recovered at frequent intervals using Split Spoon. The samples of the in-place soils were returned to our laboratory for classification by a geotechnical engineer. The samples were classified in general accordance with the Unified Soil Classification System (ASTM D 2488). General area of improvement, pipe relocation, was provided by Craven Thompson & Associates, Inc. Boring locations were selected and located in the field by TSF personnel. The boring locations and profiles are presented on Sheet 1, in the Appendix.

In general, beneath 4-inches of topsoil, the subsurface conditions primarily consisted of sand with limerock (SP) followed by sand (SP) and limestone extending to the boring termination depth of 25 feet below existing grades. Some borings indicated the presence of silt (ML) within the upper 10 feet. Very loose sandy material, weight of hammer (WOH), was noted directly above the limestone layer.

The Standard Penetration Test (N-values) in the soils indicates the sands and sandy silt to be generally in very loose to medium dense conditions. The limestone was weak to moderately hard.

Groundwater Information

Groundwater levels were measured in the borings upon completion of the drilling activities. The depth to the free water surface at the time of drilling ranged from 6 to 10 feet below the existing ground surface. We expect groundwater to, typically, fluctuate within about 2 feet of where it was encountered during the drilling operation.

In general, the seasonal high groundwater level is not intended to define a limit or ensure that future seasonal fluctuations in groundwater levels will not exceed the estimated levels. Post-development groundwater levels could exceed the normal seasonal high groundwater level estimate as a result of a series of rainfall events, changed conditions at the site that alter surface water drainage characteristics, or variations in the duration, intensity, or total volume of rainfall. We recommend that the Contractor determine the actual groundwater levels at the time of the construction to determine groundwater impact on his or her construction procedures.

EVALUATION AND RECOMMENDATIONS

The geotechnical study completed for the proposed improvements confirms that the site is suitable for the planned construction when viewed from a soil mechanics and foundation engineering perspective. Subsurface conditions at the site are not expected to impose any major geotechnical constraints or limitations on the proposed improvements.

Excavations

Subsoils found at the site consist primarily of sand underlain by weak to moderately hard limestone. These soils can be excavated with a hydraulically controlled backhoe in good working order. Excavations in the rock should be made with an excavator or backhoe with welded plate teeth. Welded plate will enable a smooth excavation and minimize over-excavation of the limestone. Unsuitable material or organic soils (if any) at utility pipe bottoms should be removed and replaced with structural fill.

We expect that unbraced cut slopes made in the granular soils at an inclination of 1.5 horizontal to 1 vertical will remain stable for short periods of time provided they are not subjected to seepage, surcharge loads (e.g., from stockpiled soil or equipment) and excessive vibration. Furthermore, open-cut excavations exceeding 10 feet in depth should be properly dewatered and sloped 2H:1V or flatter or be benched using a bracing plan approved by a professional engineer licensed in the State of Florida. Excavated materials should not be stockpiled at the top of the slope within a horizontal distance equal to the excavation depth. *Note that very loose (weight of hammer) soil material was noted between 8 and 12 feet below grade, near or at groundwater table. These soils will have a tendency to cave in or slough requiring shoring during excavations.*

Dewatering will be required for in-the-dry construction over those sections of the site where the invert elevations of the pipelines/structures fall below the water table. Should sections of the excavation encounter the groundwater table, we expect that groundwater control can be accomplished through open pumping in those areas where draw down requirements are 1 foot or less. Open pumping dewatering can most positively be accomplished by over-excavating the trench by 6 to 12 inches and backfilling the over cut section with coarse gravel. Water which flows through the gravel should be directed to a sump where it can be collected and pumped to a suitable discharge point. Precautions should be taken during open pumping to assure that fines are not withdrawn from the surrounding soils since this could result in undesirable settlement occurring. If the draw down requirements is greater than 1 foot and it is within the sand stratum, we believe well point dewatering may be required. However, dewatering in limestone could likely be achieved by sump pumps.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's responsible person, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations.

We are providing this information solely as a service to our client. TSF is not assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

Trench Backfill

Prior to back filling, where possible, the bottom of the excavation should be inspected by a geotechnical engineer to ensure that no loosely placed materials at the bottom. Where possible, the bottom of the excavation should be compacted/densified.

The utility line should be installed over at least 4 inch of granular bedding material. If peat/soft material encountered at the bottom of the excavation, we recommend that the unsuitable soils be over excavated by 2 feet and backfill with limerock. Once the line is in place, additional 12 inch of granular material should be placed and compacted to at least 98% of Modified proctor. The remainder should be backfilled with suitable fill and compacted to at least 98% of modified proctor.

Structural fill used to raise the site to structure bottom levels should consist of clean sand and/or sand and gravel (ASTM D 2487), with a maximum of 12 percent passing the U.S. Standard No. 200 sieve. The structural fill should be placed in thin lifts (12-inch thick loose measure), near the optimum moisture content for compaction, and be compacted to at least 98 percent of maximum dry density (ASTM D 1557). The structural fill to be placed below the water level should consist of well graded gravel (ASTM D 2487) or clean sand with a maximum of 5 percent passing the U.S. Standard No. 200 sieve.

Ground movements and vibrations induced by the excavation and compaction operations should be closely monitored to assess if there is a potential impact to the existing buildings.

Lateral Earth Pressures

Below grade structures should be designed to resist earth pressure from granular backfill, surcharge loads, and unbalanced hydrostatic forces. For walls that are not restrained during backfilling but are free to rotate at the top, active earth pressure should be used in design. Walls that are restrained should be designed assuming at-rest earth pressure. In cases where the wall moves into the backfill, passive earth pressure criteria should be used. Recommended equivalent fluid densities for each pressure condition with no allowance for surcharge loads are presented.

Active Pressure:

Above Water Table = 40 pcf

Below Water Table = 80 pcf*

At Rest Pressure

Above Water Table = 55 pcf

Below Water Table = 90 pcf*

Passive Pressure

Above Water Table = 360 pcf

Below Water Table = 240 pcf*

* Includes hydrostatic pressure.

The above values are based on moist and buoyant soil unit weights of 120 and 60 pcf, respectively. The active, at-rest, and passive earth pressure coefficients used in this analysis equal to 0.33, 0.47, and 3.0, respectively. We anticipate that the soils that will be used as backfill material behind the walls will consist of fine to medium grained sands with an effective friction angle of 30 degrees.

REPORT LIMITATIONS

The recommendations submitted are based on the available subsurface information obtained by TSF and project information furnished by Craven Thompson & Associates, Inc. If there are any revisions to the plans for this project or if deviations from the subsurface conditions noted in this report are encountered during construction, TSF should be notified immediately to determine if changes in the recommendations are required. If TSF is not retained to perform these functions, TSF will not be responsible for the impact of those conditions of the project.

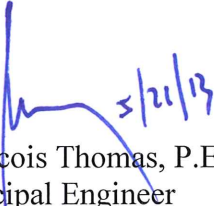
The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.


This report has been prepared for the exclusive use of Craven Thompson & Associates, Inc. for the specific application to the proposed pipe replacement within the GT Lohmeyer WWTP in Fort Lauderdale, Florida.

If you have any questions pertaining to this report, or as we may be of further service, please contact our office.

Respectfully submitted,

TIERRA SOUTH FLORIDA, INC.

 5/21/13
 Francois Thomas, P.E.
 Principal Engineer
 FL Registration No. 56381

 5/21/13
 Ramakumar V. Vedula, P.E.
 Principal Engineer

FT/KV:

Attachments: Boring Location Plan – Sheet 1
 Summary of Corrosion Test Results

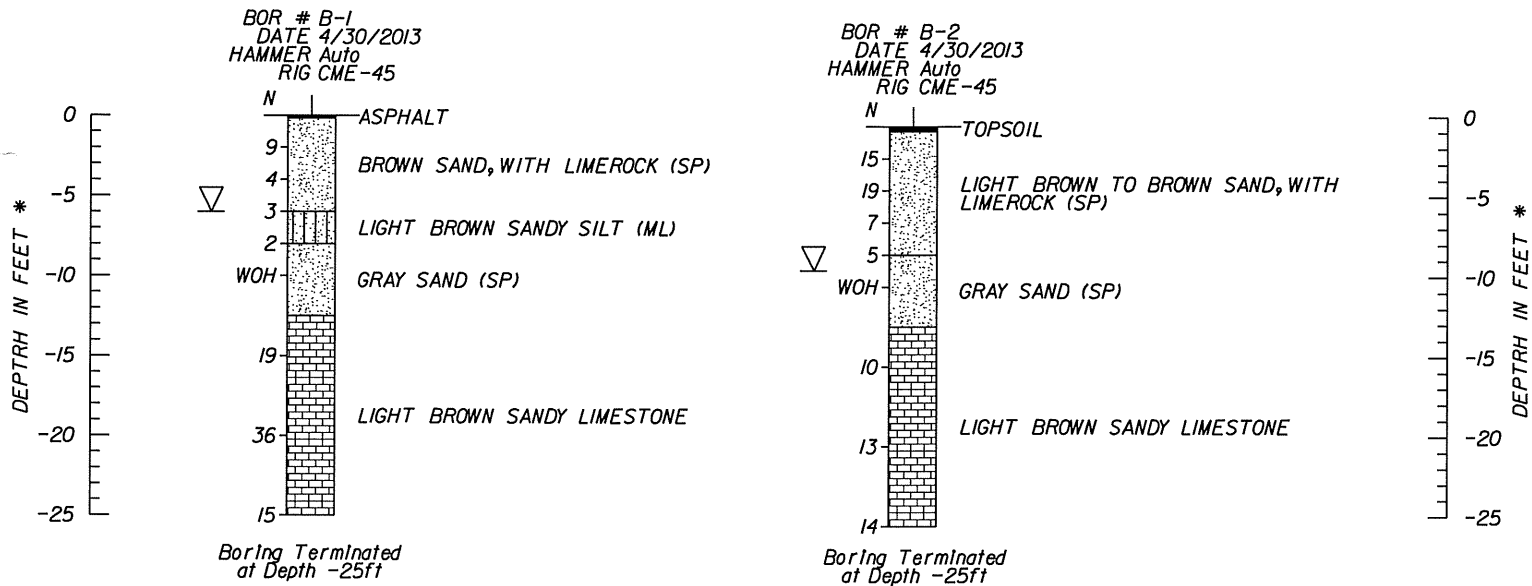
APPENDIX
Boring Location Plan
Summary of Corrosion Test Results

City of Fort Lauderdale

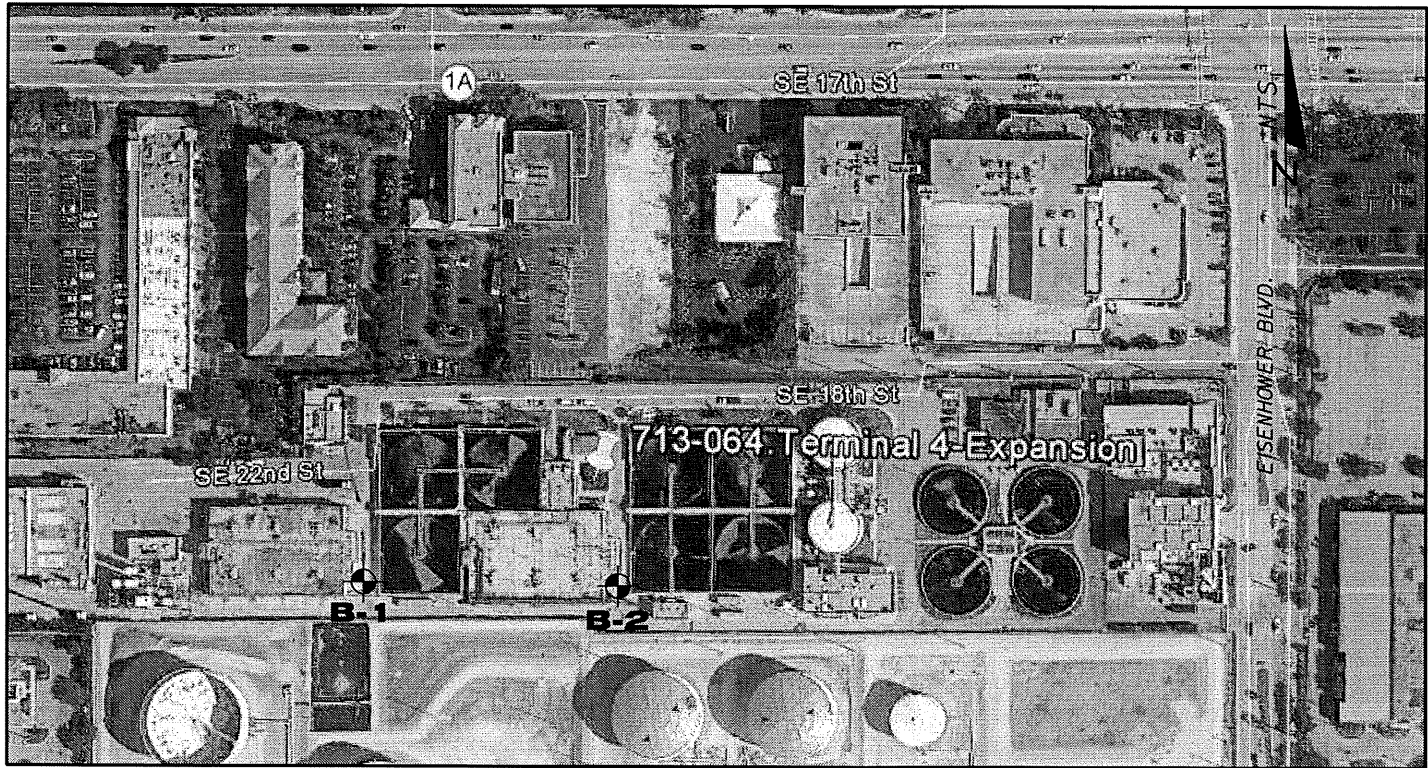
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* As per FDOT Structures Design Guidelines, Table 1.1, Updated July 7, 2007

**** Any reading represented as "0.0" is below the detection limit of 4.8 ppm**



PROFILE



BORINGS LOCATION PLAN

Approximate Location of SPT Boring

LEGEND:

- Asphalt/Topsail
- Sand
- Sandy Silt
- Limestone

NOTES:

- ENCOUNTERED GROUNDWATER TABLE
- N NUMBERS TO THE LEFT OF BORINGS INDICATE SPT VALUE FOR 12" PENETRATION AND THEY WERE OBTAINED USING A SAFETY HAMMER. (UNLESS OTHERWISE NOTED.)
- WOH WEIGHT OF HAMMER
- * DENOTES DEPTH IN FEET FROM EXISTING GROUND SURFACE

DRAWN BY:
NG
CHECKED BY:
JO
APPROVED BY:
RK
DATE:
05/14/2013

ENGINEER OF RECORD:
RAJ KRISHNASAMY, P.E.
P.E. LICENSE NUMBER 53567
TIERRA SOUTH FLORIDA
2765 VISTA PARKWAY, S-10
WEST PALM BEACH, FL 33411
CERTIFICATE OF AUTHORIZATION 28073

SCALE:
NTS
PROJECT NUMBER:
7111-13-088

GEOTECHNICAL ENGINEERING SERVICES
GT LOHMEYER WWTP
PROCESS PIPE REPLACEMENT
FT. LAUDERDALE, FLORIDA

SHEET 1

CAM #19-0723
Exhibit 2
179 of 310

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 02200
EARTHWORK

PART 1 GENERAL

1.01 STATUTORY REQUIREMENTS

- A. All excavation, trenching, sheeting, bracing, etc. shall conform to the requirements of the Florida "Trench Safety Act" (Chapter 553.60-64) and OSHA excavation safety standards, 29 CFR 1926 Subpart P.

1.02 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and perform all excavation work and grading; place and compact backfill and fill; and dispose of unsuitable, waste and surplus materials as shown on the Drawings and as specified herein.
- B. Provide the services of a licensed professional engineer registered in the State in which the work is located, to prepare temporary excavation support system designs and submittals, as required.
- C. Design, furnish, install, monitor, maintain, and remove temporary excavation support systems, including sheeting, shoring and bracing, to insure the safety of personnel and protect adjacent structures, piping, etc, in accordance with Federal, State and local laws, regulations and requirements.

1.03 RELATED WORK

- A. Dewatering and Drainage are included in Section 02140.
- B. Trenching, Backfilling and Compaction is included in Section 02221.
- C. Sedimentation and Erosion Control are included in Section 02270.
- D. Paving is included in Section 02500.
- E. Restoration is included in Section 02901.

1.04 SUBMITTALS

- A. Submit, in accordance with Section 01300, the proposed methods of construction, including excavation, excavation support systems designs, backfilling and filling and compaction for the various portions of the work. Excavation support system designs shall be prepared by a licensed professional engineer, registered in the state in which the work is located, having a minimum of 5 years of professional experience in the design and construction of excavation support systems. Review will be for information only. Contractor shall remain responsible for adequacy and safety of construction means, methods, and techniques.

1.05 REFERENCE STANDARDS

- A. ASTM International

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

1. ASTM D1557 - Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.

- B. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.06 QUALITY ASSURANCE

- A. Prior to and during the placement of backfill coordinate through the City's field inspector to request the Contractor's soils testing laboratory to perform in-place soil density tests to verify that the backfill/fill material has been compacted in accordance with the compaction requirements specified and recommended per the soil borings report provided as part of Section 02140.

1.07 DEFINITIONS

- A. Where the phrase "in-the-dry" is used in this Section, it shall be defined to mean a soil condition such that the in-place moisture content of the soil at that time is no more than two percentage points above the optimum moisture content of that soil as determined by the laboratory test of the moisture-density relation appropriate to the specified level of compaction.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 PREPARATION

A. Test Pits

1. Perform exploratory excavation work (test pits) for the purpose of verifying the location of underground utilities and structures and to check for unknown utilities and structures, prior to commencing excavation work.
2. Test pits shall be backfilled as soon as the desired information has been obtained. Backfilled surfaces shall be stabilized in accordance with approved erosion and sedimentation control plans.

B. Dewatering and Drainage Systems

1. Temporary dewatering and drainage systems shall be in place and operational prior to beginning excavation work.

3.02 EXCAVATION SUPPORT

- A. Furnish, install, monitor and maintain excavation support (e.g., shoring, sheeting, bracing, trench boxes, etc) as required by Federal, State or local laws, ordinances, regulations and safety requirements. Support the sides of excavation, to prevent any movement which could in any way reduce the width of the excavation below that necessary for proper construction and protect adjacent structures from undermining, settlement or other damage. Take care to prevent the formation of voids outside of sheeting. If voids occur behind sheeting, immediately backfill and

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

compact the voids with common fill material. Voids in locations that cannot be properly compacted upon backfilling shall be filled with lean concrete.

B. Excavation Supports Left in Place

1. The City may direct that certain excavation supports remain in place, or be cut off at any specific elevation. Supports directed by the City to be left in place and not so designated on the Drawings or otherwise specified herein to remain in place, will be paid for in accordance with the terms of the Agreement. If the Contractor believes that such a directive increases Contractor's cost and would thereby entitle Contractor to a change in contract cost, Contractor shall notify the City in accordance with the applicable article(s) of the Agreement pertaining to changes in the work.
2. The right of the City to direct that certain excavation supports remain in place shall not be construed as creating any obligation on the City to give such direction, nor shall failure to give such direction relieve the Contractor from liability for damages to persons or property occurring from or upon the work occasioned by negligence or otherwise, growing out of a failure on the part of the Contractor to leave in place sufficient excavation supports to prevent any movement of the ground or damage to adjacent structures.

- C. Excavation supports shall be carefully removed in such manner so as not to endanger the Work or other adjacent structures, utilities, or property. All voids left or caused by withdrawal of supports shall be immediately filled with sand and compacted.

3.03 GENERAL FILLING AND BACKFILLING PROCEDURES

- A. Fill and backfill materials shall be placed in lifts to suit the specified compaction requirements to the lines and grades required, making allowances for settlement and placement of cover materials (i.e., topsoil, sod, etc). Soft spots or uncompacted areas shall be corrected.
- B. Compaction in confined areas (including areas within a 45 degree angle extending upward and outward from the base of a wall) and in areas where the use of large equipment is impractical, shall be accomplished by hand operated vibratory equipment or mechanical tampers. Lift thickness shall not exceed 6-in (measured before compaction) when hand operated equipment is used.
- C. Fill and backfill shall not be placed and compacted when the materials are too wet to properly compact (i.e., the in-place moisture content of the soil at that time is no more than three percentage points above the optimum moisture content of that soil as determined by the laboratory test of the moisture-density relation appropriate to the specified level of compaction).

3.04 FILL AND BACKFILL PROCEDURES

- A. Fill and backfill material placed immediately adjacent to and within 10-ft of all structures shall be select fill. All structure water-tightness tests and dampproofing/waterproofing shall be completed prior to placing fill or backfill around structures. Place and compact select fill in even lifts having a maximum thickness (measured before compaction) of 8-in uniformly around the structure.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- B. Common fill may be used in areas beyond those designated for select fill unless shown or specified otherwise. Common fill shall be placed in even lifts having a maximum thickness (measured before compaction) of 12-in.

3.05 COMPACTION REQUIREMENTS

- A. Beneath foundations and slabs on grade (except sidewalks): Compact the top 12-in of existing subgrade (and each layer of fill if applicable) to a minimum of 95 percent modified proctor (ASTM D1557) at or near its optimum moisture content (minus 2 to plus 3 percent).
- B. 10-ft around structures: Compact the top 12-in of existing subgrade and each layer of fill or backfill to a minimum of 90 percent modified proctor (ASTM D1557) at or near its optimum moisture content (minus 2 to plus 3 percent).
- C. Sidewalks: Compact the top 6-in of existing subgrade (and each 6-in layer of fill if applicable) to a minimum of 95 percent modified proctor (ASTM D1557) at or near its optimum moisture content (minus 2 to plus 3 percent).
- D. Roads, paved areas and roadway embankments: Compact the top 12-in of existing subgrade and each layer of fill or backfill to a minimum of 95 percent modified proctor (ASTM D1557) at or near its optimum moisture content (minus 2 to plus 3 percent).

3.06 DISPOSAL OF UNSUITABLE, WASTE AND/OR SURPLUS EXCAVATED MATERIAL

- A. Unsuitable, waste and surplus excavated material shall be removed and disposed of off-site. Materials may be temporarily stockpiled in an area within the limits of construction that does not disrupt construction activities or plant operations, create any nuisances or safety hazards, or otherwise restrict access to the work site.

3.07 GRADING

- A. Grading shall be performed to the lines and grades shown on the Drawings or to match existing. All objectionable material encountered within the limits indicated shall be removed and disposed of. Subgrades shall be completely and continuously drained and dewatered throughout the grading process. Install temporary drains, drainage ditches, etc, to intercept or divert surface water which may affect the execution or condition of grading work.
- B. If at the time of grading it is not possible to place any material in its proper section of the Work, it shall be stockpiled in approved areas for later use. No extra payment will be made for the stockpiling or double handling of excavated material.
- C. Stones or rock fragments larger than 4-in in their greatest dimensions will not be permitted within the top 6-in of the finished grade of fills and embankments.
- D. In cut areas, all loose or protruding rocks in slopes shall be removed to line or finished grade of the slope. All cut and fill slopes shall be uniformly dressed to the slope, cross-section and alignment shown on the Drawings unless otherwise directed by the City.

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 02221
TRENCHING, BACKFILLING AND COMPACTION

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and perform all trenching for pipelines and appurtenances, including drainage, filling, backfilling, disposal of surplus material and restoration of trench surfaces and easements.
- B. Excavation shall extend to the width and depth shown on the Drawings or as specified herein and shall provide suitable room for installing pipe, structures and appurtenances.
- C. Furnish and place all sheeting, bracing and supports and remove from the excavation all materials which the City may deem unsuitable for backfilling. The bottom of the excavation shall be firm, dry and in all respects, acceptable. If conditions warrant, deposit gravel for pipe bedding, or gravel refill for excavation below grade, directly on the bottom of the trench immediately after excavation has reached the proper depth and before the bottom of the trench has become softened or disturbed by any cause whatever. The length of open trench shall be related closely to the rate of pipe laying. All excavation shall be made in open trenches.
- D. All excavation, trenching and related sheeting, bracing, etc, shall conform to the requirements of the Florida "State Safety Act" (Chapter 553.60-64) and OSHA's excavation safety standards, 29 CFR 1926 Subpart P.
- E. Wherever the requirements for percent compaction is referred to herein it shall mean "at least that percent of maximum density" as determined by ASTM D1557.

1.02 RELATED WORK

- A. Dewatering is included in Section 02140.
- B. Earthwork is included in Section 02200.
- C. Pavement is included in Section 02500.
- D. Restoration is included in Section 02901.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 TRENCH EXCAVATION

- A. Trench excavation shall include material of every description and of whatever substance encountered, except rock and boulders. Pavement shall be cut with a saw, wheel or pneumatic chisel along straight lines before excavating.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- B. Strip and stockpile topsoil from grassed areas crossed by trenches. At the Contractor's option, topsoil may be otherwise disposed of and replaced, when required, with approved topsoil of equal quality.
- C. While excavating and backfilling is in progress, on-site traffic shall be maintained, and all utilities and other property protected as provided in the Agreement.
- D. Trenches shall be excavated to the depth indicated on the Drawings and in widths sufficient for laying the pipe, bracing and for pumping and drainage facilities. The bottom of the excavations shall be firm and dry and in all respects acceptable to the City. Trench width shall be practical minimum.
- E. Excavation and dewatering shall be accomplished by methods which preserve the undisturbed state of subgrade soils. The trench may be excavated by machinery to, or just below the designated subgrade, provided that material remaining in the bottom of the trench is no more than slightly disturbed. Subgrade soils which become soft, loose, "quick", or otherwise unsatisfactory as a result of inadequate excavation, dewatering or other construction methods shall be removed and replaced by screened gravel fill as required by the City at the Contractor's expense.
- F. Clay and organic silt soils are particularly susceptible to disturbance due to construction operations. When excavation is to end in such soils, use a smooth-edge bucket to excavate the last 1-ft of depth.
- G. Where pipe is to be laid in screened gravel bedding, the trench may be excavated by machinery to the normal depth of the pipe provided that the material remaining in the bottom of the trench is no more than slightly disturbed.
- H. Where pipe is to be laid directly on the trench bottom, final excavation at the bottom of the trench shall be performed manually, providing a flat-bottom true to grade upon undisturbed material. Bell holes shall be made as required.

3.02 DISPOSAL OF MATERIALS

- A. Excavated material shall be stacked without excessive surcharge on the trench bank or obstructing free access to hydrants and gate valves. Inconvenience to traffic shall be avoided as much as possible. Excavated material shall be segregated for use in backfilling as specified below.
- B. It is expressly understood that no excavated material shall be removed from the site of the work or disposed of, except as directed by the City. When removal of surplus materials has been approved by the City, dispose of such surplus material in approved designated areas.
- C. Should conditions make it impracticable or unsafe to stack material adjacent to the trench, the material shall be hauled and stored at a location provided. When required, it shall be re-handled and used in backfilling the trench.

3.03 SHEETING AND BRACING

- A. Furnish, put in place and maintain sheeting and bracing required by Federal, State or local safety requirements to support the sides of the excavation and prevent loss of ground which

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

could endanger personnel, damage or delay the work or endanger adjacent structures. If the City is of the opinion that at any point sufficient or proper supports have not been provided, he/she may order additional supports placed at the expense of the Contractor. Compliance with such order shall not relieve the Contractor from his/her responsibility for the sufficiency of such supports. Care shall be taken to prevent voids outside of the sheeting, but if voids are formed, they shall be immediately filled and rammed.

- B. Where sheeting and bracing is required to support the sides of trenches, engage a professional engineer, registered in the State of Florida, to design the sheeting and bracing. The sheeting and bracing installed shall be in conformity with the design and certification of this shall be provided by the professional engineer. Submit P.E. Certification Form contained in Section 01300 to show compliance with this requirement.
- C. 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 screened gravel backfill.
 - 1. When installing rigid pipe, any portion of the box extending below mid diameter shall be raised above this point prior to moving the box ahead to install the next pipe. This is to prevent the separation of installed pipe joints due to movement of the box.
 - 2. When installing flexible pipe (PVC, etc), trench boxes, moveable sheeting, shoring or plates shall not be allowed to extend below mid-diameter of the pipe. As trench boxes, moveable sheeting, shoring or plates are moved, screened gravel shall be placed to fill any voids created and the screened gravel and backfill shall be recomacted to provide uniform side support for the pipe.
- D. All sheeting and bracing shall be carefully removed in such manner as not to endanger the construction of other structures, utilities, or property, whether public or private. All voids left after withdrawal of sheeting shall be immediately refilled with sand by ramming with tools especially adapted to that purpose, by watering or otherwise as directed.
- E. No payment will be given for sheeting, bracing, etc, during the progress of the work. No payment will be given for sheeting which has actually been left in the trench for the convenience of the Contractor.

3.04 TEST PITS

- A. Excavation of test pits shall be done for the purpose of locating underground utilities or structures as an aid in establishing the precise location of new work.
- B. Test pits shall be backfilled as soon as the desired information has been obtained. The backfilled surface shall be maintained in a satisfactory condition for travel until resurfaced as specified.

3.05 EXCAVATION BELOW GRADE AND REFILL

- A. Whatever the nature of unstable material encountered or the groundwater conditions, trench drainage shall be complete and effective.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- B. If the Contractor excavates below grade through error or for the Contractor's own convenience, or through failure to properly dewater the trench, or disturbs the subgrade before dewatering is sufficiently complete, they may be directed by the City to excavate below grade as set forth in the following paragraph, in which case the work of excavating below grade and furnishing and placing the refill shall be performed at his own expense.
- C. If the material at the level of trench bottom consists of fine sand, sand and silt or soft earth which may work into the screened gravel notwithstanding effective drainage, the subgrade material shall be removed to the extent directed and the excavation refilled with a 6-in layer of coarse sand, or a mixture graded from coarse sand to the fine peastone, as approved by the City, to form a filter layer preserving the voids in the gravel bed.

3.06 BACKFILLING

- A. As soon as practicable after the pipe has been laid and jointed, backfilling shall begin and thereafter be prosecuted expeditiously. Backfill material, fill material, and selected material shall be defined as native soil excavated from the trench or trunked in, free of rocks, and foreign materials and shall be placed up to 1-foot over the pipe.
- B. Where the pipes are laid in roadways, the remainder of the trench up to a depth of 12-in below the bottom of the specified permanent paving shall be backfilled with common fill material in layers not to exceed 1-ft and thoroughly compacted. The subbase layer for paving shall be of bank-run gravel thoroughly compacted in 6-in layers.
- C. To prevent longitudinal movement of the pipe, dumping backfill material into the trench and then spreading will not be permitted until selected material or screened gravel has been placed and compacted to a level 1-ft over the pipe.
- D. Backfill shall be brought up evenly on all sides. Each layer of backfill material shall be thoroughly compacted by rolling, tamping, or vibrating with mechanical compacting equipment or hand tamping, to 92 percent compaction. If rolling is employed, it shall be by use of a suitable roller or tractor, being careful to compact the fill throughout the full width of the trench.
- E. Where other methods are not practicable, compaction shall be by use of hand or pneumatic ramming with tools weighing at least 20 lbs. The material being spread and compacted in layers not over 6-in thick. If necessary, sprinkling shall be employed in conjunction with rolling or ramming.
- F. Backfill around structures shall be selected common fill material. All backfill shall be compacted, especially under and over pipes connected to the structures.
- G. Bituminous paving shall not be placed in backfilling.
- H. All road surfaces shall be broomed and hose-cleaned immediately after backfilling. Dust control measures shall be employed at all times.

3.07 RESTORING TRENCH SURFACE

- A. Where the trench occurs adjacent to paved roadways, sidewalks, or in other unpaved areas, thoroughly consolidate the backfill and maintain the surface as the work progresses. If settlement takes place, immediately deposit additional fill to restore the level of the ground.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- B. In and adjacent to roadways, the 12-in layer of trench backfill below the specified initial pavement shall consist of compacted bank-run gravel. Should the Contractor wish to use material excavated from the trench as gravel subbase for pavement replacement, the Contractor, at his/her own expense, have samples of the material tested by an independent testing laboratory at intervals not to exceed 500-ft, in order to establish its compliance with the specifications. Only material which has been tested and approved by the City shall be allowed to be incorporated into the work.
- C. The surface of any driveway or any other area which is disturbed by the trench excavation and which is not a part of the paved road shall be restored to a condition at least equal to that existing before work began.
- D. In sections where the pipeline passes through grassed areas, and at the Contractor's own expense, remove and replace the sod to the satisfaction of the City.

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

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Trenching, Backfilling and Compaction

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Exhibit 2
189 of 310

p. 189

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 02270
EROSION AND SEDIMENTATION CONTROL

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and perform all installation, maintenance, removal and area cleanup related to erosion and sedimentation control work as shown on the Drawings and as specified herein. The work shall include, but not necessarily be limited to; installation of temporary access ways and staging areas, silt fences, stone filter boxes, stone filter berms, sediment removal and disposal, device maintenance, removal of temporary devices, temporary mulching, excelsior matting installation and final cleanup.
- B. The Contractor shall comply with the National Pollutant Discharge Elimination System (NPDES) program for the construction activities as administered by the Florida Department of Environmental Protection (FDEP) and the US Environmental Protection Agency (EPA). The Contractor will be required to obtain coverage under an NPDES permit and implement appropriate pollution control techniques to minimize erosion and sedimentation, and properly manage stormwater. All costs associated with obtaining coverage under an NPDES permit shall be the responsibility of the Contractor.

1.02 RELATED WORK

- A. Earthwork is included in Section 02200.
- B. Trenching, Backfilling, and Compaction in Section 02221.

1.03 SUBMITTALS

- A. Submit, in accordance with Section 01300, within 10 days after award of Contract, technical product literature for all commercial products, including straw mulch tackifier, to be used for erosion and sedimentation control.

1.04 QUALITY ASSURANCE

- A. Be responsible for the timely installation and maintenance of all sedimentation control devices necessary to prevent the movement of sediment from the construction site to off site areas or into the stormwater drainage system via surface runoff or underground drainage systems. Measures in addition to those shown on the Drawings necessary to prevent the movement of sediment off site shall be installed, maintained, removed, and cleaned up at the expense of the Contractor. No additional charges to the City will be considered.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Sediment Fence:
 - 1. Sediment fence shall be a prefabricated commercial product made of a woven, polypropylene, ultraviolet resistant material such as "Envirofence" by Mirafi Inc., Charlotte, NC or equal.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- B. 1/4-in woven wire mesh for filter boxes shall be galvanized steel or hardware cloth.

PART 3 EXECUTION

3.01 INSTALLATION

A. Sediment Fence Installation:

1. Sediment fences shall be positioned as necessary to prevent off site movement of sediment produced by construction activities.
2. Install pre-fabricated silt fence according to manufacturer's instructions and as shown on the Drawings.

- B. Staging areas and access ways shall be surfaced with a minimum depth of 4-in of crushed stone.

3.02 MAINTENANCE AND INSPECTIONS

A. Inspections:

1. Make a visual inspection of all erosion and sedimentation control devices once per week and promptly after every rainstorm. If such inspection reveals that additional measures are needed to prevent movement of sediment to offsite areas, promptly install additional devices as needed. Sediment controls in need of maintenance shall be repaired promptly.

B. Device Maintenance:

1. Sediment Fences:
 - a. Remove accumulated sediment once it builds up to 1/2 of the height of the fabric.
 - b. Replace damaged fabric, or patch with a 2-ft minimum overlap.
 - c. Make other repairs as necessary to ensure that the fence is filtering all runoff directed to the fence.
2. Add crushed stone to access ways and staging area as necessary to maintain a firm surface free of ruts and mudholes.

3.03 REMOVAL AND FINAL CLEANUP

- A. Once the site has been fully stabilized against erosion, remove sediment control devices and all accumulated silt. Dispose of silt and waste materials in proper manner. Regrade all areas disturbed during this process and stabilize against erosion with surfacing materials as indicated on the Drawings.

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 02500
PAVEMENT

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish the necessary equipment, labor and materials required and perform all work in connection with the restoration of pavement, sign and marking disturbed during construction to existing or better condition as specified herein.

1.02 RELATED WORK

- A. Backfilling and compacting is specified in Section 02221.

1.03 SUBMITTALS

- A. Submit, in accordance with Section 01300, the following:
 - 1. Certified Mix Designs.
 - 2. Certified Test results for gravel gradation.
- B. Submittals are to be made prior to starting the paving work.

1.04 REFERENCE STANDARDS

- A. In addition to complying with all pertinent codes and regulations, comply with the referenced or applicable portions of the Standard Specifications for Road and Bridge Construction of the State of Florida Department of Transportation herein referred to as "FDOT".

1.05 PRODUCT HANDLING

- A. Protection:
 - 1. Use all means necessary to protect bituminous concrete pavement materials before, during and after installation and to protect the installed work and materials of all other trades.
- B. Replacements:
 - 1. In the event of damage, immediately make all repairs and replacements necessary to the approval of the City and at no additional cost to the City.

PART 2 PRODUCTS

2.01 BASE COURSES

- A. The limerock base course shall conform to FDOT Section 911.

2.02 PRIME COAT

- A. The prime coat material shall conform to FDOT Section 300-2.1, 916-3, and 916-4.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

2.03 TACK COAT

- A. The tack coat material shall conform to FDOT Section 300-2.3.

2.04 ASPHALTIC CONCRETE

- A. The bituminous concrete surface course shall conform to FDOT Section 334 superpave SP-9.5.

PART 3 EXECUTION

3.01 INSTALLATION

A. Qualification of Workmen

1. Furnish at least one person who shall be thoroughly trained and experienced in the skills required, who shall be completely familiar with the design and application of the work described for this Section and who shall be present at all times during progress of the work of this Section and shall direct all work performed under this Section.
2. For actual finishing of asphaltic concrete surfaces and operation of the required equipment, use only personnel thoroughly trained and experienced in the skills required.

B. Preparation of Subgrade:

1. After the subgrade has been prepared and has been approved by the City, it shall be brought to the final grade and contour and thoroughly compacted.

C. Base Course:

1. Placing:
 - a. The base course shall be spread in the required quantity and shaped as shown on the Drawings and in accordance with FDOT Section 200-6 so that when compacted and finished it will be of the thickness and at the required grade.
2. Compaction:
 - a. The base course shall be compacted to 98 percent of maximum dry density in accordance with FDOT Section 200-7.

D. Asphaltic Concrete:

1. Conditioning of Existing Surface:
 - a. The surface upon which the asphaltic concrete is to be placed shall be clean of all foreign and loose material, dry when the paving operations are about to start and shall be maintained in that condition.
 - b. The existing surface shall be given a prime coat in accordance with FDOT Section 300-7.
 - c. A tack coat shall be applied in accordance with FDOT Section 300-8.
2. Placing of Mixture:

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- a. Limitations of Operation: The laying operations shall not begin unless the weather is suitable for all activities to be completed in dry conditions, in accordance with FDOT Section 330-3.3.
- b. Preparation: The preparation of the asphaltic cement, aggregates and mixtures shall be in accordance with FDOT Sections 330-4, 300-5, and 300-6.
- c. Transportation: The mixture shall be transported in accordance with FDOT Section 330-3.
- d. Joints: Prepare joints in accordance with FDOT Section 330-11. Maintain a smooth transition between existing and new pavement.
- e. Pavement Cuts: Maintain all pavement cuts to the approval on the City until the Project is complete. Surface course cuts during construction must have all edges saw cut prior to replacements.
- f. Placing Mixture: Place mixture in accordance with FDOT Sections 330-9 and 330-10. Lift thickness shall be as shown on the Drawings.
- g. Surface Requirements: The surface shall be in accordance with FDOT Section 330-9, except that the criteria for the maximum allowable deficiency in the final surface layer shall be 3/16-inch for all locations and types of paved areas. The finished surface must be of uniform texture and compaction. Any pulled, torn or loosened asphalt, or any areas with open pores, segregation, and sand streaks, sand spots, or ripples must be corrected. Correct thickness deficiencies by either replacing the full thickness for a length extending at least 50 feet beyond each end of the deficient areas, for the full width of the paving lane, or by overlaying, when permitted by the City.

3.02 ROADWAY MARKINGS

- A. Markings shall be located as follows:
 1. Parking space marking area as shown on the Drawings.
 2. Traffic direction arrow marking as shown on the Drawings.
 3. Sign, code, dimensions as show on the Drawings.
- B. All surface dirt within the areas to be painted shall be removed. Large areas of tar, grease or foreign materials may require sand blasting, steam cleaning or power brooming to accomplish complete removal. Application of stripes shall not proceed until final authorization is received from the City.
- C. Markings shall be painted in accordance with FDOT Section 710 and Index No. 17346.
- D. Asphaltic concrete pavements shall have been in place for 48 hours prior to the application of pavement markings.
- E. If for any reason material is spilled or tracked on the pavement, or any markings applied, in the City's judgment, fail to conform because of a deviation from the desired pattern, remove such material by a method that is not injurious to the roadway surface and is acceptable to the City, clean the roadway surface and prepare the surface for a reapplication of markings and reapply the markings as directed without additional compensation for any of the foregoing corrective operations.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

3.03 TRENCH PAVEMENT RESTORATION

- A. If points of settlement or holes appear in the pavement, repair the same within 3 days of notification by the City. If after due notice, if failure to make the repairs is evident, the work will be done by the City and the total cost of such repairs will be charged to the Contractor.

3.04 PROTECTION OF FINISHED SURFACES

- A. The Contractor shall protect the finished asphaltic concrete pavement surface upon completion. No dumping of any material directly on the pavement shall be permitted. Vehicular traffic shall not be permitted on any pavement that has not set sufficiently to prevent rutting or other distortion.

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 02616
DUCTILE IRON PIPE AND FITTINGS

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required, install, and test ductile iron pipe and fittings for yard piping as shown on the Drawings and as specified herein.
- B. Yard piping shall include all piping and fittings extending outward, upward and downward into the ground from the wall pipe of all structures. Yard piping shall include flanged and grooved piping into the above grade wall pipe of all structures.
- C. Piping shall be located substantially as shown on the Drawings. The City reserves the right to make such modifications in locations as may be found desirable to avoid interference between pipes or for other reasons. Pipe fitting notation is for the Contractor's convenience and does not relieve him/her from installing and jointing different or additional items were required to achieve a complete piping system.
- D. Where the word "pipe" is used it shall refer to pipe, fittings, or appurtenances unless otherwise noted.

1.02 RELATED WORK

- A. Delivery, Storage and Handling is included in Section 01170.
- B. Connection to and work on Existing System is included in Section 01170.
- C. Trenching, Backfilling and Compaction is included in Section 02221.
- D. Sedimentation and Erosion Control is included in Section 02270.
- E. Pavement is included in Section 02500.
- F. Painting is included in Section 09902.

1.03 SUBMITTALS

- A. Submit shop drawings and product data, including piping layouts, design calculations, warranty information, test reports, in accordance with Section 01300 and the referenced standards.
- B. Submit the name of the pipe and fitting suppliers and a list of materials to be furnished.
- C. Prior to shipment of pipe, certified copies of mill tests confirming the type of materials used in the pipe, and shop testing of pipe to show compliance with the requirements of the applicable standards, along with a sworn affidavit of compliance that the pipe complies with the referenced standards, shall be submitted.
- D. Submit copies of all shop tests, including hydrostatic tests.
- E. Submit information on all warranties per Section 01740.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- F. Submit shop drawings with a tabulated laying schedule which references stations and invert elevations as shown on the Drawings as well as all fittings, bends, outlets, restrained joints, tees, special deflection bells, adapters, solid sleeves and specials, along with the manufacturer's drawings and specifications providing complete details of all items. The laying schedule shall show pipe class, class coding, station limits and transition stations for various pipe classes. The above shall be submitted to the City for approval before manufacture and shipment. The location of all pipes shall conform to the locations indicated on the Drawings. Full length pipe may be supplied from inventory provided that all specification requirements are met. Shop drawings shall include but not be limited to:
1. Complete and dimensional working drawings of all pipe layouts, including pipe stationing, invert elevation at changes in grade or horizontal alignment, all elements of curves and bends both in horizontal alignment and vertical position.
 2. The grade of material; size, wall thickness, of the pipe and fittings and appurtenances, type and location of fittings, specials, and valves; and the type and limits of the lining, lining reinforcing and coating systems of the pipe and fittings. Methods and procedures recommended by the coating manufacturer will be documented.
 3. Joint details; methods and locations of supports, and complete information concerning type, size and location of all welds. Shop welds (no field welding will be allowed) will be clearly differentiated and welds will be clearly detailed with preparation procedures for all pipe and parent material comprising each weld. Critical welding procedures will be identified along with methods for controlling welding stresses and distortions. Locations and proposed joint details will also be clearly identified.
 4. Method of manufacture of pipe; joint details; fittings; and any specials.
 5. All other pertinent information for all items to be furnished; product data to show compliance of all couplings, supports, fittings, coatings and related items.
- G. Submit anticipated production and delivery schedule.
- H. Prior to shipment of pipe, submit a certified affidavit of compliance from the manufacturer stating that the pipe, fittings, gaskets, linings and exterior coatings for this project have been manufactured and tested in accordance with AWWA and ASTM standards and requirements specified herein.
- I. Submit handling procedures for all phases from finished fabrication through delivery including storage, transportation, loading, and unloading. This will include storage at the project site and required protection following installation prior to startup.

1.04 REFERENCE STANDARDS

A. ASTM International

1. ASTM A193 - Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service.
2. ASTM A674 – Standard Practice for Polyethylene Encasement for Ductile Iron Pipe for Water or Other Liquids.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

3. ASTM C150 - Standard Specification for Portland Cement.

B. American Water Works Association (AWWA)

1. AWWA C104 - Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
2. AWWA C105 - Polyethylene Encasement for Ductile-Iron Pipe Systems.
3. AWWA C110 - Ductile-Iron and Gray-Iron Fittings, 3-in through 48-in (75mm Through 1219mm) for Water.
4. AWWA C111 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
5. AWWA C150 - Thickness Design of Ductile-Iron Pipe.
6. AWWA C151 - Ductile-Iron Pipe, Centrifugally Cast, for Water.
7. AWWA C115 – Flanged Ductile Iron Pipe With Ductile Iron or Grey Iron Threaded Flanges.
8. AWWA C116 – Protective Fusion-Bonded Epoxy Coatings for the Interior and Exterior surfaces of Ductile Iron and Grey Iron Fittings for Water Supply Service.
9. AWWA C153 - Ductile- Iron Compact Fittings, 3-in through 24-in and 54-in through 64-in, for Water.
10. AWWA C550 – Protective Interior Coatings for Valves and Hydrants.
11. AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.
12. AWWA C606 - Grooved and Shouldered Joints.

- C. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.05 QUALITY ASSURANCE

- A. It is a requirement of these Contract Documents to have all of the ductile iron pipe under this Section designed and supplied by a single manufacturer rather than have selection and supply of these items by a number of different manufacturers. Similarly, it is a requirement of these Contract Documents to have all of the ductile iron fittings under this section designed and supplied by a single manufacturer rather than have selection and supply of these items by a number of different manufacturers. All connections between the pipe and fittings shall be compatible, as detailed in Section 1.06.
- B. Each length of ductile iron pipe supplied for the project shall be hydrostatically tested at the point of manufacture to 500 psi for duration of 10 seconds per AWWA C151. Testing may be performed prior to machining bell and spigot. Failure of ductile iron pipe shall be defined as any leak or rupture of the pipe wall. Certified test results shall be furnished in duplicate to the City prior to time of shipment.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- C. All ductile-iron pipe and fittings to be installed under this project shall be inspected and tested at the foundry as required by the standard specifications to which the material is manufactured. Furnish in duplicate to the City sworn certificates of such tests and their results at least 5 days prior to the shipment of the goods.
- D. Inspection of the pipe and fittings will also be made by the City after delivery. The pipe shall be subject to rejection at any time on account of failure to meet any of the Specification requirements even though pipe may have been accepted as satisfactory at the place of manufacture. Pipe rejected after delivery (including defects from manufacturing or delivery/transport) shall be marked for identification and shall immediately be removed from the job at the Contractors expense.
- E. The manufacturer shall meet the following criteria and furnish the necessary project information, which demonstrates the required experience:
 - 1. Experience that includes successful fabrication (followed by installation, acceptance and service) to AWWA C151 standards of at least 1,400 lineal feet of the largest specified diameter or larger ductile iron pipe with similar linings/coatings within the past 5 years.
 - 2. Experience shall include the successful fabrication of at least 50- fittings in compliance with AWWA C110 or C153 of the largest specified diameter or larger with similar lining/coatings within the past 5 years.
 - 3. Experience that includes the successful fabrication (followed by installation, acceptance and service) of at least 10,000 lineal feet of the largest specified diameter or larger push-on style, boltless restrained joint for ductile iron pipe within the last 5 years.
- F. All pipe and fittings shall be marked in accordance with all applicable AWWA standards. Legibly and permanently mark all pipe, fittings, specials and appurtenances to be consistent with the laying schedule and marking drawings (if required) with the following information:
 - 1. Manufacturer, date.
 - 2. Size, type, class, or wall thickness.
 - 3. AWWA Standard(s) produced to.
 - 4. Each pipe shall be identified with sequential numbering consistent with the laying schedule and marking drawings and each marked pipe will appear on the marking drawings in the identified location for installation.
 - 5. Special fittings, bends, and appurtenances requiring specific orientation will be appropriately marked with the words "TOP" in the correct position and in a consistent location.

1.06 DESCRIPTION OF SYSTEMS

- A. Fittings shall be supplied by one of the named pipe manufacturers or City approved equal. Pipe and fittings shall be as supplied by the American Cast Iron Pipe Co., U.S. Pipe and Foundry, Griffin Pipe Products, all pipe divisions of the McWane Company or an approved equal who is a member of the Ductile Iron Pipe Research Association (DIPRA). All ductile iron pipe shall be

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

supplied by a single manufacturer and all ductile iron fittings shall be supplied by a single manufacturer. The fittings supplier shall certify in writing that their fittings are compatible with the supplied brand of pipe.

- B. Pipe is to be installed in those locations shown on the Drawings, and only where specifically indicated.
- C. Contractor is responsible for compatibility between joints of all items they supply.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Care shall be taken in loading, transporting, and unloading to prevent injury to the pipe, pipe linings and pipe coatings. See AWWA C600 and the referenced AWWA Standards for Shipping, handling and storage procedures. All pipe and fittings shall be examined as noted in this Section. Any damage to linings or coatings discovered during the examination shall be repaired to the satisfaction of the City at the cost of the Contractor, before proceeding with the work.
- B. Pipe shall be transported to the job site on padded bunks or oak timbers and secured with steel banding or nylon tie down straps to adequately protect the pipe and coating. Slings, hooks, or pipe tongs or other devices acceptable to the City shall be used in pipe handling. No uncushioned ropes, chairs, wedges, cables or levers shall be used in handling finished pipe, fittings or couplings. Under no circumstances shall the pipe or fittings be dropped or skidded against each other. Care shall be taken to preventing marring the pipe coating. Padded wooden pipe cradles, or chocks suitable for the protection of coatings shall be used between finished pipes and beneath them when pipes are placed upon rough surfaces. Pipe shall not be stored on bare ground unless soft sand berms are used to support the pipe and is approved by the City.
- C. Materials, if stored, shall be kept safe from damage. The interior of all pipe, fittings and other appurtenances shall be kept free from dirt, excessive corrosion or foreign matter at all times.
- D. Pipe shall not be stacked higher than the limits recommended by its manufacturer. The bottom tier shall be kept off the ground on timbers, rails, or concrete. Stacking shall conform to manufacturer's recommendations and/or AWWA C600.
- E. Gaskets for flanged, mechanical, restrained, and push-on joints to be stored shall be placed in a cool location out of direct sunlight. Gaskets shall not come in contact with petroleum products. Gaskets shall be used on a first-in, first-out basis.
- F. Lined and/or coated pipe shall be suitably protected from exposure and heating of the sun at all times following procedures recommended by the coating/lining system manufacturer. Exposure will not be allowed (except for short periods such as installation, assembly and repairs).
- G. No metal tools or heavy objects shall be permitted to come in contact unnecessarily with the finished coating. Workers will be permitted to walk upon the coated pipe only when necessary, in which case they shall wear footwear with rubber or composition soles and heels that are sufficiently free of dirt and mud that coating remains undamaged.
- H. It shall be the responsibility of the Contractor to prevent damage to the linings and coatings that might be caused by handling and/or onsite storage of the finished pipe at low temperatures (due to embrittlement), high temperatures or direct sunlight.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

1.08 WARRANTIES

- A. Provide warranties as required in Section 01740.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Ductile iron pipe shall conform to AWWA C115 and C110. Pipe shall be supplied in standard lengths as much as possible.
- B. Thickness design shall be per AWWA C150, except provide minimum Class 350 for piping 20-in and smaller and provide minimum Class 250 for piping larger than 24-in. The pipe supplier shall perform thickness analysis as referenced in Paragraph 2.02. All ductile iron pipe supplied shall meet the minimum wall thickness and pressure class indicated on the drawings.
- C. Ductile iron pipe shall be as manufactured by U.S. Pipe and Foundry Company, Inc.; American Cast Iron Pipe Company; Clow Water System Company, or equal.

2.02 DUCTILE IRON PIPE DESIGN

- A. Ductile iron pipe shall have a minimum tensile strength of 60,000 psi with minimum yield strength of 42,000 psi (per AWWA M-41). Design shall be done for external and internal pressures separately using the larger of the two for the net design thickness. Additional allowances shall be made for service allowance and casting tolerance per AWWA C150. The pipe classes determined for various sizes and conditions shall provide the total calculated thickness at a minimum or conform to minimum pipe class specified in Paragraph 2.01A2 above, or as shown on the Drawings, whichever is greater.
- B. Design for the net thickness for external loading shall be taken as the greater of the following conditions:
1. 2-1/2-ft of cover with AASHTO H-20 wheel loads, with an impact factor of 1.5.
 2. Depth from existing ground level of future proposed grade (whichever is greater) to top of pipe as shown on the Drawings, with truck load.
 3. Soil Density: 125 lbs/cu ft
 4. Laying Conditions; AWWA C150, Type 2.
- C. Design for the net thickness shall be based upon the following internal pressure conditions:
1. Design pressure: 150 psi
 2. Surge allowance: 100 psi
 3. Safety factor: 2
 4. Total internal pressure design: $2 (150 + 100) = 500$ psi
 5. E': 300 psi

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- D. Copies of design calculations showing that the pipe meets all of the requirements specified herein shall be furnished to the City upon request. A yield strength of 42,000 psi shall be used during design calculations.

2.03 END TREATMENTS/JOINTS

- A. Ductile iron pipe/fitting joints shall be push-on rubber gasket type or rubber-gasket mechanical joint per AWWA C111 in unrestrained areas, except where flanged joints are required as shown on the Drawings. In restrained areas, both pipe and fitting joints shall be push on rubber gasket, locking ring type restrained joints per the manufacturer' standard, except where flange joints are shown on the Drawings. Rubber-gasket joints shall conform to AWWA C111 and shall be of styrene butadiene rubber (SBR).
- B. Restraint for push on joint pipe shall be positive locking "Locked-type" joints manufactured by the pipe and fitting manufacturer that utilize restraint independent of the joint gasket. All restrained joints shall be suitable for the specified test pressure. Joints shall be fabricated of heavy section ductile iron casting. Bolts and nuts shall be low carbon steel conforming to ASTM A193, Grade B7. Restraint for mechanical joint pipe shall use retainer glands for restraining joint. Restrained push on joints shall be by one of the following or an approved equal:
1. "TR Flex" by US Pipe and Foundry Company.
 2. "Lok-Ring, "Flex Ring (positive locking style)" by the American Cast Iron Pipe Company.
 3. "Snap Lok" by Griffin Pipe Products Company.
 4. "Superlok" by Clow Water Systems Company.
 5. The minimum number of restrained joints required for resisting forces at fittings and changes in direction of the pipe shall be determined from the length of restrained pipe on each side of the fittings and changes in direction necessary to develop adequate resisting friction with the soil. The required lengths of restrained joints shall be as shown on the Drawings.
 6. Restrained pipe joints that achieve restraint by incorporating cut out sections in the wall of the pipe shall have a minimum wall thickness at the point of the cut out that corresponds with the minimum specified wall thickness for the rest of the pipe.
 7. For up through 48-inch diameter ductile iron pipe only, the following may be used as an alternative restraint system:
 - a. The optional mechanical joint restraint shall be incorporated in the design of a follower gland. The gland shall be manufactured of ductile iron conforming to ASTM A536. Dimensions of the gland shall be such that it can be used with the standard mechanical joint bell and tee-headed bolts, as specified with the pipe.
 - b. The restraint mechanism shall consist of numerous individually activated gripping surfaces to maximize restraint capability. The gripping surfaces shall be wedges designed to spread the bearing surfaces on the pipe. Actuation of the gripping wedges shall be by torque limiting twist-off nuts. When the nut is sheared off, standard hex nut shall remain.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- c. The restraint device for ductile iron pipe shall have a working pressure of at least 250 psi and a safety factor of 2:1.
 - d. Pipe manufacturer proprietary mechanical joint restraint systems that utilize a wedge style gripping systems or a gland/ring positive restraint system will be considered acceptable on a case by case basis as determined by the City.
 - e. The restraint device shall be EBAA Iron Megalug Series 1100, for fittings.
 - f. The restraint device shall be EBAA Iron Megalug Series 1700 for push pipe joints.
- C. Threaded ductile iron flanges for ductile iron pipe shall be fabricated per AWWA C115 and sealed during installation with a special high pressure, full face gasket per AWWA C111. At the pipe manufacturer's option, the use of 250 lb pattern flanges, which are faced and drilled in accordance with ANSI B16.1 may be substituted in order to match valves or other equipment and/or to meet the required working pressure requirements. All flanges shall be rated for the same pressure as the adjacent pipe in all cases. Compatibility of the flanges with the 250 lb class and higher special class AWWA valves will be the responsibility of the Contractor.
1. Flanges shall be pre drilled and then faced after being screwed onto the pipe, with flanges true to 90 degrees of the pipe axis and shall be flush with the end of the pipe.
 2. Gaskets shall be full face rubber, 1/8" thick SBR material. Such as American Toruseal Gasket, or U.S. Pipe Flange-Tyte.
 3. Flanged joints shall be supplied with bolts and nuts on one end, bolt studs with a nut at each end, or studs with nuts on one end where the flange is tapped. The number and size of bolts shall comply with the same standard as the flange. Bolts and nuts shall, except as otherwise specified or noted in the Specifications or on the Drawings, comply with ASTM A193, grade B7.
 4. Blind flanges shall mate with regular flanges.
 5. Filler flanges and beveled flange fillers shall be furnished faced and drilled complete with extra length bolts.
- D. Couplings and Adapters:
1. PCCP to DIP adaptors shall be Hanson Pipe & Precast or Vianini Pipe Incorporated. Contractor shall expose each connecting joint prior to selecting and submitting the PCCP to DIP adaptor.
- E. Coupling for Ductile Iron Pipe:
1. Smith-Blair Model 411 large outside diameter 316 stainless steel follower. Large outside diameter sleeve with hanging rings, 316 stainless steel. Nitrile (Buna-N) per ASTM D2000 gasket. Type 316 stainless steel hardware with fluoropolymer coated nuts.
- F. Repair Clamps:
1. Contractor shall have available 6-inch and 12-inch stainless steel repair clamps on-site in the event a line is damaged during construction Work.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

2.04 FITTINGS

- A. Pipe fittings shall be ductile iron with pressure rating of 350 psi for 24-in and smaller piping and 250 psi for 30-in and larger piping. Fittings shall meet the requirements of AWWA C110 or AWWA C153 as applicable. Fittings shall have the same pressure rating, as a minimum, of the connecting pipe.
- B. Closures shall be made with mechanical joint ductile iron solid sleeves unless alternate approved coupling systems are used and shall be located in straight runs of pipe at minimum cover outside the limits of restrained joint sections. Location of closures shall be subject to approval of the City.

2.05 INTERIOR LINING

- A. Ductile iron pipe and fittings shall be lined with a ceramic-filled amine-cured epoxy, Protecto 401 by Induron. The lining thickness shall be 40 mils nominal. Application shall be performed by an applicator approved by the coating manufacturer, in accordance with manufacturer's instructions and under controlled conditions at the applicator's shop or the pipe manufacturer's plant. Applicator shall submit a certified affidavit of compliance with manufacturer's instructions and requirements specified herein.

2.06 EXTERIOR COATING

- A. Buried pipe shall be furnished with a bituminous exterior coating in accordance with AWWA C151 and C110 respectively.
- B. Unless otherwise specified, all exposed exterior ferrous surfaces shall be painted with an applicable paint system as specified under Division 9. Surface preparation and application thereof shall be in conformance with applicable provisions of Division 9.
- C. Buried pipe shall be installed with polyethylene encasement. Polyethylene encasement shall have a minimum thickness of 8 mils and meet or exceed the minimum standards established by AWWA C105, current edition. Acceptable manufacturers include North Town Company; AA Thread and Seal Tape, Inc.; Sigma Corp. or approved equal.
 - 1. Polyethylene encasement shall meet minimum size requirements per TABLE 3 of section 2.15 of DIPRA's Installation Guide for Ductile Iron Pipe.
 - 2. Test results from an independent testing agency certifying that the polyethylene encasement meets all criteria established by AWWA C105, current edition, shall be submitted to the City prior to approval of the polyethylene encasement for use. In general, samples shall be submitted and include test results in accordance with the AWWA standard associated with tensile strength, elongation, dielectric strength, impact resistance, and propagation tear resistance.
 - 3. A 2-inch wide plastic adhesive tape, such as Calpico Vinyl, Polyken, U.P.C. Tape, or approved equal, shall be used for sealing seams, cuts, or tears in polyethylene encasement. Duct tape shall not be allowed.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

PART 3 EXECUTION

3.01 GENERAL

- A. Care shall be taken in loading, transporting and unloading to prevent injury to the pipe, lining or coatings. Pipe and fittings shall not be dropped or skidded against each other. Slings, hooks or pipe tongs shall be used for pipe handling. All pipe and fittings shall be examined before laying and no piece shall be installed which is found to be defective. Any damage to the pipe, lining or coatings shall be repaired per manufacturer's recommendations. Handling and laying of pipe and fittings shall be in accordance with manufacturer's instruction and as specified herein.
- B. If any defective pipe is discovered after it has been laid, it shall be removed and replaced with a sound pipe in a satisfactory manner. All pipe and fittings shall be thoroughly cleaned before laying, shall be kept clean until they are used in the work and when installed or laid, shall conform to the lines and grades required.
- C. Materials, if stored, shall be kept safe from damage. The interior of all pipe, fittings and other appurtenances shall be kept free from dirt, excessive corrosion or foreign matter at all times.
- D. Pipe shall not be stacked higher than the limits recommended by its manufacturer. The bottom tier shall be kept off the ground on timbers, rails, or concrete. Stacking shall conform to manufacturer's recommendations and/or AWWA C600.
- E. Gaskets for mechanical and push-on joints to be stored shall be placed in a cool location out of direct sunlight. Gaskets shall not come in contact with petroleum products. Gaskets shall be used on a first-in, first-out basis.

3.02 INSTALLING DUCTILE IRON PIPE AND FITTINGS

- A. Ductile iron pipe and fittings shall be installed in accordance with requirements of the laying schedule and AWWA C600, except as otherwise specified herein. A firm, even bearing throughout the length of the pipe shall be provided by digging bell holes at each joint and by tamping backfill materials at the side of the pipe to the spring-line per details shown on the Drawings. Blocking will not be permitted. If any defective pipe or fitting is discovered after it has been laid, it shall be removed and replaced with a sound pipe or fitting in a satisfactory manner by the Contractor, at his/her own expense.
 - 1. All pipe and fittings shall be kept clean until they are used in the work and shall be sound and thoroughly cleaned before laying. When laid, the pipe and fittings shall perform to the lines and grades required. When laying is not in progress, including lunch breaks, open ends of the pipe shall be closed by a watertight plug or other approved means. Sufficient backfill shall be placed to prevent flotation. The deflection at joints shall not exceed that recommended by the manufacturer.
 - 2. All ductile iron pipe laid underground shall have a minimum of 3 of feet of cover unless otherwise shown on the Drawings or as specified herein. Pipe shall be laid such that the centerline elevations shown on the Drawings are not exceeded.
 - 3. Fittings, in addition to those shown on the Drawings shall be provided, where required, in crossing utilities which may be encountered upon opening the trench. Solid sleeve closures shall be installed at locations approved by the City.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

4. The pipe interior shall be maintained dry and broom clean throughout the construction period.
5. When field cutting the pipe is required, the cutting shall be done by machine, leaving a smooth cut at right angles to the axis of the pipe. The end of the cut pipe shall be beveled to conform to the manufacture's recommendations for the spigot end. Any coating removed from the cut end shall be repaired according to manufacturer's recommendation. Cutting of restrained joint pipe will not be allowed, unless approved at specific joints in conjunction with the use of restrainer glands by EBAA Iron or field adaptable restrained joints. Where field cuts are permitted, the pipe to be cut shall be supplied by the factory as "gauged full length". Should full length gauged pipe be unavailable, the pipe to be cut shall be field gauged at the location of the new spigot using a measuring tape, or other means approved by the manufacturer, to verify that the diameter is within the tolerances permitted in Table 1 of AWWA C151.

B. Jointing Ductile-Iron Pipe

1. Push-on joints shall be made in strict accordance with manufacturer's instructions, AWWA C600 and Appendix B of AWWA C111. If there is conflict, the manufacturer's instructions shall take precedence. Pipe shall be laid with bell ends looking ahead. A rubber gasket shall be inserted in the groove of the bell end of the pipe. The joint surfaces shall be cleaned and lubricated and the plain end of the pipe shall be aligned with the bell of the pipe to which it is to be joined and pushed home. After joining the pipe, a metal feeler shall be used to make certain that the rubber gasket is properly seated.
2. Mechanical joints shall be assembled in strict accordance with the manufacturer's instructions, AWWA C600 and Appendix A of AWWA C111. If there is conflict, the manufacturer's instructions shall take precedence. Pipe shall be laid with bell ends looking ahead. To assemble the joints in the field, thoroughly clean and lubricate the joint surfaces and rubber gasket. Bolts shall be tightened to the specified torques. Under no condition shall extension wrenches or pipe over handle of ordinary ratchet wrench be used to secure greater leverage. After installation, apply a bitumastic coating to bolts and nuts and install polyethylene encasement as specified.
3. Bolts in mechanical or restrained joints shall be tightened alternately and evenly. Restraint for mechanical joint pipe shall use retainer glands for restraining joint. All restrained mechanical joints shall be suitable for the specified test pressure.
4. Restrained joints shall be installed according to pipe manufacturer's instructions.
5. Flanged joints shall be assembled in strict accordance with the manufacturer's instructions and Appendix C of AWWA C111. If there is conflict, the manufacturer's instructions shall take precedence. Extreme care shall be taken to ensure that there is no restraint on opposite ends of pipe or fitting, which would prevent uniform gasket compression, cause unnecessary stress, bending or torsional strains, or distortion of flanges or flanged fittings. Adjoining push on joints shall not be assembled until flanged joints have been tightened. Flange bolts shall be tightened uniformly to compress the gasket uniformly and obtain a seal. Flange bolts shall be left with approximately 1/2-inch projection beyond the face of the nut after tightening.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- a. Flanged joints shall be made using gaskets, bolts, bolt studs with a nut on each end, or studs with nuts where the flange is tapped. The number and size of bolts shall conform to the same ANSI Standard as the flanges.
 - b. Bolts in flanged joints shall be tightened alternately and evenly.
6. Sleeve couplings shall only be installed for closure or as shown on the Drawings. Couplings shall not be assembled until adjoining joints have been assembled. After installation. Apply a heavy bitumastic coating to the bolts and nuts and install protective wrap recommended by the manufacturer or as required herein. Care shall be exercised to insure that the insulating properties of insulating and dielectric couplings are maintained.
- C. All blowoffs, outlets, flow meter, fittings and other appurtenances required shall be set and jointed as indicated on the Drawings in accordance with manufacturer's instructions.
- D. Install polyethylene encasement around ductile iron pipe and in accordance with pipe manufacturer's recommendations.
 1. Polyethylene encasement shall be installed per ANSI/ AWWA C105/A21.5, Method 'A' in accordance with section 2.15 of DIPRA's Installation Guide For Ductile Iron Pipe.
 2. A fabric type or padded sling shall be used when handling polyethylene encased pipe to prevent damage to the polyethylene encasement.
 3. All seams in the polyethylene encasement shall be sealed completely with approved 2-inch wide plastic adhesive tape.
 4. Extreme care shall be taken to ensure that all rips or tears in the polyethylene encasement are properly repaired with additional tape and film as described in ANSI/AWWA C105/A21.5
 5. Extreme care shall be taken when backfilling to avoid damaging the polyethylene encasement.

3.03 GRAVITY WASTEWATER LEAKAGE TESTS

- A. Leakage tests shall be made and observed by the City between existing inlet/outlet structures and new ductile iron pipe including any structurally lined PCCP. The test shall be the exfiltration test made as described below:
- B. The existing inlet/outlet structures and new pipe shall then be filled with water to the highest point possible. If the excavation has not been backfilled and observation indicates no visible leakage, that is, no water visibly moving down the surface of the existing inlet/outlet structures, the existing inlet/outlet structures and new work may be considered to be satisfactorily water-tight. If the test, as described above is unsatisfactory as determined by the City, or if the existing inlet/outlet structures and new pipe excavation has been backfilled, the test shall be continued. A period of time may be permitted if the Contractor so wishes, to allow for absorption. At the end of this period, the existing inlet/outlet structures and new pipe shall be refilled to the highest point possible, if necessary and the measuring time of at least 8 hours begun. At the end of the test period, the existing inlet/outlet structures and new pipe shall be refilled to the highest point possible, measuring the volume of water added. This amount shall be extrapolated to a 24-hour rate and the leakage determined on the basis of depth. The leakage for each existing inlet/outlet

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

structures and new pipe shall not exceed 1 gallon per vertical foot (head) for a 24-hour period. If the existing inlet/outlet structures and new pipe fails this requirement, but the leakage does not exceed 3 gallons per vertical foot (head) per day, repairs by approved methods may be made as directed by the City to bring the leakage within the allowable rate of 1 gallon per foot per day. Leakage due to a defective section or joint or exceeding the 3 gallon per vertical foot per day shall be the cause for the rejection of the new pipe. It shall be the Contractor's responsibility to uncover the new pipe as necessary and to disassemble, reconstruct or replace it as directed by the City. The existing inlet/outlet structures and new pipe shall then be retested.

- C. No adjustment in the leakage allowance will be made for unknown causes such as absorption, it will be assumed that all loss of water during the test is a result of leaks through the joints. Furthermore, take any steps necessary to assure the City that the water table is below the bottom of the new pipe throughout the test.
- D. If the groundwater table is above the highest joint in the manhole, and if there is no leakage into the manhole as determined by the City, such a test can be used to evaluate the water-tightness of the existing inlet/outlet structures and new pipe. However, if the City is not satisfied, lower the water table and carry out the test as described hereinbefore.

3.04 FILLING AND TESTING EXISTING AND DISTURBED PRESSURE PIPE

- A. After installation, the pipe shall be tested for compliance as specified herein. Furnish all necessary equipment and labor for the hydrostatic pressure test on the pipelines.
- B. Submit detailed test procedures and method for City's review. In general, testing shall be conducted in accordance with AWWA C600. The method and procedures for performing the hydrostatic pressure test shall be approved by the City. Submit the plan for testing to the City least 10 days before starting a test.
- C. Pressure pipelines shall be subjected to a hydrostatic pressure of 150 psig. This test pressure shall be maintained for a minimum of 2 hours. The hydrostatic testing allowances shall not exceed those indicated in AWWA C600. Provide suitable restrained bulkheads as required to complete the hydrostatic testing specified.
- D. Contractor shall make any taps and furnish all necessary caps, plugs etc., as may be required in conjunction with performing the testing.
- E. Bulkheads shall be provided with a sufficient number of outlets for filling and draining the line and for venting air.
- F. Hydrostatic pressure tests shall conform to Section 5.2 of AWWA C600. Furnish gauges, meters, pressure pumps and other equipment needed to fill the line slowly and perform the required hydrostatic pressure tests.
- G. The City will provide a source of water supply. Contractor is responsible to obtain a water meter from the City and suitable backflow prevention device. The line shall be slowly filled with water and the specified test pressure shall be maintained in the pipe for the entire test period by means of a pump furnished by the Contractor. Provide accurate means for measuring the quantity of makeup water required to maintain this pressure.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- H. Duration of pressure test shall not be less than 2 hours. All leaks evident at the surface shall be repaired and leakage eliminated regardless of the total leakage as shown by test. Lines which fail to meet tests shall be repaired and retested as necessary until test requirements are complied with. Defective materials, pipes, valves and accessories shall be removed and replaced.

3.05 CLEANING

- A. At the conclusion of the work, thoroughly clean all pipe by flushing with water or other means to remove all dirt, stones, pieces of wood, or other material which may have entered during the construction period. All debris shall be removed from the pipeline. The lowest segment outlet shall be flushed last to assure debris removal.

3.06 PIPE MARKING

- A. All exposed piping, exterior and interior, shall be color coded and identified by painted legend markers in accordance with Section 09902.
- B. Pipe marker letter legend shall be as directed by the City.

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 02659
TEMPORARY BY-PASS PUMPING SYSTEMS

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Design, furnish, install, field test, operate, monitor, maintain, and remove temporary by-pass pumping systems as proposed by the Contractor for the purpose of diverting flow around work areas as required by the provisions specified in Section 01014.
- B. The design, installation and operation of temporary by-pass pumping systems shall be the Contractor's responsibility. The Contractor shall provide the services of a professional pump bypass company (system supplier) who can demonstrate to the City that the company specializes in the design prepared by a licensed professional engineer and operation of temporary by-pass pumping systems. The by-pass pumping system shall meet the requirements of all codes and regulatory agencies having jurisdiction.
- C. Maintain temporary by-pass pumping systems so that they are completely functional throughout the required period of service as specified in Section 01014.
- D. Following the required period of service, dewater and remove temporary by-pass pumping systems and return the site to its original condition.
- E. Provide all maintenance including manufacturer recommended preventive maintenance and on-call repair services. Contractor shall provide repair services and/or replacement equipment 24-hours per day, 7-days per week within 4-hours of being called.
- F. The total storage quantity of fuel allowable at the plant site to operate the temporary pumps shall not exceed the sum of the individual fuel tank capacities furnished with each pump's diesel engine drive. Provide a refueling service to maintain continuous 24-hours per day, 7-days per week pumping system operation.

1.02 RELATED WORK

- A. Construction Constraints is included in Section 01014.
- B. Special Provisions is included in Section 01170.

1.03 SUBMITTALS

- A. Submit, in accordance with Section 01300, the following:
 - 1. A detailed description of each proposed temporary by-pass pumping system including pumps, pump drives, by-pass pumping control system (as described in Article 2.01 General Pumping Equipment of this specification), piping, piping restraints, pipe supports, cross-over steps, piping headers, fittings, valves, isolation knife gate valves, flow meters, controls, wiring and any other related accessories required to provide a complete operating system in conformance with the requirements of this Section.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

2. Detailed plans and sections showing the proposed pumping system layout including dimensions and elevations. Plan shall include but not be limited to the following:
 - a. Staging area and access requirements for all pumps.
 - b. Pump size, capacity, number of units, diesel/electric engine specifications, fuel tank capacity, fuel consumption requirements, method of refueling, and power consumption.
 - c. Calculations of static lift, pipe size selection, friction losses, flow velocity and pump selection.
 - d. Pump curves showing pump operating range.
 - e. Proposed method of noise control for each pump.
 - f. Number, size, material, location and method of installation of suction piping.
 - g. Number, size, material, location and method of installation of discharge piping.
 - h. Access stairs to cross over pipe, and below grade pipe casing at road crossings.
 - i. Temporary pipe supports, anchorage, cover material, and other accessories as required to distribute point loads and stabilize the piping system.
 - j. Installation schedule and maintenance schedule.
 - k. System supplier phone number for 24-hour service.
 - l. A minimum of five reference installation of projects with similar size in wastewater pumping applications. Include contact names and phone numbers.
 - m. List of recommended spare parts to be stored on-site for emergency maintenance.
3. Provide information on the system supplier's service staff capabilities and replacement parts inventory to show that the vendor has sufficient resources to provide emergency service and replacement equipment and/or parts to the project site within 4-hours of a service call.
4. A description of system operation and controls shall include the controls of the temporary By-Pass Pumping System based on the plant influent flow signal received through a 4-20 mA hardwire connected to the By-Pass Pumping System PLC's. Include procedures for controlling pumps to accommodate the varying influent flow range, a list of all alarm conditions and procedures for correcting problems including equipment replacement. Existing slide gate adjustable weirs to battery 3 clarifier splitter box need to remain accessible. Contractor shall work with plant operations to verify the by-pass system is not causing operational problems with the plant and make proper adjustments to maintain proper operation.
 - a. The By-Pass Group (a) Pumps shall be programed to operate in a Lead/Lag/Standby configuration and shall allow the operator to select the percentage of the influent flow to be transfer by Group (a) Pumps (default percentage set point should be

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

approximately 20). The By-Pass Group (a) Pumps PLC shall determine the number of pumps request to run in the group accommodate the Group (a) Pumps discharge flow demand and will determine the criteria for an additional pump to start during incoming flow increase or a pump to stop during incoming flow decrease.

- b. The By-Pass Group (b) Pumps shall have a separate control scheme from the previous group pumps and be programmed to operate in a Lead/Lag/Standby configuration and shall allow the operator to select the percentage of the influent flow to be transfer by Group (b) Pumps (different set point from previous group, default percentage set point should be approximately 20). The By-Pass Group (b) Pumps PLC shall determine the number of pumps request to run in the group to accomodate the Group (b) Pumps discharge flow demand and will determine the criteria for an additional pump to start during incoming flow increase or a pump to stop during incoming flow decrease.
5. A description and schedule for the proposed procedures for startup and testing of the by-pass pumping system to demonstrate compliance with specified automatic operation and maintenance of a constant discharge pressure.
 6. A plan of operations for inclement weather. The plan shall demonstrate the ability to maintain pumping system operations throughout inclement weather events.
 7. A description and schedule for the proposed procedures for dismantling the system, and restoring normal operations.

1.04 REFERENCE STANDARDS

- A. Design, manufacturing and assembly of elements of the equipment specified herein shall be in accordance with the following:
 1. American Institute of Steel Construction (AISC)
 2. American Iron and Steel Institute (AISI)
 3. American Society of Mechanical Engineers (ASME)
 4. American National Standards Institute (ANSI)
 5. American Society for Testing Materials (ASTM)
 6. American Welding Society (AWS)
 7. American Bearing Manufacturers Association (ABMA)
 8. Institute of Electrical and Electronics Engineers (IEEE)
 9. National Electrical Manufacturers Association (NEMA)
 10. Occupational Safety and Health Administration (OSHA)
 11. Underwriters Laboratories (UL)

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- B. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.05 QUALITY ASSURANCE

- A. The Contractor shall employ the services of a system supplier who can demonstrate 5 years of recent and continuous specialization in the design, installation, operation and removal of temporary by-pass pumping systems in wastewater applications. The complete system shall be furnished from a single system supplier who shall be capable of providing service staff, repair parts and replacement of any deficient system component within 4-hours of a service call, 24-hours per day, 7-days per week.

1.06 SYSTEM DESCRIPTION

- A. Where proposed by the Contractor, temporary by-pass pumping systems shall comply with specified requirements in Section 01014.
- B. Pumping system control panels shall be NEMA 4 and include PLC type controller (PC or microprocessor type controller is not acceptable), flow indication, a flow totalizer, indicator lamps showing which pumps are operating, selector switch for auto or manual start and stop for each pump and visual and audible alarms for indication of operation failure and alarm conditions.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Delivery, storage and handling of equipment shall be as specified in 01170.

1.08 SYSTEM SUPPLIER

- A. Provide the services of the system supplier's representative as specified herein.
- B. Provide the services of the system supplier's representative for physical checkout field testing and operation and maintenance instruction for a minimum of 1 person day per pumping system configuration. See requirements in PART 3.
- C. Provide the services of the system supplier's representative or designated alternative, who shall be available 24-hours per day and able to be on site within 4-hours of being contacted at no additional cost to the City.
- D. Provide on-site operation of the by-pass pumping system 24-hours per day, 7-days per week.

PART 2 PRODUCTS

2.01 GENERAL PUMPING EQUIPMENT

- A. Furnish pumping units and all accessories from a single system supplier. Each temporary by-pass pumping system shall be complete including pumps, drives, piping, piping restraint, piping supports, cross-over steps, piping headers, fittings, valves, isolation knife gate valves, flow meters, controls and appurtenances as required for a complete system.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- B. The pumps, drives and control system shall be designed and built for 24-hour continuous service at any and all points within the required range of operation, without overheating, without cavitation, and without excessive vibration or strain. All parts shall be so designed and proportioned as to have the strength, stability and stiffness and be constructed to meet the specified requirements. Methods shall be provided for inspection, repairs, and adjustment.
- C. Control System shall include a Programmable Logic Controller (PLC) equipment with the required memory and functional capacity to perform the specified sequence of operation with the scheduled input and output points.
 - 1. Processor Systems shall include Central Processor Unit (CPU), power supply, input/output modules, communication modules and remote interface modules as required to meet system requirements.
 - 2. The CPU shall be, at a minimum, a 16-bit microprocessor that provides system timing and is responsible for scheduling I/O updates, with no user programming required to ensure discrete or analog update. It shall execute user relay ladder logic programs, communicate with intelligent I/O modules, and perform on-line diagnostics.
- D. All necessary foundation bolts, nuts, and washers shall be furnished.
- E. Each piece of equipment shall be furnished with a nameplate (with embossed data) securely mounted to the body of the equipment. As a minimum, the nameplate for the pumps shall include the manufacturer's name and model number, serial number, rated flow capacity, head, speed and all other pertinent data. As a minimum, nameplates for drives shall include the manufacturer's name and model number, serial number, horsepower, speed, input voltage, amps, number of cycles and power and service factors.
- F. All pumping units shall be provided as critically silenced units, complying with all City of Fort Lauderdale ordinances relating to noise.
- G. All equipment shall be suitable for outdoor operation under adverse weather conditions.

2.02 CONDITIONS OF OPERATION

- A. Pumps of the same grouping shall be identical in every respect with all parts interchangeable.
- B. Each pumping system shall be designed for the conditions of service specified in Section 01014 and below. All pumps shall have a rising head capacity curve for stable pump operation from the minimum head operating point to the shut-off head. Pump conditions are as follows:
 - 1. Work Sequence B – Group (a)

a. Service:	Temporary By-Pass Pumping
b. Number of pumps:	Three (3) installed, One (1) uninstalled stand-by
c. Liquid:	Clarifier Influent (MLSS)
d. Design capacity total peak (gpm):	14,000 gpm
e. Minimum capacity (gpm):	1,740 gpm
f. Type of drive	Diesel engine

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

g. Model/Manufacturer: Model CD300M by Godwin Pumps; or
approved equal

2. Work Sequence B – Group (b)

Pumping system installed under 2.02.B.2 to remain in place and in service for this portion of work. The pumping conditions are as follows:

a. Service:	Temporary By-Pass Pumping
b. Number of Pumps:	Three (3) installed, One (1) installed stand-by
c. Liquid:	Clarifier Influent (MLSS)
d. Design capacity total peak (gpm):	14,000 gpm
e. Minimum capacity (gpm):	1,740 gpm
f. Type of drive:	Diesel engine
g. Model/Manufacturer:	Model CD300M by Godwin Pumps; or approved equal

2.03 PUMPING SYSTEM COMPONENTS

- A. All pumps shall be centrifugal, end suction, fully automatic self-priming units that do not require the use of foot-valves, vacuum pumps, diaphragm pumps, or isolation knife gate valves or float apparatus in the priming system.
- B. Pump seals shall be high pressure, mechanical self-adjusting type with solid carbide faces capable of withstanding suction pressures to 100 psi without the pump running. The mechanical seal shall be cooled and lubricated in an oil bath reservoir, requiring no maintenance or adjustment. The oil bath reservoir shall not come in contact with or leak into the pumped water. Each pump shall be capable of running dry, with no damage for extended periods of time. All pump seal metal parts shall be stainless steel. All elastomers shall be Viton.
- C. Each pump shall be driven by a diesel engine. Diesel engine shall be water cooled. If the Contractor proposes to use electric motor driven pumps, power costs will be the responsibility of the Contractor.
- D. Each pump and diesel engine shall be skid mounted with integral fuel tank and skid lifting bracket.
- E. Provide automatic start/stop controls for the pumping system to automatically maintain system flow within the flows specified in Paragraph 2.02 B and Section 01014. Controls shall be contained in a local control panel with provision to manually operate each pump, provide indication of pump operation, and indicate the total flow being pumped.
- F. Provide all required suction and discharge pipe and fittings, discharge manifold pipe and fittings, shutoff valves, check valves, flow meter, pressure regulating valves, insulation, and all required accessories. All pipe and fittings shall be suitable for service conditions including buried conditions, as applicable. All joints must be 100 percent restrained. Suction piping shall be rated for 25-in Hg vacuum. Discharge piping, fittings, connections, isolation knife gate valves, and other discharge piping accessories shall be rated for a minimum working pressure of 150 psi.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- G. All piping shall be provided with temporary support structures, preventing any lateral movement. Temporary pipe supports connecting to existing reactor deck is not advised. Connection to the nearby existing reactor deck wall is preferred.
- H. Provisions shall be made for dewatering each temporary pipe configuration when taken out of service.

PART 3 EXECUTION

3.01 INSTALLATION AND PHYSICAL CHECKOUT

- A. Installation shall be in accordance with the system supplier's recommendations and approved shop drawing submittals.
- B. Install pumping units on a firm level surface.
- C. Furnish the services of the pump system supplier's representative for a minimum of one day per temporary by-pass system configuration to assist equipment installation and physical checkout.

3.02 FIELD TESTING

- A. Provide field testing in accordance with the approved shop drawing submittal. Field tests shall demonstrate conformance with system requirements.
- B. The Contractor shall require that field testing be conducted by the pump system supplier's representative in the presence of the City. Furnish the services of the pump system supplier's representative for a minimum of one day per temporary by-pass system to conduct required testing.
- C. Field testing shall demonstrate a minimum of seven days of continuous operation. During the seven days of continuous operation, the system shall demonstrate the ability to automatically start and stop pumps and modulate pump speeds in response to changing flow conditions.
- D. Remove and replace any system component that fails to perform in accordance with specified requirements.

3.03 SYSTEM OPERATION

- A. Perform all required maintenance on the equipment to maintain the system integrity and capacity as specified.
- B. Provide clean-up and disposal of contaminated material and reporting for all product spills.

3.04 EQUIPMENT REMOVAL

- A. At the completion of the period of service, dewater and disconnect all temporary piping and remove all system components from the site. Restore the work site to its original condition.

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

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GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 02901
MISCELLANEOUS WORK AND CLEANUP

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and perform the miscellaneous work not specified in other Sections but obviously necessary for the proper completion of the work as shown on the Drawings.
- B. When applicable, perform the work in accordance with other related Sections. When no applicable specification exists, perform the work in accordance with the best modern practice and/or as directed by the City.
- C. The work of this Section includes, but is not limited to, the following:
 - 1. Crossing and Relocating Existing Utilities.
 - 2. Restoring Sidewalk, Hardscape, Site Lights, Fence and Curbing.
 - 3. Cleaning Up.
 - 4. Incidental Work.
 - 5. Restoring the Site.

1.02 CROSSING AND RELOCATING EXISTING UTILITIES

- A. Perform any extra work required in crossing culverts, drains, gas mains, water mains and water services and other utilities. This work shall include: bracing, hand excavation, backfill (except screened gravel) and any other work required for crossing the utility or obstruction not included for payment in other items of the Bid Form.
- B. In locations where existing utilities cannot be crossed without interfering with the construction of the work as shown on the Drawings, remove and relocate the utility as directed by the City or cooperate with the Utility Companies concerned if they relocate their own utility.
- C. At pipe crossings and where designated by the City, furnish and place screened gravel bedding so that the existing utility or pipe is firmly supported for its entire exposed length. The bedding shall extend to the mid-diameter of the pipe crossed. Payment for screened gravel at pipe crossings will be made according to the unit price bid established in the Proposal.

1.03 RESTORING DRIVEWAYS AND FENCES

- A. Existing public and private driveways disturbed by the construction shall be replaced. Paved drives shall be repaved to the limits and thicknesses existing prior to construction.
- B. Fences in the vicinity of the work shall be protected from damage under this item. If damaged, fences shall be replaced in condition equal to that prior to being damaged and the work shall be satisfactory to the City.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

1.04 CLEANING UP

- A. Remove all construction material, excess excavation, buildings, equipment and other debris remaining on the job as a result of construction operations and restore the site of the work to a neat and orderly condition.

1.05 INCIDENTAL WORK

- A. Do all incidental work not otherwise specified, but obviously necessary to the proper completion of the work as shown on the Drawings and as specified herein.

1.06 RESTORING THE SITE

- A. Protect from injury all walls, fences, cultivated shrubbery, trees, pavement, underground facilities, such as water pipe, or other utilities that may be encountered. If removal and replacement are required, it shall be done in a workmanlike manner so that replacement is equivalent to that which existed prior to construction.
- B. Existing lawn and sod surfaces damaged by construction shall be replaced. Cut and replace the lawn and sod. These areas shall be maintained and resodded, if necessary, until all work under this Contract has been completed and accepted. Any additional work required to restore the site to its original condition shall be performed by the Contractor at no additional cost to the City.

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 09902
PAINTING

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and install all painting complete for new flanged piping, guard posts, repair of damaged existing coatings, and as specified herein.
- B. It is the intent of this Section to paint all exposed new flanged pipe and appurtenances; all as specified in the attached painting-schedules. Minor items not mentioned in the schedule of work shall be included in the work of this Section where they come within the general intent of this Section as stated herein.

1.02 RELATED WORK

- A. Ductile iron pipe and fittings are specified in Section 02616.

1.03 SUBMITTALS

- A. Ductile iron pipe and fittings are specified in Section 02616.
- B. Product Data: For each type of product indicated.
- C. Samples: Submit the following for each type of coating system and in each color and gloss of finish coat indicated.
 - 1. Color cards for color selections.
- D. Product List: For each product indicated. Cross-reference products to coating system and locations of application areas. Use same designations indicated on Drawings and in schedules.

1.04 REFERENCE STANDARDS

- A. Steel Structures Painting Council (SSPC):
 - 1. SSPC SP-1 - Surface Preparation Specification No. 1 Solvent Cleaning.
 - 2. SSPC SP-2 - Surface Preparation Specification No. 2 Hand Tool Cleaning.
- B. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
 - 1. Maintain containers in clean condition, free of foreign materials and residue.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

2. Remove rags and waste from storage areas daily.

1.06 PROJECT CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 50 and 95 deg F.
- B. Do not apply coatings in rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

1.07 EXTRA MATERIALS

- A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.
 1. Quantity: Furnish an additional 5 percent, but not less than 1 gal. of each material and color applied.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Provide products by one of the following:
 1. Ameron International (AME)
 2. Or equal.

2.02 MATERIALS

- A. Material Compatibility:
 1. Provide materials for use within each coating system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 2. Provide products of same manufacturer for each coat in a coating system.
- B. All painting materials shall be delivered to the work site in unbroken packages, bearing the manufacturer's brand and name. They shall be used without adulteration and mixed, thinned and applied in strict accordance with manufacturer's directions for the applicable materials and surface and with the City's approval before using.
- C. Shop priming shall be done with primers that are guaranteed by the manufacturer to be compatible with the finish paints to be used.
- D. Work areas will be designated by the City for storage and mixing of all painting materials. Materials shall be in full compliance with the requirements of pertinent codes and fire regulations. Proper containers outside of the buildings shall be provided and used for painting wastes and no plumbing fixture shall be used for this purpose.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

2.03 COLOR CODING FOR PIPES AND EQUIPMENT

- A. The color code establishes, defines and assigns a definite color for each process system. All elements which are an integral part of the system, that is originating from the equipment and/or supplying the equipment, shall be painted between and up to but not including the fixed flanges nor the flexible conduit connections on the equipment. Valves and fittings shall be painted in the color of the main body of the pipe.
- B. All pipes and equipment shall be painted with final coat color to match the existing plant color coding system and as approved by the City, and shall be treated as an integral part of the Contract.
- C. All hanger saddles and pipe support floor stands shall be painted the same color and with the same paint as the pipe it supports. Hanger rods and hanger rod connections to building structure shall be painted to match the color of the wall or ceiling to which it is attached.

2.04 LETTERING OF TITLES

- A. The name of the materials in each pipeline and alongside this an arrow indicating the direction of flow of fluids, shall be indicated on each pipe system. Titles shall not be located more than 50 linear feet apart and shall also appear directly adjacent to each side of any wall the pipeline breaches, adjacent to each side of the valve regulator, flowcheck, strainer cleanout and all pieces of equipment.
- B. Titles shall identify the contents by complete name at least once in each space through which it passes and thereafter by abbreviations as approved by the City. Identification title locations shall be determined by the City but in general they shall be placed where the view is unobstructed and on the two lower quarters of pipe or covering where they are overhead. Title should be clearly visible from operating positions especially those adjacent to control valves.
- C. Numbers and letters shall be die-cut from 3.5 mil vinyl film and prespaced on carrier tape. Adhesive and finish surface shall be protected with one piece removable liners. Color shall be white or black as approved depending on substrate color.
- D. Letter size shall be as indicated in the following table:

OUTSIDE DIAMETER OF PIPE OR COVERING	SIZE OF LEGEND LETTERS
3/4-in to 1-1/4-in	1/2-in
1-1/2-in to 2-in	3/4-in
2-1/2-in to 6-in	1-1/2-in
8-in to 10-in	2-1/2-in
Over 10-in	3-in

- E. The system for preparation and application of letters shall be Type B a.s.i/2 by ASI Sign Systems; Architectural Graphics Inc. or equal. Letter type shall be Optima Bold, upper case. Grid 2 spacing shall be employed. Arrow shall match as approved, letter type and size. The instructions of the manufacturer shall be followed in respect to storage, surface preparation and applications of letters.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

2.05 TESTING EQUIPMENT

- A. Furnish to the City for use on the Project for paint inspection, wet and dry film thickness gauges and all other equipment required by the City for inspection.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
1. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - a. Concrete: 12 percent.
 2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 3. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
 4. Coating application indicates acceptance of surfaces and conditions.

3.02 PREPARATION

- A. All surfaces to be painted shall be prepared as specified herein and shall be dry and clean before painting.
- B. All metal welds, blisters, etc., shall be ground and sanded smooth. All pits and dents shall be filled and all imperfections shall be corrected so as to provide a smooth surface for painting. All rust, loose scale, oil, tar and asphalt bearing coatings, grease and dirt shall be removed by use of approved solvents, wire brushing, grinding or sanding.
- C. All PVC pipe and other plastic matrix surfaces to be painted shall be lightly sanded and cleaned of residue before painting.
- D. Existing Surfaces to be Repainted.
1. Existing masonry, steel and other previously field painted surfaces requiring repair or as provided in Paragraph 1.01B shall be repainted.
 2. Preparation shall be in general as specified above for new surfaces except that all loose paint shall be removed and all edges of existing paint shall be feathered to ensure a smooth surface.
 3. Paint removal, capture of its residue, and its disposal shall be handled in accordance with all laws and regulations concerning disposal of hazardous materials.
 4. Primer (spot) and paint used for a particular surface shall, in general, be as scheduled for that type of new surface. Provide an organic zinc-rich (min. 83% zinc in dried film) primer

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

as specified and approved by the City. Confirm with the paint manufacturer that the paint proposed for a particular repaint condition will be compatible with the existing painted surface. Perform adhesion and compatibility tests on existing substrates as ordered and required. Repainted areas shall be covered by the same guaranty specified for remainder of Project.

3.03 WORKMANSHIP

A. General:

1. At the request of the City, sample areas of the finished work prepared in strict accordance with this Section shall be furnished and all painting shall be equal in quality to the approved sample areas. Finished areas shall be adequate for the purpose of determining the quality of workmanship. Experimentation with factory or paint manufacturer's warehouse mixed colors shall be furnished to the satisfaction of the City where standard chart colors are not satisfactory.
2. Protection of equipment, fittings and accessories shall be provided throughout the painting operation. Canopies of lighting fixtures shall be loosened and removed from contact with surface, covered and protected and reset upon completion. Remove all electric plates, surface hardware, etc., before painting, protect and replace when completed. Mask all machinery name plates and all machined parts not receiving a paint finish. Dripped or spattered paint shall be promptly removed. Lay drop cloths in all areas where painting is being done to adequately protect flooring and other work from all damage during the operation and until the finished job is accepted.
3. On metal surfaces apply each coat of paint at the rate specified by the manufacturer to achieve the minimum dry mil thickness required. If material has thickened or must be diluted for application by spray gun, the coating shall be built up to the same film thickness achieved with undiluted material. One gallon of paint as originally furnished by the manufacturer shall not cover a greater area when applied by spray gun than when applied unthinned by brush. Deficiencies in film thickness shall be corrected by the application of an additional coat(s). On masonry, application rates will vary according to surface texture; however, in no case shall the manufacturer's stated coverage rate be exceeded. On porous surfaces, it shall be the painter's responsibility to achieve a protective and decorative finish either by decreasing the coverage rate or by applying additional coats of paint.

B. Field Priming:

1. Steel members, metal castings, mechanical and electrical equipment and other metals which are shop primed before delivery at the site will not require a prime coat on the job. All piping and other bare metals to be painted shall receive one coat of primer before exposure to the weather, and this prime coat shall be the first coat as specified in the painting schedule. Surface preparation of bare metal shall be the responsibility of the Contractor.
2. Equipment which is specified to receive a baked-on enamel finish or other factory finish shall not be field painted unless the finish has been damaged in transit or during installation. Surfaces that have been shop painted and have been damaged, or where the shop coat or coats of paint have deteriorated, shall be properly cleaned and retouched before any successive painting is done on them in the field. All such field painting shall

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

match as nearly as possible the original finish. Preparation and painting shall be provided by the Contractor.

3. Equipment shipped with a protective shop painting coat or coats shall be touched up to the satisfaction of the City with primers as recommended by the manufacturer of the finish paint. Preparation and painting shall be provided by the Contractor.

C. Field Painting:

1. All painting at the site shall be under the strict inspection of the City. Only skilled painters and, where dictated by special conditions or systems and so ordered, specialist painters shall be used on the work.
2. All paint shall be at room temperature before applying, and no painting shall be done when the temperature is below 60 degrees F, in dust-laden air, when rain or snow is falling, or until all traces of moisture have completely disappeared from the surface to be painted.
3. Successive coats of paint shall be different shades (from paint manufacturer's stock or shop mixed paint) of the required colors so as to make each coat easily distinguishable from each other with the final undercoat the approximate shade of the finished coat to ensure no show-through as approved.
4. Finish surfaces shall not show brush marks or other irregularities. Undercoats shall be thoroughly and uniformly sanded with the type paper appropriate for the undercoats to remove defects and provide a smooth even surface.
5. Painting shall be continuous and shall be accomplished in an orderly manner so as to facilitate inspection. Materials subject to weather shall be primed coated as quickly as possible. Surfaces of exposed members that will be inaccessible after erection shall be cleaned and painted before erection.
6. All painting shall be performed by approved methods with number of coats modified as required to obtain the total dry film thickness specified. Spray painting shall be performed specifically by methods submitted and as approved by the City.
7. All surfaces to be painted as well as the atmosphere in which painting is to be done shall be kept warm and dry by heating and ventilation, if necessary, until each coat of paint has hardened. Any defective paint shall be scraped off and repainted in accordance with the City's directions.
8. Before final acceptance of the work, all damaged surfaces of paint shall be cleaned and repainted as directed by the City.

3.04 FIELD QUALITY CONTROL

- A. City reserves the right to invoke the following procedure at any time and as often as City deems necessary during the period when coatings are being applied:
 1. City will engage the services of a qualified testing agency to sample coating material being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

2. Testing agency will perform tests for compliance with specified requirements.
3. City may direct Contractor to stop applying coatings if test results show materials being used do not comply with specified requirements. Contractor shall remove noncomplying coating materials from Project site, pay for testing, and recoat surfaces coated with rejected materials. Contractor will be required to remove rejected materials from previously coated surfaces if, on recoating with complying materials, the two coatings are incompatible.

3.05 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by City, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

3.06 COATING SCHEDULE

		Paint Manufacturer	
Area	Surface Preparation	Carboline	Amercoat
Plastic Pipe, PVC	Per paint manufacturer's recommendation		1st Coat: Amerlock 2/400 2nd Coat: Amerlock 2/400
Ductile Iron Piping System (Above Grade)	SSPC-6 Commercial Blast Cleaning	1st Coat: Carboguard 890 Int Coat: Carboguard 890 Finish Coat: Carbothane 133 HB Min Total DFT: 12.0 mils	1st Coat: Amerlock 2/400 2nd Coat: Amerlock 2/400 3rd Coat: Amercoat 450HSG Min Total DFT: 12.0 mils
Aluminum surfaces in contact with steel	Metal must be clean, dry and free from rust, oil, dust, or other foreign, material.	Prime: 1 coat Finish: 2 coats Bitumastic 300M	Prime: None Finish: 2 coats No. 78.
Galvanized Metal.	Per paint manufacturer's recommendation	Prime: 1 coat primer Finish: 2 coats Glamortex Enamel	Prime: 1 coat No. 86 Finish: 2 coats No. 52

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

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Exhibit 2
227 of 310

p. 227

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 13030
INTERNALLY BONDED CARBON FIBER
REINFORCED POLYMER LINING

PART 1 GENERAL

1.01 DESCRIPTION

- A. This section includes requirements for structural lining of Prestressed Concrete Cylinder Pipe (PCCP) to design, furnish, and install internally bonded carbon fiber reinforced polymer (CFRP). The Work will include cleaning and preparing host pipe including repairing the groove at the crown of the host pipe prior to application of the (CFRP). The new CFRP lining system shall be designed to withstand the specified design pressure and external loading as described in the design methodology section of this specification. Personnel and all material and equipment required for the lining shall be inserted into the pipeline through existing access points.
- B. Carbon Fiber Lining System Material Qualifications.
 - 1. Testing documentation demonstrating that properties meet or exceed those used for design of CFRP rehabilitation system. Minimum material properties shall meet the requirements listed Section 2.02B5.

1.02 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM)
 - 1. D570 Standard Test Method for Water Absorption of Plastics
 - 2. D638 Standard Test Method for Tensile Properties of Plastics
 - 3. D695 Standard Test Method for Compressive Properties of Rigid Plastics
 - 4. D790 Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
 - 5. D2240 Standard Test Method for Rubber Property Durometer Hardness
 - 6. D3039 Test Method for Tensile Properties of Fiber Resin Composites
 - 7. D4541 Standard Test Method for Pull-off Strength of Coating Using Portable Adhesion Testers
- B. The following standards will be used to design the CFRP liner, and the extent to which each applies will be identified in calculation packages:
 - 1. ASCE 7-05, Minimum Design Loads for Buildings and Other Structures, 2005
 - 2. ACI 440.2R-08, Guide for the Design and Construction of Externally Bonded FRP Systems for Strengthening Concrete Structures, 2008

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

3. AWWA C301-64, AWWA Standard for Reinforced Concrete Water Pipe – Steel Cylinder Type, Prestressed, 1964
4. AWWA C304-07, AWWA Standard for Design of Prestressed Concrete Cylinder Pipe, 2007
5. AWWA M9, Concrete Pipe Design, Manual of Water Supply Practices, 2008
6. AWWA M45, Fiberglass Pipe Design, Manual of Water Supply Practices, 2005

1.03 QUALIFICATIONS

A. Contractor Qualifications:

1. Certification of approved installer from CFRP process by the manufacturer of the CFRP system.
2. List of minimum of 5 separate pipe rehabilitation projects using the CFRP method within the past 3 years. Contact information for all 5 projects and a summary of the work performed for each reference. The projects must involve wet layup application of the proposed CFRP materials inside the rehabilitated pipelines.
3. Documentation from the CFRP manufacturer indicating that Contractor's personnel are trained and certified in use of proposed CFRP system.
4. Certification that the foreman and head supervisor scheduled to perform the work for this project have experience in large diameter pipe repair projects using CFRP, with a minimum of three projects per worker. A list of projects shall be provided for each worker. Documentation that all workers who plan to enter the pipeline have received annual confined space training, first aid training, and manufacturer provided training shall also be provided.

B. Design Engineer Qualifications:

1. Written documentation with client contact information showing successful design of the proposed rehabilitation system on a minimum of five (5) independent pipe rehabilitation projects within the past three years. And a licensed Engineer in the State of Florida.
2. Written documentation of design on a minimum of 3 pipe rehabilitation projects which have used the steel expansion ring end termination details in a manner comparable to the proposed rehabilitation system.

1.04 SUBMITTALS

- A. Submit to City, in accordance with Section 01300, for review and approval within seven (7) days following Notice to Proceed the following information:
- B. Proposed construction schedule for completion of the CFRP lining.
- C. Name of Contractor's Health and Safety Officer

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

D. Contractor's Health and Safety Plan and Confined Space Entry Procedure

E. CFRP Lining QA/QC Submittal:

1. Quality Control report describing the inspection of completed CFRP installation. Include the following, as a minimum:
 - a. Name of personnel responsible for quality assurance.
 - b. Testing program for Carbon Fiber System.
 - c. Surface preparation evaluation procedure.
 - d. Internal pipeline environmental conditions evaluations procedure.

F. Technical Submittal:

1. Design methodology, specific code approach and code compliance.
2. Structural calculations and drawings stamped and signed by a licensed Engineer in the State of Florida along with the form in specification section 01300, Submittals.
3. Working drawings detailing the type, locations, dimensions, number of layers and orientation of CFRP materials and coatings installed.
4. Pipe preparation and internal pipeline environmental control procedures for the CFRP repair process.
5. Installation procedures, maintenance instructions and general recommendations regarding CFRP material to be used.
6. Properties of composite materials determined by independent laboratory testing following ASTM standards listed herein.
7. Manufacturer's Material Safety Data Sheets (MSDS) for all materials.
8. Manufacturer's Product Data Sheet indicating physical, mechanical, and chemical characteristics of all materials used in CFRP system.
9. Written acknowledgement that materials and process used meet OSHA, EPA and local ordinances for health and safety, including VOC compliance.
10. An approved and valid International Code Council (ICC) Evaluation Service Report for the proposed pipeline rehabilitation system. Products that do not have an ESR number must provide all the durability tests defined in ICC AC 125 to validate the proposed system durability. No polyester or vinyl ester will be accepted as alternates to an epoxy matrix.
11. Full Scale Testing Validation Report that documents pressure testing on 48in diameter or greater pipeline under pressures of at least 100 psi.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

1.05 STORAGE OF MATERIALS

A. General:

1. Storage of materials within the work site shall be within designated access locations shown on the drawings. Do not store any materials or equipment outside of designated areas.
2. Maintain temperatures per handling and storage precautions section of Material Safety Data Sheets.
3. Protect materials from water contamination during storage.
4. Do not exceed shelf life expiration as designated on the material label.
5. Store Carbon Fiber in boxes.
6. Avoid direct sunlight and contact with moisture.

PART 2 PRODUCTS

2.01 DESIGN REQUIREMENTS

A. Loading Criteria:

1. The CFRP system shall not rely on the strength from the host pipe. The CFRP lining shall resist loads from earth pressure, live loads, external hydrostatic pressure, internal pressure, internal vacuum, thermal stresses, and be water tight.
2. The CFRP system shall be designed for the following conditions:

66-inch PCCP

- a. External vertical soil pressure of 12.5 ft to the crown of the pipe.
- b. There are no live loads which can act on the pipe.
- c. Groundwater up to the ground surface.
- d. Internal Working Pressure of 9 psi.
- e. Internal Working plus Transient Pressure of 49 psi.
- f. The pipe will not be subjected to vacuum conditions.
- g. Axial Load from thrust loads.
- h. The proposed carbon fiber liner shall be able to resist stresses due to external loads without relying on the quality of the host pipe.
- i. The pipeline has sufficient stiffness to not have more than a 3% vertical deflection when subjected to the external vertical load.

B. Other Criteria:

1. The CFRP liner shall be designed using a load and resistance factor (LRFD) methodology with load factors, resistance factors, material adjustment factors, and time effect factors.
2. The steel prestressing wire, steel cylinder and concrete core are assumed to be totally deteriorated and do not contribute to the support of the loads. The CFRP liner system shall be designed to work independent of the existing pipeline and no existing pipe components

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

shall be used or designed to resisting pressure and bending. The CFRP liner shall be designed as a stand-alone buried flexible pipe (i.e., CFRP separated from the inner core with the outer concrete core cracked) and all associated limit states listed below shall be satisfied:

- a. Rupture of CFRP laminate in the circumferential direction due to:
 - 1) Internal pressure.
 - 2) Bending of empty pipe.
 - 3) Combined internal pressure and bending due to gravity loads.
 - b. Buckling of CFRP laminate in the circumferential direction due to external loads, external pressures, and internal negative pressure.
 - c. Rupture of CFRP laminate in the longitudinal direction due to:
 - 1) Pressure induced thrust, Poisson effect of internal pressure, and temperature change.
 - 2) Radial expansion of pipe in broken wire zones.
 - d. Buckling of CFRP liner in the longitudinal direction due to temperature change.
 - e. Interlaminar shear failure of CFRP at pipe ends.
3. The CFRP system shall have a minimum design life of 50 years.
 4. The bond strength of the CFRP liner to the concrete pipe shall not be less than 300 psi.
 5. Contractor shall determine the number of layers of carbon fabric material used in the CFRP system to resist the specified loadings and identify the stacking sequence for each layer with its orientation.
 6. The pipelines to be repaired transport pretreated raw sewage and clarifier influent (MLSS) in the 66-inch PCCP. The top coat for the CFRP liner shall be applicable for direct exposure to wastewater effluent.

C. Load Combinations:

The following load combinations shall be considered in the design:

1. Circumferential Design:
 - a. Internal pressure only (full pipe with no external load)

$$1.4P_w$$

$$1.2P_w + 1.6P_t$$
 - b. External load only (empty pipe)

$$1.4(W_e + W_p)$$

$$1.4(W_{es} + W_{ps} + P_{gw})$$
 - c. Combined internal pressure and external load (full pipe)

$$1.4(W_e + P_w + W_p + W_f)$$

$$1.2(W_e + P_w + W_p + W_f) + 1.6P_t$$

Where

P_w Internal working pressure

P_t Internal transient pressure

W_e Earth load

W_{es} Earth load in submerged condition

W_p Pipe weight

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

W_{ps} Pipe weight in submerged condition

W_f Weight of fluid in pipe

P_{gw} External groundwater pressure

2. Longitudinal Design:

- a. Internal pressure only (full pipe; for hydraulic thrust and Poisson effect)

$$1.4P_w$$

$$1.2P_w + 1.6P_t$$

- b. Temperature change only (empty pipe; for cooling or warming up)

$$(1.2 \text{ or } 1.6)\Delta T$$

- c. Combined internal pressure and temperature (full pipe)

$$1.2P_w + 1.6P_t + (1.2 \text{ or } 1.6) \Delta T$$

Where ΔT is the temperature differential between CFRP installation temperature and maximum/minimum operating temperature.

D. Resistance, Material Adjustment, and Time Effect Factors:

1. Resistance Factors (ϕ)

The resistance factors used in the design shall be as follows:

Limit State	ϕ
CFRP in tension	0.70
CFRP in flexure in standalone system	0.70
CFRP in flexure in CFRP/concrete inner core composite system	0.65
CFRP buckling	0.55
Radial bond strength between CFRP and host pipe	0.65
Shear bond strength of CFRP at terminations	0.65

2. Material Adjustment Factors (C)

The material adjustment factors used in design shall be as follows:

	C
For strength, due to moisture	0.85
For modulus, due to moisture	0.95

3. Time Effect Factors (λ)

The time effect factors used in design shall be as follows:

	λ
For strength, due to sustained loads	0.55
For modulus, due to sustained loads	0.80

E. Termination Details:

1. At each end of the liner, a termination detail, including an internal pipe seal, shall be provided to ensure durable water tightness. The Contractor shall provide and install appropriately sized internal seals at the terminations between the CFRP liner and the host piping system.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

2.02 MATERIALS

A. General:

1. Properly identify materials through labeling of each package.
2. Packaged materials: Capable of transport and storage without damage to constituent materials.
3. Shipping, handling and storage requirements shall be as per supplier recommendations.

B. Carbon Fiber Reinforced Polymer (CFRP) System:

1. Consists of high strength epoxy resin matrix reinforced with high tensile strength carbon fiber and all associated fiber reinforcement and polymer adhesive-resins.
2. CFRP manufacturer shall be either Fyfe Company (Fibrwrap) or Structural Technologies (StrongPIPE CFRP) or QuakeWrap, Inc. (PipeMedic).
3. The Contractor shall have proper equipment consisting of fabric saturator and rolling mechanism, such that the epoxy saturated fabric is transported to the point of application through the access point, which is then applied to the inside surface of the pipeline in a wet layup process.
4. Only epoxy resins will be accepted for construction of FRP systems referenced in this specification. Other resins, such as polyesters/vinyl esters, are not allowed as substitutes. The manufacturer shall clearly define the epoxy resin working time. Any batch that exceeds the batch life shall not be used.
5. The CFRP system components shall have the following properties:

Material	Property	Test Procedure	Minimum Value
Saturation Epoxy Resin	Compressive Yield Strength	ASTM D695 (75 degrees F, 7-day cure)	9,000 psi
	Flexural Strength	ASTM D790 (14-day cure)	6,000 psi
	Shore D Hardness	ASTM D2240	55
	Tensile Strength	ASTM D638 (14-day cure)	5,000 psi
	Elongation	ASTM D638 (14-day cure)	2 %
Carbon Fiber	Tensile Strength		300 ksi
	Tensile Modulus		28,000 ksi
	Ultimate Elongation		1 %
	Density		0.05 lb/in ³
Epoxy/Carbon Fiber Composite	Modulus of Elasticity	ASTM D3039	9,000 ksi
	Laminate Thickness	ASTM D3039	Minimum of 0.04 inch per layer Maximum of 0.10 inch per layer
	Tensile Strength	ASTM D3039	90,000 psi

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

Material	Property	Test Procedure	Minimum Value
	Ultimate Elongation	ASTM D3039	0.7%
	Breaking Force	ASTM D3039	3,000 lb/in
	Bond Strength to Substrate	ASTM C882/D4541	200 psi.

PART 3 EXECUTION

3.01 INSPECTION

- A. CFRP system shall be inspected during all phases of construction by the City inspector. The City shall examine substrates, areas, and conditions under which structural epoxy-resin fabric composite systems will be applied for compliance with requirements. The Contractor shall correct unsatisfactory conditions prior to installation.
- B. Examine existing conditions to identify potential obstructions and constraint, verify dimensions, geometry and access locations and map all voids and cracks in the host pipe wall.

3.02 ENVIRONMENTAL CONDITIONS

- A. The Contractor shall implement environmental controls and prepare all surfaces required for proper CFRP installation.
- B. Presence of moisture inhibits adhesion of epoxies to the host pipe surfaces. Erect portable barriers and blowers and specialty dehumidification equipment at repair location. Maintain dry dehumidified environment according to manufacturers' recommendations. Surface moisture on pipe wall not to exceed that used for surface bonding qualification, and no more than 10 degrees F above dew point.
- C. All water flow must be stopped prior to CFRP installation. Maintain dry conditions on pipe surfaces.
- D. The work area is a confined space and the Contractor shall prepare a Confined Space Entry Procedure and will require an entry permit in accordance with OSHA regulations.
- E. Provide proper dust control and ventilation to meet OSHA and Health and Safety Plan requirements.

3.03 PREPARATION

- A. The installation of the CFRP liner is a bond critical application that requires a complete bond between the CFRP liner system and the pipe mortar lining. Prepare the host pipe wall surface per CFRP manufacturer recommendations and as specified herein. Surface preparation shall promote continuous intimate contact between carbon fiber and host pipe wall by providing a clean, dry, smooth surface. Any uneven surfaces of the host pipe shall be filled with manufacturer's recommended epoxy or resin. The surface must be completely cleaned of any dust, grease, oil, curing compounds, wax, stains, paint, surface lubricants, foreign particles, weathered layers, or any other bond inhibiting materials. If water blast is used to clean the surface, the surface shall be allowed to dry before installing carbon fiber. The cost for heavy

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

cleaning and removal/disposal of solids will be borne by the Contractor and the cost shall be included as part of this Work. City will not be liable for additional cost due to this Work effort.

- B. Contractor shall examine existing conditions to identify potential obstructions and constraints, access locations, verify dimensions and geometry.
- C. Contractor shall clean, prepare, and treat substrate according to manufacturer's written instructions. Provide clean, dust-free, and dry substrate for composite application. The concrete lining of the existing PCCP shall be cleaned with hydro blasting to remove scale and to provide a profile for bonding of the epoxy in accordance with the manufacturer recommendations. The concrete substrate will be surface prepared with high pressure water blasting, to the extent that all of the concrete's latent materials (cement and sand) at the prepared surface are removed to expose the core of the concrete aggregate. This surface profile is visually recognizable when the core concrete is exposed making all of the aggregate in plain view from fines to the largest course aggregate.
- D. Contractor shall repair all flaws and cracks in the host pipe wall that may compromise the performance of the CFRP system.
 - 1. If water infiltration is noticed, inject hydrophilic grout behind the host pipe to stop flow of water.
 - 2. Prepare, fill, prime and treat joints and cracks in the host pipe wall as required.
 - 3. Fill all visible cracks in the host pipe wall with an epoxy repair grout compatible with the host steel pipe material.
 - 4. Allow the patching compound to cure for the minimum curing period recommended for patching material, before proceeding with installation of the liner.
- E. The inner core shall be inspected prior to the application of the CFRP to assure the core is adequately bonded to the embedded steel cylinder.
- F. Remove standing water prior to dehumidification of the inner surface.
- G. The prepared inner surface of the host pipe shall be inspected by the City prior to application of CFRP to ensure good bonding.

3.04 EPOXY RESINS AND ADHESIVES

- A. Mix epoxy resins following manufacturer's recommendations. Do not use mixed epoxy resins that exceed pot life specified by the manufacturer. No vinylesters or polyesters shall be permitted.

3.05 APPLICATION OF CFRP SYSTEM

- A. Contractor shall apply the CFRP liner following all manufacturer's recommendations and other provisions of this specification.
- B. Adjoining pipe surfaces not receiving CFRP materials shall be protected to prevent spillage during CFRP material delivery to interior work area.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- C. The Contractor shall use proper equipment for automated or manual saturation of carbon fiber fabric and rolling mechanism.
 - 1. Epoxy saturated carbon fiber fabric shall be transported to the point of application through entry port.
- D. The Contractor shall weigh the saturated fabric periodically to ensure saturator is calibrated properly.
 - 1. The fabric to resin weight ratio shall be 1 to 1 or following manufacturer's recommendations.
 - 2. Allowable variance in fabric to resin weight ratio shall not be more than 15%.
- E. The Contractor shall apply the CFRP to the inside surface of host pipe via the wet lay-up process. Only application of the wet layup procedure shall be permitted. Application of the dry lay up procedure or use of procured laminates shall not be permitted.
 - 1. The saturated fabric shall be pressed into surface to achieve intimate contact.
 - 2. Any entrapped air between layers shall be released or rolled out without wrinkling of carbon fibers.
- F. Contractor shall maintain a minimum longitudinal and circumferential overlap of six inches between layers to ensure full transfer of load through shear stresses.
 - 1. Fabric kinks, folds or severe waviness is not permitted.
 - 2. Following the application of carbon fiber layers, apply a final epoxy top coat, with a thickness as recommended by manufacturer, over composite material to seal surface following manufacturer's recommendations.

3.06 FIELD QUALITY CONTROL

- A. All phases of work performed shall be inspected by the City.
 - 1. City shall observe all aspects of site preparation and material application, including surface preparation, resin component mixing, application of primer, fabric epoxy-saturation, application of fiber layers, curing composites application of protective coatings.
 - 2. The City with assistance from the Contractor shall collect and document the following for each pipe section repaired:
 - a. Examination.
 - b. Surface preparation.
 - c. Temperature.
 - d. Humidity.
 - e. Surface dryness.
 - f. Mix ratios.
 - g. Laminate schedules.
 - h. Reinforcement to resin proportions.
 - i. Cure measurements.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- B. The Contractor shall calibrate and maintain equipment used for saturation of fabrics with polymers to ensure proper constituent proportions are used during wetting of fabrics, and shall submit documentation of calibration to City at completion of project.
- C. City shall perform visual inspection for evidence of de-laminations or damaged wraps after installation of CFRP.

3.07 REPAIR OF DAMAGED OR DEFECTIVE AREAS

- A. Contractor shall repair all defects in the CFRP system including bubbles, de-lamination and fabric tears spanning more than 5 percent of the estimated surface area of each pipe section.
- B. Contractor shall document repairs and submit to City. City shall re-inspect repairs prior to completion of repairs or the Project.

3.08 TESTING

- A. The Contractor shall provide two samples of the material daily for Contractor's testing to be performed by Contractor's independent testing laboratory.
 - 1. The samples shall be prepared using the same process used for repair installation.
 - 2. The samples shall measure a minimum of 12 inches x 12 inches, and its thickness shall be the same as the required repair thickness.
- B. The Contractor shall arrange for testing of tensile strength, tensile modulus, percent elongation, flexural strength, and flexural modulus of samples as required per design, at a certified laboratory following ASTM D3039 and D790 standards. Test results shall be provided to the City within three weeks after completion of CFRP application. The Contractor shall bear all the costs associated with testing and reporting of the test results.
- C. Tested tensile properties must exceed the material properties used in design as defined in product submittal.
 - 1. If test results fail to meet required properties in the design, The Contractor shall propose a repair or replacement method to address the deficiency of the CFRP material.
- D. The Contractor shall have an independent laboratory perform three pull tests per ASTM D4541 to determine if the required bond strength between the CFRP and the host pipe material has been met. The pull off test may be performed on a section of pipe similar to the host pipe, or may be performed in-situ on a sound section of the pipe. The in-situ pipe section shall be repaired, at no cost to the City, if it is damaged during the pull off test. The Contractor shall bear the costs associated with testing and reporting of test results.

3.09 WARRANTY

- A. Any defect discovered during the warranty period shall be repaired by the Contractor at no cost to the City.

END OF SECTION

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

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Internally Bonded Carbon Fiber Reinforced Polymer Lining

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

SECTION 15064
PLASTIC PIPE AND FITTINGS

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and install and test 6-in plastic piping and appurtenances as shown on the Drawings and as specified herein. Pipe or piping refers to all pipe, fittings, material and appurtenances required to construct PVC chemical pipe complete, in place.

1.02 RELATED WORK

- A. Trenching, backfilling and compaction is included in Section 02201.

1.03 SUBMITTALS

- A. Submit, in accordance with Section 01300, shop drawings and product data required to establish compliance with this Section. Submittals shall include the following:
 - 1. Shop drawings including piping layouts and schedules shall be submitted to the City and shall include dimensioning, fittings, locations of valves and appurtenances, joint details, methods and locations of supports and all other pertinent technical specifications for all piping to be furnished.
 - 2. Shop drawing submittals for piping under this Section shall include all data and information required for the complete piping systems. All dimensions shall be based on the actual equipment to be furnished.
 - 3. Prior to each shipment of pipe, certified test reports that the pipe for this contract was manufactured and tested in accordance with the ASTM Standards specified herein shall be submitted.

1.04 REFERENCE STANDARDS

- A. ASTM International
 - 1. ASTM D1785 - Standard Specification for Poly Vinyl Chloride (PVC) Plastic Pipe, Schedules 40, 80 and 120
 - 2. ASTM D2467 - Standard Specification for Poly Vinyl Chloride (PVC) Plastic Pipe Fittings, Schedule 80
 - 3. ASTM D2564 - Standard Specification for Solvent Cements for Poly Vinyl Chloride (PVC) Plastic Piping Systems
 - 4. ASTM D2855 - Standard Practice for Making Solvent-Cemented Joints with Poly Vinyl Chloride (PVC) Pipe and Fittings

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

5. ASTM D3139 - Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals
6. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
7. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws and Studs
8. ASTM F594 - Standard Specification for Stainless Steel Nuts

B. National Sanitation Foundation (NSF)

1. Standard No. 14 - Plastic Piping Components and Related Materials

- C. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.05 QUALITY ASSURANCE

- A. All plastic pipe and fittings of each type shall be furnished by a single manufacturer who is experienced in the manufacture of the items to be furnished; however, it shall not be a requirement that the pipe and fittings be manufactured by the same manufacturer, provided that the pipe and fittings are compatible in both compounding and size. The pipe and fittings shall be designed, constructed and installed in accordance with the best practices and methods and shall be suitable for the intended service.
- B. Inspections of the pipe may be made by the City after delivery. The pipe shall be subject to rejection at any time on account of failure to meet any of the requirements specified herein, even though sample pipes may have been accepted as satisfactory at the place of manufacture. Pipe rejected after delivery shall be marked for identification and shall be removed from the job at once.

1.06 SYSTEM DESCRIPTION

- A. Piping shall be installed in those locations as shown on the Drawings.
- B. The equipment and materials specified herein are intended to be standard types of plastic pipe and fittings for use in transporting wastewater, water, air and chemicals.
- C. Contractor is responsible for compatibility between pipe materials, fittings and appurtenances.
- D. Plastic piping systems shall be designed for the following conditions:
1. System: Odor Control Chlorine Solution
 2. Material: Schedule 80 PVC
 3. Fluids: chlorine solution
 4. Pressure: Atmosphere to 100 psig
 5. Flow Velocity: Up to 10 fps

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

6. Temperature: 35 to 100 degrees F

1.07 DELIVERY, STORAGE AND HANDLING

- A. PVC items deteriorate in sunlight and are slightly brittle, so care shall be taken in loading, transporting and unloading items to prevent injury to the items. All items shall be examined before installation and no piece shall be installed which is found to be defective. Handling and installation of pipe and fittings shall be in accordance with the manufacturer's instructions, referenced standards and as specified herein.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Poly Vinyl Chloride Pipe and Fittings - PVC
1. Pipe shall be manufactured from PVC compounds meeting ASTM D1784, Class 12454-B in accordance with ASTM D1785, PVC 1120. The pipe shall have a minimum hydrostatic design stress of 2,000 psi at 73 degrees F and shall be suitable for field cutting and solvent welding. Pipe shall be of the sizes as shown on the Drawings and shall be Schedule 80 unless otherwise shown.
 2. Fittings shall be the socket type for solvent welded joints conforming to ASTM D2467. Fittings shall be manufactured from PVC compound meeting ASTM D1784, Class 12454-B. Solvent cement shall be as specified in ASTM D2564.

PART 3 EXECUTION

3.01 INSTALLATION

- A. The installation of plastic pipe shall be strictly in accordance with the manufacturer's technical data and printed instructions.
- B. Buried Pipe:
1. No single piece of pipe shall be laid unless it is straight. The centerline of the pipe shall not deviate from a straight line drawn between the centers of the openings at the ends of the pipe by more than 1/16-in per foot of length. If a piece of pipe fails to meet this requirement, check for straightness, it shall be rejected and removed from the site. Laying instructions of the manufacturer shall be explicitly followed.
 2. If any defective pipe is discovered after it has been installed, it shall be removed and replaced with a sound pipe in a satisfactory manner at no additional cost to the City. All pipe and fittings shall be thoroughly cleaned before installation, shall be kept clean until they are used in the work and when laid, shall conform to the lines and grades required. PVC pipe and fittings shall be installed in accordance with requirements of the manufacturer, or as otherwise provided herein.
 3. As soon as the excavation is complete to normal grade of the bottom of the trench, bedding shall be placed, compacted and graded to provide firm, uniform and continuous support for the pipe. Bell holes shall be excavated so that only the barrel of the pipe bears upon the

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

bedding. The pipe shall be laid accurately to the lines and grades indicated on the Drawings. Blocking under the pipe will not be permitted. Bedding shall be placed evenly on each side of the pipe to mid-diameter and hand tools shall be used to force the bedding under the haunches of the pipe and into the bell holes to give firm continuous support for the pipe. Bedding shall then be placed to 12-in above the top of the pipe. The initial 3-ft of backfill above the bedding shall be placed in 1-ft layers and carefully compacted. Generally the compaction shall be done evenly on each side of the pipe and compaction equipment shall not be operated directly over the pipe until sufficient backfill has been placed to ensure that such compaction equipment will not have a damaging effect on the pipe. Equipment used in compacting the initial 3-ft of backfill shall be approved by the pipe manufacturer's representative prior to use.

4. All piping shall be sound and clean before installation. When installation is not in progress, including lunchtime, the open ends of the pipe shall be closed by watertight plug or other approved means. Good alignment shall be preserved during installation. The deflection at joints shall not exceed that recommended by manufacturer. Fittings, in addition to those shown on the Drawings, shall be provided, if required, in crossing utilities that may be encountered upon opening the trench.
5. When cutting pipe is required, the cutting shall be done by machine, leaving a smooth cut at right angles to the axis of the pipe.
6. Precautions shall be taken to prevent flotation of the pipe in the trench.
7. 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.

3.02 FIELD TESTING

- A. After installation, the pipe shall be tested for compliance as specified herein. Furnish all necessary equipment and labor for the hydrostatic pressure test on the pipelines.
- B. All pipelines shall remain undisturbed for the minimum curing or cooling time specified for each type of pipe material but no less than 8 hours to develop full curing and complete strength at all joints. All pipe systems shall be flushed clean and then subjected to a hydrostatic pressure test for 12 hours at a test pressure and temperature specified below. Testing procedures shall be as specified below. Should the temperature not be attainable under hydrostatic conditions, then the test may be performed under hydro-dynamic conditions, provided that accurate measurements for loss of the test fluid can be made, or the pressure shall be proportionally increased to simulate the stresses of the higher temperature in relation to the lowest system temperature that is expected during the duration of the test. The proportionally higher test pressures shall be determined in accordance with the accepted temperature versus strength properties as published by the pipe manufacturer, PPI or other pipe material standards organization.
- C. Contractor shall make any taps and furnish all necessary caps, plugs etc, as may be required in conjunction with performing the testing.

GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

- D. All valves and valve boxes shall be properly located and installed and operable prior to testing. Bulkheads shall be provided with a sufficient number of outlets for filling and draining the line and for venting air.
- E. The test pressures and temperatures for the various pipe lines shall be as follows:
 - 1. Odor Control Chlorine Solution piping: 150 psi at 100 degrees F.
- F. The test shall be performed by slowly filling the piping system, expelling entrapped air from all high points. The fill rate shall be controlled so that the fluid velocity within the pipe system is less than 2 fps. Upon completion of the filling process, the system shall be brought up to the specified test temperature as applicable, holding the system pressure to less than 10 percent of the test pressure. Once the system has been stabilized at the specified test temperature, the pipe should be slowly brought up to the test pressure in such a manner so as to not create shock, surge or water hammer in the pipe system. The test duration time limit shall not begin until the full pressure specified above has been reached and the system has been stabilized to within 5 percent of the test temperature. The system pressure and temperature shall be maintained to within 1/2 percent but no more than 5 percent of the specified value for the temperature and within 5 psi of the specified value for the pressure. These tolerances shall be held for the entire duration of the test. Upon completion of the test, the pressure shall be slowly removed by opening a valve or other pressure relieving device at a location remote to the location of the pressure/temperature monitoring equipment.
- G. The pressure test shall be monitored by a recording type pressure gauge for tests not requiring temperature control or a dual pen pressure/temperature recording gauge when temperature control is required. The entire test process shall be recorded, including the initial temperature stabilization and pressurization of the piping system. The record shall be continuous through the system test and shall show the final de-pressurization of the pipe system.
- H. All visible leaks detected during the pressure test shall be repaired and the pressure/ temperature test rerun. A successful test shall be a test in which no visible leaks are detected and the pipe system pressure can be maintained within 1/2 percent but no more than 5 psi of the specified value.
- I. Prior to testing, the pipelines shall be supported in an approved manner to prevent movement during the tests.

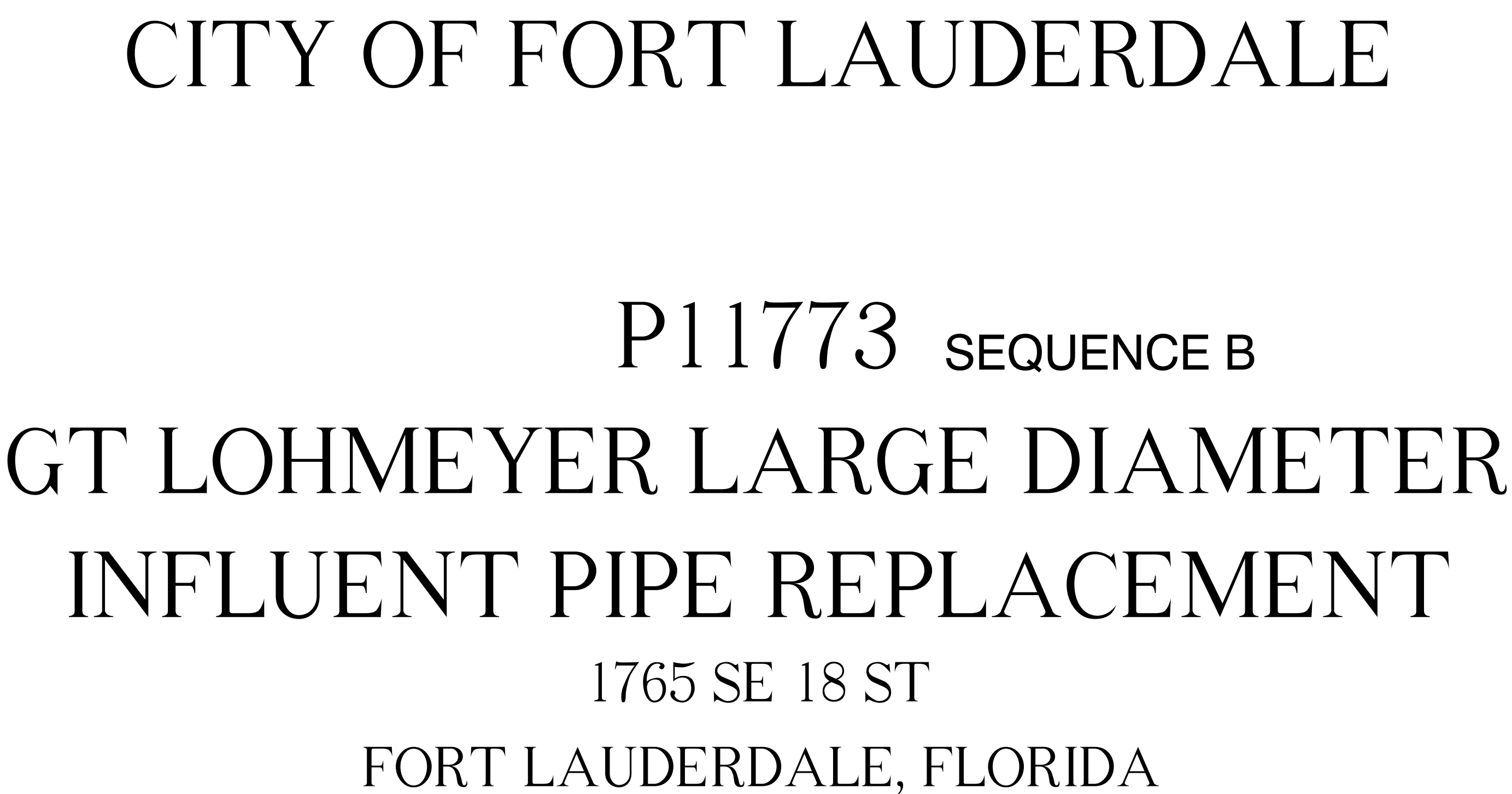
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GT Lohmeyer WWTP Large Diameter Influent Pipe
Replacement - Sequence B

Project No. 11773

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 CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

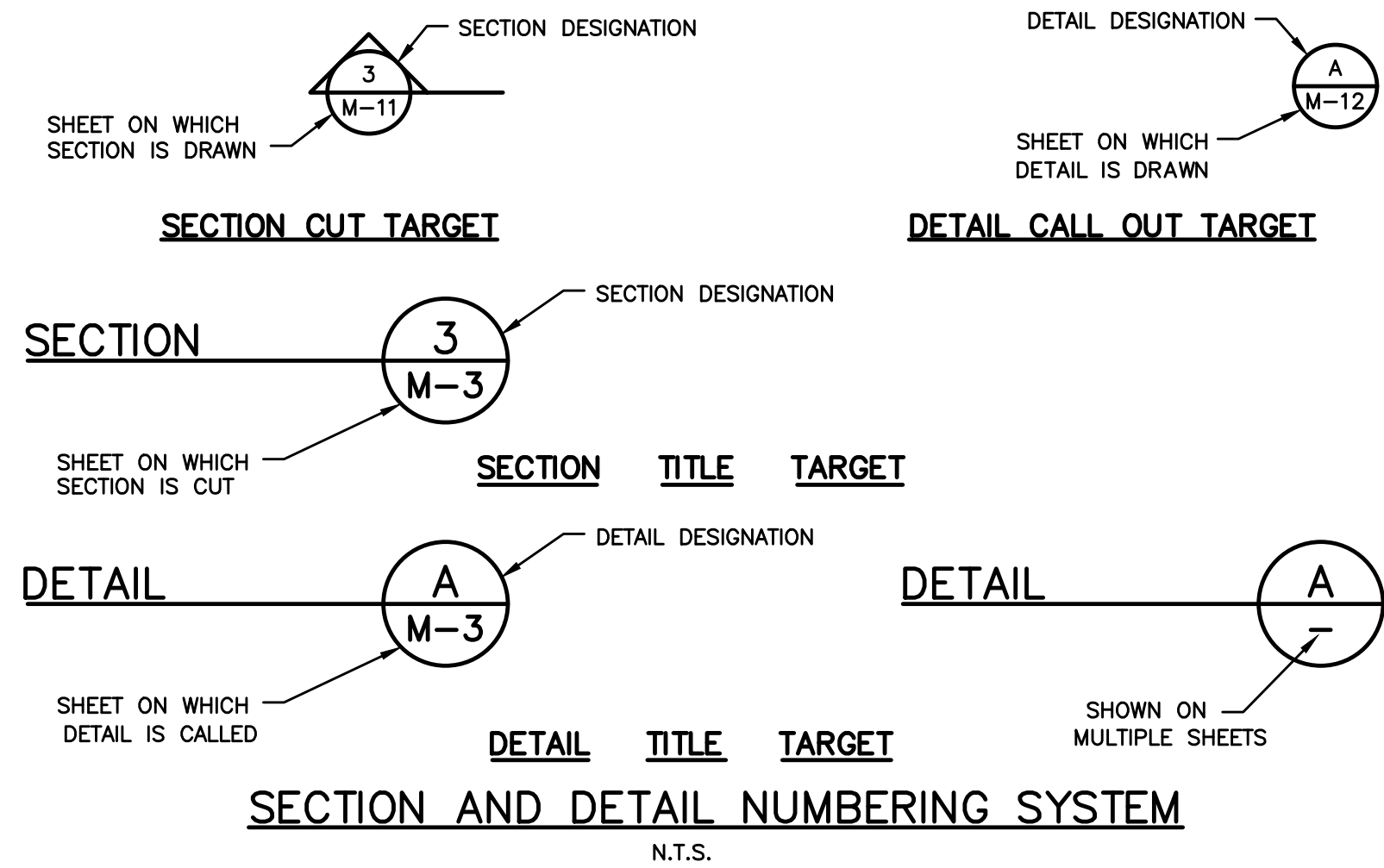
DEAN J. TRANTALIS	MAYOR
HEATHER MORAITIS	COMMISSIONER - DISTRICT I
STEVEN GLASSMAN	COMMISSIONER - DISTRICT II
ROBERT L. MCKINZIE	COMMISSIONER - DISTRICT III
BEN SORENSEN	COMMISSIONER - DISTRICT IV

DATE: 12-2014
CAD FILE: 11773-000-COVR
DRAWING FILE No.: 4-136-67

BID SET

ABBREVIATIONS

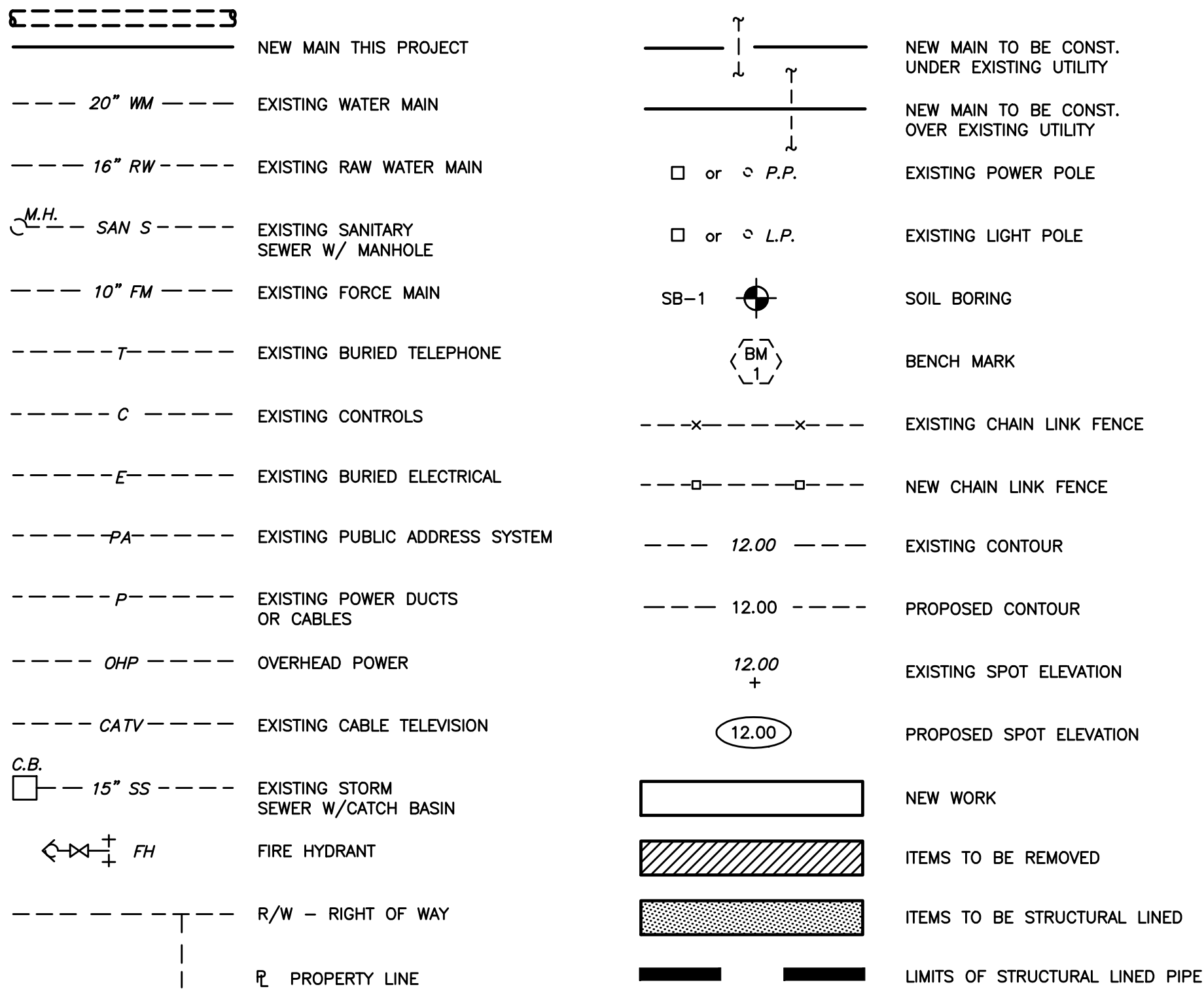
GENERAL	SYMBOLS	GENERAL (CONT.)	SYMBOLS
ADJUSTABLE	ADJ	PLANT DRAIN	PD
ALUMINUM	AL., ALUM.	PLANT INFLUENT	PI
ANGLE	<.	PRESSURE INDICATING TRANSMITTER	PIT
BARE ROOT	BR	POTABLE WATER	PW
BELOW	BEL	PRETREATED RAW SEWAGE	PRS
BENCHMARK	BM	PERFORATED	PERF
BETWEEN	BTWN.	PIECE	PC.
CAUSTIC SODA	OH	POINT	PT.
CENTER (ED)	CTR	POUND(S)	LB(S).
CENTER LINE	CL	PLATE	PL
CORRUGATED METAL PIPE	C.C.	PRECAST	PRCST
CONCRETE	CONC	PRIMARY EFFLUENT	PEFL
CLARIFIER INFLUENT	CI	RADIUS	RAD., R.
DEMOLITION	DEMO	RETURN SLUDGE	RSL
DIAMETER	DIA., DIAM.	REQUIRED	REQ'D
DIAGONAL	DIAG.	RIGHT OF WAY	R/W
DIMENSION	DIM.	ROOM	RM.
DISCHARGE	DISCH	SAMPLE	SPL
DRAWING	DWG.	SANITARY DRAIN	SAN. D
EACH	EA.	SANITARY FORCE MAIN	SAN. FM
ELEVATION	EL., ELEV.	SCHEDULE	SCH
EFFLUENT	EFF.	SCUM	SC
EDGE OF PAVEMENT	EOP	SECTION	SEC.
EXISTING	EXIST.	SIDEWALK	SDWK.
FURNISHED BY OTHERS	FBO	SHEET	SH., SHT.
FINISH	FIN.	SLUDGE	SL
FLOOR	FL.	SLUDGE TRANSFER	ST
FEET/FOOT	FT	STAINLESS STEEL	S.S.
HIGH	H.	STANDARD	ST'D
HIGH POINT	H.P.	STEEL	STL.
HEIGHT	HT	STORM WATER	STM
INFLUENT	INFL., INF.	SQUARE	SQ.
LONG	LG.	SYMMETRICAL	SYMM.
LEVEL INDICATING TRANSMITTER	LIT	THICK	THK.
LOW POINT	L.P.	TEMPERATURE INDICATING TRANSMITTER	TIT
MATERIAL	MTL.	TYPICAL	TYP.
MANUFACTURING	MFG.	TEMPORARY	TEMP.
MANUFACTURER	MFR.	THREADED	THD.
MAXIMUM	MAX.	UTILITY EASEMENT	U.E.
MECHANICAL	MECH.	VERTICAL	VERT.
METAL	MET.	WATER	WTR.
MINIMUM	MIN.	WATER LEVEL	WL
MOUNTED	MTD.	WATER MAIN	WM
MUD VALVE	MV	WEATHERPROOF	WPF.
NATIONAL ELECTRIC CODE	NEC	WEST	W.
NOMINAL	NOM.	WITH	W/
NON POTABLE WATER	NPW		
NOT IN CONTRACT	NIC		
NOT TO SCALE	N.T.S.		
NUMBER	NO.		
ON CENTER	O.C.		
OPTION	OPT.		
OPPOSITE	OPP.		
OPENING	OPNG		
OR EQUAL	O/E.		
OUTSIDE CLEARANCE	O.C.		



ABBREVIATIONS

VALVES, FITTINGS, ETC.	SYMBOLS	PIPE	SYMBOLS
AIR CUSHION CHECK VALVE	ACCV	ASBESTOS CEMENT PIPE	ACP
AIR RELIEF VALVE	ARV	BLACK STEEL PIPE	BSP
BALL CHECK VALVE	BCV	CAST IRON	CI
BALL VALVE	BAV	CAST IRON PIPE	CIP
BLIND FLANGE	B.F.	CAST IRON SOIL PIPE	CISP
BURIED GEAR OPERATOR	BO	CONCRETE PRESSURE PIPE	CPP
BUTTERFLY VALVE	BFV	COPPER PIPE	CU
CHECK VALVE	CV	CORRUGATED METAL PIPE	CMP
ELECTRIC VALVE ACTUATOR	EVA	DUCTILE IRON PIPE	DIP
ELEVATED GEAR OPERATOR	EO	DUCTILE IRON	DI
EXPANSION JOINT	EXJ	FIBERGLASS REINFORCED PIPE	FRP
FIRE HYDRANT	FH	FLANGE	FLG
FITTINGS	FTG	GALVANIZED STEEL PIPE	GSP
FLANGED ADAPTER	FA	HOT DIPPED GALVANIZED	HDG
FLEXIBLE COUPLING	FC	MECHANICAL JOINT	MJ
FLOOR BOX (BUSHING TYPE)	FB	METAL REINFORCED PLASTIC PIPE	MRPP
FLOOR STAND	FS	POLYETHYLENE PIPE	PP
GATE VALVE	GV	POLYVINYLCHLORIDE	PVC
HARNESSED FLANGE ADAPTER COUPLING	HFAC	PRESTRESSED CONC. CYLINDER PIPE	PCCP
HOSE BIBB	HB	REINFORCED CONCRETE PIPE	RCP
HYDRAULIC VALVE ACTUATOR	HVA	RESTRAINED JOINT	RJ
MECHANICAL JOINT PLUG	MJP	SLIP-ON JOINT	SJ
OIL CUSHION CHECK VALVE	OCV	STEEL PIPE	SP
PLASTIC BALL VALVE	PBV	TIED JOINT	TJ
PLASTIC CHECK VALVE/PRESSURE CONTROL VALVE	PCV	VITRIFIED CLAY PIPE	VCP
PLUG VALVE	PV		
SILENT CHECK VALVE	SCV		
SLANTING DISC CHECK VALVE	SDCV		
UNION	UN		
VALVE BOX	VB		
VICTAULIC COUPLING (GROOVED ENDS)	VC (G)		
VICTAULIC COUPLING (SHOULDERED ENDS)	VC (S)		
WALL SLEEVE	WS		
WALL PIECE (WITH WATER STOP)	WP		

LEGEND



ABBREVIATIONS – PIPE CONTENT

-----BP-----	BY-PASS
-----OH-----	CAUSTIC SODA
-----CI-----	CLARIFIER INFLUENT
-----FI-----	FILTRATE INFLUENT
-----H ₂ O ₂ -----	HYDROGEN PEROXIDE
-----ME-----	MIXED LIQUOR EQUALIZATION
-----NPW-----	NON-POTABLE WATER
-----OCLS-----	ODOR CONTROL CHLORINE SOLUTION
-----O-----	OXYGEN
-----PD-----	PLANT DRAIN
-----PI-----	PLANT INFLUENT
-----PW-----	POTABLE WATER
-----PRS-----	PRETREATED RAW SEWAGE
-----RSL-----	RETURN SLUDGE
-----SA-----	SAMPLE
-----SD-----	SANITARY DRAIN
-----SFM-----	SANITARY FORCE MAIN
-----SC-----	SCUM
-----SL-----	SLUDGE
-----ST-----	SLUDGE TRANSFER
-----STM-----	STORM WATER

GENERAL NOTE

THIS IS A STANDARD LEGEND. SOME SYMBOLS AND ABBREVIATIONS MAY NOT APPEAR ON THE DRAWINGS.

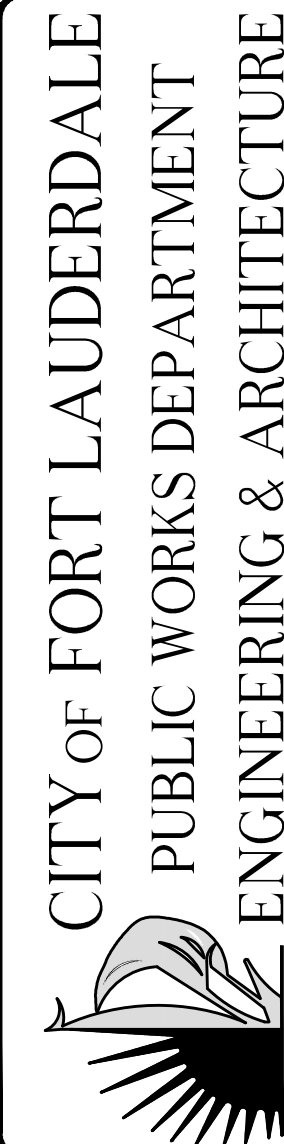
CDM Smith. PROJECT NO. 6017-234728B



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PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT
LEGEND AND ABBREVIATIONS

SHEET NO.	OF
G-1	4
TOTAL:	34
CAD FILE:	
11773-G01-LEGN	
DRAWING FILE NO.	
4-136-67	

BID SET




- CONNECT TO PLANT INFLUENT FLOW TO PACE THE FLOW FOR TEMPORARY PUMPING

**CDM
Smith**

State of Florida
Professional Engineer
License No. 48897

Timothy J. O'Neil, P.E.

DRAWN BY: A. NUNES	DATE: 12-2014
DESIGNED BY:	SCALE:



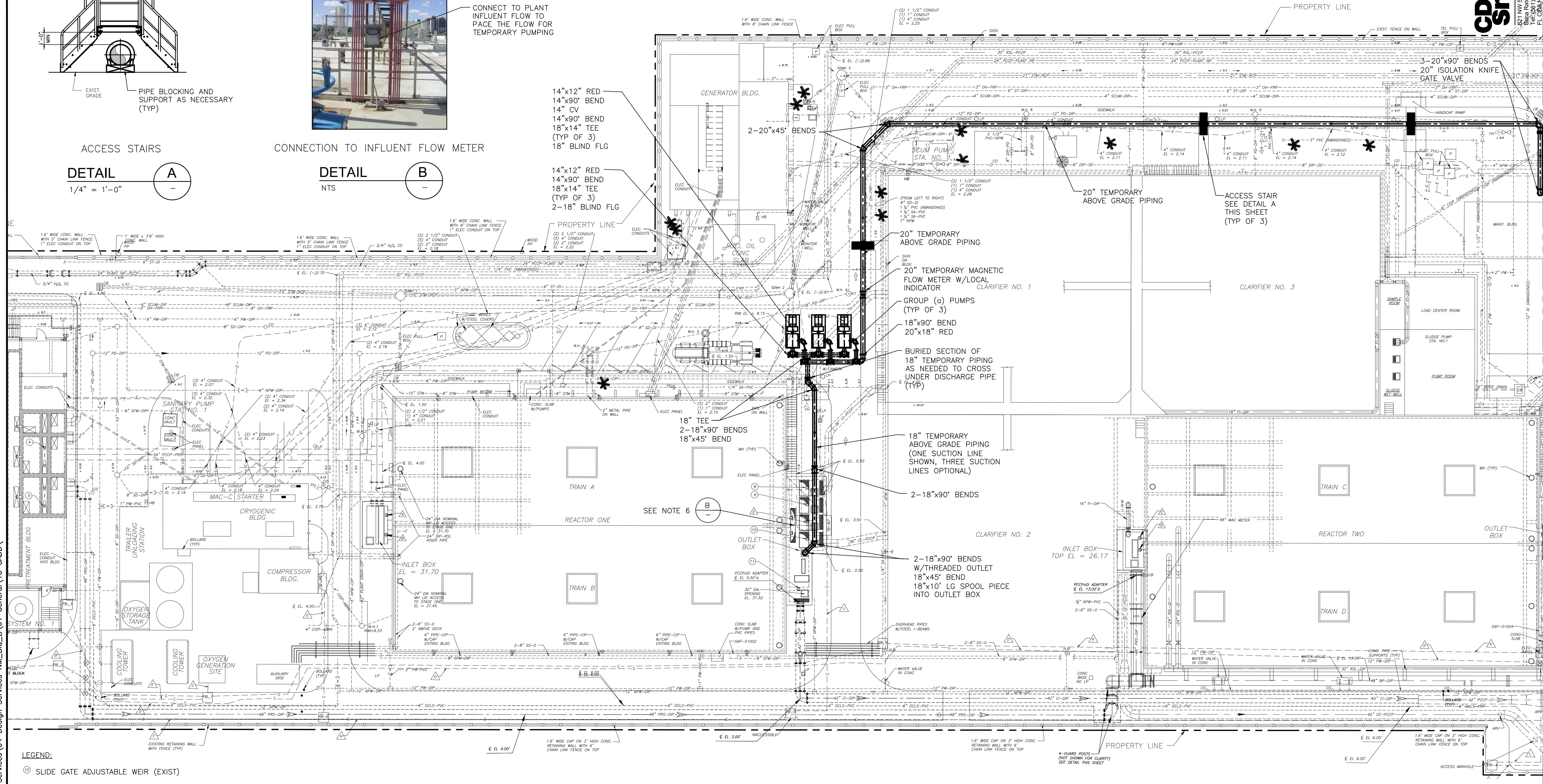
CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	REVISIONS				DESCRIPTION
	DATE	BY	CHK'D		
3-	2019	ALN	TJO		BID SET SEQUENCE B

PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT
TEMPORARY PUMPING SITE PLAN FOR
WORK SEQUENCE A & B

SHEET NO. G-2	OF 4
TOTAL: 34	
CAD FILE: 11773-G02-PLAN	
DRAWING FILE NO. 4-136-67	

CAM #19-0723
Exhibit 2 p. 2



LEGEND:

- ⑩ SLIDE GATE ADJUSTABLE WEIR (EXIST)
△ SLUICE GATE (EXIST)

NOTES:



1. PIPING SYSTEM SHALL BE PROVIDED WITH TEMPORARY SUPPORT STRUCTURES, PREVENTING ANY LATERAL MOVEMENT. TEMPORARY PIPE SUPPORTS CONNECTING TO EXISTING STRUCTURES MAY BE ALLOWED.
2. TEMPORARILY REMOVE AND REPLACE GUARD RAIL AS NEEDED TO INSTALL TEMPORARY PIPE.
3. SUPPORT TEMPORARY PIPE AND DISTRIBUTE WEIGHT TO AVOID POINT LOADING.
4. 4160 VOLT CONDUIT AND WIRE IN WORK AREA. CONTRACTOR SHALL SAFEGUARD FROM DAMAGING THEM SINCE OPERATIONS AT THE PLANT WOULD BE SERIOUSLY IMPACTED.
5. CONTRACTOR TO COORDINATE ANY POSSIBLE IMPACT TO EXISTING UTILITIES WITH OPERATIONS STAFF BEFORE THEY PROCEED WITH ROAD CROSSING EXCAVATION.
6. CONTRACTOR'S CONNECTION TO INFLUENT FLOW METER TO FLOW PACE TO EACH BYPASS PUMP GROUP (a) and (b).

LEGEND:

G	GROUND
R	RED WIRE
B	BLUE WIRE
FO	FIBER OPTIC
2W	2-WIRE CABLE
GY	GRAY WIRE

<input type="checkbox"/> PB_1	SCADA AND CITY F.O. PULL BOX (OVERHEAD)
<input type="checkbox"/> PB_2	TEMPORARY BOX ON ROAD (MARKED "WATER METER")
<input type="checkbox"/> PB_3	CHIEF MECHANICAL PULL BOX ON ROAD
<input type="checkbox"/> PB_4	REACTOR 2 SW CORNER PULL BOX (OVERHEAD)
<input type="checkbox"/> PB_5	REACTOR 2 SE CORNER PULL BOX (OVERHEAD)
<input checked="" type="checkbox"/>	GROUND PENETRATION

LEGEND:

	(4)
	(2)

(2) FO

(2) PROCESS SIGNAL MULTICONDUCTOR

(4) FO (SCADA)

(2) G











(2) R

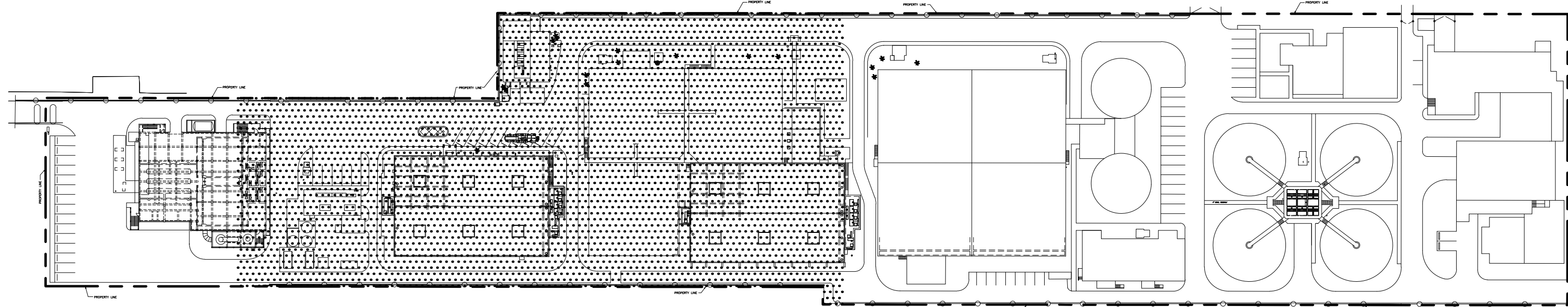
(2) B

(4) 2W

(1) FO (PA)

LEGEND:

- | | |
|---|--|
|  | (2) G
(2) R
(2) B
(2) 2W |
|  | (1) G
(2) 2W
(1) FO (PA) |
|  | (3) FO (2-SCADE, 1-CITY) |
|  | (3) FO (2-SCADA, 1-CITY) |
|  | (3) G
(4) 2W
(1) FO (PA) |
|  | (1) FO (PA) |
|  | (2) G
(1) R
(1) B
(2) 2W
(1) FO (PA) |
|  | (2) G
(2) R
(2) B
(4) 2W |
|  | (1) G
(1) R
(1) B
(2) FO (PA)
(2) 2W |
|  | (1) G
(1) R
(1) B
(1) FO (PA)
(2) 2W |



CDM Smith. PROJECT NO. 6017-234728B

BIND SET

PROJECT # P11773

GT LOHMEYER LARGE DIAMETER

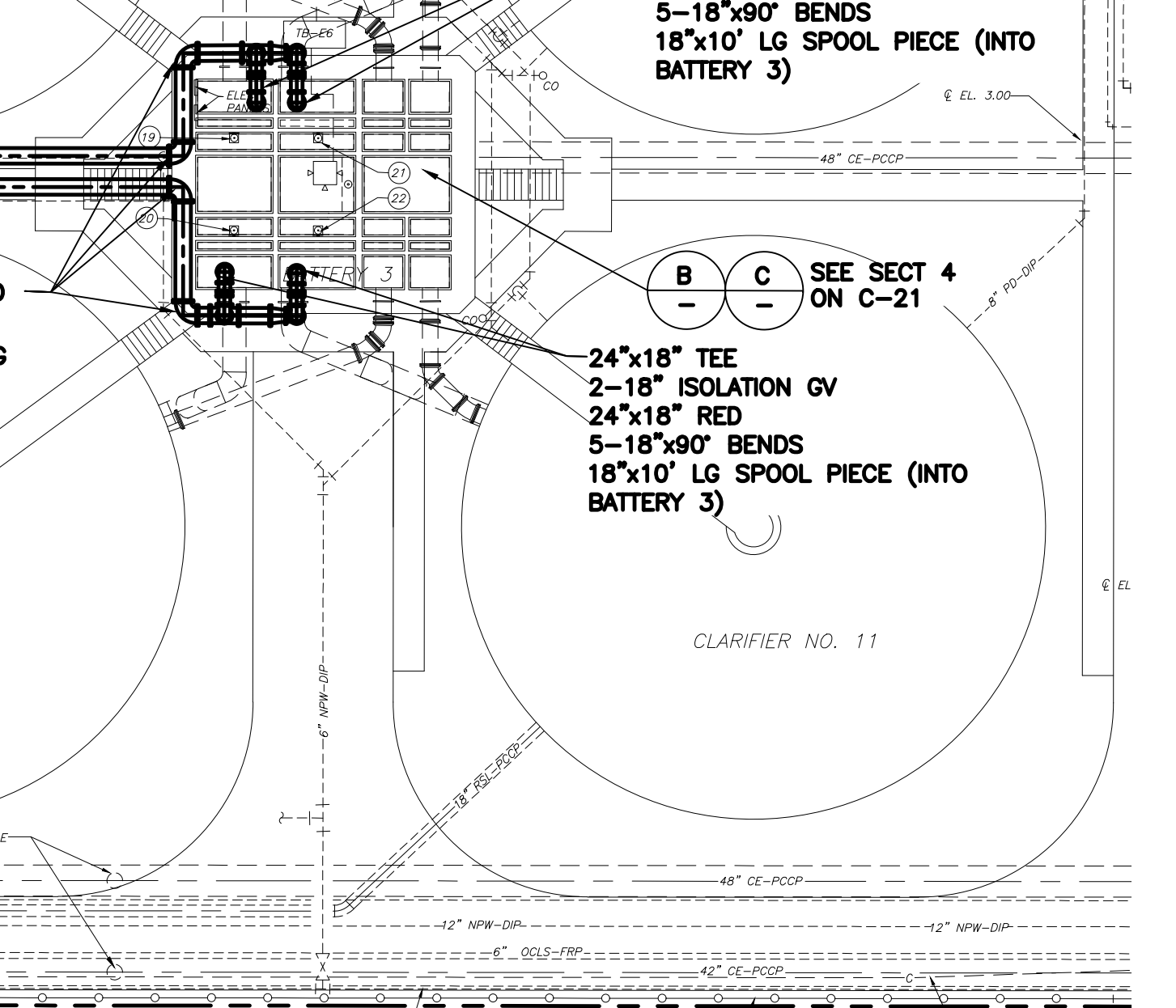
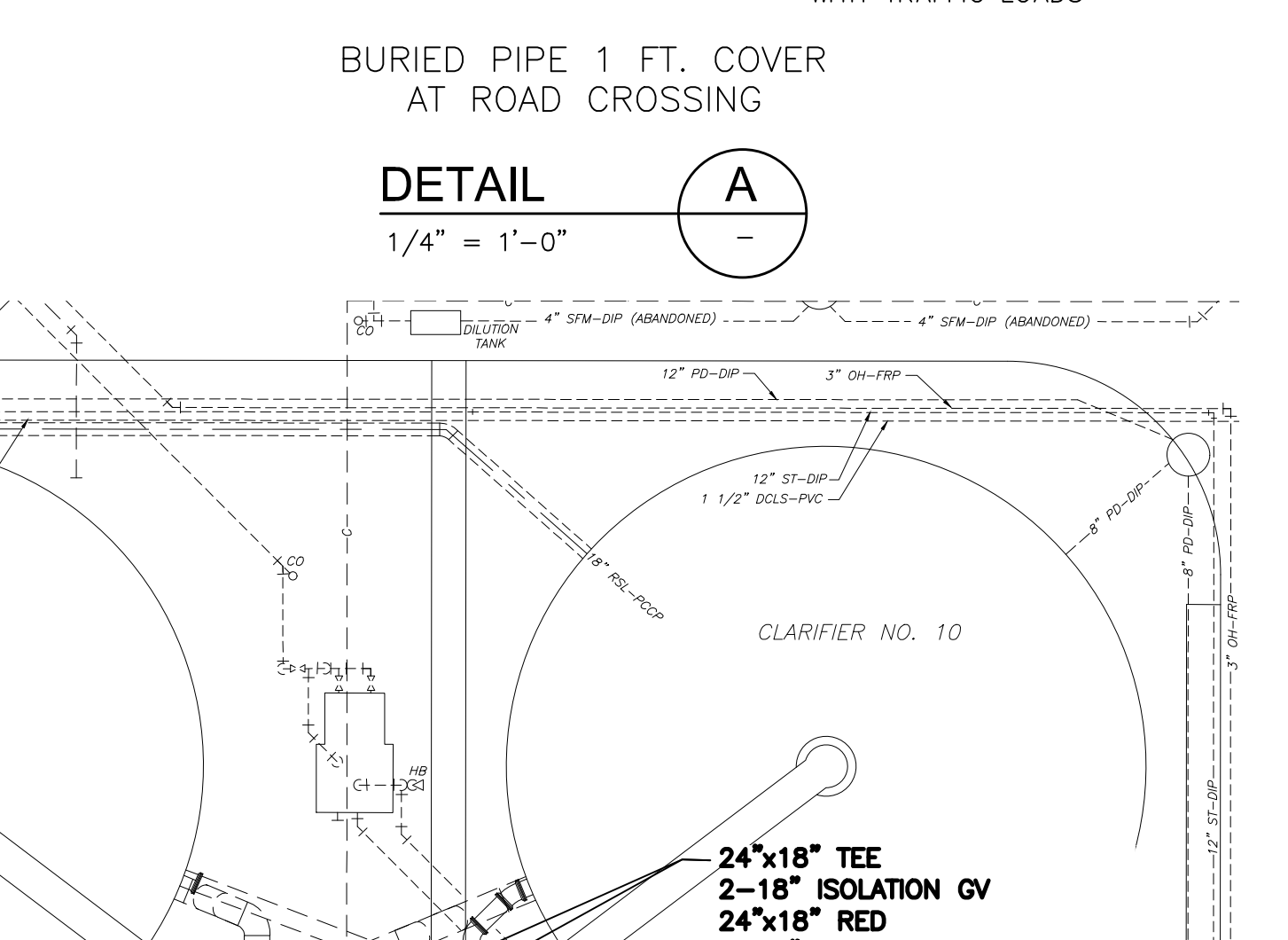
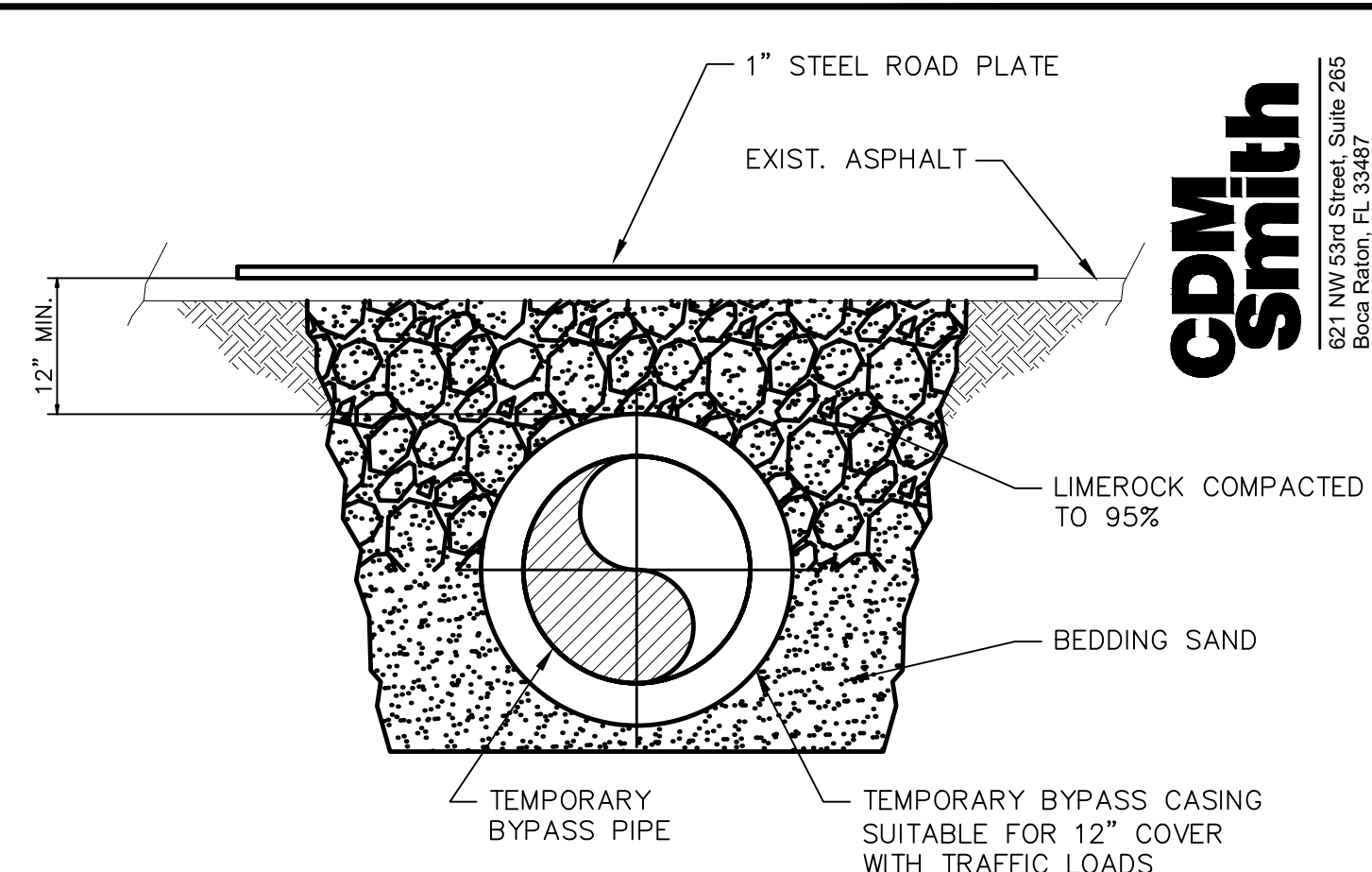
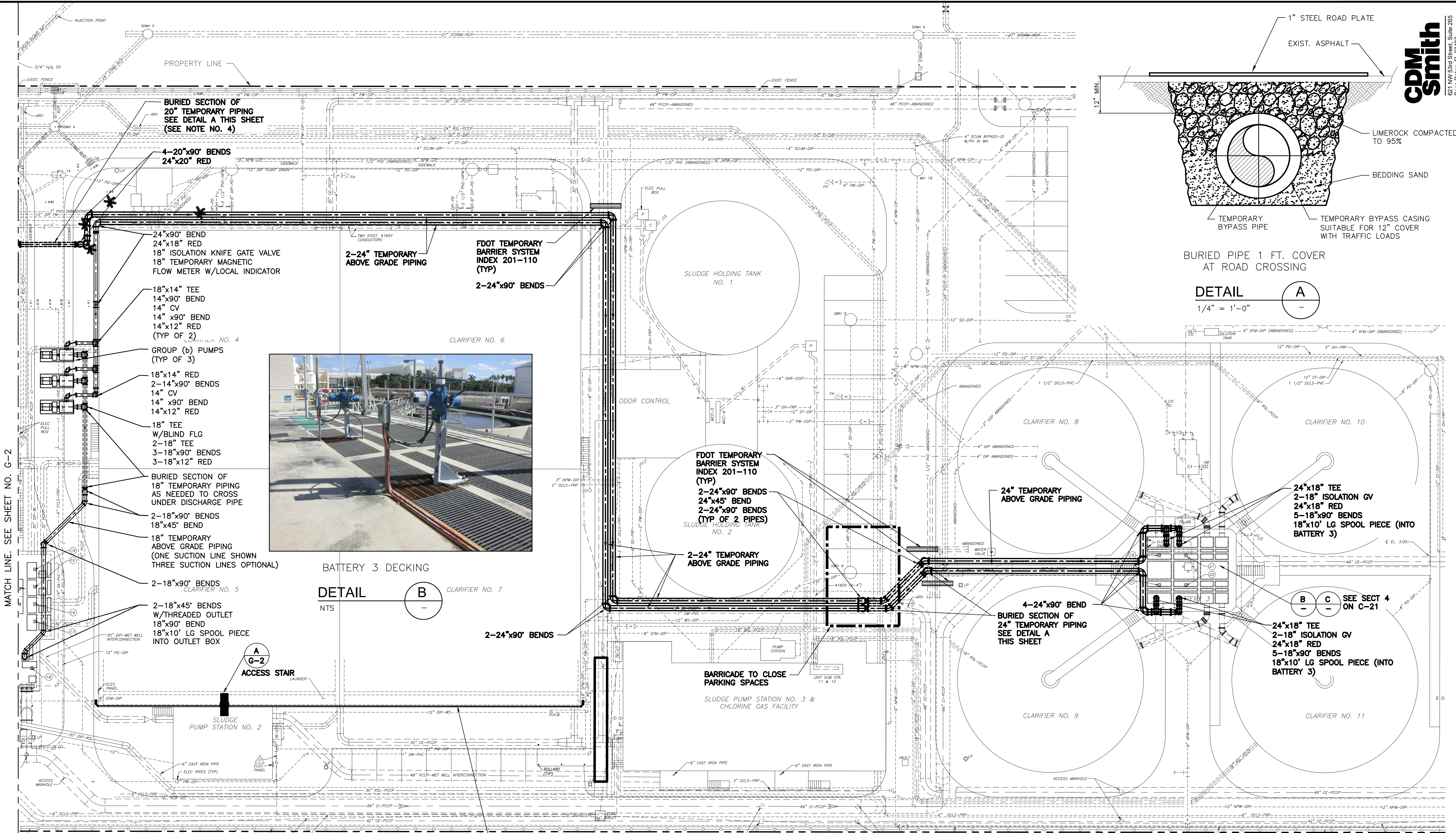
INFLUENT PIPE REPLACEMENT

TEMPORARY PUMPING S

SHEET NO
G-

3
-G02-PLAN
FILE NO.
136-67

34



LEGEND:
 (C) SLIDE GATE ADJUSTABLE WEIR (EXIST)
 (A) SLUICE GATE (EXIST)

- NOTES:**
1. PIPING SYSTEM SHALL BE PROVIDED WITH TEMPORARY SUPPORT STRUCTURES, PREVENTING ANY LATERAL MOVEMENT. TEMPORARY PIPE SUPPORTS CONNECTING TO EXISTING STRUCTURES MAY BE ALLOWED.
 2. TEMPORARILY REMOVE AND REPLACE GUARD RAIL AS NEEDED TO INSTALL TEMPORARY PIPE.
 3. SUPPORT TEMPORARY PIPE AND DISTRIBUTE WEIGHT TO AVOID POINT LOADING.
 4. 4160 VOLT CONDUIT AND WIRE IN WORK AREA. CONTRACTOR SHALL SAFEGUARD FROM DAMAGING THEM SINCE OPERATIONS AT THE PLANT WOULD BE SERIOUSLY IMPACTED.
 5. CONTRACTOR TO COORDINATE ANY POSSIBLE IMPACT TO EXISTING UTILITIES WITH OPERATIONS STAFF BEFORE THEY PROCEED WITH ROAD CROSSING EXCAVATION.
 6. CONTRACTOR'S CONNECTION TO INFLUENT FLOW METER TO FLOW PACE TO EACH BYPASS PUMP GROUP (a) AND (b).

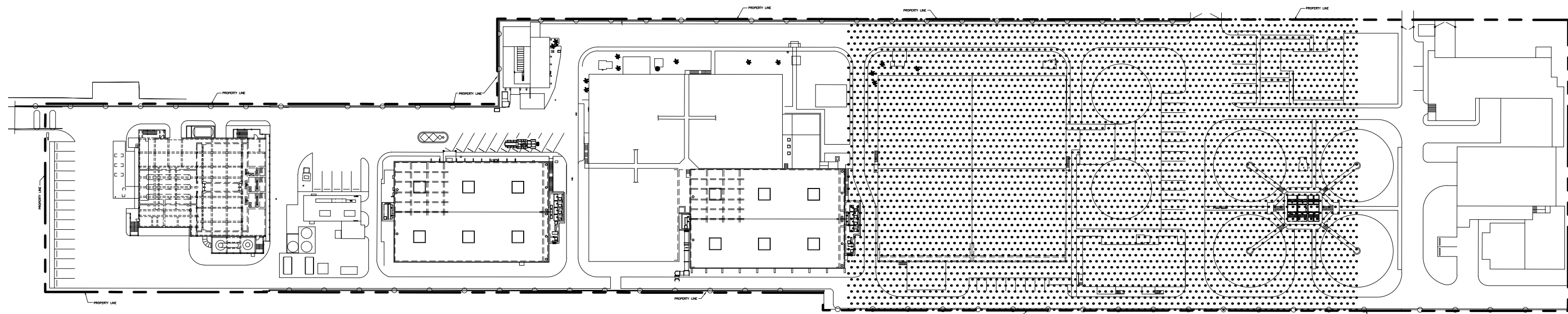
LEGEND:

G	GROUND	(4) FO (SCADA)
R	RED WIRE	(2) PROCESS MECHANICAL HIGH CONDUCTORS
B	BLUE WIRE	(1) FO (CITY)
FO	FIBER OPTIC CABLE	(2) GY
2W	2-WIRE CABLE (SPEAKER)	(2) FO
GY	GRAY WIRE	(2) PROCESS SIGNAL MULTICONDUCTOR
PB_1	SCADA AND CITY F.O. PULL BOX (OVERHEAD)	(4) FO (SCADA)
PB_2	TEMPORARY BOX ON ROAD (MARKED "WATER METER")	
PB_3	CHIEF MECHANICAL PULL BOX ON ROAD	
PB_4	REACTOR 2 SW CORNER PULL BOX (OVERHEAD)	
PB_5	REACTOR 2 SE CORNER PULL BOX (OVERHEAD)	
X	GROUND PENETRATION	

LEGEND:

(2) G	(2) R	(2) B	(2) W
(1) G	(1) R	(1) B	(1) W
(3) FO (2-SCADE, 1-CITY)	(3) FO (2-SCADA, 1-CITY)		
(1) FO (PA)	(1) FO (PA)		
(2) G	(2) R	(2) B	(2) W
(1) G	(1) R	(1) B	(1) W
(4) 2W	(4) 2W		
(1) FO (PA)	(1) FO (PA)		
(2) G	(2) R	(2) B	(2) W
(1) G	(1) R	(1) B	(1) W
(4) 2W	(4) 2W		
(1) FO (PA)	(1) FO (PA)		

8" TEMPORARY ABOVE GRADE PIPING ON CLARIFIER WALL STRAP TO OUTSIDE OF HANDRAIL
 2-8" COUPLINGS
 4-8"x90" BENDS
 SEE C-7 NOTE 7
 COORDINATE 1-HOUR SHUT DOWN WITH OPERATIONS STAFF



NOTE:

1. TEMPORARILY SEAL THE FOUR SLIDE GATE ADJUSTABLE WEIRS TO KEEP THE 66" CI-PCCP DRY, FOR DEWATERING THE PIPE CONTENTS AND PERFORMING THE REHABILITATION.

BATTERY 3

DETAIL C
 NTS

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 Tel: (561) 571-3800
 FL CCA No. EB-0000020

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 License No. 48897

Timothy J. O'Neil, P.E.

DRAWN BY: A. NUNES
DESIGNED BY: T. O'NEIL
CHECKED BY: J. CHANDLER
FIELD BOOK:

DATE: 12-2014
SCALE: 1" = 20'

CITY OF FORT LAUDERDALE
 PUBLIC WORKS DEPARTMENT
 ENGINEERING & ARCHITECTURE
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS

NO.	DATE	BY	CHK'D	DESCRIPTION
1	3-2019	ALN	TJO	BID SET SEQUENCE B


PROJECT # P11773
 GT LOHMEYER LARGE DIAMETER
 INFLUENT PIPE REPLACEMENT
 TEMPORARY PUMPING SITE PLAN FOR
 WORK SEQUENCE A & B

SHEET NO. 4
 OF 4
TOTAL: 34
CAD FILE: 11773-G03-PLAN
DRAWING FILE NO. 4-136-67



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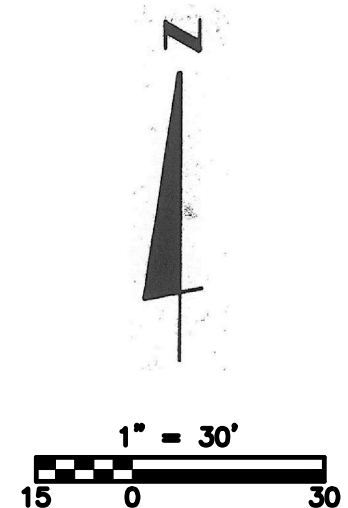
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NO.	DATE	BY	CHK'D	DESCRIPTION
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SHEET NO. G-4	OF 4
TOTAL: 34	
CAD FILE: 11773-G04-PLAN	
DRAWING FILE NO. 4-136-67	

CAM #19-0723
Exhibit 2 p.

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REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
	3-2019	ALN	TJO	BID SET SEQUENCE B

PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT
EXISTING HARDSCAPE PLAN

SHEET NO. C-1	OF 21
TOTAL: 34	
CAD FILE: 11773-C01-PLAN	
DRAWING FILE NO. 4-136-67	

CAM #19-0723
Exhibit 2 p. 251

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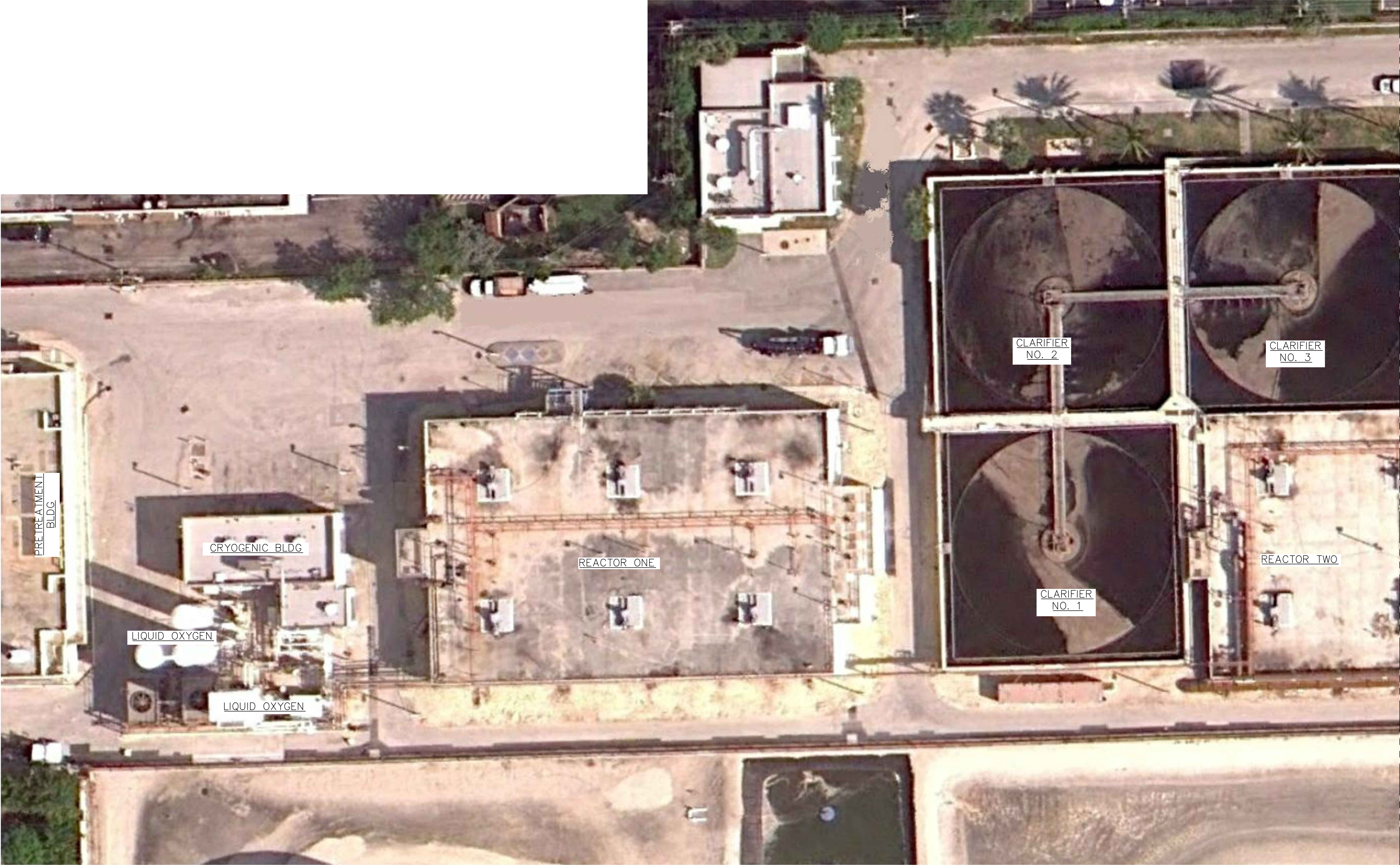
1. REMOVE EXISTING GRAVEL AND STOCKPILE ON SITE IN AREA DESIGNATED BY THE CITY FOR RESTORATION.
2. RESTORE HARDSCAPE (GRAVEL) DISTURBED DURING CONSTRUCTION TO EXISTING OR BETTER CONDITION USING STOCKPILED MATERIAL AND NEW MATERIAL AS REQUIRED.

BID SET

—

2

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MATCH LINE. SHEET SHEET NO. C-3

WEST SECTION

CDM Smith. PROJECT NO. 6017-234728B

BID SET

SHEET NO.	OF
C-2	21
TOTAL:	34
CAD FILE:	
11773-C02-PLAN	
DRAWING FILE NO.	
4-136-67	

PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT
AERIAL-WEST EXISTING CONDITIONS

REVISIONS			
NO.	DATE	BY	CHK'D
	3-2019	ALN	TJO

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100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DRAWN BY:	DATE:
A. NUNES	12-2014
DESIGNED BY:	SCALE:
T. O'NEIL	1" = 50'
CHECKED BY:	
J. CHANDLER	
FIELD BOOK:	

State of Florida
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FL CCA No. EB-0000020

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IMAGE13.jpg

IMAGE12.jpg

IMAGE10.jpg

IMAGE09.jpg

IMAGE04.jpg

Design Services\04 Design Services\04 Design Services NM_Bid_B\02 Civil\10 CADD\

MATCH LINE. SHEET NO. C-2



CENTRAL SECTION

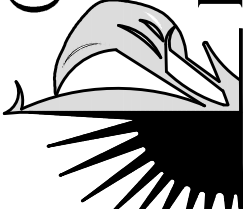
MATCH LINE. SHEET NO. C-4

BID SET



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Boca Raton, FL 33487
Tel: (561) 571-3900
FL CCA No. EB-0000020

DRAWN BY:	A. NUNES	DATE:	12-2014
DESIGNED BY:	T. O'NEIL	SCALE:	1" = 50'
CHECKED BY:	J. CHANDLER		
FIELD BOOK:			



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PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	REVISIONS			
	DATE	BY	CHECK'D	DESCRIPTION
	3-2019	ALN	TJO	BID SET SEQUENCE B

PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT

AERIAL-CENTRAL EXISTING CONDITIONS

SHEET NO.	OF
C-3	21
TOTAL:	34
CAD FILE:	
11773-C03-PLAN	
DRAWING FILE NO.	
4-136-67	

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MATCH LINE. SHEET SHEET NO. C-3



EAST SECTION

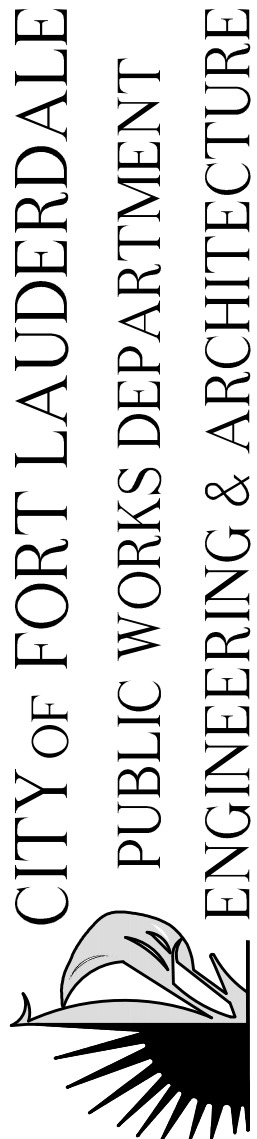
CDM Smith. PROJECT NO. 6017-234728B

BID SET

SHEET NO.	OF
C-4	21
TOTAL:	34
CAD FILE:	
11773-C04-PLAN	
DRAWING FILE NO.	
4-136-67	

PROJECT # P11773-B
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT
AERIAL - EAST EXISTING CONDITIONS

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
	3-2019	ALN	TJO	BID SET SEQUENCE B



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PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

DRAWN BY:	DATE:
A. NUNES	12-2014
DESIGNED BY:	SCALE:
T. O'NEIL	1" = 50'
CHECKED BY:	
J. CHANDLER	
FIELD BOOK:	

State of Florida
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CDM Smith

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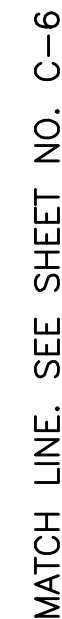
11. THE EXISTING RETAINING WALLS WHICH PARALLEL THE SOUTH PROPERTY LINES ARE TO REMAIN. THE WALLS ARE CONSTRUCTED OF VERTICAL TEE PILES WHICH ARE SPANNED BY INSERTED PRECAST SLABS. THE TEE PILES ARE ANCHORED ON SITE BY DEADMEN CONNECTED BY MEANS OF RODS WITH THREADED ENDS, WASHERS AND NUTS. CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND PROTECTIVE MEASURES TO ASSURE THAT THE EXISTING TEE PILES AND PRECAST SLABS ARE NOT DAMAGED OR DISPLACED. THE CONTRACTOR SHALL RESTORE THE RESTRAINT TO THE TEE PILES AND SHALL PERFORM OPERATIONS IN A MANNER SUCH THAT THE STRUCTURAL INTEGRITY OF THE EXISTING WALLS IS NOT DISTURBED.

WHERE PIPELINE CONSTRUCTION DOES NOT CONFLICT WITH THE LOCATION OF THE DEADMEN, THE RODS SHALL BE REMOVED AND RECONNECTED.

WHERE PIPELINE CONSTRUCTION CONFLICTS WITH THE LOCATION OF THE DEADMEN, THE DEADMEN SHALL BE RELOCATED AND THE TIEROD LENGTHS ADJUSTED ACCORDINGLY.

WHERE PIPELINE CONSTRUCTION DOES NOT ALLOW THE RELOCATION OF THE DEADMEN, THE TIERODS SHOULD BE LENGTHENED AND ANCHORED TO CONCRETE STRUCTURES BELOW GRADE.

12. SEE GENERAL SHEETS FOR ELECTRICAL LEGEND.



- NOTES:
1. SEE DRAWINGS AND SPECIFICATIONS FOR CONSTRUCTION CONSTRAINT REQUIREMENTS.
2. SEE SHEET G-1 FOR LEGEND AND ABBREVIATIONS.
3. CONTRACTOR WILL BE WORKING IN AN AREA WHERE LIQUID OXYGEN IS ONGOING. THIS IS A NO SMOKING, NO CUNCT, NO SPARKS AREA, NO SPARK TOOLS, NO PANT CUFFS, NO EXCESSIVE VIBRATION AND SAW CUTTING WITH WATER IN THE AREA. EXPOSURE TO LIQUID OXYGEN CAUSES SEVERE BURNS. CONTRACTOR SHALL BE FAMILIAR WITH LIQUID OXYGEN SAFETY AND COMPLY WITH OSHA, STATE AND LOCAL REQUIREMENTS.
4. CONTRACTOR SHALL DRAIN THE PRETREATMENT RAW-SEWAGE FROM THE INLET/OUTLET BOX AND PIPE INTO A NEARBY PLANT DRAIN MANHOLE. CITY WILL CLOSE SLUICE GATES, AS NEEDED.
5. SEE SPECIFICATION SECTION 02221 FOR TRENCHING, BACKFILLING AND COMPACTION REQUIREMENTS.
6. DURING EXCAVATION FOR REMOVAL/INSTALLATION OF PCPP/DIP, CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND PROTECTIVE MEASURES TO ASSURE THAT EXISTING RETAINING WALL IS NOT DAMAGED OR DISPLACED. CONTRACTOR SHALL PERFORM WORK IN A MANNER SUCH THAT THE STRUCTURAL INTEGRITY OF THE EXISTING RETAINING WALL IS NOT DISTURBED. CONTRACTOR SHALL BE FAMILIAR WITH ALL REQUIREMENTS INCLUDED IN THE SPECIFICATION BEFORE AND DURING CONSTRUCTION ACTIVITIES.
7. 4160 VOLT CONDUIT AND WIRE IN WORK AREA. CONTRACTOR SHALL SAFEGUARD FROM DAMAGING THEM SINCE OPERATIONS AT THE PLANT WOULD BE SERIOUSLY IMPACTED.
8. CONTRACTOR MAY NEED TO TEMPORARILY RELOCATE/REINSTALL 12" DIAMETER NPW-CIP LOCATED BETWEEN 42" AND 48" PCPP DURING THE WORK. CONTRACTOR SHALL COORDINATE AND DETERMINE IMPACT TO OPERATIONS WITH CITY STAFF.
9. IF THE EXISTING 9-2" CONDUIT PUBLIC ADDRESS SYSTEM CANNOT BE PROTECTED AND IT IS DAMAGED DURING CONSTRUCTION, CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST TO REPLACE IT WITH A NEW ONE. THE CITY WILL NOT BE RESPONSIBLE FOR SUCH COSTS. THE CONDUIT RUNS ALONG THE PERIMETER WITH TENSION WITHIN THE CONSTRUCTION ZONE.
10. VIBRATION IS AN ISSUE THAT SHALL NOT IMPACT THE OXYGEN GENERATION SITE OPERATION. THERE SHALL BE A 12/72 HOUR RULE: OXYGEN GENERATION CAN BE SHUT DOWN FOR NO MORE THAN TWELVE (12) HOURS TO ALLOW WORK THAT MAY CAUSE EXCESSIVE VIBRATION NEAR THE FACILITY. THE FACILITY WILL THEN NEED TO BE RETURNED TO OPERATION FOR AT LEAST SEVENTY-TWO (72) HOURS BEFORE ANOTHER TWELVE HOUR SHUT-DOWN CAN OCCUR.

CDM Smith. PROJECT NO. 6017-234728B

Timothy J. O'Neil, P.E.

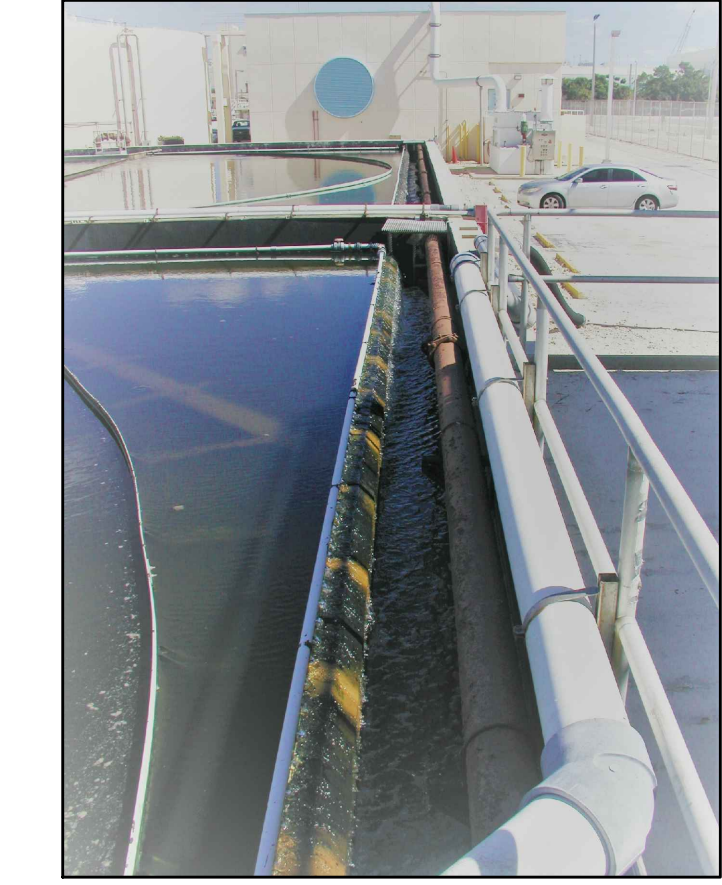
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT
YARD PIPING PLAN - WEST DEMO

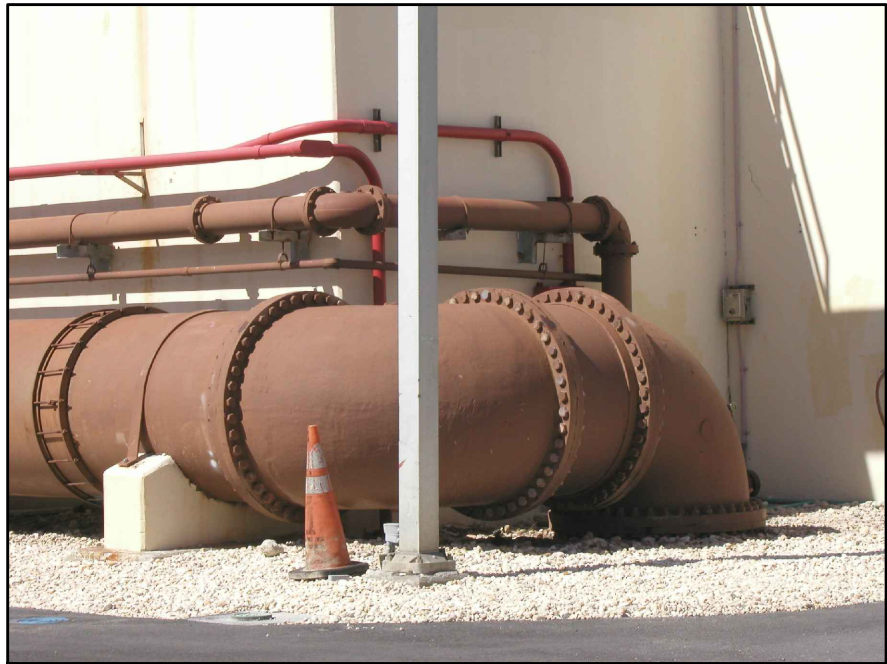
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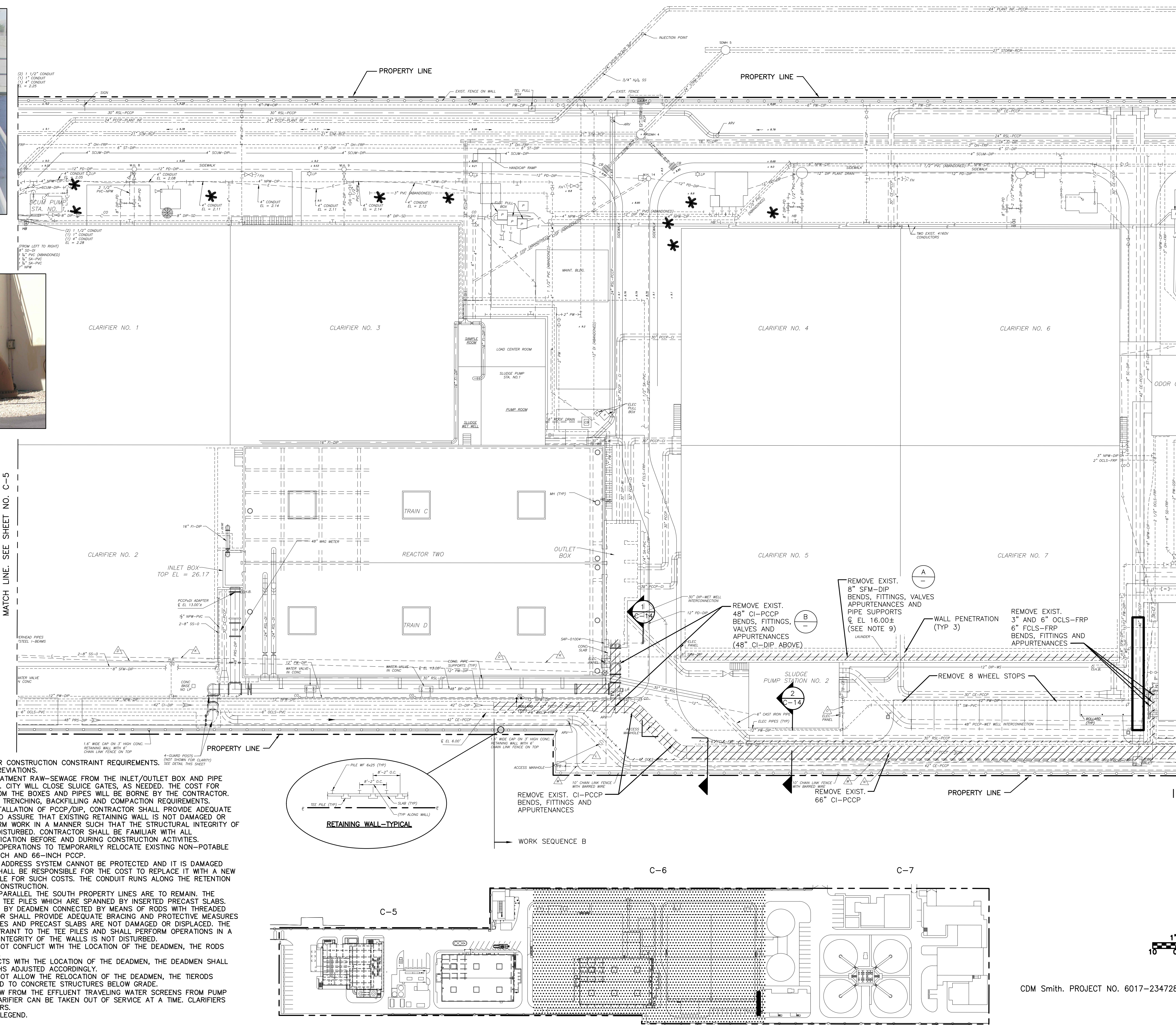
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EXISTING 8" SFM-DIP
DETAIL
NTS

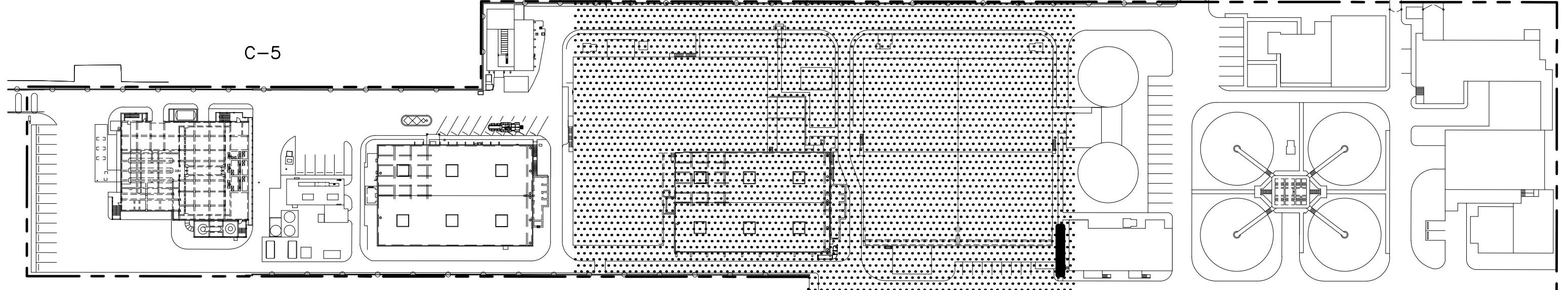
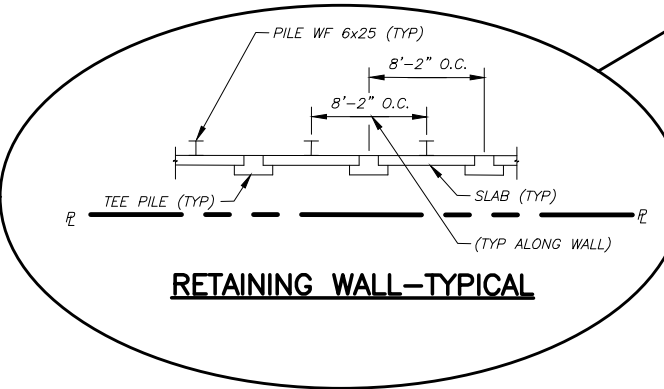


EXISTING ABOVE GROUND 48" PIPE
DETAIL
NTS



MATCH LINE. SEE SHEET NO. C-7

- NOTES:
- SEE DRAWINGS AND SPECIFICATIONS FOR CONSTRUCTION CONSTRAINT REQUIREMENTS.
 - SEE SHEET G-1 FOR LEGEND AND ABBREVIATIONS.
 - CONTRACTOR SHALL DRAIN THE PRETREATMENT RAW-SEWAGE FROM THE INLET/OUTLET BOX AND PIPE INTO A NEARBY PLANT DRAIN MANHOLE. CITY WILL CLOSE SLUICE GATES, AS NEEDED. THE COST FOR REMOVAL AND DISPOSAL OF SOLIDS FROM THE BOXES AND PIPES WILL BE BORNE BY THE CONTRACTOR.
 - SEE SPECIFICATION SECTION 02221 FOR TRENCHING, BACKFILLING AND COMPACTION REQUIREMENTS.
 - DURING EXCAVATION FOR REMOVAL/INSTALLATION OF PCCP/DIP, CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND PROTECTIVE MEASURES TO ASSURE THAT EXISTING RETAINING WALL IS NOT DAMAGED OR DISPLACED. CONTRACTOR SHALL PERFORM WORK IN A MANNER SUCH THAT THE STRUCTURAL INTEGRITY OF THE EXISTING RETAINING WALL IS NOT DISTURBED. CONTRACTOR SHALL BE FAMILIAR WITH ALL REQUIREMENTS INCLUDED IN THE SPECIFICATION BEFORE AND DURING CONSTRUCTION ACTIVITIES.
 - CONTRACTOR SHALL COORDINATE WITH OPERATIONS TO TEMPORARILY RELOCATE EXISTING NON-POTABLE WATER (NPW) LINE ADJACENT TO 48-INCH AND 66-INCH PCCP.
 - IF THE EXISTING 9-2" CONDUIT PUBLIC ADDRESS SYSTEM CANNOT BE PROTECTED AND IT IS DAMAGED DURING CONSTRUCTION, CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST TO REPLACE IT WITH A NEW ONE. THE CITY WILL NOT BE RESPONSIBLE FOR SUCH COSTS. THE CONDUIT RUNS ALONG THE RETENTION WALL AND IT IS WITHIN THE AREA OF CONSTRUCTION.
 - THE EXISTING RETAINING WALLS WHICH PARALLEL THE SOUTH PROPERTY LINES ARE TO REMAIN. THE WALLS ARE CONSTRUCTED OF VERTICAL TEE PILES WHICH ARE SPANNED BY INSERTED PRECAST SLABS. THE TEE PILES ARE ANCHORED ON SITE BY DEADMEN CONNECTED BY MEANS OF RODS WITH THREADED ENDS, WASHERS AND NUTS. CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND PROTECTIVE MEASURES TO ASSURE THAT THE EXISTING TEE PILES AND PRECAST SLABS ARE NOT DAMAGED OR DISPLACED. THE CONTRACTOR SHALL RESTORE THE RESTRAINT TO THE TEE PILES AND SHALL PERFORM OPERATIONS IN A MANNER SUCH THAT THE STRUCTURAL INTEGRITY OF THE WALLS IS NOT DISTURBED.
 - WHERE PIPELINE CONSTRUCTION DOES NOT CONFLICT WITH THE LOCATION OF THE DEADMEN, THE RODS SHALL BE REMOVED AND RECONNECTED.
 - WHERE PIPELINE CONSTRUCTION CONFLICTS WITH THE LOCATION OF THE DEADMEN, THE DEADMEN SHALL BE RELOCATED AND THE TIEROD LENGTHS ADJUSTED ACCORDINGLY.
 - WHERE PIPELINE CONSTRUCTION DOES NOT ALLOW THE RELOCATION OF THE DEADMEN, THE TIERODS SHOULD BE LENGTHENED AND ANCHORED TO CONCRETE STRUCTURES BELOW GRADE.
 - 8" SFM-DIP RECEIVES CONTINUOUS FLOW FROM THE EFFLUENT TRAVELING WATER SCREENS FROM PUMP STATION ON SHEET C-7. ONLY ONE CLARIFIER CAN BE TAKEN OUT OF SERVICE AT A TIME. CLARIFIERS ARE 18-FOOT DEEP WITH SLOPING FLOORS.
 - SEE GENERAL SHEETS FOR ELECTRICAL LEGEND.



BID SET

CDM Smith
821 NW 53rd Street, Suite 205
Boca Raton, FL 33487
Tel: (561) 571-3900
FL COA No. EB-000020

State of Florida
Professional Engineer
License No. 48897

DRAWN BY: DATE: 12-2014
DESIGNED BY: SCALE: 1" = 20'
CHECKED BY: J. CHANDLER
FIELD BOOK:

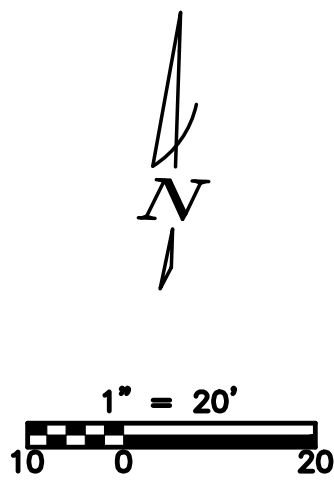
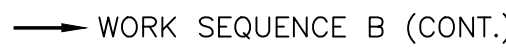
CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHK'D
1	3-2019	ALN	TJO
		BID SET SEQUENCE B	

PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT
YARD PIPING PLAN - CENTRAL DEMO

SHEET NO.	OF
C-6	21
TOTAL:	34
CAD FILE:	11773-C06-DEMO
DRAWING FILE NO.	4-136-67

CDM Smith. PROJECT NO. 6017-234728B




- CDM Smith. PROJECT NO. 6017-234728B

YARD PIPING PLAN - EAST DEMO

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
	3-2019	ALN	TJO	BID SET SEQUENCE B

DRAWN BY: A. NUNES	DATE: 12-2014
DESIGNED BY: T. O'NEIL	SCALE: 1" = 20'
CHECKED BY: J. CHANDLER	
FIELD BOOK:	



CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

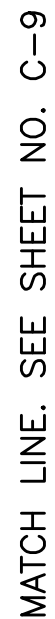
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

State of Florida
Professional Engineer
License No. 48897

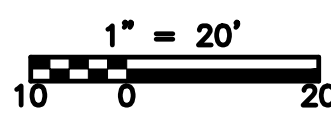
Timothy J. O'Neil, P.E.

CDM
Smith

621 NW 53rd Street, Suite 265
Boca Raton, FL 33487
Tel: (561) 571-3800
FL COA No. EB-0000020



C-10



N

NOTES:

1. RESTRAIN ALL JOINTS.
2. CONTRACTOR WILL VISUALLY INSPECT EACH JOINT IN THE PRESENCE OF THE CITY INSPECTOR TO VERIFY THE GASKET IS NOT ROLLED.
3. SEE DRAWINGS AND SPECIFICATIONS FOR CONSTRUCTION CONSTRAINT REQUIREMENTS.
4. CONTRACTOR WILL BE WORKING IN AREA WHERE LIQUID OXYGEN GENERATION IS ONGOING. THIS IS A NO SMOKING, NO DUCT, NO SPARKS AREA, NO SPARK TOOLS, NO PANT CUFFS, NO EXCESSIVE VIBRATIONS, AND SAW CUTTING WITH WATER ONLY AREA. EXPOSURE TO LIQUID OXYGEN CAUSES SEVERE BURNS. CONTRACTOR SHALL BE FAMILIAR WITH LIQUID OXYGEN SAFETY AND COMPLY WITH OSHA, STATE AND LOCAL REQUIREMENTS.
5. 4110V AC POWER CABLE AND WIRE IN WORK AREA. CONTRACTOR SHALL SAFEGUARD FROM DAMAGING THEM SINCE OPERATIONS AT THE PLANT WOULD BE SERIOUSLY IMPACTED.
6. SEE GENERAL SHEETS FOR ELECTRICAL LEGEND.

621 NW 53rd Street, Suite 265
Boca Raton, FL 33487
Tel: (561) 571-3800
FL COA No. EB-0000020

Timothy J. O'Neil, P.E.

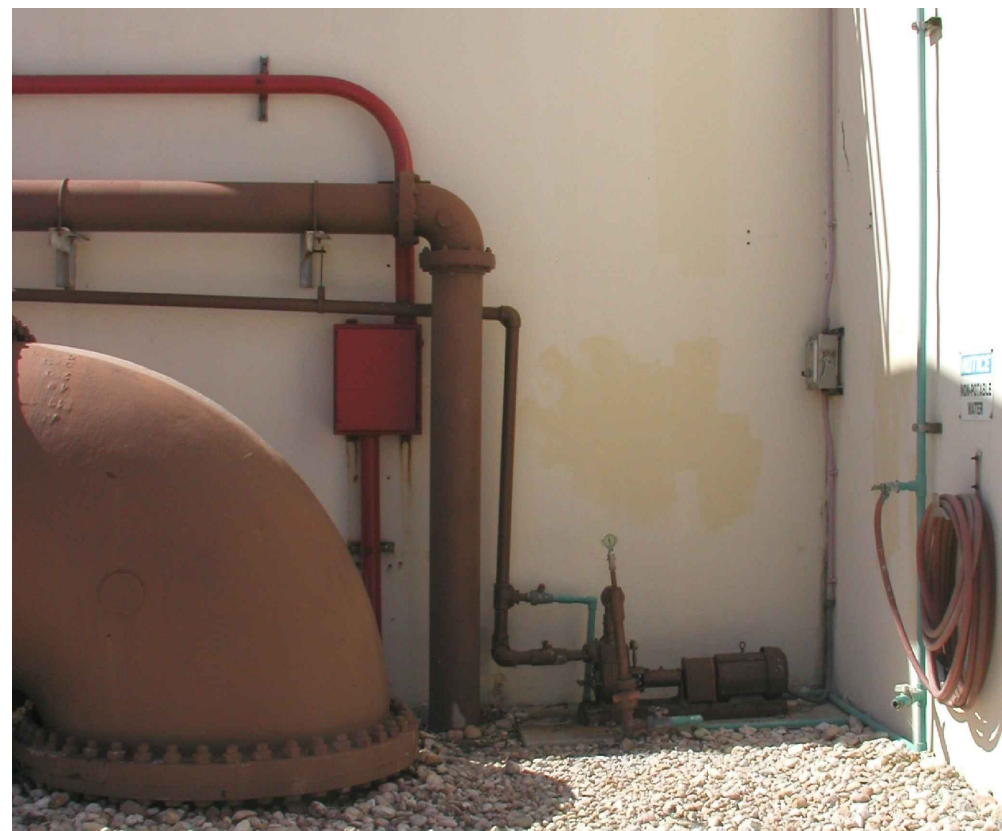
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

WEST MODIFICATION

CAM #19-0723
Exhibit 2 p. 25

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PULL BOX

DETAIL

NTS

B

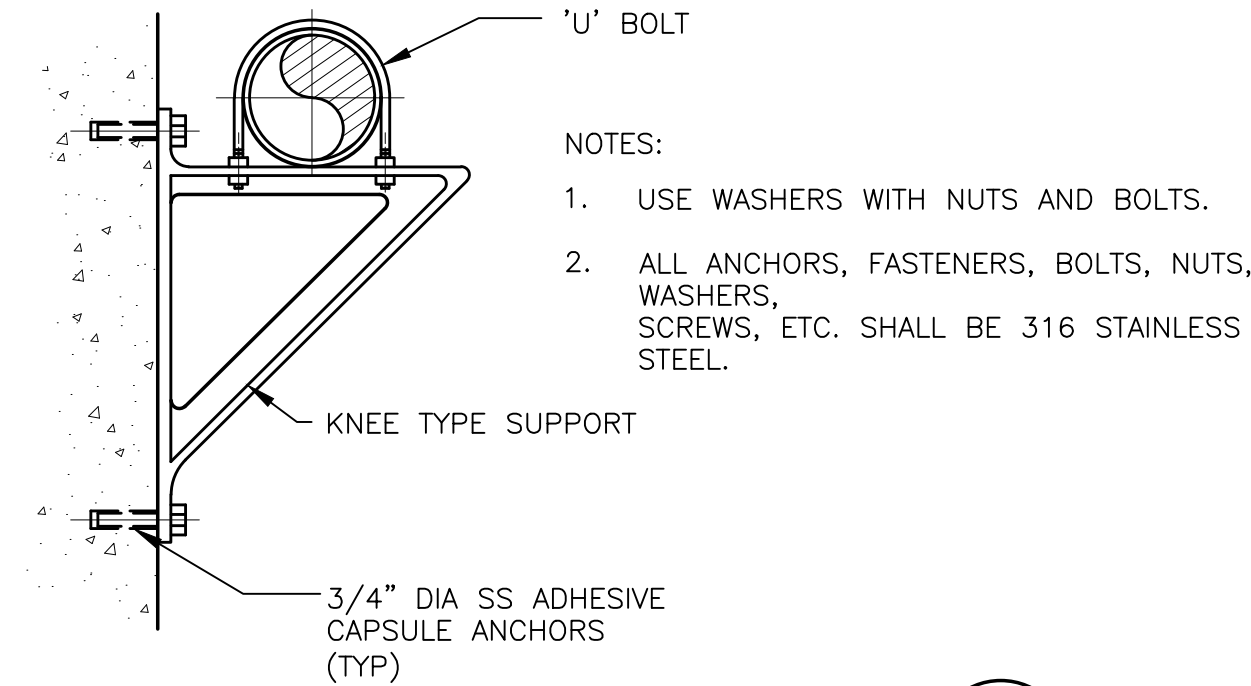
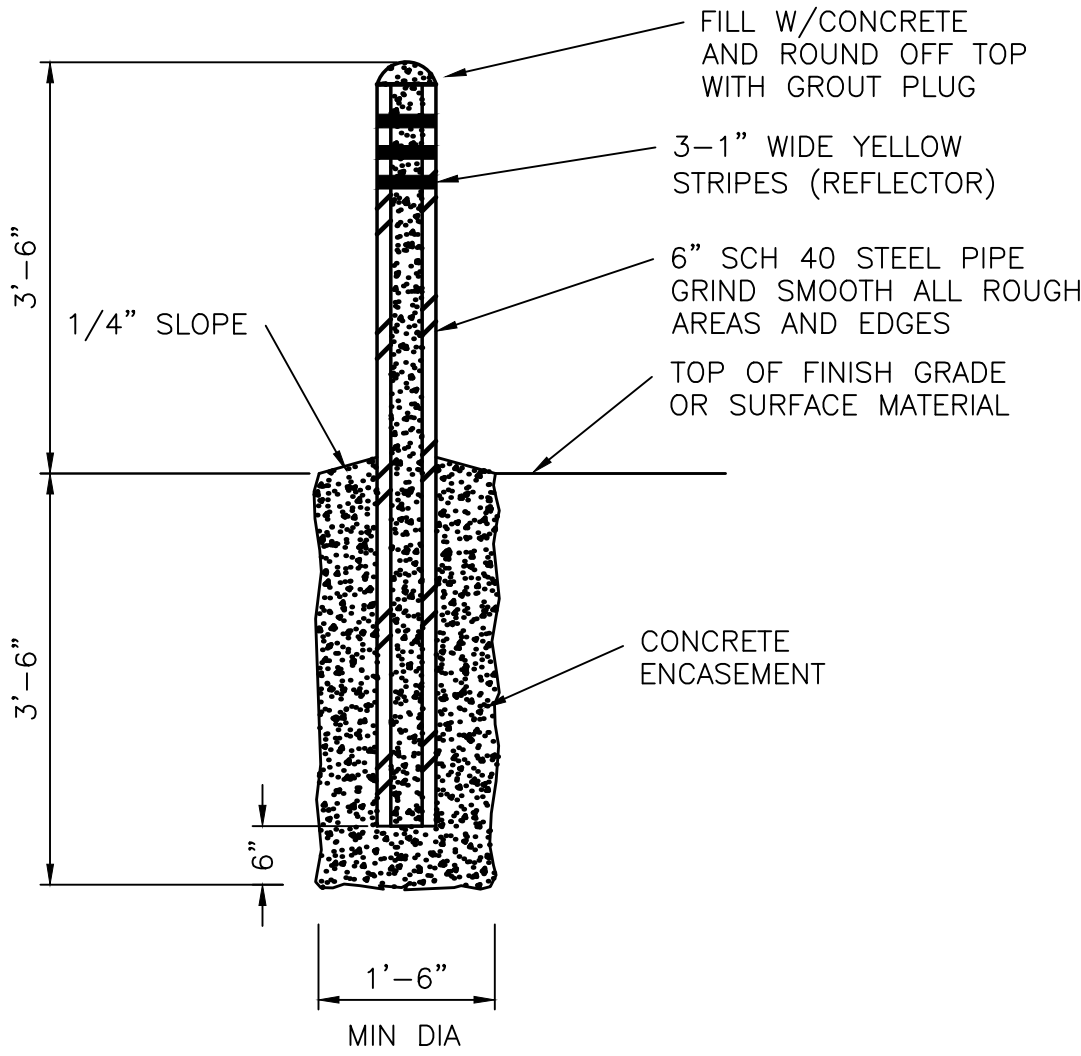
- NOTES:
1. RESTRAIN ALL JOINTS.
 2. CONTRACTOR WILL VISUALLY INSPECT EACH JOINT IN THE PRESENCE OF THE CITY INSPECTOR TO VERIFY THE GASKET HAS NOT ROLLED.
 3. SEE DRAWINGS AND SPECIFICATIONS FOR CONSTRUCTION CONSTRAINT REQUIREMENTS.
 4. SEE GENERAL SHEETS FOR ELECTRICAL LEGEND.

DETAIL

NTS

A

GUARD POST



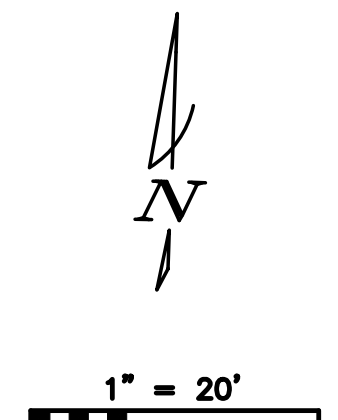
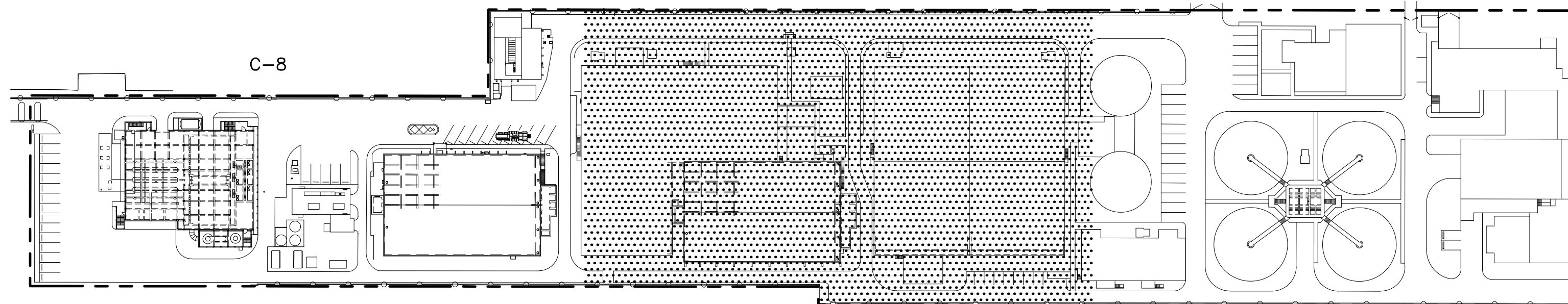
PIPE BRACKET 956

NOTES:

1. USE WASHERS WITH NUTS AND BOLTS.
2. ALL ANCHORS, FASTENERS, BOLTS, NUTS, WASHERS, SCREWS, ETC. SHALL BE 316 STAINLESS STEEL.

MATCH LINE. SEE SHEET NO. C-8

MATCH LINE. SEE SHEET NO. C-10



CDM Smith. PROJECT NO. 6017-234728B

CDM Smith

821 NW 53rd Street, Suite 205
Boca Raton, FL 33497
Tel: (561) 571-3900
FL CCA No. EB-0000020

State of Florida
Professional Engineer
License No. 48897

Timothy J. O'Neil, P.E.

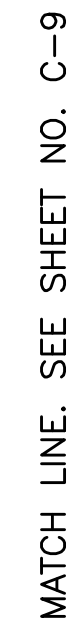
CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	REVISIONS			
	DATE	BY	CHK'D	DESCRIPTION
1	3-2019	ALN	TJO	BID SET SEQUENCE B

PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT
YARD PIPING PLAN
CENTRAL MODIFICATION

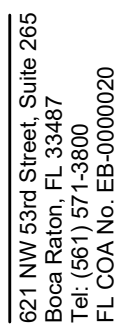
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C-9		21
TOTAL:		34
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DRAWING FILE NO.		4-136-67

BID SET



C-8

1" = 20'



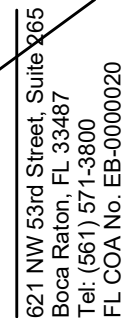
Timothy J. O'Neil, P.E.

CHK'D	
-------	--


PROJECT # P11773
GT LOHMEYER LARG
INFLUENT PIPE REPL
YARD PIPING PLAN
EAST MODIFICATION

C-10	2
------	---

CAM #19-0723
Exhibit 2 p. 26



Timothy J. O'Neil, P.E.

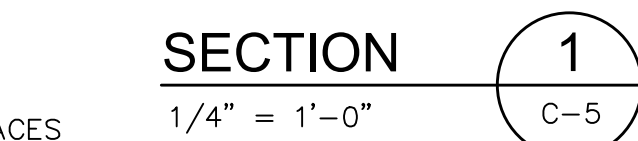


CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
	3-2019	ALN	TJO	BID SET SEQUENCE B

SHEET NO. C-11	OF 21
TOTAL: 34	
CAD FILE: 11773-C11-SECT	
DRAWING FILE NO. 4-136-67	

CAM #19-0723
Exhibit 2 p. 26



TEMPORARILY REMOVE AND
REPLACE GUARD RAIL AS
NEEDED TO INSTALL
TEMPORARY PIPE

NOT IN CONTRACT

EXISTING
(BEHIND)



SECTION

$$1/4'' = 1'-0''$$

2

C-5

NOTE:
1. 4160 VOLT CONDUIT AND WIRE IN WORK AREA. CONTRACTOR SHALL SAFEGUARD FROM DAMAGING THEM SINCE OPERATIONS AT THE PLANT WOULD BE SERIOUSLY IMPACTED.

CDM Smith. PROJECT NO. 6017-234728B

BID SET

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CDM Smith

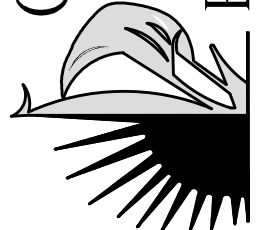
8271 NW 53rd Street, Suite 305
Boca Raton, FL 33497
Tel: (561) 571-3900
FL CCA No. EB-0000020

State of Florida
Professional Engineer
License No. 48897

Timothy J. O'Neil, P.E.

DRAWN BY:	DATE:
A. NUNES	12-2014
DESIGNED BY:	SCALE:
T. O'NEIL	NO SCALE
CHECKED BY:	
J. CHANDLER	
FIELD BOOK:	

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE


100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHK'D
1	3-2019	ALN	TJO
		BID SET SEQUENCE B	

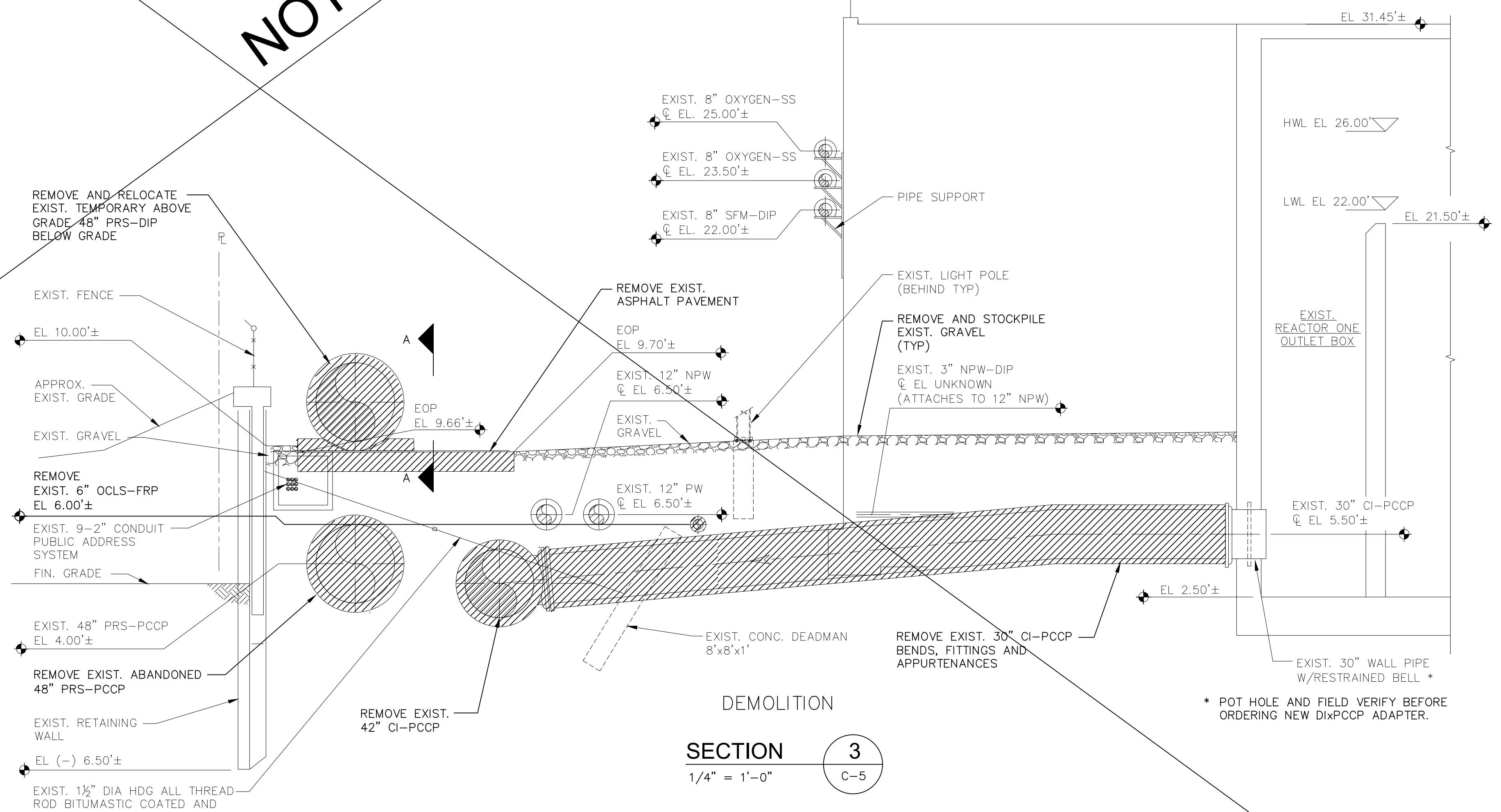
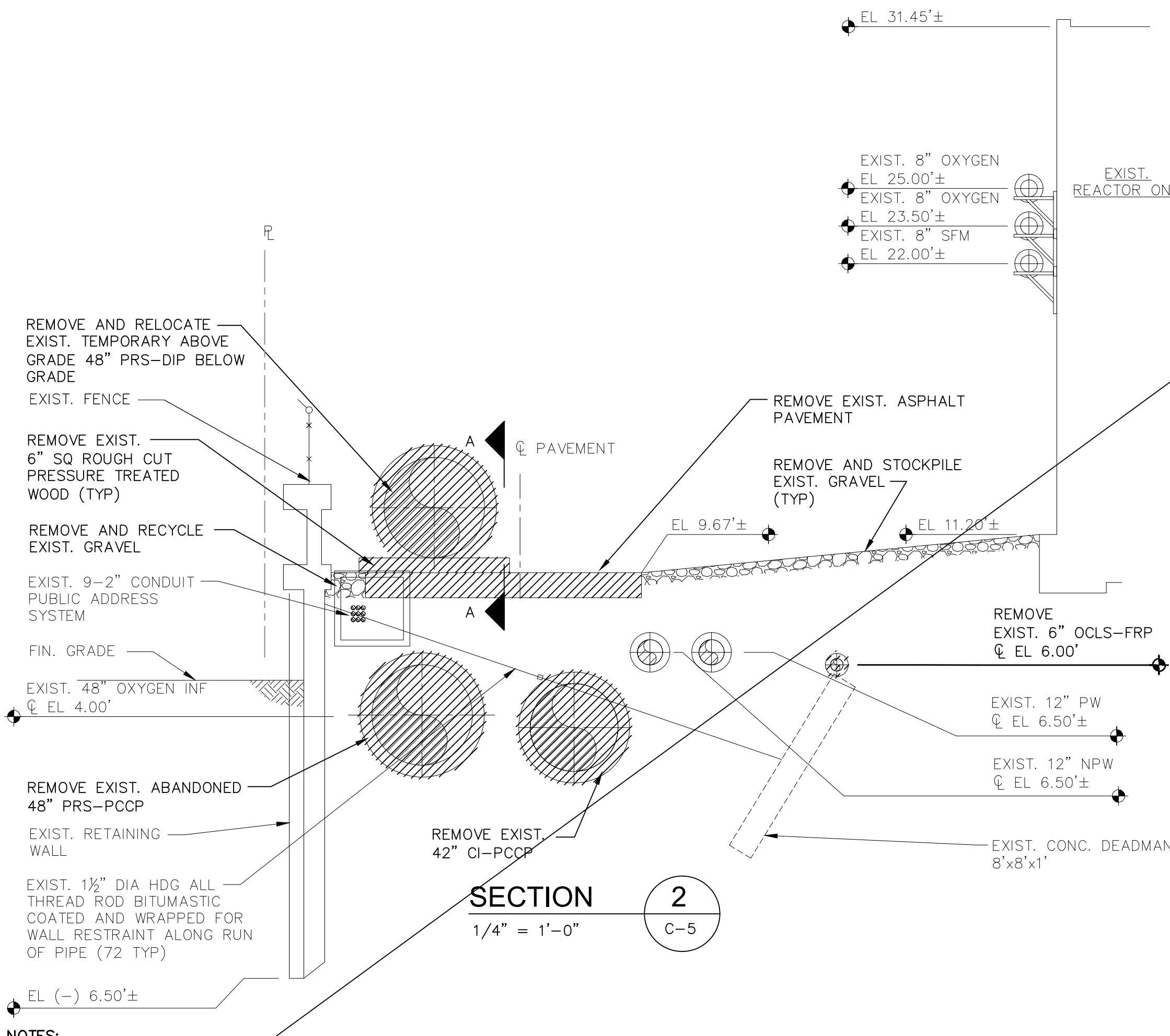
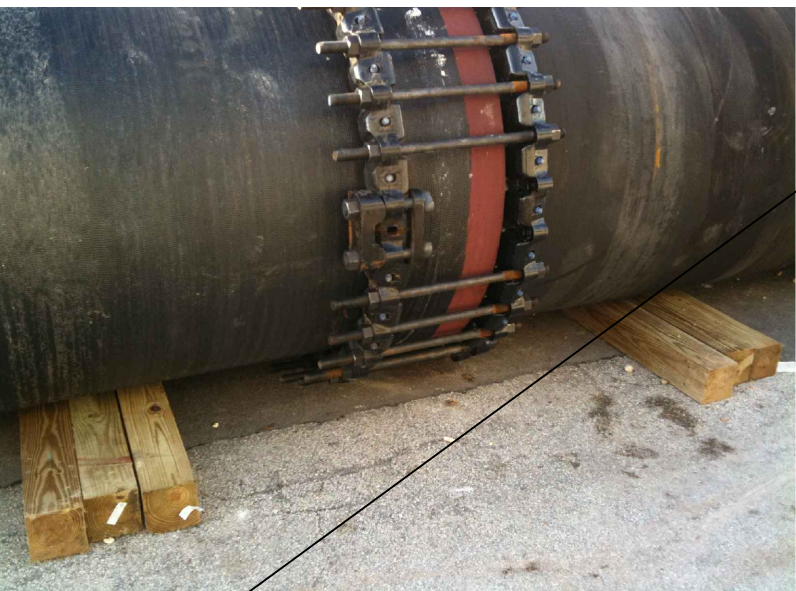
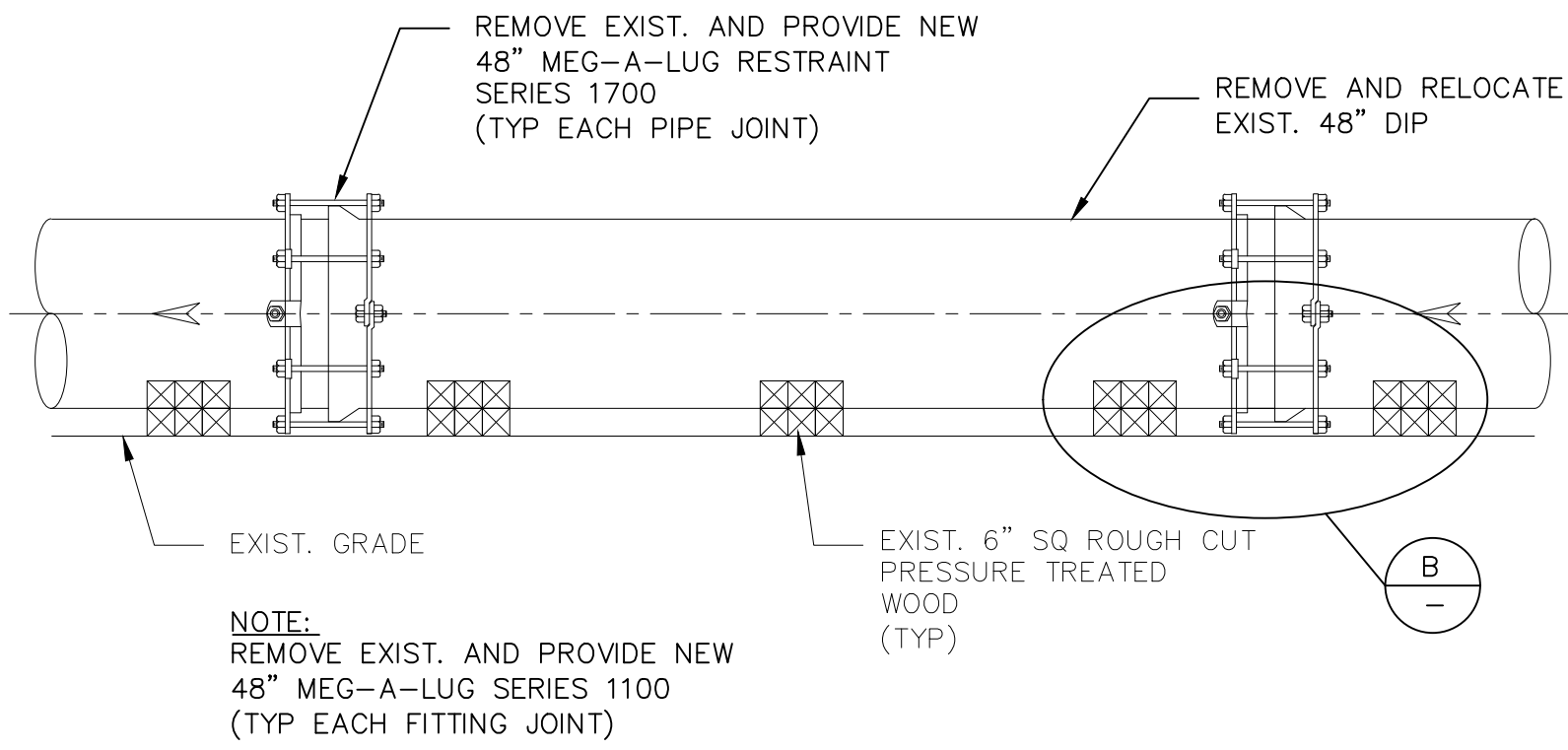
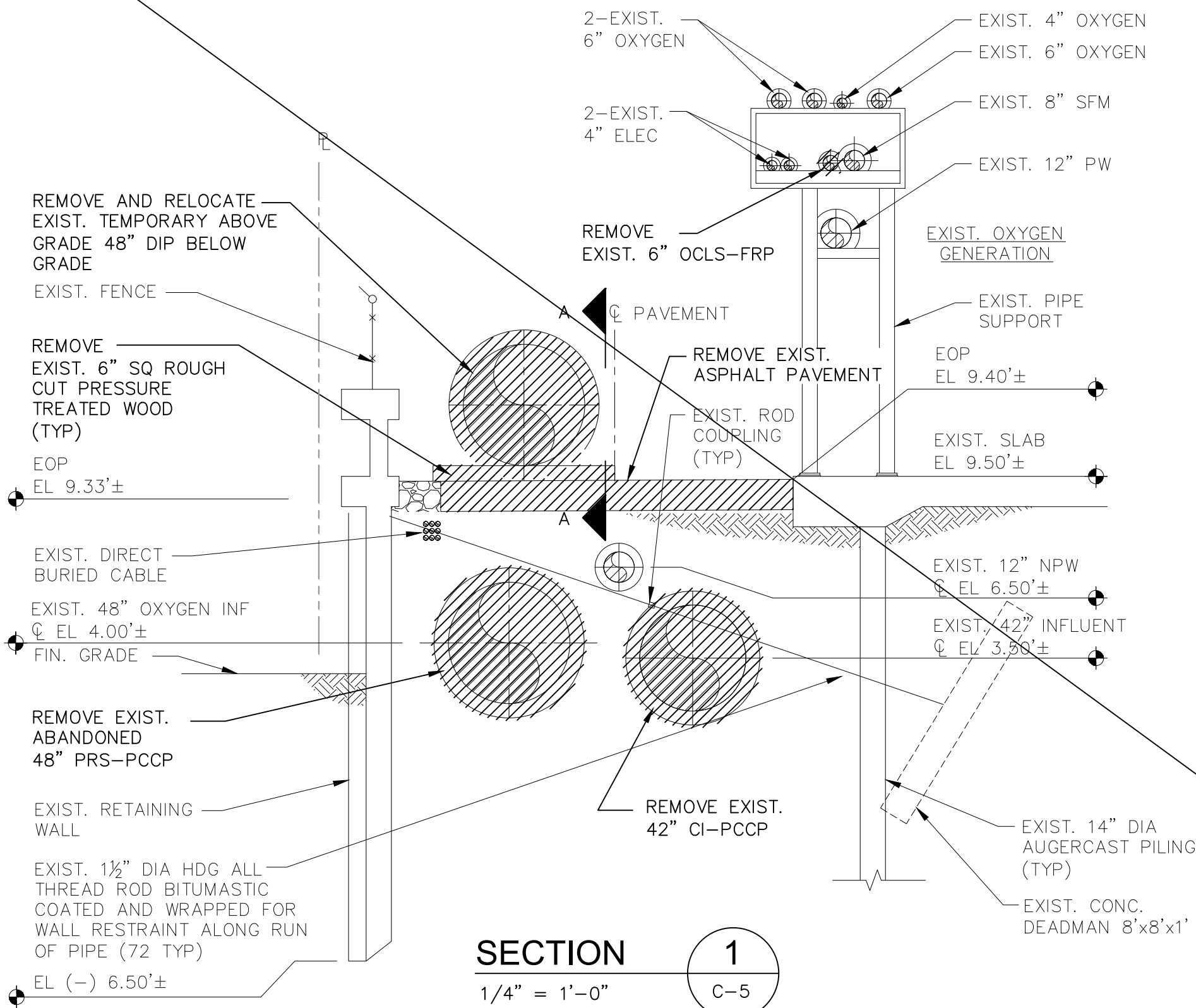
PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT

DEMOLITION SECTIONS

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DRAWING FILE NO.	4-136-67

CDM Smith. PROJECT NO. 6017-234728B

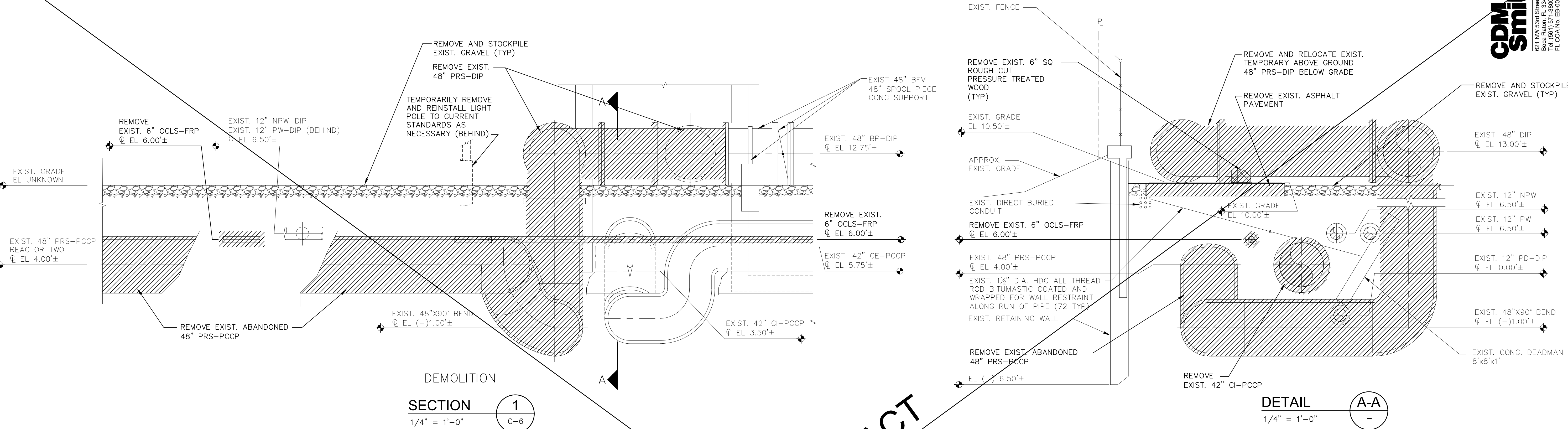
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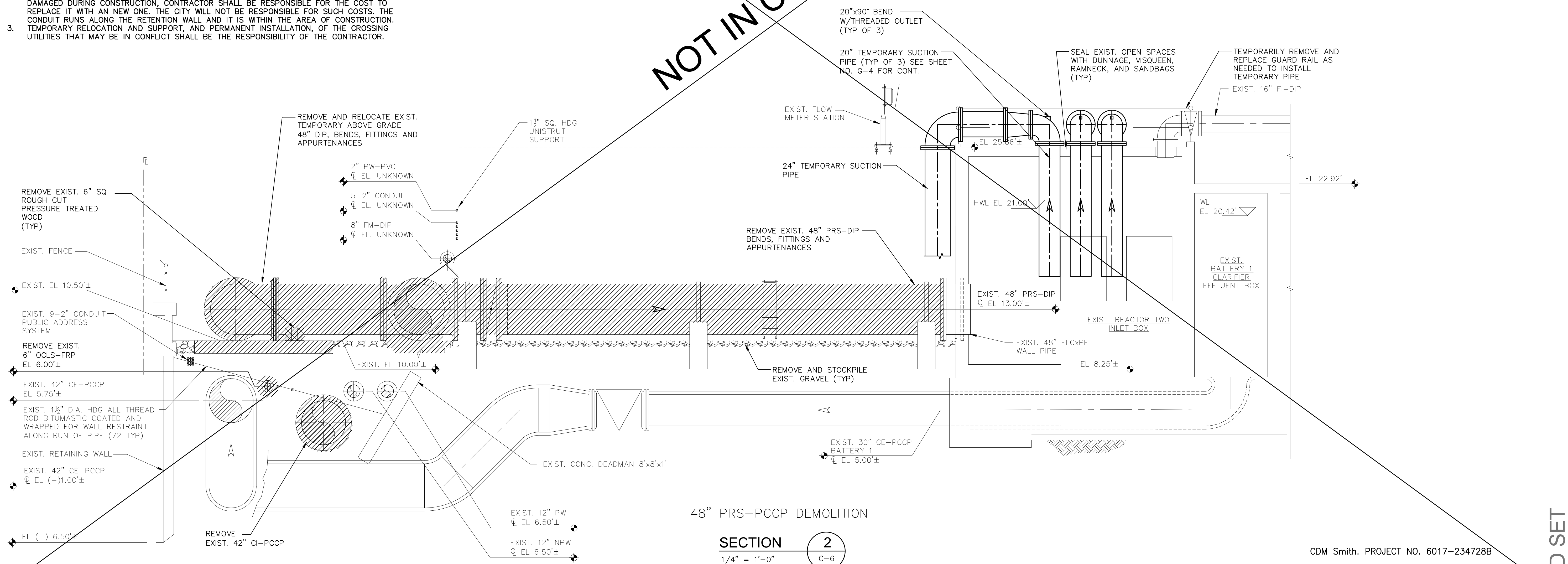
- NOTES:
- RESTRAIN ALL JOINTS.
 - CONTRACTOR MAY NEED TO TEMPORARILY RELOCATE/REINSTALL 12" DIAMETER NPW-CIP LOCATED BETWEEN 42" AND 48" PCCP DURING THE WORK. CONTRACTOR SHALL COORDINATE AND DETERMINE IMPACT TO OPERATIONS WITH CITY STAFF.
 - IF THE EXISTING 9-2" CONDUIT PUBLIC ADDRESS SYSTEM CANNOT BE PROTECTED AND IT IS DAMAGED DURING CONSTRUCTION, CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST TO REPLACE IT WITH AN NEW ONE. THE CITY WILL NOT BE RESPONSIBLE FOR SUCH COSTS. THE CONDUIT RUNS ALONG THE RETENTION WALL AND IT IS WITHIN THE AREA OF CONSTRUCTION.
 - VIBRATION IS AN ISSUE THAT SHALL NOT IMPACT THE OXYGEN GENERATION SITE OPERATION. THERE SHALL BE A 12/72 HOUR RULE: OXYGEN GENERATOR CAN BE SHUT DOWN FOR NO MORE THAN TWELVE (12) HOURS TO ALLOW WORK THAT MAY CAUSE EXCESSIVE VIBRATION NEAR THE FACILITY. THE FACILITY WILL THEN NEED TO BE RETURNED TO OPERATION FOR AT LEAST SEVENTY-TWO (72) HOURS BEFORE ANOTHER TWELVE HOUR SHUT-DOWN CAN OCCUR.
 - TEMPORARY RELOCATION AND SUPPORT, AND PERMANENT INSTALLATION, OF THE CROSSING UTILITIES THAT MAY BE IN CONFLICT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

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- NOTES:
1. CONTRACTOR MAY NEED TO TEMPORARILY RELOCATE/REINSTALL 12" DIAMETER NPW-CIP LOCATED BETWEEN 42" AND 48" PCCP DURING THE WORK. CONTRACTOR SHALL COORDINATE AND DETERMINE IMPACT TO OPERATIONS WITH CITY STAFF.
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 3. TEMPORARY RELOCATION AND SUPPORT, AND PERMANENT INSTALLATION, OF THE CROSSING UTILITIES THAT MAY BE IN CONFLICT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.



CDM Smith
821 NW 53rd Street, Suite 205
Boca Raton, FL 33487
Tel: (561) 571-3800
FL CCA No. EB-0000020

State of Florida
Professional Engineer
License No. 48897

DRAWN BY:	DATE:
A. NUNES	12-2014
DESIGNED BY:	SCALE:
T. O'NEIL	1/4"=1'-0"
CHECKED BY:	
J. CHANDLER	
FIELD BOOK:	

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHK'D
	3-2019	ALN	TJO

PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT

DEMOLITION SECTIONS

SHEET NO. C-13 OF 21

TOTAL: 34

CAD FILE: 11773-C13-SECT

DRAWING FILE NO. 4-136-67

BID SET

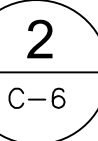
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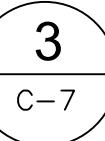
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C-6

C-6

- EXIST. SLUDGE
PUMP STATION
NO. 3



C-6



C-7

BID SET

DEMOLITION SECTIONS

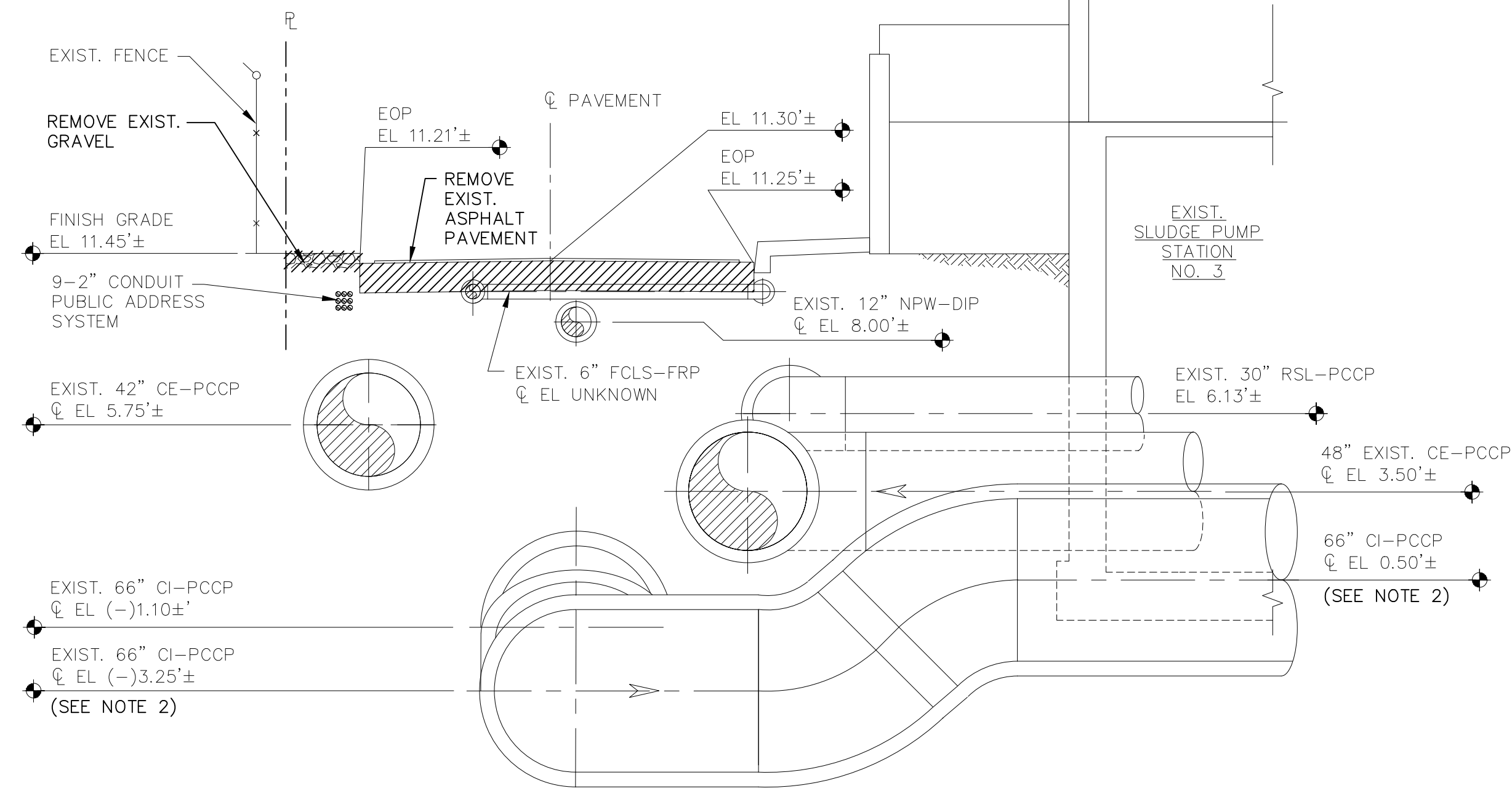
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DRAWING FILE NO. 4-136-67	

CAM #19-0723
Exhibit 2
264 of 310

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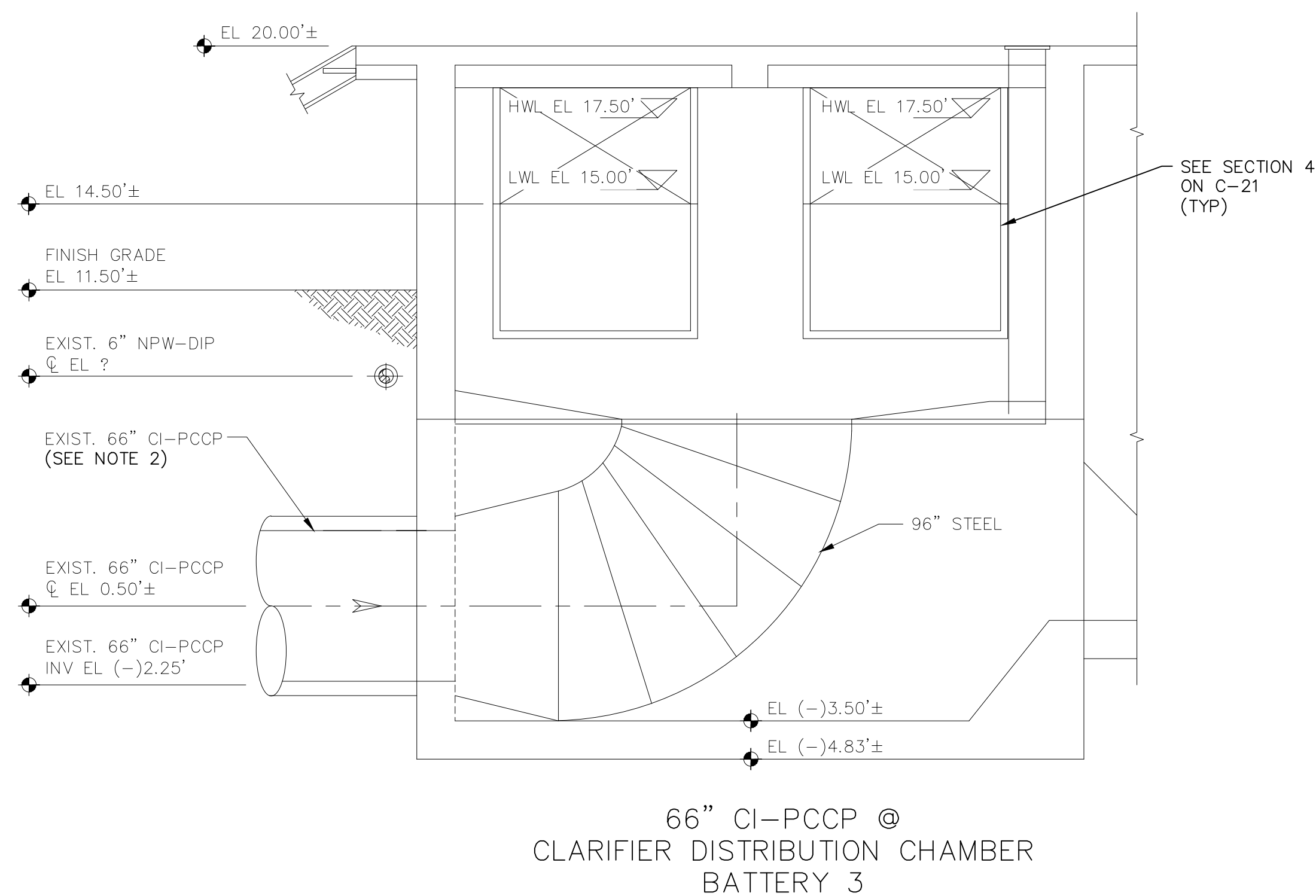
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66" CI-PCCP @
SLUDGE P.S. NO. 3

SECTION 2
 $1/4" = 1'-0"$ C-7




66" CI-PCCP @
CLARIFIER DISTRIBUTION CHAMBER
BATTERY 3

SECTION 4
1/4" = 1'-0" C-7

BID SET

Timothy J. O'Neil, P.E.



CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
	3-2019	ALN	TJO	BID SET SEQUENCE B


PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT
DEMOLITION SECTIONS

SHEET NO.	OF
C-15	21
TOTAL: 34	
CAD FILE: 11773-C15-SECT	
DRAWING FILE NO. 4-136-67	



Timothy J. O'Neil, P.E.

DRAWN BY: A. NUNES	DATE: 12-2014
DESIGNED BY: T. O'NEIL	SCALE: 1" = 60'
CHECKED BY: J. CHANDLER	
FIELD BOOK:	



CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS				
NO.	DATE	BY	CHKD	DESCRIPTION
	3--2019	ALN	TJO	BID SET SEQUENCE B







PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT
EXISTING PAVEMENT SIGN AND
MARKING SITE PLAN

SHEET NO.	OF
C-16	21
TOTAL:	34
CAD FILE: 11773-C16-SECT	
DRAWING FILE NO. 4-136-67	

CDM Smith. PROJECT NO. 6017-234728B

BID SET

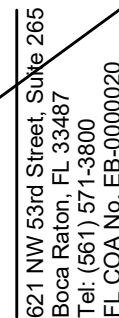


	EXISTING STRUCTURES
	NEW TREATMENT FACILITIES (CIRCA 1983)
	PARKING SPACE MARKING
	TRAFFIC DIRECTION ARROW MARKING
	PROPERTY LINE
	INFORMATION SIGN


DWG: C:\pw_pl1\nunesal\d1415302\11773-C16-SECT.dwg USER: nunesal

SOURCE: CITY PROJECT 100E, AS-BUILT DATED 1980

CAM #19-0723
Exhibit 2 p. 2



Timothy J. O'Neil, P.E.



CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
	3-2019	ALN	TJO	BID SET SEQUENCE B

MODIFICATION SECTIONS

SHEET NO.	OF
C-17	21
TOTAL:	34
CAD FILE: 11773-C17-SECT	
DRAWING FILE NO. 4-136-67	

CAM #19-0723
Exhibit 2 p. 26



NOT IN CONTRACT



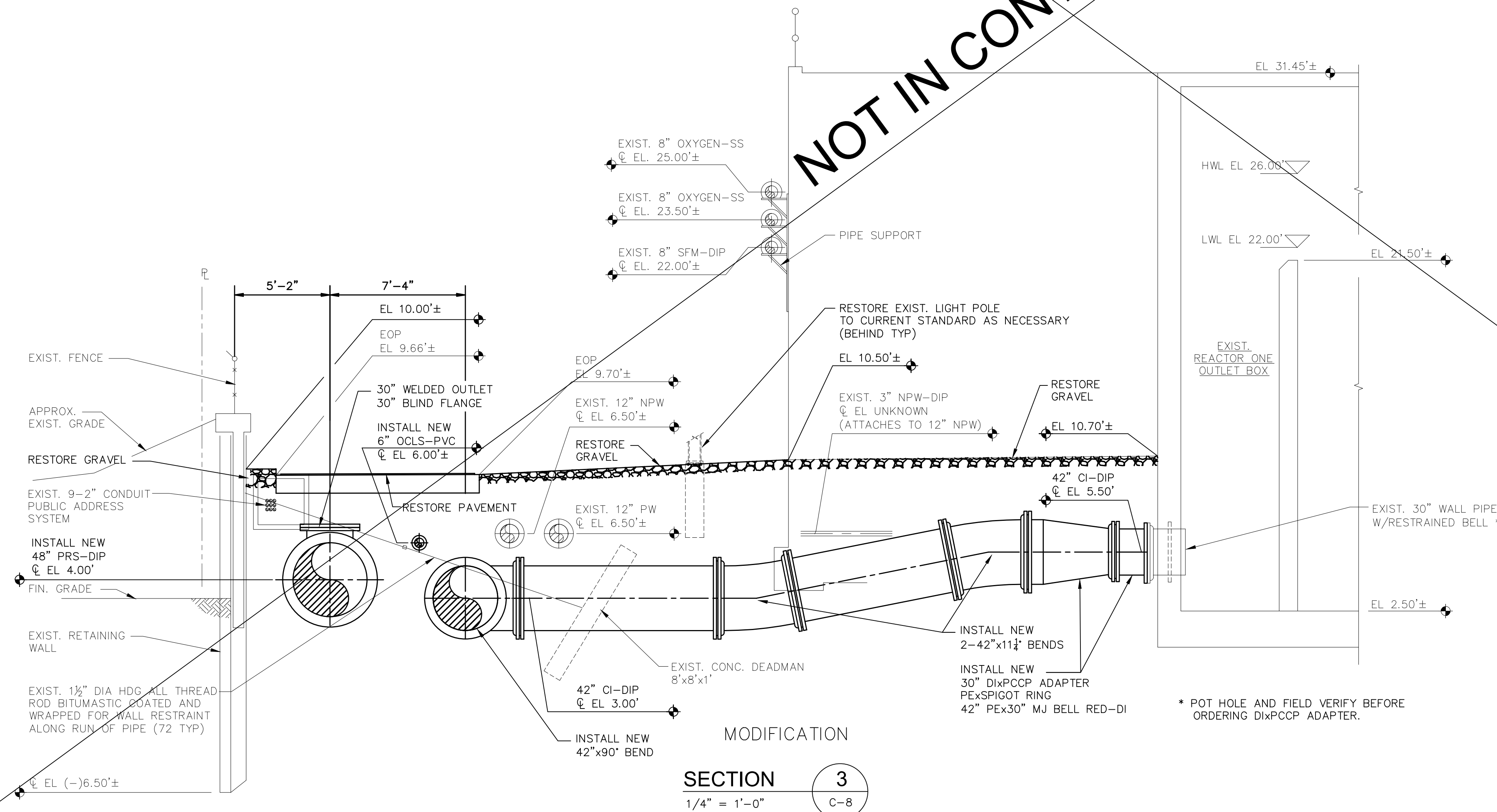
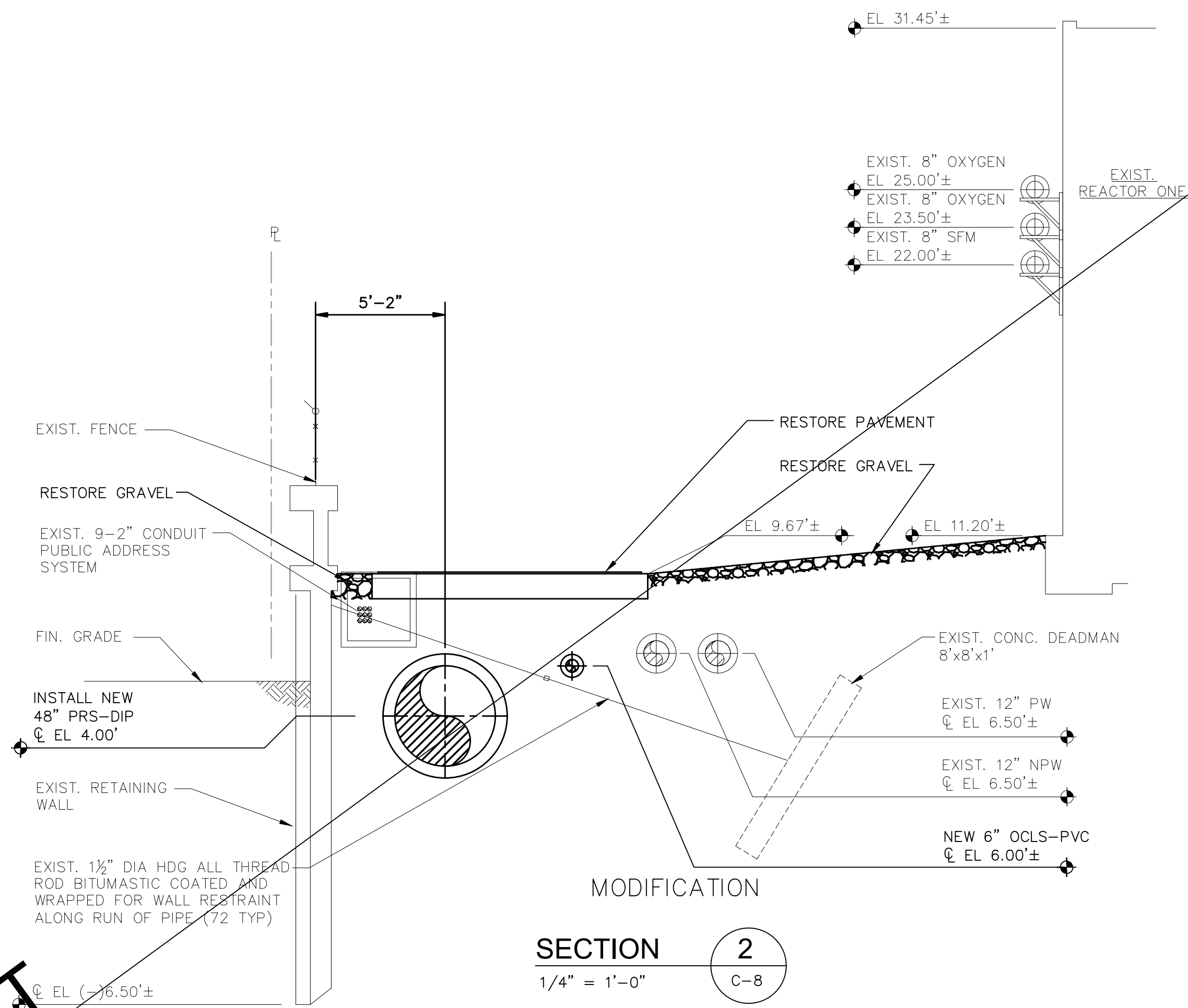
2
C-8

- NOTES:
1. RESTRAIN ALL JOINTS.
 2. RESTORE ROAD BASE, ASPHALT, AND MARKINGS PER PAVEMENT SPECIFICATIONS AND SHEET C-16.
 3. 4160 VOLT CONDUIT AND WIRE IN WORK AREA. CONTRACTOR SHALL SAFEGUARD FROM DAMAGING THEM SINCE OPERATIONS AT THE PLANT WOULD BE SERIOUSLY IMPACTED.

CDM Smith. PROJECT NO. 6017-234728E

BID SET

USER: nunesal



1. RESTRAIN ALL JOINTS.
2. RESTORE ROAD BASE, ASPHALT, AND MARKINGS PER PAVEMENT SPECIFICATIONS AND SHEET 016.
3. VIBRATION IS AN ISSUE THAT SHALL NOT IMPACT THE OXYGEN GENERATION SITE OPERATION. THERE SHALL BE A 12/72 HOUR RULE: OXYGEN GENERATION CAN BE SHUT DOWN FOR NO MORE THAN TWELVE (12) HOURS TO ALLOW WORK THAT MAY CAUSE EXCESSIVE VIBRATION NEAR FACILITY. THE FACILITY THEN NEED TO BE RETAINED TO OPERATION FOR AT LEAST SEVENTY-TWO (72) HOURS BEFORE ANOTHER TWELVE HOUR SHUT-DOWN CAN OCCUR.

* POT HOLE AND FIELD VERIFY BEFORE ORDERING DIXPCCP ADAPTER.


CDM Smith. PROJECT NO. 6017-234728B

**CDM
Smith**

621 NW 53rd Street, Suite 265
Boca Raton, FL 33487
Tel: (561) 571-3800
FL COA No. EB-0000020

State of Florida
Professional Engineer
License No. 48897

Timothy J. O'Neil, P.E.



CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

[illegible]

PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT

MODIFICATION SECTIONS

SHEET NO.	OF
C-18	21
TOTAL: 34	
CAD FILE: 11773-C18-SECT	
DRAWING FILE NO. 4-136-67	

BRIDGES

NOT IN CONTRACT

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DWG: \pw\cdmsmith.com\PW_PL1 Documents\6017 234728\04 Design Services\04 CAD\

USER: nunesal

7/5/2019 2:30 PM

CAM #19-0723
Exhibit 2
268 of 310

p. 2



827 NW 53rd Street, Suite 200
Boca Raton, FL 33497
Tel: (561) 571-3900
FL CCA No. EB-0000020

State of Florida
Professional Engineer
License No. 48897

Timothy J. O'Neil, P.E.

DRAWN BY:	DATE:
A. NUNES	12-2014
DESIGNED BY:	SCALE:
T. O'NEIL	1/4"=1'-0"
CHECKED BY:	
J. CHANDLER	
FIELD BOOK:	

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHK'D
	3-2019	ALN	TJO

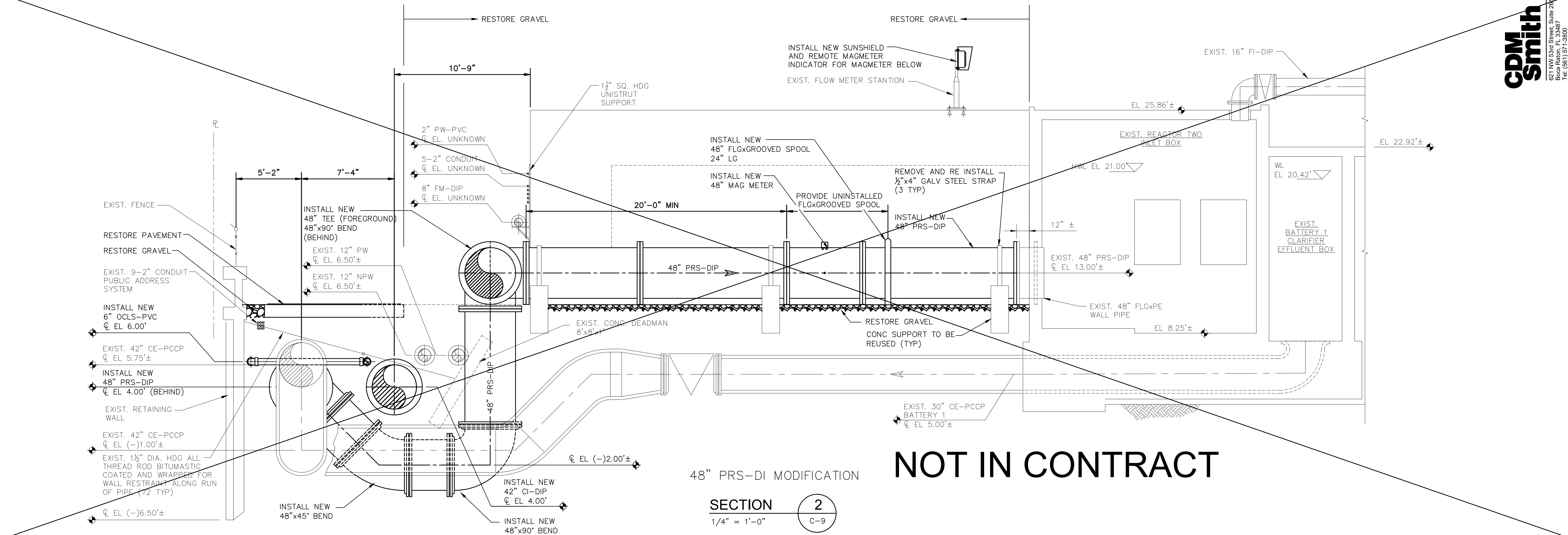
PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT

MODIFICATION SECTIONS

SHEET NO.	OF
C-19	21
TOTAL:	34
CAD FILE:	11773-C19-SECT
DRAWING FILE NO.	4-136-67

BID SET

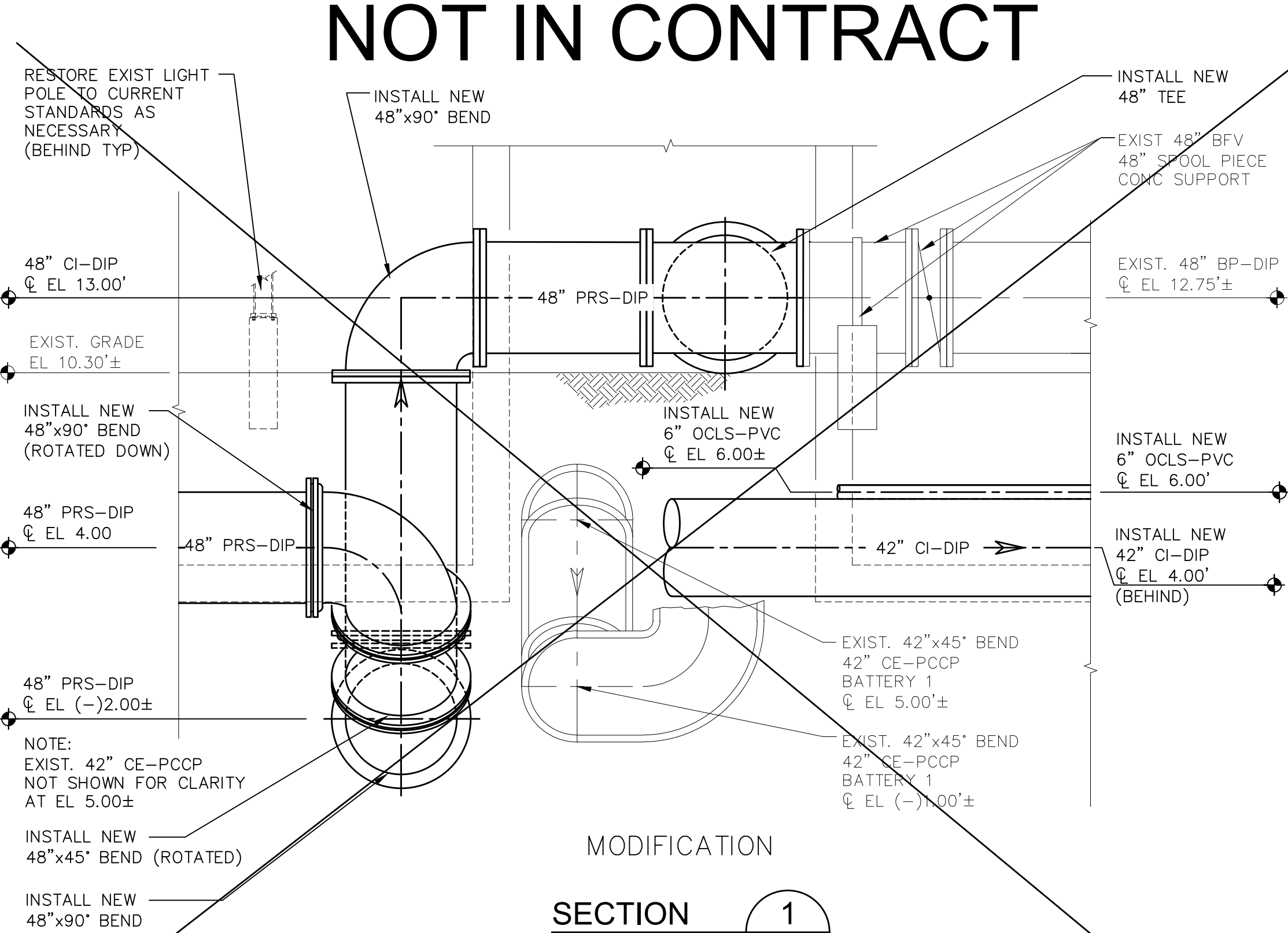
CDM Smith. PROJECT NO. 6017-234728B



48" PRS-DI MODIFICATION

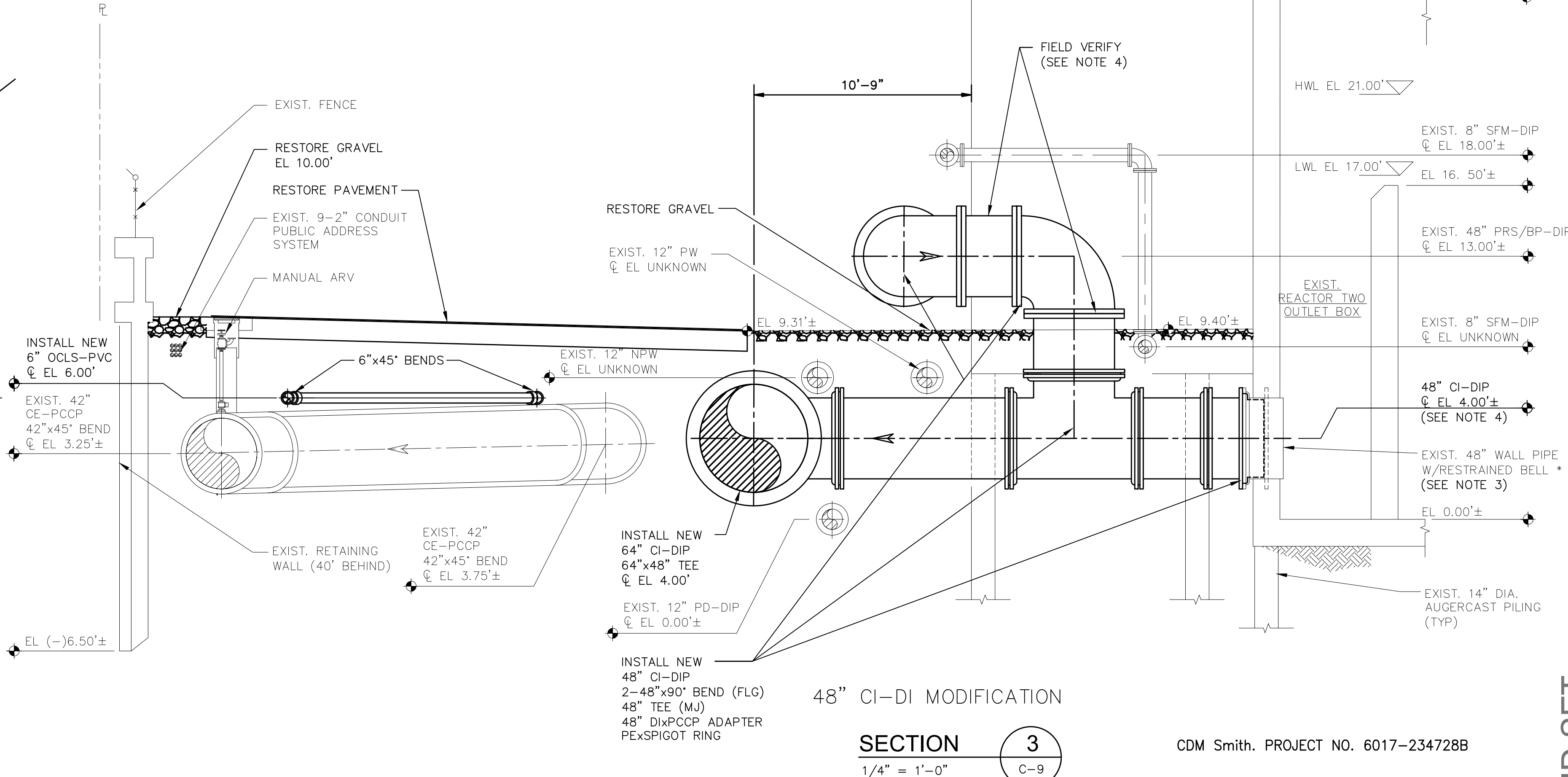
SECTION 2
1/4" = 1'-0"

- NOTES:
1. RESTRAIN ALL JOINTS.
 2. RESTORE ROAD BASE, ASPHALT, AND MARKINGS PER PAVEMENT SPECIFICATION AND SHEET C-16.
 3. CONTRACTOR SHALL POT-HOLE TO VERIFY JOINT TYPE BEFORE SELECTING DIxPCCP ADAPTER AND SUBMITTING FOR APPROVAL.
 4. CONTRACTOR SHALL POT-HOLE TO VERIFY ELEVATIONS BEFORE SELECTING 48-INCH FLxFL VERTICAL SPOOL PIECE AND SUBMITTING FOR APPROVAL.



MODIFICATION

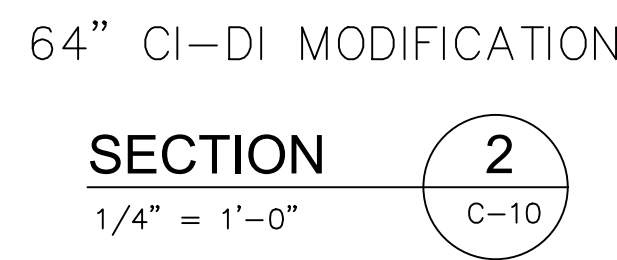
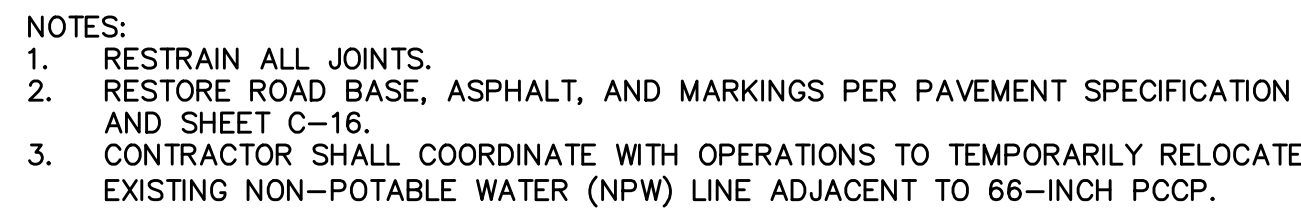
SECTION 1
1/4" = 1'-0"



48" CI-DI MODIFICATION

SECTION 3
1/4" = 1'-0"

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BID SET	SHEET NO.	OF
	C-20	21
	TOTAL: 34	
	CAD FILE: 11773-C20-SECT	
	DRAWING FILE NO. 4-136-67	

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
	3-2019	ALN	TJO	BID SET SEQUENCE B

DRAWN BY: A. NUNES	DATE: 12-2014
DESIGNED BY: T. O'NEIL	SCALE: 1/4"=1'-0"
CHECKED BY: J. CHANDLER	
FIELD BOOK:	

Timothy J. O'Neil, P.E.

621 NW 53rd Street, Suite 265
Boca Raton, FL 33487
Tel: (561) 571-3800
FL COA No. EB-00000020



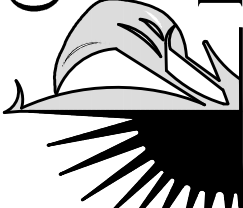
821 NW 53rd Street, Suite 205
Boca Raton, FL 33487
Tel: (561) 571-3900
FL CCA No. EB-0000020

State of Florida
Professional Engineer
License No. 48897

Timothy J. O'Neil, P.E.

DRAWN BY:	DATE:
A. NUNES	12-2014
DESIGNED BY:	SCALE:
T. O'NEIL	1/4"=1'-0"
CHECKED BY:	
J. CHANDLER	
FIELD BOOK:	

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE

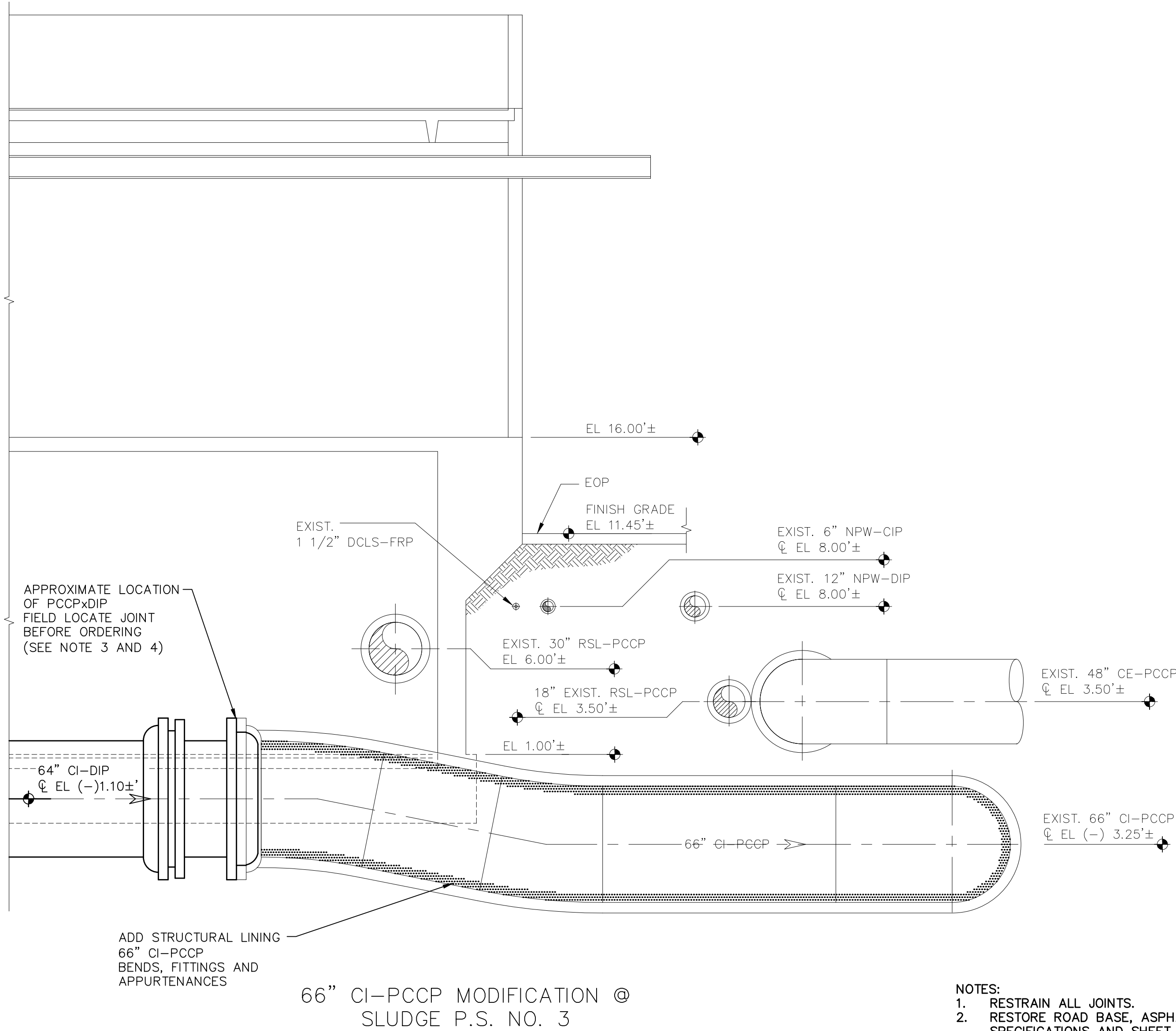

100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS		DESCRIPTION	
NO.	DATE	BY	CHK'D
	3-2019	ALN	TJO

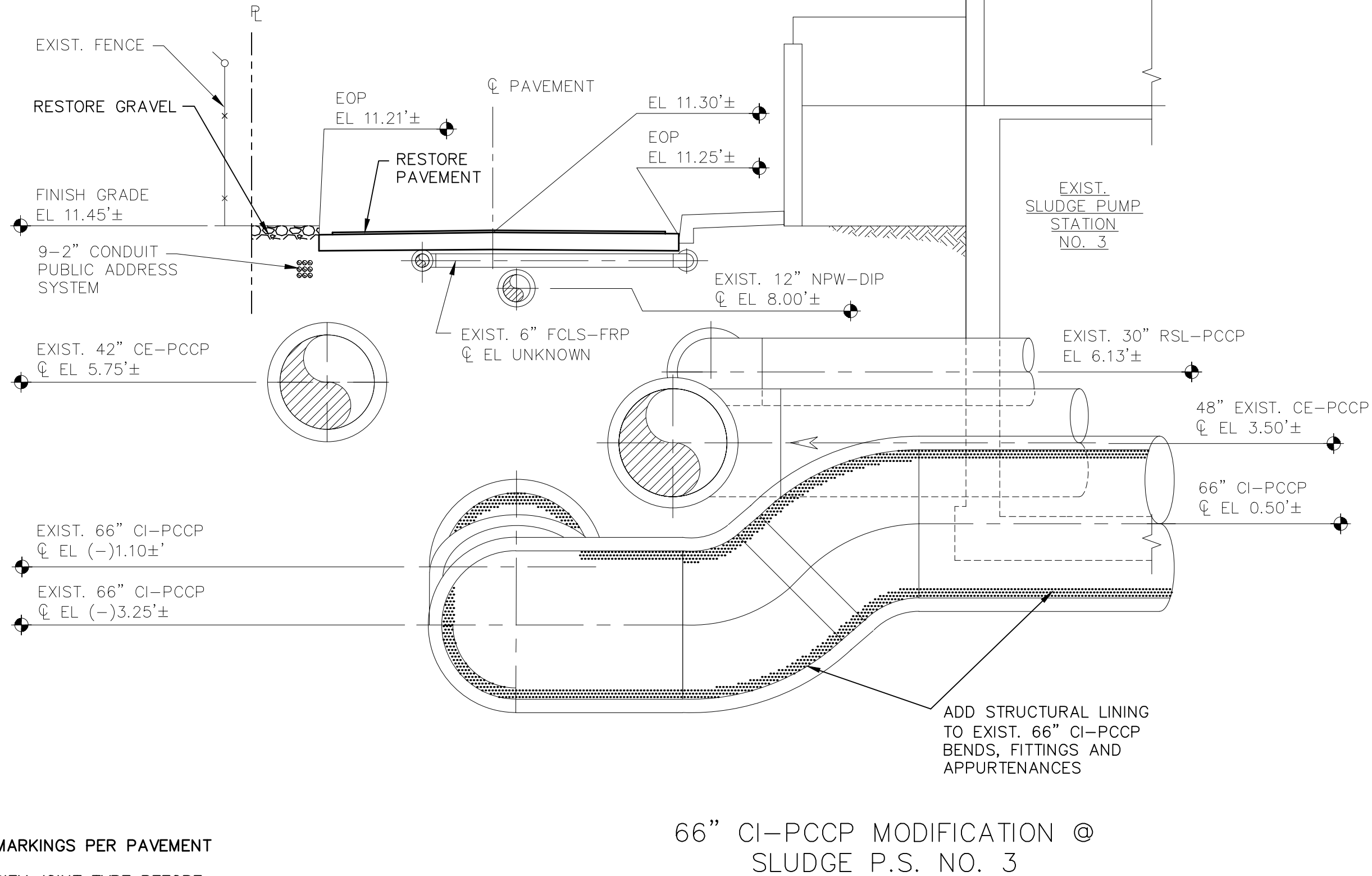
PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT

MODIFICATION SECTIONS

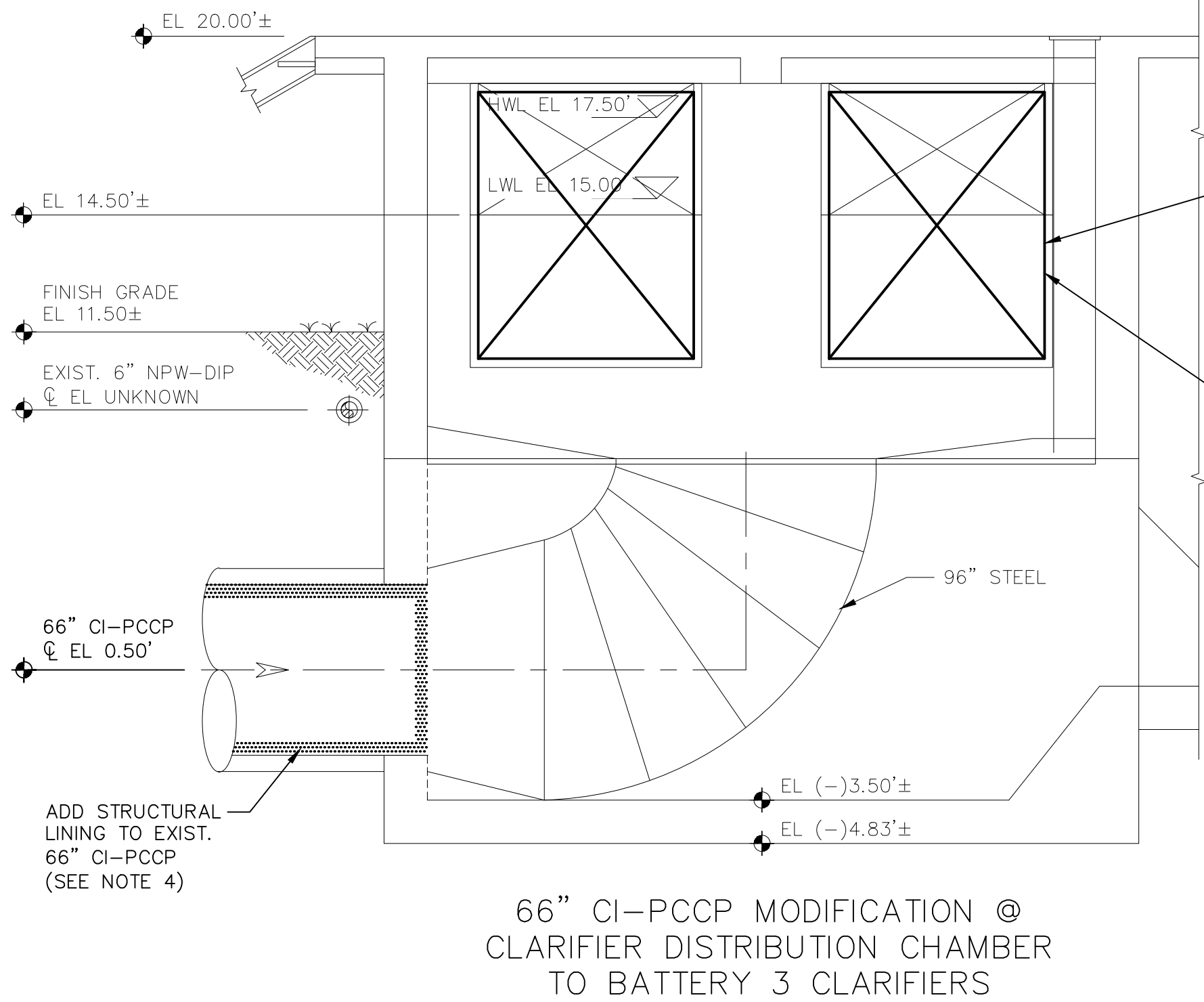
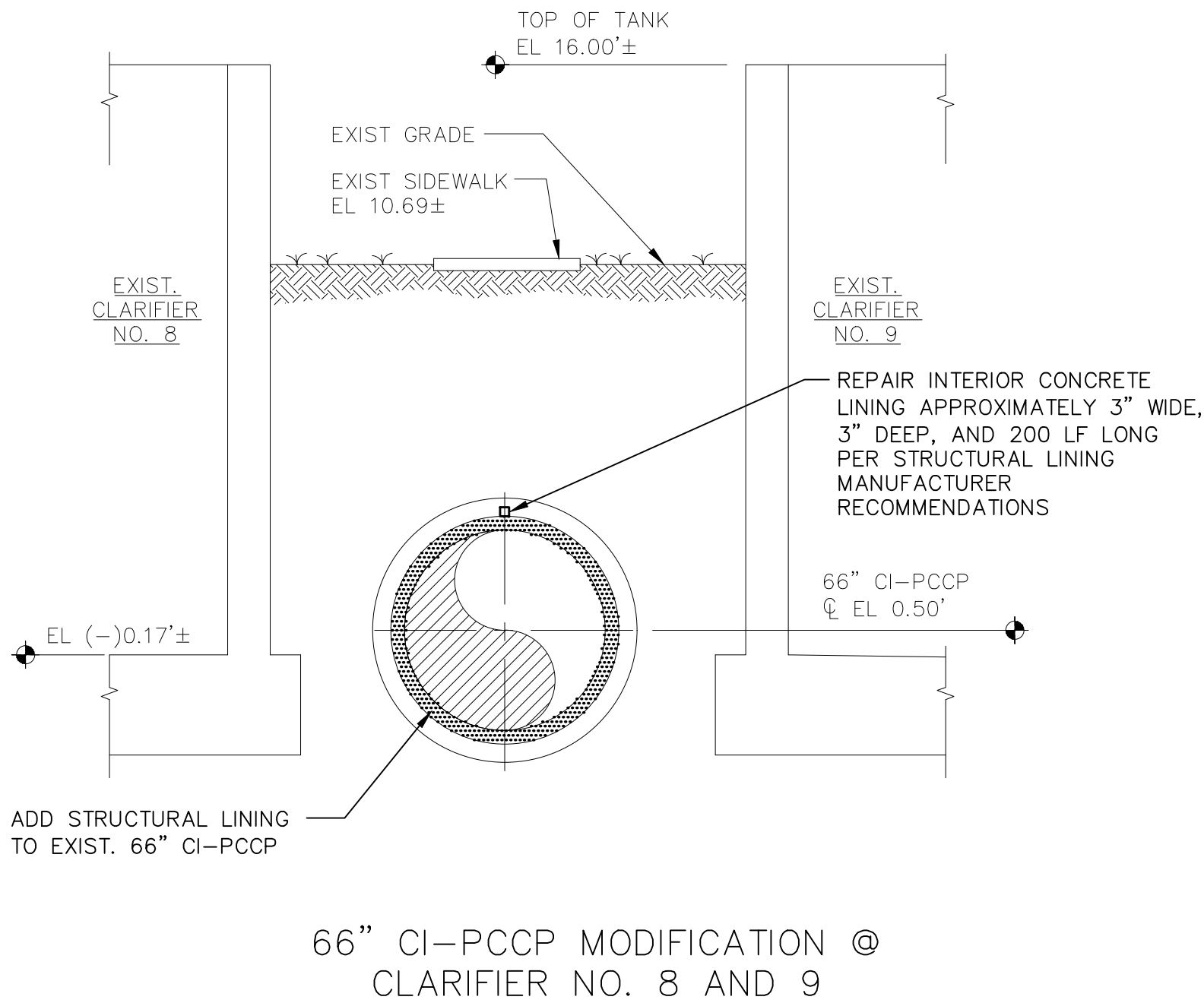
SHEET NO.	OF
C-21	21
TOTAL:	34
CAD FILE:	
11773-C21-SECT	
DRAWING FILE NO.	
4-136-67	



- NOTES:
1. RESTRAIN ALL JOINTS.
 2. RESTORE ROAD BASE, ASPHALT, AND MARKINGS PER PAVEMENT SPECIFICATIONS AND SHEET C-16.
 3. CONTRACTOR SHALL POT-HOLE TO VERIFY JOINT TYPE BEFORE SELECTING PCCPxDI ADAPTER AND SUBMITTING FOR APPROVAL.
 4. TERMINATE STRUCTURAL LINING AT EACH PIPE END PER MANUFACTURER RECOMMENDATION.



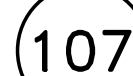
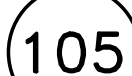
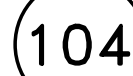
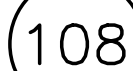
TEMPORARY STEEL PLATE
(SEE PICTURE) WEDGED INTO
CONCRETE OPENING, (TYP OF 4)
HEAVILY CAULKED AROUND
PERIMETER TO STOP LEAKS INTO
WORK AREA. REMOVE TO PLACE
PIPE INTO SERVICE



BID SET

CDM Smith. PROJECT NO. 6017-234728B

DWG: C:\pwworking\11773-C21-SECT.dwg USER: nunesd
DATE: 04/12/2019 12:28:00 XREFS: MAESTRO
pw:\pw.cdmsmith.com\p11773\Documents\6017-234728\04 Design Services NM_Bid_B\02 Civil\10 CAD\



2' For 8' Joints Of Pipe
2.5' For 12' Joints Of Pipe

1'-0"
2'-0"

SIDE VIEW

A curved cut is acceptable — provided the control dimension is maintained (Typical For Elliptical & Round Pipe)

OPTION B – ROUND OR ELLIPTICAL PIPE

CDM Smith. PROJECT NO. 6017-234728B

107

BID SET

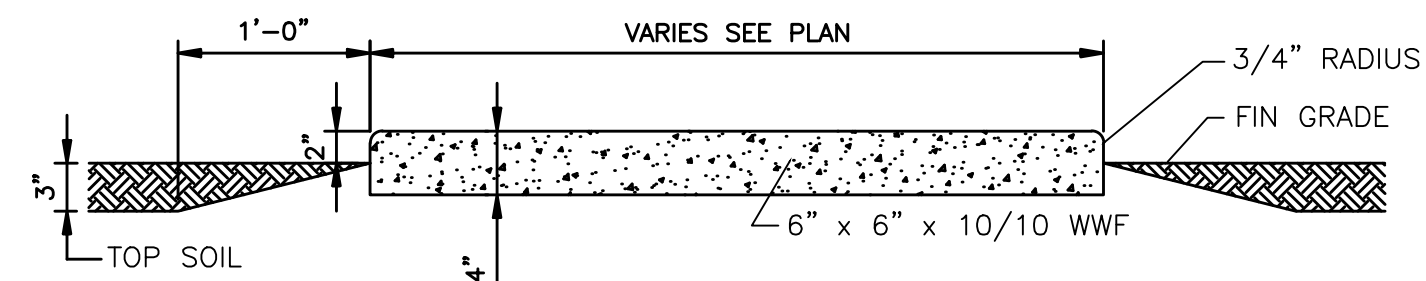
SHEET NO.	OF
CD-1	4
TOTAL:	34
CAD FILE: 11773-CD4-DETL	
DRAWING FILE NO. 4-136-67	

BID SET

PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT

STANDARD DETAILS

D 2

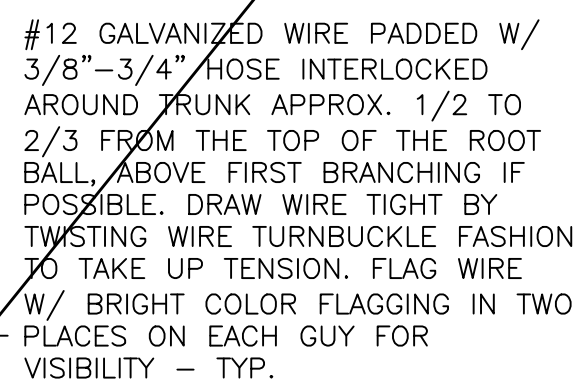


SIDEWALK REINSTATEMENT

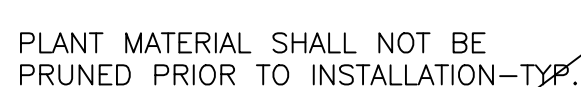
NOTES:

1. ALL EXISTING SIDEWALKS DEMOLISHED, CUT OR DAMAGED DUE TO THE MAINS INSTALLATION SHALL BE REINSTATED TO MATCH THE EXISTING SIDEWALK IN BOTH WIDTH, THICKNESS AND TOP ELEVATIONS.
2. WHERE THE EXISTING SIDEWALK IS TO BE REINSTATED THE SIDEWALK SHALL BE NEATLY SAWCUT AND A 1/4" EXPANSION JOINT PROVIDED BETWEEN EXISTING WORK AND NEW WORK.
3. CONCRETE STRENGTH FOR REINSTATED SIDEWALK TO BE 2500 PSI AT 28 DAYS.
4. EXISTING SIDEWALK IS TO BE REINSTATED AT ALL LOCATIONS WHERE MAINS ARE INDICATED TO BE INSTALLED UNDER OR ACROSS THE SIDEWALK.
5. THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO AVOID DAMAGE TO EXISTING SIDEWALKS WHERE THE MAINS ARE TO BE INSTALLED PARALLEL WITH THE SIDEWALK.
6. AT LOCATIONS WHERE MAINS ARE TO BE INSTALLED PARALLEL WITH AN EXISTING SIDEWALK AND THE SIDEWALK IS DAMAGED DUE TO CONSTRUCTION THE EXTENT OF SIDEWALK RE-INSTALLMENT SHALL BE DETERMINED BY THE ENGINEER.
7. THE MINIMUM LENGTH OF DAMAGED SIDEWALK TO BE REPLACED SHALL COINCIDE WITH THE NEAREST FLAG AND/OR EXPANSION JOINTS ON BOTH SIDES OF THE DAMAGED AREA.
8. SIDEWALK SHALL BE 6 INCHES THICK, OR 4 INCHES WITH MESH, AT DRIVEWAYS.

FLAG AND EXPANSION JOINT (120)



TREE DETAIL (121)



NOTE:
REMOVE BURLAP FROM TOP OF
ROOT BALL IF BALLED & BURLAP
MATERIAL IS USED-TYP.

MULCHED AREA (MIN. 1" LARGER DIAMETER THAN ROOT BALL). WHERE SHRUBS ARE SHOWN IN PLANTING BEDS, ENTIRE BED TO BE MULCHED - TYP.

~~PLANTING SOIL BACKFILL, WASHED IN
TO AVOID AIR POCKETS - TYP.~~

NOTE:
DISTURBED SHRUBBERY SHALL BE
REPLACED WITH SHRUBS OF THE
SAME SPECIES, SIZE, AND MATURITY.

SHRUB DETAIL (122)



SOD SHALL BE AS PER THE
PLANS W/ MIN. 2" OF TOP
SOIL-TYP.

~~MULCH, MIN. 2"
FINISH SLAB, IF
P.~~

MIN. 3"-TYP
MIN. 2"-TYP

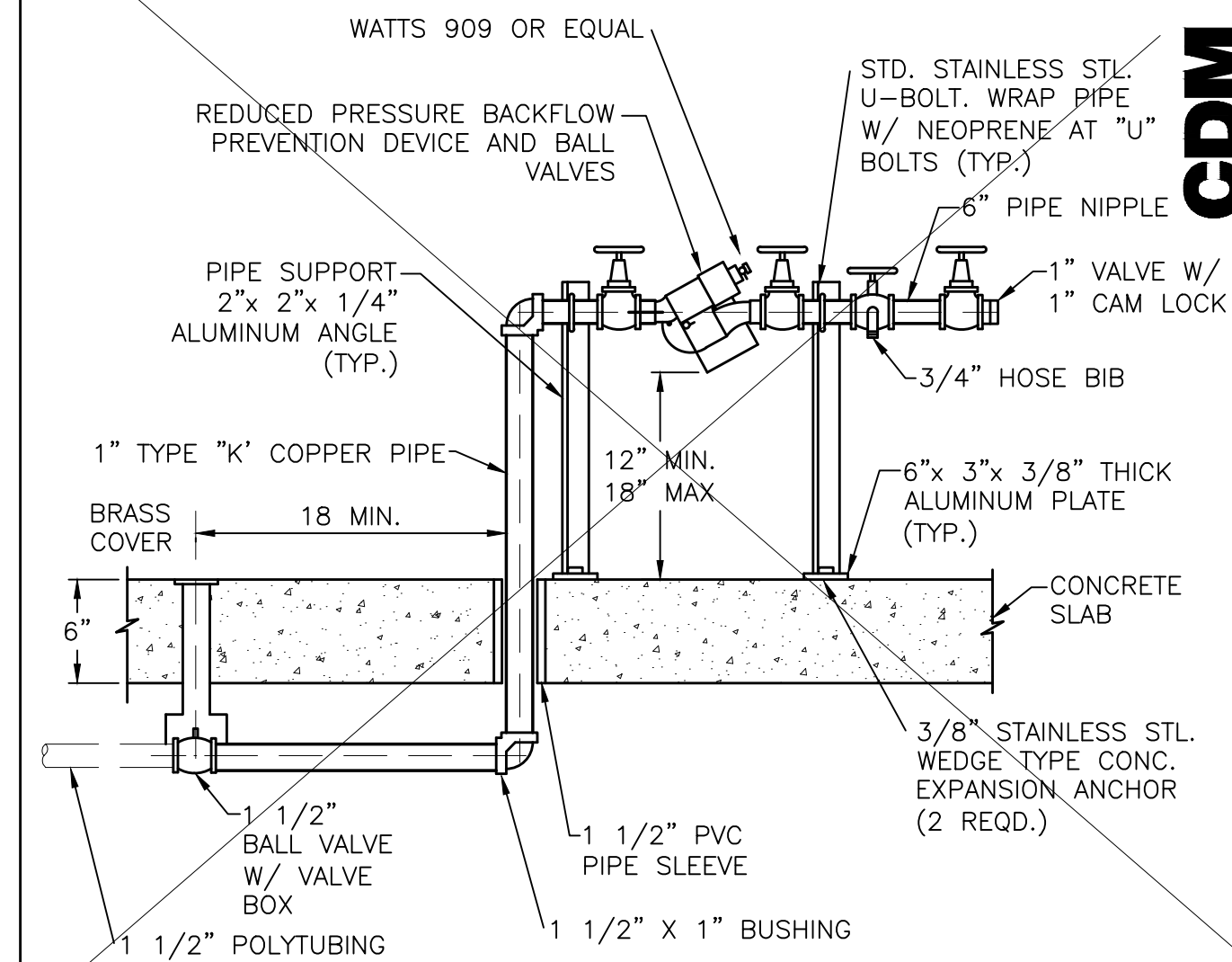
- CONCRETE
SLAB-TYP.

MIN. 8" CONTINUOUS LAYER —
PREPARED PLANT MIXTURE—TYP.

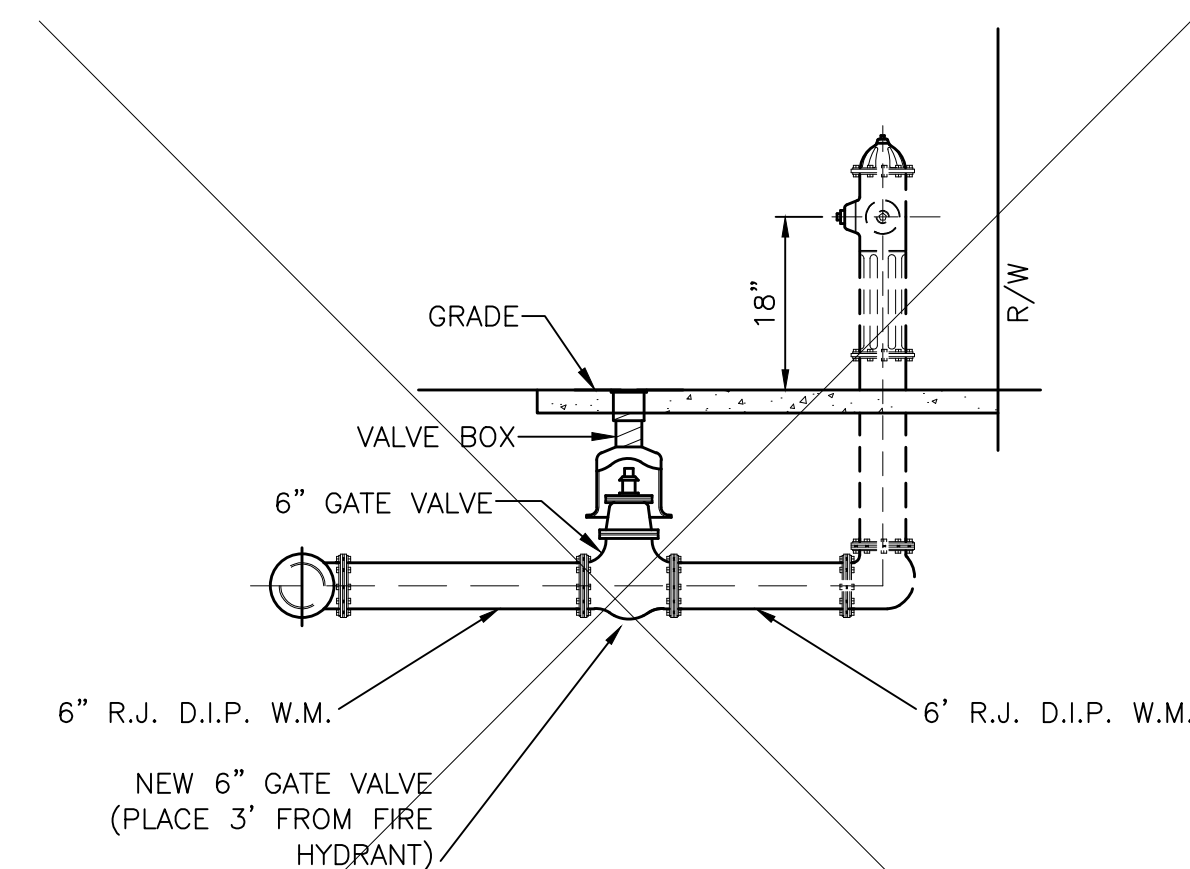
SOD AND GROUND COVER (123)



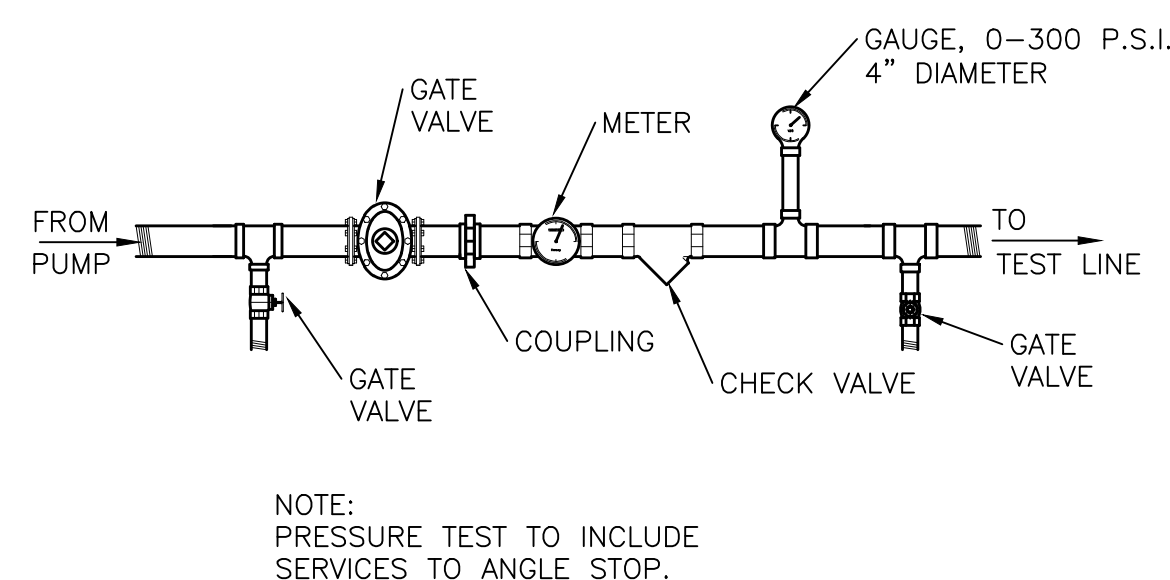
SOD INSTALLATION (124)



REDUCED PRESSURE BACKFLOW PREVENTER WITH HOSE CONNECTION FOR LIFT STATION (307)

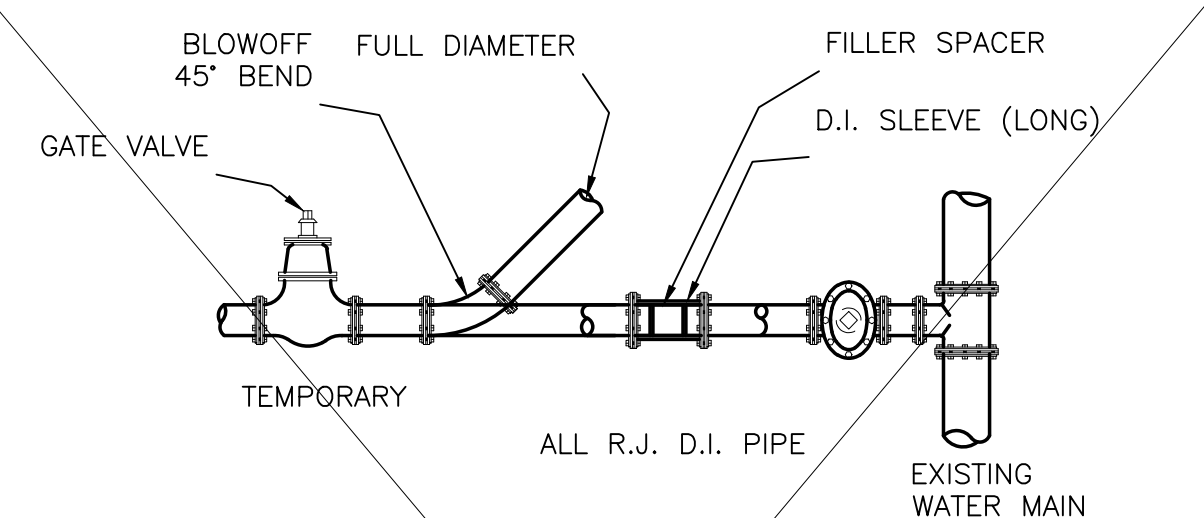


RELOCATE OR CONNECT
EXISTING FIRE HYDRANT

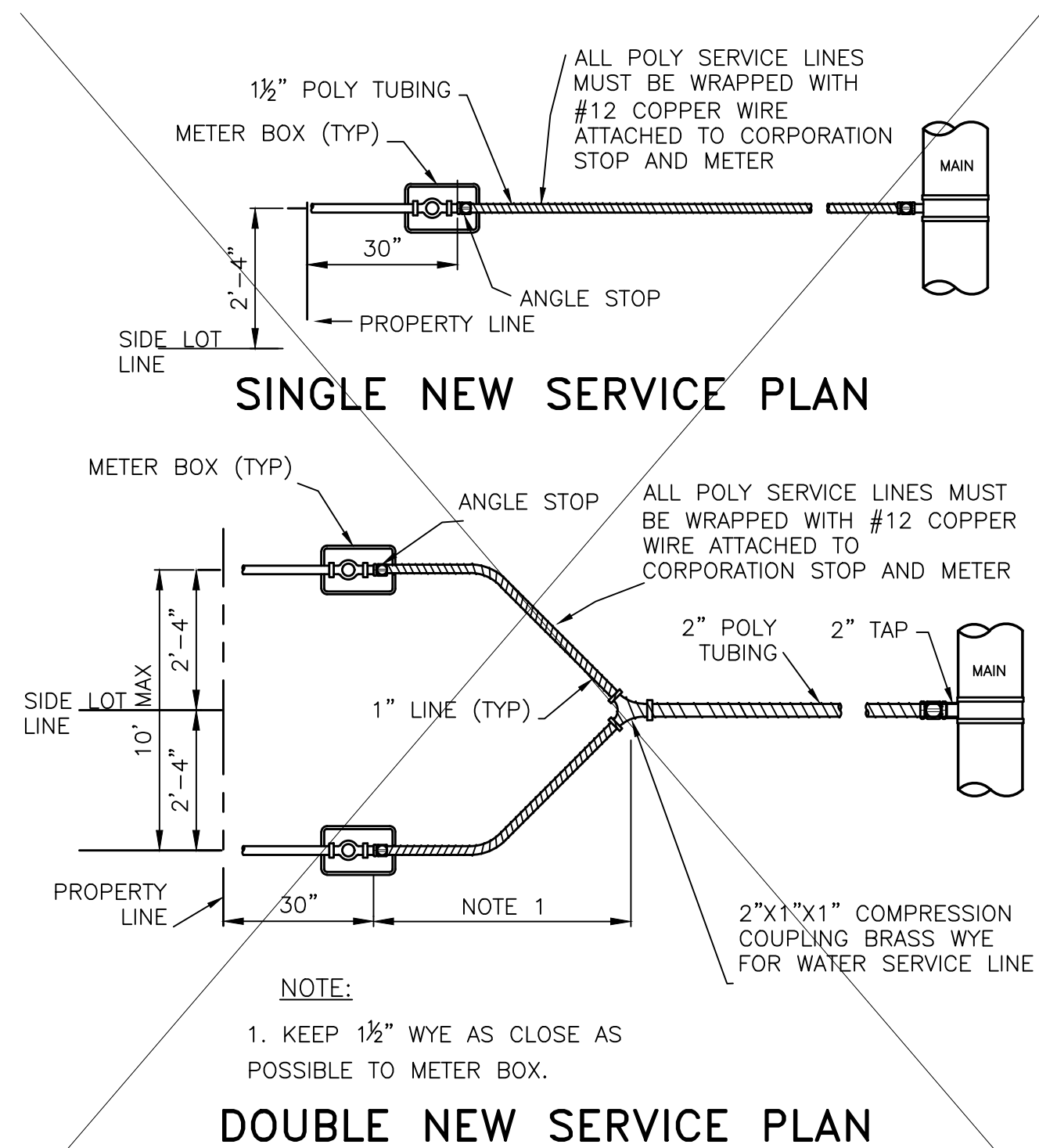


PRESSURE TEST DETAIL (306)

TYPICAL NEW FIRE HYDRANT ASSEMBLY INSTALLATION (302)



FLUSHING CONNECTION AND BLOW OFF DETAIL (303)

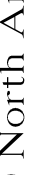


TYPICAL WATER SERVICE 301

State of Florida
Professional Engineer
License No. 48897

Timothy J. O'Neil, P.E.

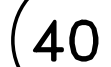
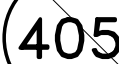
DRAWN BY: A. NUNES	DATE: 12-2014
DESIGNED BY: T. O'NEIL	SCALE: N/A
CHECKED BY: J. CHANDLER	
FIELD BOOK:	



CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
 100 North Andrews Avenue, Fort Lauderdale, Florida 33301

REVISIONS				
NO.	DATE	BY	CHK'D	DESCRIPTION
	3-2019	ALN	TJO	BID SET SEQUENCE B

PROJECT # P11773	
GT LOHMEYER LARGE DIAMETER INFLUENT PIPE REPLACEMENT	
STANDARD WATER DETAILS	
SHEET NO.	OF
CD-3	4
TOTAL:	34
CAD FILE: 11773-CD3-DETL	
DRAWING FILE NO. 4-136-67	

403

BID SET

PROJECT # P11773
GT LOHMEYER LARGE DIAMETER
INFLUENT PIPE REPLACEMENT

SHEET NO.	OF
CD-4	4
TOTAL:	34
CAD FILE: 11773-CD2-DETL	
DRAWING FILE NO. 4-136-67	

p. 27

BID NO. 12286-293 SPECIFIC REFERENCES FORM

Bidder shall submit proof of the construction of a minimum of 3 similar projects accumulating to at least 1,500LF of large diameter (36" or greater) ductile iron wastewater pipe on an operating wastewater treatment plant within the past 10 years. Include the owner's name, address, phone number, pipe diameters, and lengths

Note: Do not include proposed team members or parent/subsidiary companies as references in your submittals.

A. PRIME BIDDER'S NAME:

CLIENT NO.1 - Name of firm to be contacted:

Address:

Contact Person:

Phone No: ()

Contact E-Mail Address:

Project Performance Period: to

Dates should be in mm/yy format

Project Name:

Location of Project:

Description of the overall scope:

Description of work that was self-performed by Bidder:

	5
	6

CLIENT NO.2 - Name of firm to be contacted:

Address:

Contact Person:

Phone No: ()

Contact E-Mail Address:

Project Performance Period: to

Dates should be in mm/yy format

Project Name:

Location of Project:

Description of the overall scope:

	5
	6

Description of work that was self-performed by Bidder:

	5
	6

CLIENT NO.3 - Name of firm to be contacted:

Address:

Contact Person:

Phone No: ()

Contact E-Mail Address:

Project Performance Period: to

Dates should be in mm/yy format

Project Name:

Location of Project:

Description of the overall scope:

	5
	6

Description of work that was self-performed by Bidder:

	5
	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:	<input type="text"/>
Address of Firm:	<input type="text"/>
Telephone Number:	<input type="text"/>
Name of Person Completing Form:	<input type="text"/>
Title:	<input type="text"/>
Signature:	<input type="text"/>
Date:	<input type="text"/>
City Project Number:	<input type="text"/>
City Project Description:	<input type="text"/>

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

QUESTIONNAIRE SHEET

PLEASE PRINT OR TYPE:

Firm Name: President

Business Address:

<input type="text"/>	5
<input type="text"/>	6

Telephone:

Fax:

E-Mail Address:

What was the last project of this nature which you completed? Include the year, description, and contract value.

<input type="text"/>	5
<input type="text"/>	6

The following are named as three corporations and representatives of those corporations for which you have performed work similar to that required by this contract, and which the City may contact as your references (include addresses, telephone numbers and e-mail addresses). Include the project name, year, description, and contract value.

<input type="text"/>
<input type="text"/>
<input type="text"/>

How many years has your organization been in business?

Have you ever failed to complete work awarded to you; if so, where and why?

The name of the qualifying agent for the firm and his position is: Certificate of Competency Number of Qualifying Agent: Effective Date: Expiration Date: Licensed in: Engineering Contractor's License #

(County/State)

Expiration Date:

NOTE: To be considered for award of this contract, the bidder must submit a financial statement upon request.

NOTE: Contractor must have proper licensing and shall provide copy of same with his proposal.

QUESTIONNAIRE SHEET

1. Have you personally inspected the proposed work and have you a complete plan for its performance?

	5
	6

2. Will you sublet any part of this work? If so, list the portions or specialties of the work that you will.

a)

--

b)

--

c)

--

d)

--

e)

--

f)

--

g)

--

3. What equipment do you own that is available for the work?

	5
	6

4. What equipment will you purchase for the proposed work?

	5
	6

5. What equipment will you rent for the proposed work?

	5
	6

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:

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.

**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

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 is transitioning 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 payment fast and safely. No more waiting for checks to be printed and mailed.

In accordance with Article 7, item 7.6 of the contract, payments on this contract will be made utilizing the City's P-Card. 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.

Please indicate with which credit card you prefer to be paid:

☐ Master Card

☐ Visa Card

Company Name:

Signature:

Print Name Title:

CONSTRUCTION BID 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 ☐

If a corporation, state the name of the President, Secretary and Resident Agent. If a partnership, state the names of all partners. If a trade name, state the names of the individuals who do business under the trade name.

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Name	Title	Name	Title
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Name	Title	Name	Name

ADDENDUM ACKNOWLEDGEMENT - Bidder acknowledges that the following addenda have been received and are included in the bid:

Addendum No.	Date Received	Addendum No.	Date Received	Addendum No.	Date Received	Addendum No.	Date Received
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

VARIANCES: If you take exception or have variances to any term, condition, specification, or requirement in this bid you must specify such variance in the space provided below or reference in the space provided below all variances contained on other pages within your bid. Additional pages may be attached if necessary. No variances will be deemed to be part of the bid submitted unless such is listed and contained in the space provided below. The City does not, by virtue of submitting a variance, necessarily accept any variances. If no statement is contained in the below space, it is hereby implied that your response is in full compliance with this competitive solicitation. If you do not have variances, simply mark N/A. If submitting your response electronically through BIDS SYNC you must also click the "Take Exception" button.

The below signatory affirms that he has or will obtain all required permits and licenses from the appropriate agencies, and that his firm is authorized to do business in the State of Florida. The below signatory agrees to furnish all labor, tools, material, equipment and supplies, and to sustain all the expense incurred in doing the work set forth in strict accordance with the bid plans and contract documents at the unit prices indicated if awarded a contract. The below signatory has not divulged to, discussed, or compared this bid with other bidders, and has not colluded with any other bidder or parties to this bid whatsoever. Furthermore, the undersigned guarantees the truth and accuracy of all statements and answers contained in this bid. The below signatory also hereby agrees, by virtue of submitting or attempting to submit a bid, that in no event shall the City's liability for bidder's direct, 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 protest ordinance contained in this competitive solicitation.

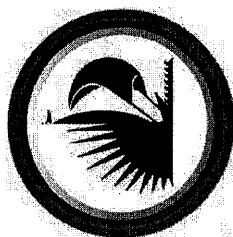
Submitted by:

Name (printed)

Date:

Signature

Date:



FINANCE DEPARTMENT

RFP EVALUATION COMMITTEE MEETING SIGN-IN SHEET



DATE: 05/20/2019

TIME: 10:00

☒ AM ☐ PM

OPENING DATE: 06/11/2019

PROCUREMENT CONTACT: James Hemphill

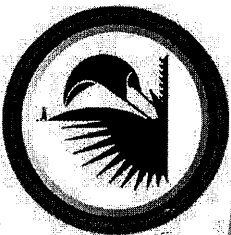
RFP#: 12286-293

RFP TITLE: G.T. Lohmeyer Wastewater Treatment Plant Rehab of PCCP (Sequence B)

NAME	COMPANY	PHONE	EMAIL
Bob Henning	Gianetti	954-972-8104	bob@giannethicorp.com
James Tilli	Lanzo	954-979-0802	estimating@lanzo.org
Victor Menocal	Richman Construction Inc.	305-770-8181	vmenocal@ric-man.com
Tim O'Neill	CDM Smith	954-319-3076	oneil TJ@cdmsmith.com
Michael Kotas	Kwikwrap	520 791 7000	mkotas@kwikwrap.com
LAYLA LEWELYN	CDM SMITH	305 433-1469	llewelyn11@cdmsmith.com
Gerald Soto	CDM Smith	561-571-3752	sotog@cdmsmith.com
Axel Rivera	City of Fort Lauderdale	954-828-5124	arivera@fortlauderdale.gov
James Hemphill	city	(904) 228-5743	jhemphill@fortlauderdale.gov

Form approved By: Jodi S. Hart, Chief Procurement Officer | Page: 1 of 1 | Rev: 3 | Revision Date: 4/16/2018 | Author: LP Q:

\\PURCHASING\\FINAL FORMS\\FINAL FORMS - ISO COMPLIANT\\Approved Forms\\RFP Documents_RFP Evaluation Comm Sign-In Sheet



FINANCE DEPARTMENT

RFP EVALUATION COMMITTEE MEETING SIGN-IN SHEET



PM AM

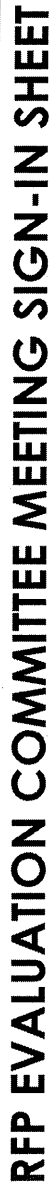
PROCUREMENT CONTACT: James Hemphill

G.T. Lohmeyer Wastewater Treatment Plant Rehab of PCCP (Sequence B)

[illegible]

Form approved By: Jodi S. Hart, Chief Procurement Officer | Page: 1 of 1 | Rev: 3 | Revision Date: 4/16/2018 | Author: LP Q:

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\\PURCHASING\FINAL FORMS\FINAL FORMS - ISO COMPLIANT\Approved Forms\RFP Documents_RFP Evaluation Comm Sign-In Sheet



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purchase@fortlauderdale.gov

ITB #12286-293
G.T. LOHMEYER WASTEWATER TREATMENT PLANT REHAB. OF PCCP (SEQUENCE B)
TITLE

ADDENDUM NUMBER 1

DATE 6/7/2019

The following Addendum is hereby made a part of the Plans and Specifications and shall be included with all contract documents:

Acknowledge receipt of this Addendum by inserting its number and date on the Construction Bid Certification.
All changes are in bold, red italics.

- 1. REVISE: Bid due date has changed to June 18, 2019 – 2:00 PM local time**

All other terms, conditions, and specifications remain unchanged.

James T. Hemphill
Senior Procurement Specialist

Company Name: _____

(please print)

Bidder's Signature: _____

Date: _____



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ITB #12286-293
G.T. LOHMEYER WASTEWATER TREATMENT PLANT REHAB. OF PCCP (SEQUENCE B)
TITLE

ADDENDUM NUMBER 2

DATE 6/12/2019

The following Addendum is hereby made a part of the Plans and Specifications and shall be included with all contract documents:

Acknowledge receipt of this Addendum by inserting its number and date on the Construction Bid Certification.
All changes are in bold, red italics.

1. Specification Section 13030.1.04.F.11: **Delete the following sentence without replacement. "Full Scale Testing Validation Report that documents pressure testing on 48in diameter or greater pipeline under pressures of at least 100 psi."**
2. Specification section 13030.3.03.A: Change the first sentence to read as follows: **"In addition to the CFRP installer inspections, CFRP system shall be independently inspected during all phases of construction by the City inspector"**.
3. Specification Section 13030.3.03.D.1: Change the sentence to read as follows: **"If water infiltration is noticed, inject hydrophilic grout behind the host pipe to stop flow of water. Assume 200 linear feet of inject hydrophilic grout."**
4. Specification Section 13030.3.03.D.2: **Delete the following sentence without replacement. "Prepare, fill, prime and treat 16 pipe joints; and 200 linear feet of cracks in the crown of the host pipe wall-as required- approximately 3-inch wide by 3-inch deep, per detail 3 on C-21 of the drawings."**
5. Specification Section 13030.3.03.D.3: Change the sentence to read as follows: **"Fill all visible cracks in the host pipe wall with an epoxy repair grout compatible with the host steel pipe material. Assume 200 linear feet of inject hydrophilic grout."**
6. The following are Questions submitted by the deadline date, and City Responses made a part of this Addendum:

Overall Bid Questions



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Question 1

Is there a budget or cost estimate for this project? (**Submitted: May 9, 2019 10:32:27 AM EDT**)

Answer

- Between 4-5 Million (**Answered: May 9, 2019 11:40:46 AM EDT**)

Question 2

is a bid bond required? (**Submitted: May 10, 2019 8:19:48 AM EDT**)

Answer

- Yes (**Answered: May 29, 2019 4:57:42 PM EDT**)

Question 3

In Specification section 13030 Part 1 1.02B. The current ANSI/AWWA C305-18 Standard for CFRP Renewal and Strengthening of Prestressed Concrete Cylinder Pipe (PCCP) is not listed and should be used to govern the materials, design, installation and QA/QC of the CFRP system. Will this Standard be enforced as a guide to the specification? (**Submitted: May 13, 2019 10:17:20 AM EDT**)

Answer

- The design requirements for this project will be those discussed in 13030.2.01 and 2.02. (**Answered: May 16, 2019 5:12:02 PM EDT**)

Question 4

In Specification Section 13030 Part 1 102.B you list ASCE 7-05 and ACI 440.2R-08 standards. These standards apply to above ground strengthening of columns, beams, slabs, shear walls, etc. and do not apply to strengthening PCCP pipe.

The Design shall be in strict accordance with the AWWA C305 Standard. No modifications to this standard are allowed in design or installation as per the AWWA standard. Will there be modifications to the current specification 13030? (**Submitted: May 13, 2019 10:29:55 AM EDT**)

Answer



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- Refer to specification section 13030.1.02.B which reads as follows:
The following standards will be used to design the CFRP liner, and the extent to which each applies will be identified in calculation packages:

In other words, if a standard is not going to be used by the designer, then it would not be identified in their calculations. **(Answered: May 16, 2019 5:12:02 PM EDT)**

Question 5

What submittals are due at time of bid to qualify/verify CFRP materials, designers and installers? The current industry standards for CFRP renewal/strengthening of PCCP requires All items listed in this specification for experience shall be submitted with bid with the following experience requirements:

CFRP System MANUFACTURER shall have in place a minimum of thirty (30) CFRP composite systems used for internal water pipeline rehabilitation including CFRP layers and epoxy within the past three (3) years.

The CFRP INSTALLER must be certified by the MANUFACTURER and have completed a minimum of thirty (30) independent installations of CFRP involving internal pipe rehabilitation projects in the past three years.

Designer: Written documentation with client contact information showing successful design of an internally applied CFRP rehabilitation system on a minimum of fifty (50) independent pipe rehabilitation projects within the past five years. **(Submitted: May 13, 2019 10:51:45 AM EDT)**

Answer

- Special Condition 08, Specific Experience Required, requires the bidder to submit with the bid, proof of construction experience for a minimum of 3 projects of similar scope and scale.

Please note that this project consisting of temporary bypass pumping design, trenching support design, dewatering design, internally bonded carbon fiber reinforced polymer lining design, open cut large pipe replacement, restoration, etc **(Answered: May 29, 2019 4:57:42 PM EDT)**

Question 6

Will you consider CFRP for all work, in lieu of replacement? **(Submitted: May 13, 2019 12:59:54 PM EDT)**

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Answer

- No.

However, an installation inspector is required for the QA/QC per specification section 13030.1.04.E

Also, please delete the first sentence and add the following replacement sentence of specification section 13030.3.01.A; "In addition to the CFRP installer inspections, CFRP system shall be independently inspected during all phases of construction by the City inspector." • **(Answered: May 29, 2019 4:54:07 PM EDT)**

Question 7

Does the bypass supplier have to be submitted at time of bid? **(Submitted: May 21, 2019 10:47:57 AM EDT)**

Answer

- No.

Please also read the answer to question #5 for bid time submittal requirements. **(Answered: May 29, 2019 4:54:07 PM EDT)**

Question 8

With regards to the 66" PCCP strengthening with CFRP materials (spec section) scope of work, can you please clarify the length of pipe that requires rehabilitation? If you would like us base the pipe length on the drawings provided with the bid, is it possible to request additional drawings with pipe length dimensions or pipe stations? **(Submitted: May 22, 2019 8:42:54 PM EDT)**

Answer

- Referencing the Invitation to Bid which reads in part "approximately 170 linear feet of 66-inch diameter PCCP to be structurally lined." • The "approximately 170" • should read "approximately 200" • .

The City does not have the original laying schedule of the PCCP.

Please base the lengths of pipe based on your take-off from the bid

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drawings. (Answered: May 29, 2019 4:54:07 PM EDT)

Question 9

We would very much so like to pursue the G.T. Lohmeyer WTP Rehab of PCCP (Sequence B), but we would be found non-responsive if low bidder due to our company not having three projects that included 1,500 LF or greater of 36" or larger DI piping. We feel that this requirement is excluding a licensed and qualified contractor, that has the resources and equipment to perform the scope of work designed, from being able to receive award on this project.

Would the City be willing to modify the specific experience requirement in such a way that would still protect the owner from receiving bids from unqualified firms, but open the door to firms that have done this type of work for many years with many similar projects to the scope of work being solicited? (Submitted: May 29, 2019 5:02:15 PM EDT)

Answer

- City shall keep the current requirement of Special Condition 08, Specific Experience Required, which requires the bidder to submit with the bid, proof of construction experience for a minimum of 3 projects of similar scope and scale.

Note that this project consists of temporary bypass pumping design, trenching support design, dewatering design, internally bonded carbon fiber reinforced polymer lining design, open cut large pipe replacement, restoration, etc. (Answered: May 29, 2019 5:03:43 PM EDT)

Question 10

Please elaborate on full-scale testing outlined in Specification Section 13030, Part 1.04/F, item 11. Is there a reference standard or guideline for this test? Does it have to be carried out by third party? Is it required for the approved products? (Submitted: May 30, 2019 11:18:43 AM EDT)

Answer

- A full-scale testing validation report is not required for this project (Answered: Jun 12, 2019 12:06:10 PM EDT)

Question 11

Is there a requirement for coating of the CFRP system? Typical for sewer applications would be a chemical and abrasive resistant coating, such as novolac epoxy. (Submitted: May 30, 2019 11:23:05 AM EDT)



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Answer

- Yes, 13030.2.01.6. requires a top coat applicable to direct exposure to wastewater effluent. Manufacturer and their designer recommendations shall govern. City agrees that a chemical and abrasive resistant coating, such as Novolac epoxy, or equal, would be typical. **(Answered: Jun 12, 2019 12:06:10 PM EDT)**

Question 12

In addition to GC's, are subcontractors also required to possess a contractor license, a certified underground utility and excavation contractor licenses, or a certified "Plant Construction" License issued by the Florida Department of Business and Professional Regulation? **(Submitted: May 31, 2019 5:37:34 PM EDT)**

Answer

- City's "Invitation to Bid" • lists the licensing requirements for the Contractor. The draft Construction Agreement, Article 1.12 defines "Contractor" • to include subcontractors. Qualification requirements are further identified within various specification sections. **(Answered: Jun 12, 2019 12:06:10 PM EDT)**

Question 13

In the bid documents, part 3.03 D Execution, states: "Contractor shall repair all flaws and cracks in the host pipe wall that may compromise the performance of the CFRP system." And "If water infiltration is noticed, inject hydrophilic grout behind the host pipe to stop flow of water." Due to the difficulty in estimating the cost of these unknowns, would it be allowable to quote the work based on time and material or per unit price? **(Submitted: Jun 3, 2019 11:42:52 AM EDT)**

Answer

- City shall keep the current lump sum bid item No. 3. Quantity of repair work will be added to the specification section as part of the base bid, via addendum. **(Answered: Jun 12, 2019 12:06:10 PM EDT)**

Question 14

Will the City be able to provide accurate locate marks of existing utilities or will the Contractor be required to do its own locating/GPR to locate the numerous known and unknown existing utilities within the corridor of the 66" pipe as well as where the bypass piping will be buried? **(Submitted: Jun 3, 2019 2:17:29 PM EDT)**



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Answer

- Contractor is responsible for locating all existing utilities and verifying all existing conditions. **(Answered: Jun 5, 2019 10:30:27 AM EDT)**

Question 15

Within the corridor of the 66" pipe replacement there are several known existing utilities that will need to be removed to install the new pipeline. I.E. –FCLS, OCLS, NPW, PW, and Public Address System. Will the City please clarify which one of these systems need to remain in service with a temporary system during the install of the 66" pipe and which systems can be shut down until construction is complete. Please also clarify how long the systems can be shutdown. **(Submitted: Jun 3, 2019 2:18:06 PM EDT)**

Answer

- Existing utilities (included those listed in this question) will need to remain in service during installation of the open-cut DIP with either a temporary system or protected in-place from damage. **(Answered: Jun 12, 2019 12:06:10 PM EDT)**

Question 16

Due to the width restrictions of the pipe corridor and the weight of the pipes being removed and installed, there will be a need to use a crane to install the pipe. Is the City aware of any restriction associated with the use of a crane onsite? **(Submitted: Jun 3, 2019 2:18:34 PM EDT)**

Answer

- There are no restrictions **(Answered: Jun 5, 2019 10:30:27 AM EDT)**

Question 17

Where can the Contractor get power for the flow meters on the Bypass system? **(Submitted: Jun 3, 2019 2:18:51 PM EDT)**

Answer

- This is means and methods of the Contractor. **(Answered: Jun 5, 2019 10:30:27 AM EDT)**

Question 18

Can the City extend the work hours to 7am to 7pm without charging the contractor for



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inspector OT charges? (**Submitted: Jun 3, 2019 2:19:08 PM EDT**)

Answer

- No. (**Answered: Jun 5, 2019 10:30:27 AM EDT**)

Question 19

02659 – Temporary By-Pass Pumping Systems – 3.02 Field Testing states that a minimum seven-day operational test will be required for the bypass system. The previous contract required a 24-hour period. 7 days of operational test period seems excessive and will result in a substantial unnecessary expense. Please clarify if this was the intent. (**Submitted: Jun 3, 2019 2:19:35 PM EDT**)

Answer

- 02659.3.02 Field testing will remain as specified for the 7-days. (**Answered: Jun 12, 2019 12:06:10 PM EDT**)

Question 20

Will the Pump Watch be required during the 7-day operational Test period? (**Submitted: Jun 3, 2019 2:19:51 PM EDT**)

Answer

- Yes, the pump will be watched during the 7-day operational test period in accordance with specification section 02659.1.08.D and 1.01.E (**Answered: Jun 12, 2019 12:06:10 PM EDT**)

Question 21

Can the City provide an as built for the NPW and PW line within the project area, this will be necessary to ensure that proper temporary service is reinstated if/when a temporary bypass is needed. (**Submitted: Jun 3, 2019 2:20:05 PM EDT**)

Answer

- This information can be provided after contract award (**Answered: Jun 5, 2019 10:30:27 AM EDT**)

Question 22

The project documents reference Builders Risk Insurance. This does not seem to be necessary for this work, will Builders Risk be required? (**Submitted: Jun 3, 2019 2:20:20 PM EDT**)



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Answer

- Insurance requirements for this project are indicated in the Special Conditions Section, Item 10. There is no requirement for Builders Risk. (Answered: Jun 5, 2019 10:30:27 AM EDT)

Question 23

Please confirm if all above ground, existing 48" DIP is to be painted, whether replaced as part of this project or not. (Submitted: Jun 3, 2019 2:20:34 PM EDT)

Answer

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Question 24

1. Please note the above ground 48" flange pipe is sitting inches from the ground and inches from the wall of the reactor building. There is approximately 25% of the pipe that is inaccessible. How does the City intend to treat this inaccessible portion of the pipe? (Submitted: Jun 3, 2019 2:20:57 PM EDT)

Answer

- Areas of the pipe exterior that cannot be reached will not be painted. (Answered: Jun 12, 2019 12:06:10 PM EDT)

Question 25

Special Conditions Section 09. Bid Allowance shows a breakdown for \$240,000.00 in bid allowance. There is a note that states "The City will add this allowance to your bid". Will this additional \$240,000.00 be included in the contract amount and thus be required to be included in the bond for the project? Does this amount need to be built into a specific pay item by the Contractor? (Submitted: Jun 3, 2019 2:21:14 PM EDT)

Answer

- 1. Yes the allowance will be included in the contract amount.
2. The bond is required for the full contract amount.
3. No the allowances will be listed individually on the pay estimate line items and the Unit will be AL for Allowance. (Answered: Jun 5, 2019 10:30:27 AM EDT)

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**Question 26**

What type of coupling device will be used to connect the existing 48" above ground DIP to the new above ground DIP? Will the City accept making the connection with a dresser coupling as it is currently connected?(Submitted: Jun 3, 2019 2:21:32 PM EDT)

Answer

- Replacing the 48-inch diameter above ground pipe plain-end to plain-end connection with an in-kind coupling is acceptable. (Answered: Jun 12, 2019 12:06:10 PM EDT)

Question 27

Does all of the new 42", 48", and 64" pipe need to be restrained, including the PCCP x DIP adapters? (Submitted: Jun 3, 2019 2:21:52 PM EDT)

Answer

- Yes. All joints including the PCCP x DIP adapter shall be restrained. (Answered: Jun 12, 2019 12:06:10 PM EDT)

All other terms, conditions, and specifications remain unchanged.

James T. Hemphill
Senior Procurement Specialist

Company Name: _____

(please print)

Bidder's Signature: _____

Date: _____



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ITB #12286-293
G.T. LOHMEYER WASTEWATER TREATMENT PLANT REHAB. OF PCCP (SEQUENCE B)
TITLE

ADDENDUM NUMBER 3

DATE 6/17/2019

The following Addendum is hereby made a part of the Plans and Specifications and shall be included with all contract documents:

Acknowledge receipt of this Addendum by inserting its number and date on the Construction Bid Certification.
All changes are in bold, red italics.

1. The following statement has been added to the response to Question 12:

The Licensing Requirements state “as appropriate, is required for this project” The City has no contractual relationship with the Contractor’s subcontractors, which is why the Prime Contractor is required to have these licenses. If a subcontractor is performing work that is unrelated to underground utility and excavation, or “Plant Construction”, then no, the subcontractor would not need to be licensed the same as the Prime Contractor and the sub would refer to the individual spec sections for qualification requirements. However if the Prime Contractor subs out the excavation or underground utility work then that sub would need to be licensed for the work.

All other terms, conditions, and specifications remain unchanged.

James T. Hemphill
Senior Procurement Specialist

Company Name: _____
(please print)
Bidder's Signature: _____
Date: _____

Question and Answers for Bid #12286-293 - G.T. Lohmeyer Wasterwater Treatment Plant Rehab of PCCP (Sequence B)

Overall Bid Questions

Question 1

Is there a budget or cost estimate for this project? (Submitted: May 9, 2019 10:32:27 AM EDT)

Answer

- Between 4-5 Million (Answered: May 9, 2019 11:40:46 AM EDT)

Question 2

is a bid bond required? (Submitted: May 10, 2019 8:19:48 AM EDT)

Answer

- Yes (Answered: May 29, 2019 4:57:42 PM EDT)

Question 3

In Specification section 13030 Part 1 1.02B. The current ANSI/AWWA C305-18 Standard for CFRP Renewal and Strengthening of Prestressed Concrete Cylinder Pipe (PCCP) is not listed and should be used to govern the materials, design, installation and QA/QC of the CFRP system. Will this Standard be enforced as a guide to the specification? (Submitted: May 13, 2019 10:17:20 AM EDT)

Answer

- The design requirements for this project will be those discussed in 13030.2.01 and 2.02. (Answered: May 16, 2019 5:12:02 PM EDT)

Question 4

In Specification Section 13030 Part 1 102.B you list ASCE 7-05 and ACI 440.2R-08 standards. These standards apply to above ground strengthening of columns, beams, slabs, shear walls, etc. and do not apply to strengthening PCCP pipe.

The Design shall be in strict accordance with the AWWA C305 Standard. No modifications to this standard are allowed in design or installation as per the AWWA standard. Will there be modifications to the current specification 13030? (Submitted: May 13, 2019 10:29:55 AM EDT)

Answer

- Refer to specification section 13030.1.02.B which reads as follows:

The following standards will be used to design the CFRP liner, and the extent to which each applies will be identified in calculation packages:

In other words, if a standard is not going to be used by the designer, then it would not be identified in their calculations. (Answered: May 16, 2019 5:12:02 PM EDT)

Question 5

What submittals are due at time of bid to qualify/verify CFRP materials, designers and installers? The current industry standards for CFRP renewal/strengthening of PCCP requires All items listed in this specification for experience shall be submitted with bid with the following experience requirements:

CFRP System MANUFACTURER shall have in place a minimum of thirty (30) CFRP composite systems used for internal water pipeline rehabilitation including CFRP layers and epoxy within the past three (3) years.

The CFRP INSTALLER must be certified by the MANUFACTURER and have completed a minimum of thirty (30) independent installations of CFRP involving internal pipe rehabilitation projects in the past three years.

Designer: Written documentation with client contact information showing successful design of an internally applied CFRP rehabilitation system on a minimum of fifty (50) independent pipe rehabilitation projects within the past five years. (Submitted: May 13, 2019 10:51:45 AM EDT)

Answer

- Special Condition 08, Specific Experience Required, requires the bidder to submit with the bid, proof of construction experience for a minimum of 3 projects of similar scope and scale.

Please note that this project consisting of temporary bypass pumping design, trenching support design, dewatering design, internally bonded carbon fiber reinforced polymer lining design, open cut large pipe

replacement, restoration, etc (Answered: May 29, 2019 4:57:42 PM EDT)

Question 6

Will you consider CFRP for all work, in lieu of replacement? (Submitted: May 13, 2019 12:59:54 PM EDT)

Answer

- No.

However, an installation inspector is required for the QA/QC per specification section 13030.1.04.E

Also, please delete the first sentence and add the following replacement sentence of specification section 13030.3.01.A; **In addition to the CFRP installer inspections, CFRP system shall be independently inspected during all phases of construction by the City inspector.** (Answered: May 29, 2019 4:54:07 PM EDT)

Question 7

Does the bypass supplier have to be submitted at time of bid? (Submitted: May 21, 2019 10:47:57 AM EDT)

Answer

- No.

Please also read the answer to question #5 for bid time submittal requirements. (Answered: May 29, 2019 4:54:07 PM EDT)

Question 8

With regards to the PCCP strengthening with CFRP materials (spec section) scope of work, can you please clarify the length of pipe that requires rehabilitation? If you would like us base the pipe length on the drawings provided with the bid, is it possible to request additional drawings with pipe length dimensions or pipe stations? (Submitted: May 22, 2019 8:42:54 PM EDT)

Answer

- Referencing the Invitation to Bid which reads in part **approximately 170 linear feet of 66-inch diameter PCCP to**

be structurally lined. The **approximately 170** should read **approximately 200**.

The City does not have the original laying schedule of the PCCP.

Please base the lengths of pipe based on your take-off from the bid drawings. (Answered: May 29, 2019 4:54:07 PM EDT)

Question 9

We would very much so like to pursue the G.T. Lohmeyer WTP Rehab of PCCP (Sequence B), but we would be found **non-responsive** if low bidder due to our company not having three projects that included 1,500 LF or greater of 36" or larger DI piping. We feel that this requirement is excluding a licensed and qualified contractor, that has the resources and equipment to perform the scope of work designed, from being able to receive award on this project.

Would the City be willing to modify the specific experience requirement in such a way that would still protect the owner from receiving bids from unqualified firms, but open the door to firms that have done this type of work for many years with many similar projects to the scope of work being solicited? (Submitted: May 29, 2019 5:02:15 PM EDT)

Answer

- City shall keep the current requirement of Special Condition 08, Specific Experience Required, which requires the bidder to submit with the bid, proof of construction experience for a minimum of 3 projects of similar scope and scale.

Note that this project consists of temporary bypass pumping design, trenching support design, dewatering design, internally bonded carbon fiber reinforced polymer lining design, open cut large pipe replacement, restoration, etc. (Answered: May 29, 2019 5:03:43 PM EDT)

Question 10

Please elaborate on full-scale testing outlined in Specification Section 13030, Part 1.04/F, item 11. Is there a reference standard or guideline for this test? Does it have to be carried out by third party? Is it required for the approved products? (Submitted: May 30, 2019 11:18:43 AM EDT)

Answer

- A full-scale testing validation report is not required for this project (Answered: Jun 12, 2019 12:06:10 PM EDT)

Question 11

Is there a requirement for coating of the CFRP system? Typical for sewer applications would be a chemical and abrasive resistant coating, such as novolac epoxy. (Submitted: May 30, 2019 11:23:05 AM EDT)

Answer

- Yes, 13030.2.01.6. requires a top coat applicable to direct exposure to wastewater effluent. Manufacturer and their designer recommendations shall govern. City agrees that a chemical and abrasive resistant coating, such as Novolac epoxy, or equal, would be typical. (Answered: Jun 12, 2019 12:06:10 PM EDT)

Question 12

In addition to GC's, are subcontractors also required to possess a contractor license, a certified underground utility and excavation contractor licenses, or a certified "Plant Construction" License issued by the Florida Department of Business and Professional Regulation? (Submitted: May 31, 2019 5:37:34 PM EDT)

Answer

- City "Invitation to Bid" lists the licensing requirements for the Contractor. The draft Construction Agreement, Article 1.12 defines "Contractor" to include subcontractors. Qualification requirements are further identified within various specification sections. (Answered: Jun 12, 2019 12:06:10 PM EDT)

- The Licensing Requirements state "as appropriate, is required for this project" The City has no contractual relationship with the Contractor's subcontractors, which is why the Prime Contractor is required to have these licenses. If a subcontractor is performing work that is unrelated to underground utility and excavation, or "Plant Construction", then no, the subcontractor would not need to be licensed the same as the Prime Contractor and the sub would refer to the individual spec sections for qualification requirements. However if the Prime Contractor subs out the excavation or underground utility work then that sub would need to be licensed for the work. (Answered: Jun 17, 2019 11:32:00 AM EDT)

Question 13

In the bid documents, part 3.03 D Execution, states: "Contractor shall repair all flaws and cracks in the host pipe wall that may compromise the performance of the CFRP system." And "If water infiltration is noticed, inject hydrophilic grout behind the host pipe to stop flow of water." Due to the difficulty in estimating the cost of these unknowns, would it be allowable to quote the work based on time and material or per unit price? (Submitted: Jun 3, 2019 11:42:52 AM EDT)

Answer

- City shall keep the current lump sum bid item No. 3. Quantity of repair work will be added to the specification section as part of the base bid, via addendum. (Answered: Jun 12, 2019 12:06:10 PM EDT)

Question 14

Will the City be able to provide accurate locate marks of existing utilities or will the Contractor be required to do its own locating/GPR to locate the numerous known and unknown existing utilities within the corridor of the 66" pipe as well as where the bypass piping will be buried? (Submitted: Jun 3, 2019 2:17:29 PM EDT)

Answer

- Contractor is responsible for locating all existing utilities and verifying all existing conditions. (Answered: Jun 5, 2019 10:30:27 AM EDT)

Question 15

Within the corridor of the 66" pipe replacement there are several known existing utilities that will need to be removed to install the new pipeline. I.E. "FCLS, OCLS, NPW, PW, and Public Address System. Will the City please clarify which one of these systems need to remain in service with a temporary system during the install of the 66" pipe and which systems can be shut down until construction is complete. Please also clarify how long the systems can be shutdown. (Submitted: Jun 3, 2019 2:18:06 PM EDT)

Answer

- Existing utilities (included those listed in this question) will need to remain in service during installation of the open-cut DIP with either a temporary system or protected in-place from damage. (Answered: Jun 12, 2019 12:06:10 PM EDT)

Question 16

Due to the width restrictions of the pipe corridor and the weight of the pipes being removed and installed, there will be a need to use a crane to install the pipe. Is the City aware of any restriction associated with the use of a crane onsite? (Submitted: Jun 3, 2019 2:18:34 PM EDT)

Answer

- There are no restrictions (Answered: Jun 5, 2019 10:30:27 AM EDT)

Question 17

Where can the Contractor get power for the flow meters on the Bypass system? (Submitted: Jun 3, 2019 2:18:51 PM EDT)

Answer

- This is means and methods of the Contractor. (Answered: Jun 5, 2019 10:30:27 AM EDT)

Question 18

Can the City extend the work hours to 7am to 7pm without charging the contractor for inspector OT charges? (Submitted: Jun 3, 2019 2:19:08 PM EDT)

Answer

- No. (Answered: Jun 5, 2019 10:30:27 AM EDT)

Question 19

02659 "Temporary By-Pass Pumping Systems" 3.02 Field Testing states that a minimum seven-day operational test will be required for the bypass system. The previous contract required a 24-hour period. 7 days of operational test period seems excessive and will result in a substantial unnecessary expense. Please clarify if this was the intent. (Submitted: Jun 3, 2019 2:19:35 PM EDT)

Answer

- 02659.3.02 Field testing will remain as specified for the 7-days. (Answered: Jun 12, 2019 12:06:10 PM EDT)

Question 20

Will the Pump Watch be required during the 7-day operational Test period? (Submitted: Jun 3, 2019 2:19:51 PM EDT)

Answer

- Yes, the pump will be watched during the 7-day operational test period in accordance with specification section 02659.1.08.D and 1.01.E (Answered: Jun 12, 2019 12:06:10 PM EDT)

Question 21

Can the City provide an as built for the NPW and PW line within the project area, this will be necessary to ensure that proper temporary service is reinstated if/when a temporary bypass is needed. (Submitted: Jun 3, 2019 2:20:05 PM EDT)

Answer

- This information can be provided after contract award (Answered: Jun 5, 2019 10:30:27 AM EDT)

Question 22

The project documents reference Builders Risk Insurance. This does not seem to be necessary for this work, will Builders Risk be required? (Submitted: Jun 3, 2019 2:20:20 PM EDT)

Answer

- Insurance requirements for this project are indicated in the Special Conditions Section, Item 10. There is no requirement for Builders Risk. (Answered: Jun 5, 2019 10:30:27 AM EDT)

Question 23

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