



CITY OF VENICE, FLORIDA

Purchasing Department

**401 W. Venice Avenue
Venice, FL 34285**

Invitation to Bid

ITB Number 2972-13

Date of Issue: July 8, 2013

Submission Deadline: August 13, 2013 at 2:00 PM

Title and Purpose of ITB:

Intracoastal Waterway Force Main Replacement Project

INVITATION TO BID

The City of Venice invites sealed bids from qualified bidders to provide the following goods or services, which is described in detail in the Specifications.

Bid No.: 2972-13

Bid Title: Intracoastal Waterway Force Main Replacement Project

PROJECT DESCRIPTION: The Contractor shall furnish all labor, materials, equipment, tools, services and incidentals to complete all work required by these Specifications and as shown on the Drawings. The Contractor shall perform the work complete, in place and ready for continuous service, and shall include repairs, testing, permits, clean-up, replacements and restoration required as a result of damages caused during this construction. All materials, equipment, skills, tools and labor which is reasonably and properly inferable and necessary for the proper completion of the work in a substantial manner and in compliance with the requirements stated or implied by these Specifications or Drawings shall be furnished and installed by the Contractor without additional compensation, whether specifically indicated in the Contract Documents or not. The Contractor shall comply with all Municipal, County, State, Federal, and other codes which are applicable to the proposed construction work.

The project area is bounded by American Legion Way to the west and Warfield Avenue to the east. The project includes furnishing and installing a new 16-inch HDPE or 14-inch FPVC force main installed via horizontal directional drill across the Intracoastal Waterway south of the Venice Avenue Bridge; abandonment of the existing force mains east, west and north of the Venice Avenue Bridge and a new 4" force main installed via open cut methods connecting at Tampa Avenue East running south along the American Legion Way to south of Venice Avenue East.

BID OPENING LOCATION: City of Venice, Venice City Hall, Community Hall, room #114,
401 W. Venice Ave., Venice FL 34285

BID SUBMITTAL DEADLINE and BID OPENING DATE & TIME: August 13, 2013 at 2:00 PM

PRE-BID MEETING: YES DATE & TIME: July 25, 2013 at 2:00 PM

LOCATION: Venice City Hall, Community Hall room #114

Specifications and Bid documents are available by calling Onvia DemandStar at (800) 711-1712 or by their Internet address at <http://www.demandstar.com>. Proposers may also pick up Bid documents at the City of Venice Procurement- Finance Department, Room 204, 401 West Venice Ave., Venice Florida 34285, (941) 486-2626 Ext. 24002 at no charge.

A pre-bid meeting will be held on July 25, 2013 at 2:00 p.m., room #114, Venice City Hall. Representatives from the City will be present to discuss the overall project and the Invitation to Bid. Interested Firms are encouraged to attend.

All questions, comments, or concerns about this ITB must be submitted in writing to Mr. Jon Mayes, Procurement Department, for the City of Venice, Room 204, 401 West Venice Avenue, Venice, FL 34285 or e-mail at jmayes@venicegov.com. Mr. Mayes is the only designated representative of the City authorized to respond to comments, questions, and concerns. The City will not respond to comments, questions or concerns addressed to any person other than Mr. Mayes. If the City determines that a particular comment, question or concern necessitates a global response to all Proposers, the City will issue a clarifying memorandum or addendum. **The final day that the City will accept questions will be Thursday, August 1, 2013 by 1:00 p.m.**

Bids must be submitted in **four sets** and at least one set must bear an original signature, in a sealed envelope marked **“Invitation to Bid # 2972-13: “Intracoastal Waterway Force Main Replacement Project”** and mailed or delivered to the City of Venice- Procurement- Finance Department, 401 W. Venice Ave., Room # 204, Venice, FL 34285, no later than the deadline specified. The City assumes no responsibility for bids received after the bid submittal time or at any location other than that specified, no matter what the reason. Late bids will be held unopened and will not be considered for award.

Bid Security in the amount of five (5%) percent of the bid is required.

Performance and Payment Bonds are required in the amount of One Hundred (100%) percent of the contract price once a contract is awarded.

No bid will be received after the specified time for acceptance and no bidder may withdraw his bid within a period of one-hundred and eighty (180) days after the actual date of opening thereof.

Bids will be considered only from bidders who have the applicable license, if a license is required by the City of Venice and/or State of Florida, for the type of work specified. A copy of the applicable license must be submitted with bid if a license is required.

The City reserves the right to reject any or all bids in whole or in part, with or without cause, to waive any requirements, irregularities or technical defects therein, when it is deemed to be in the interest of the City.

CITY OF VENICE, FLORIDA
Jon Mayes, Procurement Department

Publish: Saturday, July 6 2013
Wednesday, July 10, 2013

SEALED INVITATION TO BID
CITY OF VENICE, FLORIDA
ITB# 2972-13

GENERAL CONDITIONS & INSTRUCTIONS TO OFFERORS

DEFINED TERMS

Terms used in this solicitation are defined and have the meaning assigned to them. The term "Offeror" means one that submits a proposal directly to CITY as distinct from a Sub-Offeror, who submits a Proposal to the Offeror. The term "Successful Offeror" means the qualified, responsible and responsive Offeror to whom the City of Venice (on the basis of CITY'S evaluation as hereinafter provided) makes an award. The term "CITY" refers to the City of Venice, a municipal corporation of the State of Florida. The term "ITB" refers to this Sealed INVITATION TO BID. The term "solicitation" refers to the entire ITB package and the Offeror's submittal as a response to this ITB. The term "submittal" refers to all documentation and information as submitted by the Offeror in response to this solicitation. The term "Department" refers to the State of Florida Department of Transportation.

1. OFFEROR REGISTRATION

Offerors who obtain solicitation documents from sources other than the City or download from <http://www.demandstar.com/> must officially register receipt of the solicitation with the City's Procurement- Finance Department in order to be placed on the notification list for any forthcoming addendum or other official communications. Failure to register as a prospective Offeror may cause your submittal to be rejected as non-responsive if you have submitted a response without acknowledgment of issued addenda. The City of Venice is not responsible for the accuracy of bid documents and information obtained from any source other than <http://www.demandstar.com/>.

2. CONTACT

All prospective Offerors are hereby instructed not to contact any member of the City of Venice City Council, City Manager, or City of Venice staff member other than the contact person indicated in this ITB regarding this solicitation or their submittal at any time prior to the final evaluation and recommended ranking by the City staff for this project. Any such contact shall be cause for rejection of your submittal.

3. ADDENDA AND INQUIRIES

- 3.1 If there is any doubt as to the true meaning of the specifications and information provided, Offerors may submit written or faxed inquiries regarding this solicitation to the Procurement- Finance Department, 401 West Venice Avenue, Room # 204 Venice, FL 34285, Fax No. (941) 486-2790. The City will respond to written or faxed inquiries received by the posted deadline for questions. Inquiries must reference the date and time of opening, and the solicitation number. Failure to comply with this condition shall result in the Offeror waiving their right to dispute the specifications and information provided in the solicitation document.

- 3.2 Any change to this solicitation shall be made by addenda duly issued to each registered Offeror.

Receipt of such addenda must be so noted on or within your response. It is the Offeror's responsibility to make contact through the Internet or phone to determine if Addenda have been issued.

- 3.3 Oral Inquiries: The City will not respond to oral inquiries.

4. PUBLIC OPENING

Submittals shall be received in the Procurement Department, 401 W. Venice Ave, Venice, FL 34285 by the date and time indicated on these documents. As soon as possible thereafter, the names of the Offerors shall be read off at the specified location.

5. DELAYS

The City, at its sole discretion, may delay the scheduled due dates indicated above if it is to the advantage of the City to do so. The City will notify Offerors of all changes in scheduled due dates by written addenda.

6. PROPOSAL SUBMISSION AND WITHDRAWAL

- 6.1 Address to send submittal:

*Procurement- Finance Department
City of Venice
401 W. Venice Ave, Room # 204,
Venice, FL 34285*

- 6.2 The outside of the envelope/container must be identified with the solicitation number and title as stated above. The envelope/container must also include the Offeror's name and return address.

- 6.3 Submittals may be withdrawn by an appropriate document duly executed (in the manner that a Submittal must be executed) and delivered to the place where Submittals are to be submitted at any time prior to the deadline for submission. A request for withdrawal or a modification must be in writing

and signed by a person duly authorized to do so. Evidence of such authority must accompany the request for withdrawal or modification. Withdrawal of a Submittal will not prejudice the rights of an Offeror to submit a new Submittal prior to the opening date and time. After expiration of the period for receiving Submittals, no Submittal may be withdrawn or modified.

- 6.4 Withdrawal of Submittals after Opening Date: Submittals, once opened, become the property of the City and will not be returned to the Offerors. Submittals not so withdrawn before the opening constitute an irrevocable offer for a period of one-hundred-eighty (180) days to provide the City the services set forth in these specifications until one or more of the proposals have been accepted by City staff. No Offeror may withdraw their proposal during this one-hundred-eighty (180) day period.
- 6.5 Number of Submittal Copies: Offerors shall submit four (4) complete sets (one original and three copies) of the submittal complete with all supporting documentation (i.e. photographs, drawings, and exhibits) in a sealed envelope/container marked as noted above.
- 6.6 Proposal Is Not Binding: The Offeror understands that responding to this solicitation does not constitute an agreement or contract with the Offeror. A submittal is not binding until submittal is reviewed and accepted by the appropriate level of authority and both parties execute a contract.
- 6.7 Responsibility for getting a submittal to the City on or before the specified date and time is solely and strictly that of the Offeror. The City will not be responsible for any delay, for any reason whatsoever. Submittals by telephone, telegram, facsimile machines, and Internet, will not be acceptable. Submittals must be received and stamped on the outside of the envelope with the time and date, in the Purchasing Department by the date and time specified for opening.
- 6.8 LATE SUBMITTALS – Submittals received after the date and time of the opening will not be considered and will not be opened. It will be the Offeror's responsibility to make arrangements for the return of their submittal at their expense.

7. PRICES, TERMS AND PAYMENT:

Firm prices shall be bid F.O.B. requesting agency and include packing, handling and shipping charges fully prepaid by the vendor.

- 7.1 BID PRICE/MISTAKES: The bidder shall show in the proposal both the unit price and the total amount on items when indicated. In the event of discrepancy between the unit price and the extension, THE UNIT PRICE SHALL PREVAIL. Prices shall be extended in decimals.
- 7.2 INVOICING AND PAYMENT: The vendor shall be paid upon submission of proper certified invoices to the ordering agency at the prices stipulated on the contract. Invoices shall contain the purchase order number. THE VENDOR SHALL ACCEPT NO ORDER WITHOUT A PURCHASE ORDER NUMBER FROM THE CONTRACTING ENTITY. The City reserves the right

to pay for purchases made under any agreement resulting from a solicitation through its Purchasing Card Program which utilizes VISA credit cards. Check or the ACH (Automated Clearing House) process may also be used if the City desires to select this form of payment. When payment is received utilizing the City credit card, an original invoice should not be mailed to the Finance Department. Only the credit card receipt is issued for this charge with the original receipt being provided with the delivery to the individual cardholder placing the order. No surcharges will be accepted for the use of purchasing cards.

- 7.3 TAXES: The purchase of certain items by the Contracting Entity are exempt from the payment of excise, transportation and sales tax imposed by the Federal, State and/or City governments. Such taxes must not be included in proposal prices. Upon request, applicable Federal Excise Exemption certificates will be furnished.

8. CONDITION AND PRICING:

It is understood and agreed that any item offered or shipped as a result of this bid shall be new (current model at the time of this bid). All containers shall be suitable for storage or shipment and all prices shall include standard commercial packaging.

9. SAFETY STANDARDS:

Unless otherwise stipulated in the bid, all manufactured items or fabricated assemblies shall comply with applicable requirements of occupational Safety and Health Act and any standards

10. MANUFACTURER'S NAME AND APPROVED EQUIVALENTS:

Any manufacturer's names, trade names, brand names, information and/or catalog numbers listed in a specification are for information and not intended to limit competition unless otherwise indicated. The bidder may offer any brand for which he/she is an authorized representative, which meets or exceeds the bid specification for any item(s). If bids are based on equivalent products, indicate on the bid form the manufacturer's product name and reference number. Bidder shall submit with his/her proposal, cuts, sketches, and descriptive literature, and/or complete specifications. Reference to literature submitted with a previous bid will not satisfy this provision. The bidder shall explain in detail the reason(s) why the proposed equivalent will meet the specifications and not be considered an exception thereto. Bids that do not comply with these requirements, are subject to rejection. Bids lacking any written indication of intent to quote an alternate brand will be received and considered in complete compliance with the specifications as listed on the bid form. The City's Purchasing Office is to be notified of any proposed changes in (a) materials used, (b) manufacturing process, or (c) construction. However, changes shall not be binding upon the City unless evidenced by a Change Notice issued and signed by the Purchasing Director or designated representative.

11. DELIVERY:

All prices shall be F.O.B. Destination, Venice, Florida. Delivery date and warranties must be written out and submitted with bids. Delivery dates, as specified, must be met.

12. ADDITIONAL PURCHASES ("PIGGY-BACK") BY OTHER PUBLIC AGENCIES:

The vendor, by submitting a bid, authorizes other Public Agencies to "Piggy-Back" or purchase equipment or services being proposed in this invitation to bid at prices bid unless otherwise noted on the proposal sheet.

13. SUBMITTAL PREPARATION COST

The City shall not be liable for any expense incurred in connection with preparation of a submittal to this document. Offerors should prepare a straightforward and concise description of the Offeror's ability to meet the requirements of this document.

14. ACCURACY OF SUBMITTAL INFORMATION

Any Offeror, who states in their submittal any information that is determined to be substantially inaccurate, misleading, exaggerated, or incorrect, shall be disqualified from consideration.

15. LICENSES

Licensed and Certified: Offeror's, both corporate and individual, must be fully licensed and certified for the type of work to be performed in the state of Florida at the time of submittal and during the entire Contract time.

16. LOCAL PREFERENCE

16.1 Unless otherwise noted in the solicitation, preference shall be given to a "local business" in the awarding of any Invitation to Bid (ITB), Request for Proposal (RFP) or Request for Qualifications (RFQ) in accordance with Section 2-217 of the City of Venice's Code. Local preference shall not apply to other types of solicitations unless explicitly stated in the subject solicitation.

16.2 "Local business" means the vendor has paid a local business tax to either Sarasota, Manatee, DeSoto or Charlotte County, whichever county the vendor is located, if applicable prior to bid submission that authorizes the vendor to provide the commodities or services to be purchased, and maintains a permanent physical business address located within the limits of either Sarasota, Manatee, DeSoto or Charlotte County from which the vendor operates or performs business, and at which at least one full time employee is located.

16.3 In addition, fifty percent (50%) or more of the employees based at the local business location must reside within Sarasota, Manatee, DeSoto or Charlotte County.

16.4 In the event the local office is not the primary location of the vendor, at least ten percent (10%) of the vendor's entire full-time employees must be based at the local office location. Alternatively, this requirement may be satisfied if at least one corporate officer, managing partner or principal owner of the vendor resides in Sarasota, Manatee, DeSoto or Charlotte County.

16.5 Offerors wishing to be given preference as a local business must submit with their offer, all of the Local Preference documentation identified in the "Required Forms Section" of the solicitation.

16.6 For local preference to be granted, the name of the company represented on the required forms must be the same as the name on the Local Preference documentation.

16.7 Information regarding Sarasota County's Local Business Tax can be found at www.sarasotataxcollector.governmentmax.com.

16.8 In case of a proposal submitted by more than one entity, any one of those entities can qualify the proposal for the local preference. Sub-contractors or sub-consultants cannot qualify a proposal for local preference.

17. POSTING OF NOTICE OF INTENT

A notice of intent for award will be posted for review by interested parties in City Hall and on the City's website prior to submission through the appropriate approval process to the appropriate level for final approval of award.

18. PUBLIC RECORDS/TABULATION

Submittals are not public records, subject to the provisions of Florida State Statutes, Chapters 119 and 120, until such time as notice of a decision or intended decision is provided, or within ten (10) days after the solicitation opening, whichever is earlier. A copy of the tabulation results will be forwarded upon receipt of a stamped, self-addressed envelope. An electronic tabulation will be posted on Demand Star at their Internet Website at <http://www.demandstar.com/>.

19. RESERVED RIGHTS

19.1 The City reserves the right to waive formalities in any submittal, and to reject any or all submittals in whole or in part, with or without cause and/or to accept the submittal that in the City's judgment will be in the best interest of the City. The City specifically reserves the right to reject any conditional submittal.

19.2 To the extent permitted by applicable state and federal laws and regulations, City reserves the right to reject any and all submittals, to waive any and all informalities not involving price, time or changes in the work with the Successful Offeror, and the right to disregard all nonconforming, non-responsive, unbalanced or conditional submittals. Submittals will be considered irregular and may be rejected, if they show serious omissions, alterations in form, additions not called for, conditions or unauthorized alterations, or irregularities of any kind.

19.3 City reserves the right to reject the submittal of any Offeror if the City believes that it would not be in the best interest of the City to make an award to that Offeror, whether because the submittal is not responsive or the Offeror is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by City.

19.4 The City reserves the right to terminate the contract with any vendor who fails to meet a deadline or shows incompetency.

20. INDEMNIFICATION/HOLD HARMLESS

The Offeror shall defend, indemnify and hold the City, the

City's representatives or agents, and the officers, directors, agents, employees, and assigns of each harmless for and against any and all claims, demands, suits, judgments, damages to persons or property, injuries, losses or expenses of any nature whatsoever arising directly or indirectly from or out of any negligent act or omission of the Offeror, its sub-consultants and their officers, directors, agents or employees; any failure of the elected firm to perform its services hereunder in accordance with generally accepted professional standards; any material breach of the elected firm representations as set forth in the proposal or any other failure of the elected firm's to comply with the obligations on its part to be performed under this contract.

21. PUBLIC ENTITY CRIMES/NON-COLLUSIVE AFFIDAVIT

- 21.1 Each Offeror shall complete the Non-Collusive Affidavit and the Public Entity Crimes Form and shall submit the forms with the submittal. CITY considers the failure of the Offeror to submit these documents to be a major irregularity and may be cause for rejection of their submittal.
- 21.2 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 response on a contract to provide any goods or services to a public entity, may not submit a response on a contract with a public entity for the construction or repair of a public building or public work, may not submit responses on leases of real property to a public entity, may not be awarded or perform work as a Offeror, supplier, Sub-Offeror, 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, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.
- 21.3 Termination for Cause: Any Agreement with the City obtained in violation of this Section shall be subject to termination for cause. A Sub-Offeror who obtains a subcontract in violation of this Section shall be removed from the Project and promptly replaced by a Sub-Offeror acceptable to the City.

22. GRATUITIES AND KICKBACKS

- 22.1 Gratuities: It is unethical for any person to offer, give, or agree to give any employee or for any employee to solicit, demand, accept or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation of any part of program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, audit, or in any other advisory capacity in any proceeding or application, request for ruling, determination claim or controversy, or other particular matter, pertaining to any program requirement or an Agreement or subcontract, or to any solicitation or proposal therefore.
- 22.2 Kickbacks: It shall be unethical for any payment, gratuity, or offer of employment to be made by or on behalf of a Sub-Offeror under a Contract to Offeror or higher tier Sub-Offeror any person associated

therewith, as an inducement of the award of a subcontract or order.

- 22.3 Contract Clause: The prohibition against gratuities and kickbacks prescribed in this section shall be conspicuously set forth in every Contract and subcontract and solicitation therefore.

23. EQUAL EMPLOYMENT OPPORTUNITY

Offeror shall be in compliance with Executive Order 11426 Equal Opportunity as amended by Executive Order 11375, and as supplemented by the Department of Labor Regulations as applicable.

24. TERMS FOR FEDERAL AID CONTRACTS

The following terms apply to this contract which involves the expenditure of federal funds:

- 24.1 It is understood and agreed that all rights of the Department relating to inspection, review, approval, patents, copyrights, and audit of the work, tracing, plans specifications, maps data, and cost records relating to this Agreement shall also be reserved and held by authorized representatives of the United States of America.
- 24.2 It is understood and agreed that, in order to permit federal participation, no supplemental agreement of any nature may be entered into by the parties hereto with regard to the work to be performed hereunder without the approval of U.S.D.O.T., anything to the contrary in this Agreement notwithstanding.
- 24.3 COMPLIANCE WITH REGULATIONS: The Consultant shall comply with the regulations of the U.S. Department of Transportation relative to nondiscrimination in federally-assisted programs of the U.S. Department of Transportation (Title 49, Code of Federal Regulation, Part 21, hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of the contract.
- 24.4 NONDISCRIMINATION: The Consultant, with regard to the work performed by him after award and prior to completion of the contract work, will not discriminate on the grounds of race, color, religion, sex or national origin in the selection and retention of Sub-Offerors, including procurements of material, and leases of equipment. The Consultant will not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the program set forth in Appendix B of the Regulations.
- 24.5 SOLICITATIONS FOR SUBCONTRACTS, INCLUDING PROCUREMENTS OF MATERIALS AND EQUIPMENT: In all solicitations made by competitive bidding or negotiation made by the Consultant for work to be performed under a subcontract, including procurements of materials and leases of equipment, each potential Sub-Offeror, supplier or lessor shall be notified by a consultant of the consultant's obligations under this contract and the regulations

relative to nondiscrimination on the grounds of race, color religion, sex or national origin.

- 24.6 INFORMATION AND REPORTS: The Consultant will provide all information and reports required by the Regulations, or orders and instructions issued pursuant thereto, and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Department or U.S. Department of Transportation to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of the Consultant is in the exclusive possession of another who fails or refuses to furnish this information, the Consultant shall certify to the Department, or the U.S. Department of Transportation, as appropriate, and shall set forth what efforts it has made to obtain the information.
- 24.7 SANCTIONS OF NONCOMPLIANCE: In the event of the Consultant's noncompliance with the nondiscrimination provisions of this contract, the State of Florida Department of Transportation shall impose such contract sanctions as it or the U.S. Department of Transportation may determine to be appropriate, including but not limited to,
1. withholding of payments to the Consultant under the contract until the Consultant complies and/or
 2. cancellation, termination or suspensions of the Contract, in whole or in part.
- 24.8 INCORPORATION OR PROVISIONS: The Consultant will include the provisions of Section 25.11, part 1 and 2 of the General Conditions in every subcontract, including procurements of materials and leases of equipment unless exempt by the Regulations, order, or instructions issued pursuant thereto. The Consultant will take such action with respect to any subcontract or procurement as the State of Florida Department of Transportation or the U.S. Department of Transportation may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided, however, that, in the event a Consultant becomes involved in, or is threatened with litigation with a Sub-Officer or supplier as a result of such direction, the Consultant may request the State to enter into such litigation to protect the interests of the State, and, in addition, the Consultant may request the United States to enter into such litigation to protect the interests of the United States.
- 24.9 INTEREST OF MEMBERS OF CONGRESS: No member of or delegate to the Congress of the United States shall be admitted to any share or part of this contract or to any benefit arising therefrom.
- 24.10 INTEREST OF PUBLIC OFFICIALS: No member, officer, or employee of the public body or of a local public body during his tenure or for one year thereafter shall be any interest, direct or indirect, in this contract or the proceeds thereof. For purposes of this provision, public body shall include municipalities and other political subdivisions of States, and public corporations, boards, and

commissions established under the laws of any State.

- 24.11 PARTICIPATION BY MINORITY BUSINESS ENTERPRISES: The Consultant shall agree to abide by statements in Paragraph (1) and (2) which follow. These statements shall be included in all subsequent agreements between the Consultant and any subconsultant or Offeror:
1. "Policy: It is the policy of the Department of Transportation that minority business enterprises as defined in 49 CFR Part 23 shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with Federal funds under this agreement. Consequently, the MBE requirements of 49 CFR Part 23 apply to this agreement."
 2. "MBE OBLIGATION: The recipient or its Offeror agrees to ensure that minority business enterprises, as defined in 49 CFR Part 23, have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with Federal Funds provided under this agreement. In this regard, all recipients or Offerors shall take all necessary and reasonable steps in accordance with 49 CFR Part 23, have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds provided under this agreement. In this regard, all recipients or Offerors shall take all necessary and reasonable steps in accordance with 49 CFR Part 23 to ensure that minority business enterprises have the maximum opportunity to compete for and perform contracts. Recipients and their Offerors shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of DOT-assisted contracts."
- 24.12 It is mutually understood and agreed that the willful falsification, distortion or misrepresentation with respect to any facts related to the project(s) described in this Agreement is a violation of the Federal Law. Accordingly, United States Code, Title 18, Section 1020, is hereby incorporated by reference and made a part of this Agreement.
- 24.13 It is understood and agreed that if the Consultant at any time learns that the certification it provided the Department in compliance with CFR, Section 23.51, was erroneous when submitted or has become erroneous by reason of changed circumstances, the Consultant shall provide immediate written notice to the Department. It is further agreed that the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – Lower Tier Covered Transaction" as set forth in 49 CFR, Section 29.510, shall be included by the Consultant in all lower tier covered transactions and in all aforementioned federal regulation.
- 24.14 The Department hereby certifies that neither the Consultant nor the Consultant's representative have been required by the Department, directly or indirectly as an express or implied condition in

connection with obtaining or carrying out this contract, to

- A. employ or retain, or agree to employ or retain, any firm or person, or
- B. pay, or agree to pay, to any firm, person, or organization, any fee, contribution, donation, or consideration of any kind;

24.15 The Department further acknowledges that this agreement will be furnished to a federal agency, in connection with this contract involving participation of Federal-Aid funds, and is subject to applicable State and Federal Laws, both criminal and civil.

24.16 The Consultant hereby certified that it has not:

- A. employed or retained for a commission, percentage, brokerage, contingent fee, or other consideration, any firm or person (other than a bona fide employee working solely for the above Offeror) to solicit or secure this contract;
- B. agreed, as an express or implied condition for obtaining this contract, to employ or retain the services of any firm or person in connection with carrying out this contract; or
- C. paid, or agreed to pay, to any firm, organization or person (other than a bona fide employee working solely for the above Offeror) any fee contribution, donation, or consideration of any kind for, or in connection with, procuring or carrying out the contract.

24.17 The Consultant further acknowledges that this agreement will be furnished to the State of Florida Department of Transportation and a federal agency in connection with this contract involving participation of Federal-Aid funds, and is subject to applicable State and Federal Laws, both criminal and civil.

25. CONFLICT OF INTEREST

No employee of an agency acting in his or her official capacity as a purchasing agent, or public officer acting in his or her official capacity, shall either directly or indirectly purchase, rent, or lease any realty, goods, or services for his or her own agency from any business entity of which the officer or employee or the officer's or employee's spouse or child is an officer, partner, director, or proprietor or in which such officer or employee or the officer's or employee's spouse or child, or any combination of them, has a material interest. Nor shall a public officer or employee, acting in a private capacity, rent, lease, or sell any realty, goods, or services to the officer's or employee's own agency, if he or she is a state officer or employee, or to any political subdivision or any agency thereof, if he or she is serving as an officer or employee of that political subdivision. The foregoing shall not apply to district offices maintained by legislators when such offices are located in the legislator's place of business or when such offices are on property wholly or partially owned by the legislator. This subsection shall not affect or be construed to prohibit contracts entered into prior to:

October 1, 1975.
Qualification for elective office.
Appointment to public office.
Beginning public employment

26. DRUG FREE WORKPLACE:

The City of Venice has adopted a policy in observance of the Drug Free Work Place Act of 1988. Therefore, it is unlawful to manufacture, distribute, disperse, possess, or use any controlled substance in the City of Venice workplace.

The City of Venice requests the attached Drug Free Workplace Affidavit to accompany your response. This form has been adopted by the City in accordance with the Drug Free Workplace Act. The City will not disqualify any respondent who does not concur with the affidavit. The Drug Free Workplace Affidavit is primarily used as tiebreaker when two or more separate entities have submitted proposals at the same price, terms and conditions.

27. APPLICABLE LAWS

Interested parties are advised that all City contracts and/or documentation pertinent to this solicitation are subject in full or in part to all legal requirements provided in applicable City Ordinances, State Statutes, and Federal Regulations. Uniform Commercial Code, Chapter 672, Florida State Statutes shall prevail, as the basis for contractual obligations between the Offeror and the City for any terms and conditions not specifically stated within the context of this contract.

28. COMPETENT PERSONNEL

All interested firms are to warrant that services shall be performed by skilled and competent personnel to the highest professional standards in this scope of work.

29. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

29.1 Before delivering a submittal, each Offeror must (a) consider federal, state and local laws, ordinances, rules and regulations that may in any manner affect cost, or performance of the work, (b) study and carefully correlate the Offeror's observations with the solicitation documents; and notify the Purchasing Manager of all conflicts, errors and discrepancies, if any, in the solicitation documents.

29.2 The Offeror, by and through delivering a submittal, agrees that they shall be held responsible for having familiarized themselves with the nature and extent of any local conditions that may affect the services.

30. SPECIFICATIONS

30.1 The apparent silence of the specification as to any detail, or the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail and that only material and workmanship of the finest quality are to be used. All interpretations of the Specifications shall be made on the basis of this statement.

30.2 For the purpose of evaluation, the Offeror must indicate any variance or exceptions to the stated Specifications, no matter how slight. Deviations should be explained in detail. Absence of variations and/or corrections will be interpreted to mean that the Offeror meets all the Specifications in every respect.

31. CANCELLATION CLAUSE

Failure to comply with any of the terms, conditions, specifications and/or service requirements will be just cause for termination of this contract by a thirty (30) day written notice of intent forwarded to the successful Offeror.

32. ACCEPTING CONTENT OF PROPOSAL

By delivering a submittal in response to this solicitation document, the Offeror certifies that they have fully read and understand the context of the solicitation document and have full knowledge of the scope, nature, and detailed requirements of services and/or commodities to be provided and performed. Submittals shall be returned in the sequential manner as requested in the "Submittal Format and Requirements" section of this solicitation.

33. TAXES

The negotiated cost shall include all freight, handling, delivery, surcharges or other incidental charges that may be required to provide the services or deliver the commodities. The City of Venice is exempt from the payment of Federal and State taxes, including sales tax. Your cost proposal shall not include sales tax to be collected from the City. The City's sales tax exemption is not available to you for items you purchase, regardless of whether these items will be transferred to the City.

34. ASSIGNMENT

- 34.1 Successful Offeror shall not assign, transfer or subject the Contract or its rights, title or interests or obligations therein without CITY'S prior written approval.
- 34.2 Violation of the terms of this paragraph shall constitute a breach of the Contract by Successful Offeror and CITY may, at its discretion, cancel the Contract and all rights, title and interest of Successful Offeror shall thereupon cease and terminate.

35. SOLICITATION FORMS

- 35.1 If the Proposer cannot meet a service or equipment requirement, then the phrase "not available" should be entered on the Proposal Form for that service requirement. In the case of a "not available" remark, the Offeror may offer an alternative service. Alternate submittals may be submitted for consideration. It will be at the City's sole discretion to accept or reject any and all alternate submittals received.
- 35.2 This solicitation presents the City's minimum requirements under present methods of operation. Responses to this request should address these requirements, but Offerors are encouraged to suggest any additional services or commodities, which in their opinion, would be in the best interest of the City.
- 35.3 Submittals may be delivered, which deviate from the requirements herein, providing that they are clearly identified as alternate submittals and providing further that it can be demonstrated that stated requirements are substantially improved or are not compromised or prejudiced by such deviations; and, that it would be clearly in the interest of the City that an alternative proposal be considered. Such alternative proposals will be

provisionally accepted for consideration, subject to the reserved right of the City to make the determination whether the above stated conditions for alternate proposals have been satisfied and subject further to the reserved right of the City to accept or reject these proposals upon the basis of the determination.

36. DISCLOSURE – PUBLIC OFFICER, PUBLIC EMPLOYEE OR ADVISORY BOARD MEMBER OF CITY

- 36.1 Sections 112.313(3) and 112.313(7), Florida Statutes, prohibit any public officer, employee, or advisory board member of the City from holding any employment or contractual relationship with any business entity doing business with the City. Section 112.313(12) provides that a public officer, employee, or advisory board member will not be in violation of the prohibition if all three of the following conditions are met. The filing of the disclosure form with the Supervisor of Elections is the sole responsibility of the Proposer and must be filed prior to or at the time of submission of the proposal. A copy of the filed disclosure form shall be submitted as part of the proposal.
- 36.2 Bid is awarded under a sealed, competitive Proposal to lowest or best Proposer system. Advisory board member is required to, prior to or at the time of the submission of the proposal, file a statement with the Supervisor of Elections, disclosing his interest and the nature of the intended business. The form is entitled "Form 3A Interest in Competitive Proposal for Public Business," a copy of which is available from the City's Purchasing department.
- 36.3 The public officer, employee, or advisory board member, spouse, or child is required to have in no way used or attempted to use his influence to persuade a member of the City or any of its personnel to enter into such a contract other than by the mere submission of the proposal.
- 36.4 The public officer, employee, or advisory board member, spouse, or child is required to have in no way participated in the determination of the Bid specifications or the determination of the lowest or best Proposer.

37. CIVIL RIGHTS

- A. Nondiscrimination - In accordance with Title VI of the Civil Rights Act of 1964, as amended, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6102, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12132, and Federal transit law at 49 U.S.C. § 5332:
The CONSULTANT or SUBGRANTEE shall not discriminate on the basis of race, age, creed, disability, marital status, color, national origin, or sex in the performance of this contract. The CONSULTANT or SUBGRANTEE shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of (Florida Department of Transportation, the Federal Highway Administration, Federal Aviation Administration, the US Department of Energy, US Department of Justice, or Office of

Housing and Urban Development) assisted contracts. Failure by the CONSULTANT or SUBGRANTEE to carry out these requirements is a material breach of this AGREEMENT, which may result in the termination of this AGREEMENT or such other remedy, as the City deems appropriate.

Each subcontract the CONSULTANT or SUBGRANTEE signs in regards to this federal aid PROJECT must include the assurance in this paragraph (see 49 CFR 26.13(b)). The CONSULTANT or SUBGRANTEE agrees to comply with all applicable federal implementing regulations and other implementing requirements the Federal government may issue.

B. Equal Employment Opportunity - The following equal employment opportunity requirements apply to this AGREEMENT:

(1) Race, Color, Creed, National Origin, Sex - In accordance with Title VI of the Civil Rights Act of 1964, as amended, 42 U.S.C. § 2000e, and Federal transit laws at 49 U.S.C. § 5332, the CONSULTANT or SUBGRANTEE agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, "Office of Federal Contract Compliance Programs, Employment Opportunity, Department of Labor," 41 C.F.R. Parts 60 et seq., (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect construction activities undertaken in the course of the PROJECT.

The CONSULTANT or SUBGRANTEE agrees to take all reasonable steps to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, creed, national origin, sex, or age. Such action shall include, but not be limited to, the following:

Employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the CONSULTANT or SUBGRANTEE agrees to comply with any implementing requirements the Federal government may issue.

(2) Age - In accordance with Section 4 of the Age Discrimination in Employment Act of 1967, as amended, 29 U.S.C. § 621 through 634 and Federal transit law at 49 U.S.C. § 5332, the CONSULTANT or SUBGRANTEE agrees to refrain from discrimination against present and prospective employees for reason of age. In addition, the CONSULTANT or SUBGRANTEE agrees to comply with any implementing requirements the Federal government may issue.

(3) Disabilities - In accordance with section 102 of the Americans with Disabilities Act, as amended, 42 U.S.C. § 12112, the CONSULTANT or SUBGRANTEE agrees that it will comply with the requirements of U.S. Equal Employment Opportunity Commission, "Regulations to Implement the Equal Employment Provisions of the Americans with Disabilities Act," 29 C.F.R. Part 1630, pertaining to employment of persons with disabilities. In addition, the CONSULTANT or SUBGRANTEE agrees to comply with any implementing requirements the Federal government may issue.

(4) Access to Services for Persons with Limited English Proficiency - To the extent applicable and except to the extent that the Federal agency determines otherwise in writing, the CONSULTANT or SUBGRANTEE agrees to comply with the policies of Executive Order No. 13166, "Improving Access to Services for Persons with Limited English Proficiency," 42 U.S.C. § 2000d-1 note, and with the provisions of U.S. DOT Notice, "DOT Guidance to Recipients on Special Language Services to Limited English Proficient (LEP) Beneficiaries," 66 Fed. Reg. 6733 et seq., January 22, 2001. The City's LEP Plan is available in the Title VI/ADA plan at City facilities or may be viewed online at www.venicegov.com

(5) Drug or Alcohol Abuse - Confidentiality and Other Civil Rights Protections - To the extent applicable, the CONSULTANT or SUBGRANTEE agrees to comply with the confidentiality and other civil rights protections of the Drug Abuse Office and Treatment Act of 1972, as amended, 21 U.S.C. §§ 1101 et seq., with the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970, as amended, 42 U.S.C. §§ 4541 et seq., and with the Public Health Service Act of 1912, as amended, 42 U.S.C. §§ 201 et seq., and any amendments to these laws.

(6) Other Nondiscrimination Laws - The CONSULTANT or SUBGRANTEE agrees to comply with all applicable provisions of other federal laws, regulations, and directives pertaining to and prohibiting discrimination, except to the extent the Federal Government determines otherwise in writing. The CONSULTANT or SUBGRANTEE also agrees to include these requirements in each subcontract financed in whole or in part with federal assistance, modified only if necessary to identify the affected parties.

38. BID PROTESTS

In any case where a bidder wishes to protest either the results of or the intended disposition of any bid, the bidder must:

- 38.1 File a written notice to the City Manager of the bidder's intention to protest within one (1) business day of the bid opening or the City's declaration of intent with regard to the disposition. Upon receipt of a protest, the bid process shall be suspended until the protest procedure herein described has been

completed.

- 38.2 Within five (5) days of filing the written notice of intent to protest, the protester shall file a formal written protest with the City Manager, acting as the bid protest officer, explaining in detail the nature of the protest and the grounds on which it is based. During this five-day period, the protester is encouraged to attempt to resolve the issue with the City's Finance Department.
- 38.3 The protester must include with the formal written protest a bid protest bond in the form of a certified check, cashier's check or money order made payable to the city in an amount equal to five percent (5%) of the lowest acceptable bid. The bond will be deposited with the Cashier's Office where it will be put into an account and the protester will receive a receipt.
- 38.4 Upon timely receipt of the formal written protest and protest bond, the City must:
- (1) Issue formal findings of fact and a written decision with regard to the validity or non-validity of the formal written protest within ten (10) business days of the City's receipt of the protest.
 - (2) Within two (2) business days of receipt of the formal findings of fact and written decision, the City shall notify the protester of the decision of the bid protest officer. Such notification shall be transmitted via certified return receipt mail.
- 38.5 Should the protest be found to be without merit or validity, the bid protest bond shall be forfeited to the City in its entirety, and the bid process may resume. If a decision favorable in whole or in part to the protest is rendered, a check for the full amount of the bond will be returned to the protester.

END OF SECTION

“ATTACHMENT A”

Insurance:

Before performing any work, the Company shall procure and maintain, during the life of the Contract, insurance listed below. The policies of insurance shall be primary and written on forms acceptable to the City and placed with insurance carriers approved and licensed by the Insurance Department in the State of Florida and meet a minimum financial AM Best and Company rating of no less than A:VII. No changes are to be made to these specifications without prior written specific approval by the City.

A. Workers Compensation: Company will provide Workers Compensation Insurance on behalf of all employees, including sub-contractors who are to provide a service under this Contract, as required under Florida Law, Chapter 440, and Employers Liability with limits of not less than \$100,000 per employee per accident; \$500,000 disease aggregate; and \$100,000 per employee per disease.

B. Commercial General Liability including but not limited to bodily injury, property damage, contractual, products and completed operations, and personal injury with limits of not less than \$1,000,000 per occurrence, \$1,000,000 aggregate covering all work performed under this Contract, to include broad form property damage.

Policy Form:

A. All policies required by this Contract, with the exception of Workers Compensation, or unless specific approval is given by the City, are to be written on an occurrence basis, shall name the City of Venice, its Elected Officials, Officers, Agents, Employees as additional insured as their interest may appear under this Contract. Insurer(s), with the exception of Workers Compensation, shall agree to waive all rights of subrogation against the City of Venice, its Elected Officials, Officers, Agents, & Employees.

B. Insurance requirements itemized in this Contract, and required of the Company, shall be provided on behalf of all subcontractors to cover their operations performed under this Contract. The Company shall be held responsible for any modifications, deviations, or omissions in these insurance requirements as they apply to subcontractors.

C. Each insurance policy required by this Contract shall:

(1) apply separately to each insured against whom claim is made and suit is brought, except with respect to limits of the insurer's liability;

(2) be endorsed to state that coverage shall not be suspended, voided or canceled by either party except after thirty (30)

calendar days prior written notice by certified mail, return receipt requested, has been given to the City of Venice Risk Manager.

D. The City shall retain the right to review, at any time, coverage form, and amount of insurance.

E. The procuring of required policies of insurance shall not be construed to limit Company's liability nor to fulfill the indemnification provisions and requirements of this Contract.

F. The Company shall be solely responsible for payment of all premiums for insurance contributing to the satisfaction of this Contract and shall be solely responsible for the payment of any deductible and/or retention to which such policies are subject, whether or not the City is an insured under the policy. In the event that claims in excess of the insured amounts provided herein are filed by reason of operations under the contract, the amount excess of such claims, or any portion thereof, may be withheld from any payment due or to become due to the Company until such time the Company shall furnish additional security covering such claims as may be determined by the City. Deductible levels should be acceptable to the city.

G. Claims Made Policies will be accepted for professional and hazardous materials and such other risks as are authorized by the City. All Claims Made Policies contributing to the satisfaction of the insurance requirements herein shall have an extended reporting period option or automatic coverage of not less than two years. If provided as an option, the Company agrees to purchase the extended reporting period on cancellation or termination unless a new policy is effected with a retroactive date, including at least the last policy year.

H. Certificates of Insurance evidencing Claims Made or Occurrence form coverage and conditions to this Contract, as well as the City's Bid Number and description of work, are to be furnished to the City's Risk Manager, 401 West Venice Avenue, Venice, FL 34285, ten (10) business days prior to commencement of work and a minimum of thirty (30) calendar days prior to expiration of the insurance policy.

I. Notices of Accidents and Notices of Claims associated with work being performed under this Contract, shall be provided to the Company's insurance company and the City's Risk Manager, as soon as practicable after notice to the insured.

END OF SECTION

SPECIAL CONDITIONS

1. Payment

Retainage of 10 percent of each progress payment made to the contractor shall be withheld until final completion and acceptance of the project by the City of Venice for all construction services contracts exceeding \$200,000. Retainage shall not be withheld for construction services contracts of \$200,000 or less.

2. Stored Materials

The City of Venice, at its discretion, will pay for stored materials which are safely stored on the project site in accordance with the manufacturer's or supplier's recommendations and in accordance with these Contract Documents. All requests for payment of stored materials shall be accompanied by a paid receipt indicating that the contractor has paid for the materials.

3. Owner's Allowance

This Bid Item entails minor increases to existing bid item quantities or minor modification items not bid which were unforeseen and necessary during the construction to provide a safe, complete project in accordance with the Bid Documents. Authorization for use of any of this Bid Item shall be made by the City of Venice in writing prior to performing the associated work. In general, this item is for unanticipated conflicts and/or design changes required during construction which are necessary to complete the project without changing the initial Scope of Work and without costly delays.

4. Permits

Unless otherwise provided, Contractor shall obtain and pay for all construction permits and licenses. City shall assist Contractor, when possible, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the work.

The following City permits are required for this project:

Right of Way Use Permit Authorization (Application fee is waived)

Revised 6/24/13

Site Preparation Permit (Application fee is waived)

5. Warranty

All work, materials and equipment furnished as defined herein shall be guaranteed and warranted by the Contractor for a minimum period of one (1) year, unless otherwise specified, from final acceptance by the City to be free from defects due either to faulty materials or equipment or faulty workmanship. If within one (1) year after the date of final completion or such longer period of time as may be prescribed by laws or regulation or by the terms of any applicable special guarantee required by the Contract Documents, any work is found to be defective, Contractor shall promptly, without cost to the City and in accordance with the City's written instructions, either correct such defective work or remove it from the site and replace it with non-defective work. If Contractor does not promptly comply with the terms of such instruction, City may have the defective work corrected/removed and all direct, indirect and consequential costs of such removal and replacement will be paid by the Contractor.

6. Stipulated Damages

In the event that the work is not completed within the required time, then from the compensation otherwise to be paid to the Contractor, the City may retain the sum of one thousand five hundred thirty-two dollars (\$1,532.00) per day for each calendar day that the work remains uncompleted beyond the time limit, which sum shall represent the actual damage which the City will have sustained per day by failure of the Contractor to complete the work within the required time, said sum not being a penalty but being the stipulated damages the City will have sustained in the event of such default by the Contractor.

7. Testing

Unless otherwise specified herein, Contractor shall arrange and pay for all testing required by the Contract Documents.

8. Construction Time

The Contractor shall diligently prosecute the work to completion within 150 days from receipt of a Notice To Proceed.

REQUIRED FORMS LIST

Each respondent shall return the required information forms as attached:

- Bid Submittal Form
- Proposal Bond
- Local Preference Form
- Qualifications Statement
- Co-operative Procurement with Other Jurisdictions
- Form 3A- Interest in Competitive Bid for Public Business
- Indemnification/Hold Harmless
- FDEP & U.S. EPA Construction Notices of Intent (NOI)
- Statement of References for Contractor
- Contractor's Statement of Sub-contractors
- Drug Free Workplace Certification
- Non-Collusive Affidavit
- Public Entity Crime Information
- Statement of "No Bid" (if applicable)

All required forms are included in this package. All forms must be filled out and returned with the firm's proposal.

Failure to do so will result in the firm being considered non-responsive and their proposal will be disallowed.

INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT

BASE BID 1

Contractor shall bid both Base Bid 1 & Base Bid 2; contract shall be awarded in the best interest of the Owner.

Item No.	Estimated Quantity	Unit	Description (Print or Type in Words)	Unit Bid Price (In Numbers)	Total Amount (In Numbers)
			BASE BID 1 ITEMS		
1	900	LF	16" DR-9 HDPE Force Main Installed by HDD		
2	60	LF	16" C-905 PVC Force Main by Open Cut Method		
3	540	LF	4" C-900 PVC Force Main by Open Cut Method		
4	5	TON	Ductile Iron Fittings		
5	4	EA	Combination Air/Vacuum Valve Assembly		
6a	4	EA	16" Eccentric Plug Valves with Box		
7	1	EA	4" Eccentric Plug Valve with Box		
8	20	CYD	Flowable Fill for Pipe Conflicts		
9	30	CYD	Abandonment of Existing Force Main with Flowable Fill		
10	2	EA	Wet Tap Existing 16" Cast Iron Force Main		
11	2	EA	16" Temporary Line Stop		
12	1	LS	Site Restoration		
13	15	CYD	Reverse Dead Man and Cast-In-Place Thrust Blocks		
14	1	LS	Maintenance of Traffic and Traffic Control (Max 3% of Base Bid)		
15	1	LS	General Conditions, Mobilization and Demobilization (Max: 5% of Base Bid)		
16	1	LS	Indemnification	\$10.00	\$10.00
17	1	LS	Owner's Allowance for Extra Work Authorized by the Owner	\$25,000	\$25,000
			BASE BID 1 TOTAL		

Total Base Bid 1 in Words

Legal Name of Bidder

Authorized Signature

Date

D/B/A (if applicable)

Print Name

Title

Mailing Address (PO Box or Street)

Phone No.

Facsimile No.

Address

Authorized Representative

Email

City/State/Zip

Type of Business

Federal ID No.

INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT

BASE BID 2

Contractor shall bid both Base Bid 1 & Base Bid 2; contract shall be awarded in the best interest of the Owner.

Item No.	Estimated Quantity	Unit	Description (Print or Type in Words)	Unit Bid Price (In Numbers)	Total Amount (In Numbers)
BASE BID 2 ITEMS					
1	900	LF	14" DR-18 Fusible PVC Force Main Installed by HDD		
2	60	LF	14" C-905 PVC Force Main by Open Cut Method		
3	540	LF	4" C-900 PVC Force Main by Open Cut Method		
4	4	TON	Ductile Iron Fittings		
5	4	EA	Combination Air/Vacuum Valve Assembly		
6a	2	EA	16" Eccentric Plug Valves with Box		
6b	2	EA	14" Eccentric Plug Valves with Box		
7	1	EA	4" Eccentric Plug Valve with Box		
8	20	CYD	Flowable Fill for Pipe Conflicts		
9	30	CYD	Abandonment of Existing Force Main with Flowable Fill		
10	2	EA	Wet Tap Existing 16" Cast Iron Force Main		
11	2	EA	16" Temporary Line Stop		
12	1	LS	Site Restoration		
13	15	CYD	Reverse Dead Man and Cast-In-Place Thrust Blocks		
14	1	LS	Maintenance of Traffic and Traffic Control (Max 3% of Base Bid)		
15	1	LS	General Conditions, Mobilization and Demobilization (Max: 5% of Base Bid)		
16	1	LS	Indemnification	\$10.00	\$10.00
17	1	LS	Owner's Allowance for Extra Work Authorized by the Owner	\$25,000	\$25,000
BASE BID 2 TOTAL					

Total Base Bid 2 in Words

Legal Name of Bidder

Authorized Signature

Date

D/B/A (if applicable)

Print Name

Title

Mailing Address (PO Box or Street)

Phone No.

Facsimile No.

Address

Authorized Representative

Email

City/State/Zip

Type of Business

Federal ID No.

PROPOSAL BOND

****Not to be completed if a certified check is submitted.***

KNOW ALL MEN BY THESE PRESENTS: That we, the undersigned,

_____ as Principal,

and _____ as Surety

are held and firmly bound unto the City of Venice, Florida, in the sum of

_____ \$_____, for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of the above obligation is such that if the attached Proposal of Principal and Surety for work specified as:

all as stipulated in said Proposal, by doing all work incidental thereto, in accordance with the plans and specifications provided heretofore, all within Sarasota County, is accepted and the bidder shall within ten (10) days after notice of said award, enter into a contract, in writing, and furnish the required Performance Bond with surety or sureties to be approved by the Director of Purchasing, this obligation shall be void; otherwise the same shall be in full force and virtue by law and the full amount of this Proposal Bond will be paid to the City as stipulated or liquidated damages.

Signed this _____ day of _____, 2013.

Principal

Surety

Principal must indicate whether corporation, partnership, company, or individual.

The person signing shall, in his own handwriting, sign the Principal's name, his own name, and his title. The person signing for a corporation must, by affidavit, show his authority to bind the corporation.

HOW DO I DETERMINE “LOCAL PREFERENCE”

The following questions will help you determine local preference for your company.
Please answer questions 1 through 4 **FIRST**. If you answer **NO** to any questions 1 through 4, local preference does **NOT** apply.
ONLY if you answer **YES** to questions 1 through 4, may you proceed to question 5.
If you answer **YES** to any questions 5 through 7, local preference applies.
If you are unsure of how to answer any questions, please contact the City of Venice’s Purchasing Department at 941-486-2626.

Questions 1 – 4

1. Have you paid a local business tax either to Sarasota, DeSoto or Charlotte County (Manatee County does not have a local business tax) authorizing your company to provide goods or services described in this solicitation ?

YES ____ If “yes”, proceed to question 2.

NO ____ If “no”, **STOP, local preference does not apply.**

* If the name on the local business tax receipt is not the same as the name on the bid/solicitation submittal, local preference does not apply.

2. Does your company maintain a permanent physical business address located within the limits of Sarasota, Manatee, DeSoto or Charlotte County ?

YES ____ If “yes”, proceed to question 3.

NO ____ If “no”, **STOP, local preference does not apply.**

3. Does your local business office (identified in question 2) have a least one full time employee ?

YES ____ If “yes”, proceed to question 4.

NO ____ If “no”, **STOP, local preference does not apply.**

4. Do at least fifty percent (50%) of your company employees who are based in the local business location (identified in question 2) reside within Sarasota, Manatee, DeSoto or Charlotte County ?

YES ____ If “yes”, proceed to question 5.

NO ____ If no, **STOP, local preference does not apply.**

Questions 5 – 7

5. Is your local business office (identified in question 2) the primary location (headquarters) of your company ?

YES ____ If “yes”, **STOP, local preference applies.**

NO ____ If “no”, proceed to question 6.

6. If the local business office (identified in question 2) is not the primary location of your company, are at least ten percent (10%) of your company’s entire full-time employees based at the local office location ?

YES ☐ If “yes”, STOP, local preference applies

NO ☐ If “no”, proceed to question 7

7. If your local business office is not the primary location of your company, does at least one corporate officer, managing partner or principal owner of the company reside in Sarasota, Manatee, DeSoto or Charlotte County ?

YES ☐ If “yes”, STOP, local preference applies

NO ☐ If “no”, local preference does not apply.

QUALIFICATIONS STATEMENT

The undersigned certifies under oath the truth and correctness of all statements and all answers to questions made hereinafter:

SUBMITTED TO:

CITY OF VENICE
Procurement- Finance Department
401 W. Venice Avenue
Venice, Florida 34285

CHECK ONE:

- ☐ Corporation
☐ Partnership
☐ Individual
☐ Joint Venture
☐ Other

SUBMITTED BY:

NAME: _____
ADDRESS: _____
PRINCIPLE OFFICE: _____

State the true, exact, correct and complete legal name of the partnership, corporation, trade or fictitious name under which you do business and the address of the place of business.

The correct name of the Offeror is: _____

The address of the principal place of business is: _____

If the Offeror is a corporation, answer the following:

- a. Date of Incorporation: _____
- b. State of Incorporation: _____
- c. President's Name: _____
- d. Vice President's Name: _____
- e. Secretary's Name: _____
- f. Treasurer's Name: _____
- g. Name and address of Resident Agent: _____

If Offeror is an individual or partnership, answer the following:

- a. Date of Organization: _____
- b. Name, address and ownership units of all partners:

- c. State whether general or limited partnership: _____

If Offeror is other than an individual, corporation partnership, describe the organization and give the name and address of principals:

If Offeror is operating under fictitious name, submit evidence of compliance with the Florida Fictitious Name Statute.

How many years has your organization been in business under its present business name?

a. Under what other former names has your organization operated?

ACKNOWLEDGEMENT

State of _____

County of _____

} SS.
}

On this the _____ day of _____, 2013, before me, the undersigned Notary Public of the State of _____, personally appeared _____ and (Name(s) of individual(s) who appeared before notary) whose name(s) is/are Subscribed to the within instrument, and he/she/they acknowledge that he/she/they executed it.

NOTARY PUBLIC
SEAL OF OFFICE:

NOTARY PUBLIC, STATE OF _____

(Name of Notary Public: Print, stamp, or type as commissioned)

☐ Personally known to me, or ☐ Produced Identification: _____ ☐ **DID** take an oath, or ☐ **DID NOT** take an oath

COOPERATIVE PROCUREMENT WITH OTHER JURISDICTIONS

The vendor, by submitting a bid, authorizes other Public Agencies to "Piggy-Back" or purchase equipment or services being proposed in this invitation to bid at prices bid unless otherwise noted on the proposal sheet.

Yes _____ No _____

AUTHORIZED SIGNATURE

By submission of the ITB, the undersigned certifies that:

1. He/She has not paid or agreed to pay any fee or commission, or any other thing of value contingent upon the award of this contract, to any City of Venice, Florida employee or official or to any current consultant to the City of Venice, Florida;
2. He/She has not paid or agreed to pay any fee or commission or any other thing of value contingent upon the award of this contract to any broker or agent or any other person;
3. The prices contained in this proposal have been arrived at independently and without collusion, consultation, communication or agreement intended to restrict competition.
4. He/She has the full authority of the Offeror or to execute the proposal and to execute any resulting contract awarded as the result of, or on the basis of, the proposal.

Authorized Representative: _____

Signature: _____

Title: _____

Company Name: _____

Address: _____

City, State, ZIP: _____

Telephone Number: _____

Fax Number: _____

E-mail address: _____

FORM 3A INTEREST IN COMPETITIVE BID FOR PUBLIC BUSINESS

LAST NAME — FIRST NAME — MIDDLE INITIAL			OFFICE / POSITION HELD
MAILING ADDRESS			AGENCY
CITY	ZIP	COUNTY	ADDRESS OF AGENCY

WHO MUST FILE THIS STATEMENT

Sections 112.313(3) and 112.313(7), Florida Statutes, prohibit certain business relationships on the part of public officers and employees, their spouses, and their children. See Part III, Chapter 112, Florida Statutes, and/or the brochure entitled "A Guide to the Sunshine Amendment and Code of Ethics for Public Officers and Employees" for more details on these prohibitions. However, Section 112.313(12), Florida Statutes, provides certain limited exemptions to the above-referenced prohibitions, including one where the business is awarded under a system of sealed, competitive bidding; the public official has exerted no influence on bid negotiations or specifications; AND where disclosure is made, prior to or at the time of the submission of the bid, of the official's or his spouse's or child's interest and the nature of the intended business. This form has been promulgated by the Commission on Ethics for such disclosure, *if and when applicable* to a public officer or employee.

INTEREST IN COMPETITIVE BID FOR PUBLIC BUSINESS *(Required by § 112.313(12)(b), Fla. Stat.)*

1. The competitive bid to which this statement applies has been / will be (strike one) submitted to the following government agency:		
2. The person submitting the bid is:	NAME ▼	POSITION ▼
3. The business entity with which the person submitting the bid is associated is:		
4. My relationship to the person or business entity submitting the bid is as follows:		
5. The nature of the business intended to be transacted in the event that this bid is awarded is as follows:		
a. The realty, goods, and / or services to be supplied specifically include: _____		
b. The realty, goods, and / or services will be supplied for the following period of time: _____		
c. Will the contract be subject to renewal without further competitive bidding? <input type="checkbox"/> Yes <input type="checkbox"/> No. If so, how often?		
6. Additional comments:		
7. SIGNATURE	DATE SIGNED	DATE FILED

FILING INSTRUCTIONS

If you are a state officer or employee required to disclose the information above, please file this form with the Department of State in Room 316, R.A. Gray Building, 500 South Bronough Street, Tallahassee, Florida 32399-0250. If you are an officer or employee of a political subdivision of this state and are subject to this disclosure, please file the statement with the Supervisor of Elections of the county in which the agency in which you are serving has its principal office.

NOTICE: UNDER PROVISIONS OF FLORIDA STATUTES §112.317, A FAILURE TO MAKE ANY REQUIRED DISCLOSURE CONSTITUTES GROUNDS FOR AND MAY BE PUNISHED BY ONE OR MORE OF THE FOLLOWING: IMPEACHMENT, REMOVAL OR SUSPENSION FROM OFFICE OR EMPLOYMENT, DEMOTION, REDUCTION IN SALARY, REPRIMAND, OR A CIVIL PENALTY NOT TO EXCEED \$10,000.

CE FORM 3A — REV. 1-95

INDEMNIFICATION/HOLD HARMLESS

The elected firm shall (if required by City) defend, indemnify and hold the City, the City's representatives or agents, and the officers, directors, agents, employees, and assigns of each harmless for and against any and all claims, demands, suits, judgments, damages to persons or property, injuries, losses or expenses of any nature whatsoever (including attorneys' fees at trial at appellate level) arising directly or indirectly from or out of any negligent act or omission of the elected firm, its Sub-Offerrors and their officers, directors, agents or employees; any failure of the elected firm to perform its services hereunder in accordance with generally accepted professional standards; any material breach of the elected firm's representations as set forth in the proposal or any other failure of the elected firm to comply with the obligations on its part to be performed under this contract.

Concur _____

Variance _____

I, _____, being an authorized representative of the firm of

_____ located at City

_____, State _____, Zip Code _____ Phone:

_____ Fax: _____. Having read and

understood the contents above, hereby submit accordingly as of this Date,

_____, 2013.

Please Print Name

Signature

This signed document shall remain in effect for a period of one (1) year from the date of signature or for _____ the contract period, _____ whichever is _____ longer.

CITY OF VENICE, FLORIDA
FDEP & U.S. EPA CONSTRUCTION NOTICES OF INTENT (NOI)

The undersigned bidder acknowledges the requirement of the U.S. Environmental Protection Agency (EPA) and the Florida Department of Environmental Protection (FDEP) which have published the rules for NPDES General Permits for stormwater discharges from construction sites and said bidder agrees to assist the owner in the preparation of these permits and associated plans. The bidder acknowledges that he has taken these permits and associated construction costs into account in the preparation of his lump sum bid. These permits are mandated under Section 402(p) of the Clean Water Act for "Stormwater Discharge from Construction Activities (including clearing, grading, and excavation activities) that result in the disturbance of five (5) or more acres total land area, including areas that are part of a larger common plan of development or sale." The EPA has published summary guidance for: "Developing Prevention Plans and Best Management Practices" (EPA 833-R-92-001, October 1992).

The EPA permit format is a *Notice of Intent (NOI) for Stormwater Discharges Associated with Construction Activity to be covered under a NPDES Permit*, and it is to be submitted according to the NOI instructions. The Stormwater Pollution Prevention Plan which must accompany the NOI must be signed by authorized representatives of the contractor and subcontractors as well as the facility Owner. Copies of the EPA NOI must be provided to state and local agencies who have issued stormwater management, grading, or land alteration permits or approvals.

An NOI must also be submitted to the Florida Department of Environmental Protection, NPDES Stormwater Notices Center, MS 2510, 2600 Blair Stone Road, Tallahassee, FL 32399. FDEP forms may be downloaded from the State's web site <http://www.dep.state.fl.us/water/stormwater/npdes/> or phone 850-921-9870 if you have questions.

Acceptance of the bid to which this certification and disclosure applies in no way represents the Owner or its Representative has evaluated and thereby determined that the information is adequate to comply with the applicable U.S. EPA or FDEP requirements nor does it in any way relieve the contractor of its sole responsibility to comply with the applicable U.S. EPA and FDEP requirements, including inspection of all control measures at least once each week and following any storm (rainfall) event of 0.5 inches or greater and maintaining reports of each inspection.

Bidder (Company): _____

Name and Title: _____

Address: _____

Telephone: _____

BY SIGNATURE BELOW OF AUTHORIZED REPRESENTATIVE, CONTRACTOR ACKNOWLEDGES RECEIPT OF A COPY OF CITY ORDINANCES 95-12 and 96-09 AND AGREES TO ABIDE BY THE REQUIREMENTS OF SAID ORDINANCES.

Signature: _____ Date: _____
Printed name/title: _____

ORDINANCE 95-12

AN ORDINANCE OF THE CITY OF VENICE, FLORIDA, AMENDING THE CODE OF ORDINANCES BY AMENDING CHAPTER 9, HEALTH AND SANITATION, ARTICLE IV, DISPOSAL OF EXCRETA, SECTION 9-71, DISCHARGE OF RAW SEWAGE INTO STORMWATER; DELETING ARTICLE V, PROHIBITED STORMWATER DISCHARGES; ADDING CHAPTER 19, WATER AND SEWERS, ARTICLE VI, STORMWATER QUALITY; DELETING CHAPTER 15, STREETS AND SIDEWALKS, ARTICLE IV, EXCAVATIONS, SECTION 15-53, STORM DRAINAGE AND POLLUTION; PROVIDING FOR CONFLICT WITH OTHER ORDINANCES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, control of stormwater runoff is necessary from individual lots that do not require a permit from the Southwest Florida Water Management District and requiring compliance with the provisions of the Clean Water Act 33 U.S.C.1251 et.seq., as amended by the Water Quality Act of 1987; and

WHEREAS, the City is desirous of complying with its U.S. Environmental Protection Agency National Pollutant Discharge Elimination System Permit and its Stormwater Master Plan, therefore, stormwater runoff and any discharge to the City storm sewer system will be closely monitored and regulated; and

WHEREAS, the control of stormwater runoff is the responsibility of each individual property owner; and

WHEREAS, the City is desirous of controlling stormwater runoff and insuring compliance with the Comprehensive Plan.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF VENICE, FLORIDA:

SECTION 1. Chapter 9, Water and Sewers, Article IV, Disposal of Excreta, Section 9-71, Discharge of Raw Sewage into Storm Sewer, is amended to read as follows:

Sec. 9-71. Discharge of raw sewage into storm sewer.

It shall be unlawful for any person to discharge raw sewage or to discharge the effluent of and from any septic tank into the storm sewer system of the city or to construct or maintain any system of drainage, pipes, conduits or other apparatus whereby raw sewage or the effluent of and from any septic tank shall or may be discharged into or through the storm sewer system of the city.

SECTION 2. Chapter 9, Water and Sewers, Article V, Prohibited Stormwater Discharges, is deleted in its entirety.

SECTION 3. Chapter 19, Water and Sewers, Article VI, Stormwater Quality is added to read as follows:

ARTICLE VI. STORMWATER QUALITY

Sec. 19-141. Definitions.

As used in this article "industrial stormwater" means stormwater runoff from a site with industrial activities, as defined under 40 CFR Section 122.26(a)(14) U.S. Environmental Protection Agency regulation.

As used in this article "construction sites" refers to all sites.

As used in this article, "illicit discharge" is any discharge of anything other than stormwater to the municipal separate storm sewer system (MS4) or the waters of the State of Florida or the United States.

As used in this article "industrial wastewater" refers to liquids used by an entity in their course of business, that if discharged to the MS4, would degrade the quality of stormwater.

Sec. 19-142. Disposal of industrial stormwater discharges.

The following types of discharges to the municipal separate storm sewer of the city must be controlled as indicated.

(1) **Industrial wastewater/illicit discharge:** Industrial wastewater/illicit discharge may not be discharged to the city's municipal separate storm sewer system.

(2) **Industrial stormwater:** As required to comply with NPDES regulations, the quality of industrial stormwater which is discharged through the city's municipal separate storm sewer system may be subject to regulation or permitting, and any violation of such regulation or permit may be subject to an order to immediately cease such

discharge.

Sec. 19-143. Runoff stormwater and Best Management Practice (BMPs) for construction sites.

BMPs shall be implemented as necessary, to insure that all discharges from construction activities are in compliance with the City of Venice EPA/NPDES Stormwater Permit and the Stormwater Master Plan, or the SWFWMD Permit or EPA's NPDES Construction Activity General Permit, whichever is most stringent in its requirements.

Best Management Practices include but are not limited to, the following requirements:

- (a) All site grading shall be conducted in such a manner that all stormwater management facilities located adjacent to the site are not altered in any way which will diminish their designated flow or pollutant removal capacity or the shape of the drainage facility.
- (b) Maintenance of vegetative buffers or use of a silt fence and/or staked hay bales which minimize erosion and retain sediment on site, shall be implemented prior to any construction activities taking place at sites which discharge to surface water or the municipal separate storm sewer system (MS4). These controls, when utilized, shall be secured and properly maintained during construction activities until the site has been stabilized with sod and/or seed and mulch. A double silt fence may be required as an additional measure to insure that discharges from the site are in compliance with water quality standards as established by the EPA/NPDES Stormwater Permit. Undisturbed vegetative buffers shall be maintained intact to the maximum extent possible to reduce erosion and the discharge of sediment from stormwater runoff. All areas of exposed soil shall be stabilized within 72 hours of attaining final grade.
- (c) Storm sewer systems (eg. inlets, pipes and ditches, etc.) adjacent to the site must be protected by a silt fence and/or staked hay bales during construction, to keep solids from entering conveyance systems.
- (d) Vehicles such as concrete or dump trucks and other construction equipment shall not be washed at locations where the runoff will flow directly into a lake, wetland, watercourse or stormwater conveyance system. Special areas must be designated for washing vehicles. In all new subdivisions, a wash area may be established by the owner/developer which can be used by the site contractor and home builders. If established, wash areas shall be located where the wash water will spread out and evaporate or infiltrate directly into the ground, or where the runoff can be collected in a temporary holding or seepage basin. Gravel or rock bases are recommended for temporary holding or seepage basins, to minimize mud generation. Underdrains shall be installed where infiltration basins are provided as required by the owner/developer's engineer or the Southwest Florida Water Management District. Upon completion of the project, the wash areas shall be graded and stabilized and any trash or waste shall be collected and disposed of properly.
- (e) Fuel, chemicals, cements, solvents, paints, topsoil, or other potential water pollutants shall be stored in areas where they will not cause runoff pollution. Toxic chemicals and materials, such as pesticides, paints, and acids, must be stored in accordance with manufacturer's guidelines. Groundwater resources shall be protected from leaching by placing a plastic mat, packed clay, tar paper, or other impervious material on any areas where toxic liquids are to be opened and stored.
- (f) A minimum of one permitted driveway must be established prior to construction and shall be used as the only access for ingress/egress during construction in order to provide minimum disturbance of drainage facilities and vegetative cover on site.

Sec. 19-44. Owner responsibility for stormwater runoff.

- (a) The control of stormwater runoff is the responsibility of each individual property owner.
- (b) Any property owner constructing or causing to be constructed any building which requires an elevated slab and the elevation of the building pad is higher than that of adjoining properties, will control stormwater runoff during construction. Likewise, any property that is filled more than twelve inches above the adjacent property must provide additional control measures for stormwater during construction. Upon completion of the work, all stormwater runoff shall flow to its natural preconstruction drainage swale, ditch, etc., or be retained in a retention or detention pond(s) designed and constructed for that purpose.
- (c) For any construction where the elevation of the building pad or site fill will be higher than adjoining properties, construction plans certified by a professional engineer registered with the State of Florida, retained by the property owner, will be provided to the City prior to issuance of a building permit.
- (d) Any single lot not covered under Southwest Florida Water Management District rules, exceeding forty-five percent in impervious coverage (including buildings, drives, sidewalks, patios, etc.) shall require stormwater retention facilities to be designed by a Florida registered engineer. The design is to meet the City of Venice EPA/NPDES Permit requirements for quantity and quality of treatment.
- (e) The property owner's engineer will be required to certify to the City Engineer that construction was completed

in accordance with the certified plans, prior to issuance of a Certificate of Occupancy.

(f) All improvements to property affecting stormwater drainage must be done in compliance with the City's Comprehensive Plan.

Sec. 19-145. Illicit discharges.

It shall be unlawful for any person to discharge anything other than stormwater into the city's municipal separate storm sewer system whether such discharges occur through piping connections, runoff, exfiltration, infiltration, seepage, or leaks. No person may maintain, use, or establish any direct or indirect connection to any storm sewer owned by the city that results in any discharge in violation of any provision of federal, state, city, or other law or regulation. This provision is retroactive to January 1, 1995, and applies to connections made prior to the effective date of this provision, regardless of whether made under a permit, or other authorization, or whether permissible under laws or practices applicable or prevailing at the time the connection was made.

No materials other than those composed entirely of stormwater shall be disposed of, dumped, or spilled into the city's municipal separate storm sewer system, whether such materials are in a solid or liquid form.

Sec. 19-146. Inspections.

It shall be the duty of the city engineer or designee to carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance with this article.

SECTION 4. Chapter 15, Streets and Sidewalks, Article IV, Excavations, Section 15-53, Storm Drainage and Pollution, is deleted in its entirety.

SECTION 5. To the extent of any conflict between the provisions of this Ordinance, and any other Ordinance, Resolution, or Agreement of the City of Venice, Florida, the provisions of this Ordinance shall prevail.

SECTION 6. Severability. If for any reason a provision of this Ordinance or the application thereof to any person, group of persons, or circumstances is held invalid, the invalidity shall not effect other provisions or applications of the Ordinance which can be given effect without the invalid provision or application, and to this end the provisions of the Ordinance are severable.

SECTION 7. Effective Date. This Ordinance shall take effect immediately upon its adoption, as required by law.

PASSED BY THE COUNCIL OF THE CITY OF VENICE, FLORIDA, THIS 23RD DAY OF MAY, 1995.

First Reading: May 9, 1995 - Final Reading: May 23, 1995 - ADOPTION: May 23, 1995

ATTEST: /s/LORI STELZER, CMC, CITY CLERK /S/ MERLE L. GRASER, MAYOR

I, LORI STELZER, City Clerk of the City of Venice, Florida, a municipal corporation in Sarasota County, Florida, do hereby certify that the foregoing is a full and complete, true and correct copy of an Ordinance duly adopted by the Venice City Council, at a meeting thereof duly convened and held on the 23rd day of May, 1995, a quorum being present.

WITNESS my hand and the official seal of said City this 24th day of May, 1995.

/S/ LORI STELZER, CMC, CITY CLERK Approved as to form: /S/ ROBERT C. ANDERSON, CITY ATTORNEY

ORDINANCE 96-09

AN ORDINANCE OF THE CITY OF VENICE, FLORIDA, AMENDING THE CODE OF ORDINANCES BY AMENDING CHAPTER 19, WATER AND SEWERS, ARTICLE VI, STORMWATER QUALITY, SECTION 19-141, DEFINITION FOR INDUSTRIAL STORMWATER, SECTION 19-146, INSPECTIONS, PROVIDING FOR CONFLICT WITH OTHER ORDINANCES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Venice is responsible for the conservation, management, protection, control, use and enhancement of stormwater within its corporate limits, and for the acquisition, management, maintenance, extension, and improvement of the stormwater systems in the City; and

WHEREAS, the Environmental Protection Agency/National Pollutant Discharge Elimination System (EPA/NPDES) permit requires certain amendments to the existing Ordinance and extension of inspection authority on private properties.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF VENICE, FLORIDA:

SECTION 1. Chapter 19, Water and Sewers, Article VI, Stormwater Quality, Section 19-141, Definition, for Industrial Stormwater is amended to read as follows:

Sec. 19-141. Definitions.

As used in this article, “industrial stormwater” means stormwater runoff from a site with industrial activities, as defined under 40 CFR Section 122.26 (a) (b) (14), U.S. Environmental Protection Agency regulation.

SECTION 2. Chapter 19, Water and Sewers, Article VI, Stormwater Quality, Section 19-146, Inspections, is amended to read as follows:

Sec. 19-146. Inspections.

It shall be the duty of the city engineer or designee to carry out all inspections, surveillance, and monitoring procedures necessary to determine compliance with this article. The city engineer or his duly authorized agents may enter at all reasonable times in or upon any private or public property for the purpose of inspecting and investigating conditions and practices which may be a violation of this ordinance, regulation or permit. The city engineer may, whenever necessary, make an inspection of construction sites to enforce any of the provisions of this ordinance, regulation or permit issued hereunder, or whenever an authorized official has reasonable cause to believe there exists any condition constituting a violation of this ordinance, regulation or permit issued hereunder. The city engineer shall inspect the work and shall require the owner to obtain services to provide adequate on-site inspection. If the city engineer finds that eroded soils are leaving the construction site, the city engineer may direct the owner(s) or his agents or his contractor on the site by written order to install any and all erosion controls that are deemed necessary to prevent said soil erosion from migrating off site. Notwithstanding the existence or pursuit of any other remedy, the City may maintain an action in its own name in any court of competent jurisdiction for an injunction or other process against any person to restrain or prevent violations of this ordinance.

SECTION 3. To the extent of any conflict between the provisions of this Ordinance, and any other Ordinance, Resolution, or Agreement of the City of Venice, Florida, the provisions of this Ordinance shall prevail.

SECTION 4. Severability. If for any reason a provision of this Ordinance or the application thereof to any person, group of persons, or circumstances is held invalid, the invalidity shall not effect other provisions or applications of the Ordinance which can be given effect without the invalid provision or application, and to this end the provisions of the Ordinance are severable.

SECTION 5. Effective Date. This Ordinance shall take effect immediately upon its adoption, as required by law.

PASSED BY THE COUNCIL OF THE CITY OF VENICE, FLORIDA, THIS 26TH DAY OF MARCH, 1996.

First Reading: March 12, 1996 - Final Reading: March 26, 1996 - ADOPTION: March 26, 1996

ATTEST: /s/LORI STELZER, CMC,CITY CLERK /S/ MERLE L. GRASER, MAYOR

I, LORI STELZER, City Clerk of the City of Venice, Florida, a municipal corporation in Sarasota County, Florida, do hereby certify that the foregoing is a full and complete, true and correct copy of an Ordinance duly adopted by the Venice City Council, at a meeting thereof duly convened and held on the 26th day of March, 1996, a quorum being present.

WITNESS my hand and the official seal of said City this 27th day of March, 1996.
/S/ LORI STELZER, CMC, CITY CLERK Approved as to form: /S/ ROBERT C. ANDERSON, CITY ATTORNEY.

STATEMENT OF REFERENCES
FOR CONTRACTOR

NAME OF CONTRACTOR: _____

BUSINESS ADDRESS: _____

How many years have you been engaged in the business under the present firm name? _____

List previous business experience: _____

List at least three construction references:

(1) Person to contact: _____

Company Name: _____

Address: _____

Telephone: _____ Date work performed: _____

(2) Person to contact: _____

Company Name: _____

Address: _____

Telephone: _____ Date work performed: _____

(3) Person to contact: _____

Company Name: _____

Address: _____

Telephone: _____ Date work performed: _____

(4) Person to contact: _____

Company Name: _____

Address: _____

Telephone: _____ Date work performed: _____

**CONTRACTOR'S STATEMENT OF
SUBCONTRACTORS TO BE USED FOR THIS WORK**

NAME OF CONTRACTOR: _____

BUSINESS ADDRESS: _____

CURED-IN-PLACE PIPE INSTALLER:

Company Name: _____

Address: _____

Telephone: _____ Phase of Work Sublet: _____

PROPOSED CIPP PRODUCT: _____

REQUIRED PRODUCT & INSTALLER COMMERCIALY ACCEPTABLE DOCUMENTATION
ATTACHED: YES _____ NO _____

LIST SUBCONTRACTORS TO BE USED IN THE PROJECT:

(1) Company Name: _____

Address: _____

Telephone: _____ Phase of Work Sublet: _____

(2) Company Name: _____

Address: _____

Telephone: _____ Phase of Work Sublet: _____

(3) Company Name: _____

Address: _____

Telephone: _____ Phase of Work Sublet: _____

(4) Company Name: _____

Address: _____

Telephone: _____ Phase of Work Sublet: _____

DRUG FREE WORKPLACE CERTIFICATION

If identical tie bids exist, preference will be given to the vendor who submits a certification with their bid/proposal certifying they have a drug-free workplace in accordance with Section 287.087, Florida Statutes. The drug-free workplace preference is applied as follows:

IDENTICAL TIE BIDS: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more bids, which are equal with respect to price, quality, and service, are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program.

As the person authorized to sign this statement, I certify that this firm complies fully with the following requirements:

- 1) This firm publishes a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
- 2) This firm informs employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
- 3) This firm gives each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).
- 4) In the statement specified in subsection (1), this firm notifies the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
- 5) This firm imposes a sanction on or requires the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.
- 6) This firm will continue to make a good faith effort to maintain a drug-free workplace through implementation of this section.

Contractor's Name Signature

NON-COLLUSIVE AFFIDAVIT

State of _____

County of _____

}

SS.

_____ being first duly sworn, deposes and says that:

1. He/she is the _____, (Owner, Partner, Officer, Representative or Agent) of _____ the Offeror that has submitted the attached Proposal;
2. He/she is fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal;
3. Such Proposal is genuine and is not a collusive or sham Proposal;
4. Neither the said Offeror nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Offeror, firm, or person to submit a collusive or sham Proposal in connection with the Work for which the attached Proposal has been submitted; or have in any manner, directly or indirectly sought by agreement or collusion, or have in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference with any Offeror, firm, or person to fix the price or prices in the attached Proposal or of any other Offeror, or to fix any overhead, profit, or cost elements of the Proposal price or the Proposal price of any other Offeror, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposal Work.

Signed, sealed and delivered
in the presence of:

By: _____

(Printed Name)

(Title)

ACKNOWLEDGEMENT

State of _____

County of _____

On this _____ day of _____, 2013, before me, the undersigned Notary Public of the State of _____, personally appeared _____ and (Name(s) of Individual(s) who appeared before notary) whose name(s) in/are Subscribed to the written instrument, and he/she/they acknowledge that he/she/they executed it.

NOTARY PUBLIC
SEAL OF OFFICE:

NOTARY PUBLIC, STATE OF _____

(Name of Notary Public: Print, stamp, or type as commissioned)

☐ Personally known to me, or ☐ Produced Identification: _____ ☐ DID take an oath, or ☐ DID NOT take an oath

PUBLIC ENTITY CRIME INFORMATION

A person or affiliate who has been placed on the State of Florida's convicted vendor list following a conviction for a public entity crime may not submit a BID/ITB proposal on a contract to provide any goods or services to a public entity, may not submit a response on a contract with a public entity for services in 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, Sub-Contractor, or Contractor 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 2876.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.**

I, _____, being an authorized representative
of the firm of _____, located at City:
_____ State: _____ Zip: _____, have
read and understand the contents of the Public Entity Crime Information and of this
formal BID/ITB package, hereby submit our proposal accordingly.

Signature: _____

Date: _____

Phone: _____

Fax: _____

Federal ID#: _____

NO BID RESPONSE

IMPORTANT: If you choose not to submit a bid for the attached "Invitation To Bid," please complete and return this form only on/before bid closing date. Failure to respond will result in your company being negatively registered as non-responsive. In the event five (5) "no responses" are posted, you will be automatically dropped from our mailing list for future solicitations for the described product/service.

Thank you for taking this opportunity to help us update and improve the solicitation process.

Bid Open/Close Date: **August 13, 2013 at 2:00 P.M.**

Bid Number: 2972-13

Description: **Intracoastal Waterway Force Main Replacement Project**

Contact: Jon Mayes, Procurement- Finance Dept.

Please check the appropriate response. We respectfully submit "No bid" for the following reason(s):

- ☐ 1. We are unable to meet the required delivery date
- ☐ 2. We cannot provide a product to meet the required specifications.
- ☐ 3. We no longer provide the requested product.
- ☐ 4. We do not represent the required brand name product.
- ☐ 5. The bid closing date does not allow adequate time to prepare a response.
- ☐ 6. The specifications are too restrictive.
- ☐ 7. We have chosen not to do business with the City
- ☐ 8. Other (feel free to provide our response on your company letterhead.)

Company Name _____ Vendor No. _____

Authorized Signature _____

Print Name _____

Title _____

Date _____ Telephone No. _____

SAMPLE CONTRACT

THIS CONTRACT, pursuant to City Council approval granted on _____, is made and entered into this _____ day of _____, 2013, by and between the CITY OF VENICE, FLORIDA, hereinafter referred to as the City, and _____, of the City of _____, County of _____, and State of _____, hereinafter referred to as the Contractor.

W I T N E S S E T H:

THAT FOR and in consideration of the mutual covenants and obligations hereafter set forth, the parties hereto agree as follows:

(1) The contract documents consist of this contract, standard general conditions, supplemental conditions, special conditions, technical specifications, drawings, bid proposal, payment and performance bonds, all of which are hereby made a part of this agreement.

(2) The Contractor shall perform all the work required by the contract documents for the following described project; and shall include installation of the listed items, per bid specifications:

City Bid # ITB# 2972-13: Intracoastal Waterway Force Main Replacement Project

(3) The work to be performed under this contract shall be completed within _____ days of the issuance of the Notice To Proceed by the City.

(4) The City shall pay the Contractor for the performance of the work, subject to the terms and conditions of the contract documents and any written change orders, the contract sum of: _____
Dollars & 00/100.

(5) Time is of the essence in this contract. In the event that the work is not completed within the required time, then from the compensation otherwise to be paid to the Contractor, the City may retain the sum of _____ (\$ _____) **per day** for each calendar day that the work remains uncompleted beyond the time limit, which sum shall represent the actual damage which the City will have sustained per day by failure of the Contractor to complete the work within the required time, said sum not being a penalty but being the stipulated damages the City will have sustained in the event of such default by the Contractor.

(6) In connection with the performance of work under this contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, sex, religion, color, or national origin. The aforesaid provision shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, lay-off or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor agrees to post hereafter in conspicuous places, available for employees or applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the non-discrimination clause. The Contractor further agrees to

insert the foregoing provisions in all contracts hereunder, including contracts or agreements with labor unions and/or workers' representatives, except subcontracts for standard commercial supplies or raw materials.

(7) This contract and the contract documents constitute the entire agreement of the parties and may not be changed or modified, except by a written document signed by both parties hereto. This contract shall be binding upon the successors and assigns of the parties.

IN WITNESS WHEREOF, the parties to the agreement have hereunto set their hands and seals and have executed this agreement, the day and year first above written.

(SEAL)

ATTEST: CITY OF VENICE
IN SARASOTA COUNTY, FLORIDA

CITY CLERK BY: _____

ATTEST: CONTRACTOR

BY: _____

Signed by (typed or printed) Signed by (typed or printed)

SURETY BONDS

At the time of executing the contract documents, the successful proposer shall append to this sheet separate performance and payment bonds each equal to one-hundred percent (100%) of the contract amount. Said bonds become an integral part of these contract documents and shall meet the following requirements:

1. Surety bonds submitted shall be written by a surety company that is approved by the City Finance Director and authorized to do business in the State of Florida, shall be accompanied by evidence of the authority of the issuing agent, and shall be on a form to be approved by the City Attorney. No bond in an amount greater than \$5,000 required by the City Charter, the Ordinances of The City of Venice, or the laws of the State of Florida shall be approved by the City Finance Director unless the surety company executing the bond is listed by the United States Treasury Department as being approved for writing bonds for Federal projects and its current list in an amount not less than the amount of the bond tendered to The City of Venice.

2. Both the separate payment and performance bonds shall be in the general form of AIA documents A311. Additionally, the payment bond shall state as follows:

“This bond is issued in compliance with Section 255.05, Florida Statutes (1994 Supp.), as may be amended. A claimant, except a laborer, who is not in privity with the contractor and who has not received payment for his labor, materials, or supplies shall, within 45 days after beginning to furnish labor, materials, or supplies for the prosecution of the work, furnish the contractor with a notice, that he intends to look to the bond for protection. A claimant who is not in privity with the contractor and who has not received payment for his labor, materials, or supplies shall, within 90 days after performance of the labor or after complete delivery of the materials or supplies, or with respect to rental equipment, within 90 days after the date that the rental equipment was last on the job site available for use, deliver to the contractor and to the surety written notice of the performance of the labor or delivery of the materials or supplies and of the nonpayment. No action for the labor, materials, or supplies may be instituted against the contractor or the surety unless both notices have been given. No action shall be instituted against the contractor or the surety on the payment bond or the payment provisions of a combined payment and performance bond after 1 year from the performance of the labor or completion of delivery of the materials or supplies. A claimant may not waive in advance his right to bring an action under the bond against the surety. In any action brought to enforce a claim against a payment bond under this section, the prevailing party is entitled to recover a reasonable fee for the services of his attorney for trial and appeal or for arbitration, in an amount to be determined by the court, which fee must be taxed as part of his costs, as allowed in equitable actions.”

**GIVE THIS INFORMATION TO YOUR SURETY TO AID IN
PREPARATION OF BONDS**

PUBLIC WORKS PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT _____, a _____
Corporation, as Principal, hereinafter called Contractor; and
_____, a corporation of the State
of _____, a surety, hereinafter called Surety, are held and firmly bound unto the
City of Venice as Obligee, hereinafter called the City in the amount of:
_____ Dollars (\$ _____) for the payment whereof
Contractor and Surety bind themselves, their heirs, executors, administrators, successors and
assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated the _____ day of
_____, 2013, entered into a Contract with the City for the following described
project:

ITB# 2972-13: Intracoastal Waterway Force Main Replacement Project

which contract is incorporated by reference herein and made a part hereof, and is hereinafter
referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor
shall promptly make payments to all persons supplying Contractor labor, materials and supplies,
used directly or indirectly by the Said Contractor or Subcontractors in the prosecution of the work
provided for in said Contract, then this obligation shall be null and void; otherwise it shall remain
in full force and effect.

PROVIDED FURTHER, that the said Surety for value received hereby stipulates and agrees
that no change, extension of time, alteration or addition to the terms of the Contract or to the work
to be performed thereunder or the Specifications accompanying the same shall in anyway affect its
obligation on this Bond, and it does hereby waive notice of any such change, extension of time,
alteration or addition to the terms of the Contract or to the work or to the Specifications.

PROVIDED FURTHER, that this bond is issued pursuant to Section 255.05, Florida Statutes,
and reference is hereby made to the notice and time limitations in said statute for making claims
against this bond.

PROVIDED FURTHER, that any suit under this bond must be instituted before the expiration
of one (1) year from the performance of the labor or completion of delivery of the materials or
supplies.

PROVIDED FURTHER, no right of action shall accrue on this bond to or for the use of any
person or corporation other than the City named herein and those persons or corporations provided
for the Section 255.05, Florida Statutes, their heirs, executors, administrators, successors or assigns.

Signed and sealed this _____ day of _____, A.D., 2013.

CONTRACTOR

By: _____

IN THE PRESENCE OF:

INSURANCE COMPANY

By: _____
Agent and Attorney-in-Fact

PUBLIC WORKS PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

THAT, _____, _____ as Principal, hereinafter called Contractor; and _____, a corporation of the State of _____ as surety, hereinafter called Surety, are held and firmly bound unto the City of Venice as Obligee, hereinafter called the City, in the amount of _____ Dollars (\$_____) for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has by written agreement dated the _____ day of _____, 2013, entered into a Contract with the City for the following described project:

ITB# 2972-13: Intracoastal Waterway Force Main Replacement Project

which contract is by reference incorporated herein and made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if Contractor shall promptly and faithfully perform Contract during the original term thereof and any extensions thereof which may be granted by the City with or without notice to the Surety and during any guarantee or warranty period, including the obligation to correct any latent defects not discovered until after acceptance of the project by the City, and if he shall satisfy all claims and demands incurred under said Contract and shall fully indemnify and save harmless the City, its agents, Engineer and employees from all losses, damages, expenses, costs and Attorney's Fees, including appellate proceedings which it may suffer by reason of failure to do so, and shall reimburse and repay the City all outlay and expense which the City may incur in making good any default, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

PROVIDED FURTHER, whenever Contractor shall be, and declared by the City to be in default under the Contract, the City having performed its obligations thereunder, the Surety may promptly remedy the default, or shall promptly:

- (1) Complete the Contract in accordance with its terms and conditions; or
- (2) Obtain a bid or bids for submission to the City for completing the Contract in accordance with its terms and conditions and upon determination by the City and Surety of the lowest responsible bidder, arrange for a contract between such bidder and City and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the contract price", as used in this paragraph, shall mean the total amount payable by the City to Contractor under the Contract and any amendments thereto, less the amount properly paid by the City to the Contractor.

PROVIDED FURTHER, the Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the contract documents accompanying the same shall in any way affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Contract documents.

PROVIDED FURTHER, any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due; except that, when the action involves a latent defect, suit must be instituted within four (4) years from the time the defect is discovered or should have been discovered with the exercise of due diligence.

PROVIDED FURTHER, no right of action shall accrue on this bond to or for the use of any person or corporation other than the City, its successors or assigns.

Signed and sealed this _____ day of _____, A.D., 2013.

IN THE PRESENCE OF:

CONTRACTOR

_____ By: _____

INSURANCE COMPANY

By: _____
Agent and Attorney-in-Fact

CONTRACTOR S RELEASE OF LIEN

BEFORE ME, the undersigned authority in said County and State, appeared

_____, who being first duly sworn, deposes and says that he is _____ of _____ a company and/or corporation authorized to do business under the laws of Florida, which is the contractor on Project known as City of Venice Bid # **2972-13**, located in the City of Venice, County of Sarasota, Florida, under contract with the City of Venice, dated the _____ day of _____, 2012, that the said deponent is duly authorized to make this affidavit by resolution of the Board of Directors of said company and/or corporation; that deponent knows of his own knowledge that said contract has been complied with in every particular by said contractor and that all parts of the work have been approved by the City Engineer; that there are no bills remaining unpaid for labor, material or otherwise, in connection with said contract and work, and that there are no suits pending against the undersigned as contractor or anyone in connection with the work done and materials furnished or otherwise, under said contract.

DEPONENT further says that the final estimate which has been submitted to the City simultaneously with the making of this affidavit, constitutes all claims and demands against the City on account of said contract or otherwise, and that acceptance of the sum specified in said final estimate will operate as a full and final release and discharge of the City from any further claims, demands or compensation by contractor under the above contract.

DEPONENT further agrees that all guarantees under this contract shall start and be in full force from the date of this release as spelled out in the contract documents.

Signature: _____

Printed Name:

STATE OF FLORIDA)
COUNTY OF)

Signed before me this _____ day of _____, 2013,
by _____ who is personally known to me or has produced
_____ as identification.

Notary Public

My Commission Expires:

Commission Number:

WE, the _____, having heretofore executed a performance bond and a payment bond for the above named contractor covering project and section as described above in the sum of (\$ _____)

Dollars, hereby agree that the Owner may make full payment of the final estimate, including the retained percentage, to said contractor.

IT IS fully understood that the granting of the right to make the payment of the final

estimate to said contractor and/or his assigns, shall in no way relieve this surety company of its obligations under its bonds, as set forth in the specifications, contract, and bonds pertaining to the above project.

IN WITNESS WHEREOF, the _____ has caused this instrument to be executed on its behalf by its _____, and/or its duly authorized attorney in fact, and its corporate seal to be hereunto affixed, all on this _____ day of _____, A.D., 2013.

Surety Company

Attorney in Fact

Power of Attorney must be attached if executed by Attorney in Fact.

STATE OF)

COUNTY OF)

BEFORE ME, the undersigned authority, appeared _____, who is personally known to me or has produced _____ as identification, and who executed the foregoing instrument in the name of _____ as its _____ and the said _____ acknowledged that he executed said instrument in the name of _____ as its _____ and/or _____, for the purpose therein expressed and that he had due and legal authority to execute the same on behalf of said _____, a corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal at _____ this _____ day of _____, 2013.

Notary Public

My Commission Expires:

CERTIFICATE OF SUBSTANTIAL COMPLETION

PROJECT NO: **ITB# 2972-13**

PROJECT: **Intracoastal Waterway Force Main Replacement Project**

CONTRACTOR CONTRACT DATE

CONTRACT FOR

Project or Specified Part Shall Include:

DEFINITION OF SUBSTANTIAL COMPLETION

The date of substantial completion of a project or specified part of a project is the date when the work is sufficiently completed, in accordance with the Contract Documents, so that the project or specified part of the project can be utilized for the purpose for which it was intended.

TO: (Contractor)

DATE OF SUBSTANTIAL COMPLETION: _____

The work performed under this contract has been inspected by authorized representatives of the City of Venice and the contractor, and the project or specified part of the project, is hereby declared to be substantially completed on the above date.

A tentative list of items to be completed or corrected is appended hereto. This list may not be exhaustive, and the failure to include an item on it does not alter the responsibility of the contractor to complete all the work in accordance with the contract documents. These items shall be completed by the contractor within _____ days of Substantial Completion.

The date of Substantial Completion is the date upon which all guarantees and warranties begin, except as noted below. The responsibilities between the Owner and the Contractor for maintenance shall be as set forth below.

CITY OF VENICE

By:

Date: _____

The contractor accepts the foregoing Certification of Substantial Completion and agrees to complete and correct the items on the tentative list within the time indicated.

Contractor Authorized Representative

Date: _____

RESPONSIBILITIES:

OWNER:

CONTRACTOR:

EXCEPTIONS AS TO GUARANTEES AND WARRANTIES:

ATTACHMENTS (Identify)

TECHNICAL SPECIFICATIONS

for

Intracoastal Waterway Force Main Replacement



Venice, Florida
"City on the Gulf"

CITY OF VENICE

OWNER

CITY OF VENICE
UTILITIES DEPARTMENT
200 NORTH WARFIELD AVENUE
VENICE, FL 34285

DESIGN PROFESSIONAL



KING ENGINEERING ASSOCIATES, INC.
4921 Memorial Highway
One Memorial Center, Suite 300
Tampa, FL 33634

Bid Documents
June 2013

4799-003-000
DESIGN PROFESSIONAL'S REF NO.

OWNER'S REF NO.

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Intracoastal Waterway Force Main Replacement

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1. Driggers Engineering Services, Inc. Geotechnical Investigation
2. Permits

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SECTION 01005

GENERAL REQUIREMENTS

PART 1 – GENERAL

1.01 SCOPE OF WORK

A. Description

The work to be done consists of the furnishing of all labor, materials and equipment, and the performance of all work included in this Contract.

B. Work Included

The Contractor shall furnish all labor, superintendence, materials, plant, power, light, heat, fuel, water, tools, appliances, equipment, supplies and other means of construction necessary or proper for performing and completing the work. He shall perform and complete the work in the manner best calculated to promote rapid construction consistent with safety of life and property and to the satisfaction of the Engineer, and in strict accordance with the Contract Documents. The Contractor shall clean up the work and maintain it during and after construction, until accepted, and shall do all work and pay all costs incidental thereto. He shall repair or restore all structures and property that may be damaged or disturbed during performance of the work.

The cost of incidental work described in these General Requirements, for which there are no specific Contract Items, shall be considered as part of the general cost of doing the work and shall be included in the prices for the various Contract Items. No additional payment will be made therefore.

The Contractor shall provide and maintain such modern plant, tools, and equipment as may be necessary, in the opinion of the Engineer, to perform in a satisfactory and acceptable manner all the work required by this Contract. Only equipment of established reputation and proven efficiency shall be used. The Contractor shall be solely responsible for the adequacy of his workmanship, materials and equipment, prior approval of the Engineer notwithstanding.

The Contractor shall comply with the requirements of all permits and regulatory agencies having jurisdiction over the various portions of the Work. Contractor shall provide and maintain effective erosion control measures for the entire duration that construction is in progress.

C. Public Utilities and Structures

Public utility installations and structures shall be understood to include all poles, tracks, pipes, wires, conduits, house service connections, vaults, manholes and all other appurtenances and facilities pertaining thereto whether owned or controlled by the Owner, other governmental bodies or privately owned by individuals, firms or corporations, used to serve the public with transportation, traffic control, gas, electricity, telephone, sewerage, drainage, water or other public or private property which may be affected by the work shall be deemed included hereunder.

The Contractor shall protect all public utility installations and structures from damage during the work, except those specifically designated to be removed or relocated. Access across any buried public utility installation, or structure, shall be made only in such locations and by means approved by the Engineer. The Contractor shall so arrange his operations as to avoid any damage to these facilities. All required protective devices and construction shall be provided by the Contractor at his expense. All existing public utilities damaged by the Contractor which are shown on the Plans or have been located in the field by the utility shall be repaired by the Contractor, at his expense, as directed by the Engineer. No separate

payment shall be made for such protection or repairs to public utility installations or structures.

Public utility installations or structures owned or controlled by the Owner or other governmental body which are shown on the Plans to be removed, relocated, replaced or rebuilt by the Contractor shall be considered as a part of the general cost of doing the work and shall be included in the prices bid for the various contract items. No separate payment shall be made therefore.

Where public utility installations or structures owned or controlled by the Owner or other governmental body are encountered during the course of the work, and are not indicated on the Plans or in the Specifications, and when, in the opinion of the Engineer, removal, relocation, replacement or rebuilding is necessary to complete the work under this Contract, such work shall be accomplished by the utility having jurisdiction, or such work may be ordered, in writing by the Engineer, for the Contractor to accomplish. If such work is accomplished by the utility having jurisdiction it will be carried out expeditiously and the Contractor shall give full cooperation to permit the utility to complete the removal, relocation, replacement or rebuilding as required.

All Owner and other governmental utility departments and other owners of public utilities which may be affected by the work will be informed in writing by the Engineer within two weeks after the execution of the Contract or Contract covering the work. Such notice will set out, in general, and direct attention to, the responsibilities of the Owner and other governmental utility departments and other owners of public utilities for such installations and structures as may be affected by the work and will be accompanied by one set of Plans and Specifications covering the work under such Contract or Contracts.

In addition to the general notice given by the Engineer, the Contractor shall give written notice to Owner and other governmental utility departments and other owners of public utilities of the locations of his proposed construction operations, at least forty-eight hours in advance of breaking ground in any area or on any unit of the work. This can be accomplished by making the appropriate contact with the "Underground Utility Notification Center for Excavators (Sunshine State One Call of Florida)."

The maintenance, repair, removal, relocation or rebuilding of public utility installations and structures, when accomplished by the Contractor as herein provided, shall be done by methods approved by the Engineer.

D. Contractor's Use of Premises

Unless otherwise indicated on the Drawings or directed, all project construction work will be accomplished on Owner owned property, rights-of-way, or easements, and the Contractor shall confine his activity to those designated areas. The Contractor shall not enter upon private property for any reason without securing prior permission from the property owner. Such permission, including any stipulations, shall be in writing and a copy shall be delivered to the Owner Representative prior to the Contractor's entry or occupation of the subject property. This requirement will be rigidly enforced.

When access through construction areas must be disrupted, the Contractor shall provide alternate acceptable access, as specified herein. The residents shall be allowed uninterrupted access to their homes throughout the construction phase.

The Contractor shall perform his work in such manner that he will not damage adjacent public or private property. Any damage to existing physical structures or utility services shall be repaired or restored promptly at no expense to the Owner.

The Contractor shall avoid damage to and preserve all existing vegetation (grass, shrubs, trees, etc..) on or near the work area which do not, within reason, interfere with construction. The Contractor will be responsible for and required to replace or restore all such vegetation damaged or destroyed at no cost to the Owner. The Contractor will also be responsible for any unauthorized cutting or damage to

trees, shrubs, etc. and also includes damage caused by careless operation of equipment, storage of materials and rutting or tracking of grass by equipment.

During the progress of the work the Contractor shall keep the work site free from an accumulation of rubbish, waste materials or any type of debris resulting from the construction. Upon completion of the work all equipment, excess materials, etc., shall be removed from the project site as soon as is practicable, and the Contractor shall restore the entire project work site to its original condition, with the exception of any area(s) designated for alteration by the Contract Documents.

1.02 DRAWINGS AND SPECIFICATIONS

A. Drawings

When obtaining data and information from the Drawings, figures shall be used in preference to scaled dimensions, and large scale drawings in preference to small scale drawings.

B. Copies Furnished to Contractor

The Contractor shall furnish each of the subcontractors, manufacturers, and suppliers such copies of the Contract Documents as may be required for their work. Additional copies of the Drawings and Specifications, when requested, may be furnished to the Contractor at cost of reproduction.

C. Supplementary Drawings

When, in the opinion of the Engineer, 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 Engineer and five paper prints thereof will be given to the Contractor and the Owner.

D. Contractor to Check Drawings and Data

The Contractor shall verify all dimensions, quantities and details shown on the Drawings, Supplementary Drawings, Schedules, Specifications or other data received from the Engineer and shall notify him of any errors, omissions, conflicts and discrepancies found therein. The Contractor shall submit to the Engineer a Request for Information (RFI), consecutively numbered, detailing all errors, omissions, conflicts and discrepancies. Engineer shall promptly provide a response to all RFIs submitted by the Contractor. Contractor will not be allowed to take advantage of any errors or omissions, as full instructions will be furnished by the Engineer, should such errors or omissions be discovered."

E. Specifications

The Technical Specifications consist of three parts: General, Products and Execution. The General Section contains General Requirements which govern the work. Products and Execution modify and supplement these by detailed requirements for the work and shall always govern whenever there appears to be a conflict.

The inclusion of the Related Requirements (or work specified elsewhere) in the General part of the specifications is only for the convenience of the Contractor, and shall not be interpreted as a complete list of related Specification Sections.

Certain portions of the work may be described by reference to the "FDOT Standard Specifications" or "Standard Specifications." These terms refer to the Florida Department of Transportation (FDOT) "Standard Specifications" for Road and Bridge Construction," latest edition. Whenever the "Standard Specifications" use the word "Department" or reference any of its engineers, agencies or

representatives, the word or reference shall be taken to mean "City of Venice, Florida." In any case where a specific specification regarding materials or method of construction has been omitted in the technical specifications for the Work of this project, such work shall be performed by the Contractor in accordance with the applicable "Standard Specifications" as determined by the Engineer.

F. Intent

All work called for in the Specifications applicable to this Contract, but not shown on the Drawings in their present form, or vice versa, shall be of like effect as if shown or mentioned in both. Work not specified in either the Drawings or in the Specifications, but involved in carrying out their intent or in the complete and proper execution of the work, is required and shall be performed by the Contractor as though it were specifically delineated or described.

The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation of these Specifications shall be made upon that basis.

The inclusion of the Related Requirements (or work specified elsewhere) in the General part of the specifications is only for the convenience of the Contractor, and shall not be interpreted as a complete list of related Specification Sections.

G. Project Submittals

The Contractor shall submit a minimum of six (6) copies of the manufacturer's shop drawings, descriptive literature and appropriate certified test reports on all materials to be used on this project.

The Contractor shall submit all Shop Drawings and schedules sufficiently in advance of construction requirements to provide adequate time for review.

1.03 MATERIALS AND EQUIPMENT

A. Manufacturer

The names of proposed manufacturers, suppliers and dealers who are to furnish materials, fixtures, equipment, appliances or other fittings shall be submitted to the Engineer for approval. Such approval must be obtained before shop drawings will be checked. No manufacturer will be approved for any materials to be furnished under this Contract unless he shall be of good reputation and have a plant of ample capacity. He shall, upon the request of the Engineer, be required to submit evidence that he has manufactured a similar product to the one specified and that it has been previously used for a like purpose for a sufficient length of time to demonstrate its satisfactory performance.

All transactions with the manufacturers or subcontractors shall be through the Contractor, unless the Contractor shall request, in writing to the Engineer, that the manufacturer or subcontractor deal directly with the Engineer. Any such transactions shall not in any way release the Contractor from his full responsibility under this Contract.

Any two or more pieces of material or equipment of the same kind, type or classification, and being used for identical types of service, shall be made by the same manufacturer.

All materials and equipment shall be new, unless otherwise provided. The Contractor shall furnish satisfactory evidence as to the type and quality of materials or equipment to be furnished and installed on this project.

Materials of fabrication and construction to be furnished and permanently installed in the project shall be of the best quality. The workmanship of construction, fit and finish on the project shall be equal to the highest standards of the industry. As indicated above, all materials and equipment and/or components thereof shall be new and shall not have been in service at any other installation.

B. Delivery

The Contractor shall deliver materials in ample quantities to insure the most speedy and uninterrupted progress of the work so as to complete the work within the allotted time. The Contractor shall also coordinate deliveries in order to avoid delay in, or impediment of, the progress of the work of any related Contractor. The Contractor shall replace, at his own expense, all such material(s) found to be damaged in shipment or handling or defective in manufacture. The cost of the replacement material and labor of installation for the replacement of previously installed material found to be defective prior to the final acceptance of the work shall also be the responsibility of the Contractor.

All materials and equipment to be incorporated into the project shall be loaded and unloaded by a method that will provide protection against damage. Every precaution shall be taken to prevent damage or injury to the equipment and material during transporting and handling. Proper and suitable power equipment shall be used in the loading or unloading process. Under no condition shall any items of equipment be dropped or rolled from a truck or dragged over the ground after being unloaded. When a crane or similar type equipment is being used in loading or unloading a suitable lifting sling and hook shall be used.

C. Storage

It will be the responsibility of the Contractor to store delivered materials or equipment in a secure area. The Owner will not be responsible for any damages resulting from vandalism or other reasons. Replacement of materials or equipment lost, stolen, damaged or destroyed due to careless or improper storage will be the Contractor's responsibility. All stored materials shall be easily and readily accessible for inspection by the Owner Representative.

D. Tools and Accessories

The Contractor shall, unless otherwise stated in the Contract Documents, furnish with each type, kind or size of equipment, one complete set of suitably marked high grade special tools and appliances which may be needed to adjust, operate, maintain or repair the equipment. Such tools and appliances shall be furnished in approved painted steel cases, properly labeled and equipped with good grade cylinder locks and duplicate keys.

Spare parts shall be furnished as specified.

Each piece of equipment shall be provided with a substantial nameplate, securely fastened in place and clearly inscribed with the manufacturer's name, year of manufacture, serial number, weight and principal rating data.

E. Installation of Equipment

The Contractor shall have on hand sufficient proper equipment and machinery of ample capacity to facilitate the work and to handle all emergencies normally encountered in work of this character.

Equipment shall be erected in a neat and workmanlike manner on the foundations at the locations and elevations shown on the Drawings, unless directed otherwise by the Engineer during installation. All equipment shall be correctly aligned, leveled and adjusted for satisfactory operation and shall be installed so that proper and necessary connections can be made readily between the various units.

The Contractor shall furnish, install and protect all necessary anchor and attachment bolts and all other appurtenances needed for the installation of the devices included in the equipment specified. Anchor bolts shall be as approved by the Engineer and made of ample size and strength for the purpose intended. Substantial templates and working drawings for installation shall be furnished.

The Contractor shall, at his own expense, furnish all materials and labor for, and shall properly bed in non-shrink grout, each piece of equipment on its supporting base that rests on masonry foundations. Grout shall completely fill the space between the equipment base and the foundation. All metal surfaces coming in contact with concrete or grout shall receive a coat of coal tar epoxy equal to Kop-Coat 300M.

Materials and coatings that will be in contact with potable water shall comply with NSF Standard 61 requirements.

F. Service of Manufacturer's Engineer

The Contract prices for equipment shall include the cost of furnishing a competent and experienced engineer or superintendent who shall represent the manufacturer and shall assist the Contractor, when required, to install, adjust, test and place in operation the equipment in conformity with the Contract Documents. After the equipment is placed in permanent operation by the Owner, such engineer or superintendent shall make all adjustments and tests required by the Engineer to prove that such equipment is proper and in satisfactory operating condition, and shall instruct such personnel as may be designated by the Owner in the proper operation and maintenance of such equipment.

1.04 INSPECTION AND TESTING

A. General

Inspection and testing of materials will be performed by the Contractor's independent laboratory or the equipment manufacturer unless otherwise specified. The testing personnel shall make the necessary inspections and tests and the reports thereof shall be in such form as will facilitate checking to determine compliance with the Contract Documents. Three copies of the reports shall be submitted and authority's certification thereof must be furnished to the Engineer as a prerequisite for the acceptance of any material or equipment.

If, in the making of any test of any material or equipment, it is ascertained by the Engineer that the material or equipment does not comply with the Contract, the Contractor will be notified thereof and he will be directed to refrain from delivering said material or equipment, or to remove it promptly from the site or from the work and replace it with acceptable material, without cost to the Owner.

Tests of electrical and mechanical equipment and appliances shall be conducted in accordance with recognized test codes of the ANSI, ASME, or the IEEE, except as may otherwise be stated herein.

The Contractor shall be fully responsible for the proper operation of equipment during tests and instruction periods and shall neither have nor make any claim for damage which may occur to equipment prior to the time when the Owner formally takes over the operation thereof.

B. Costs

The cost of shop and field tests of equipment and of certain other tests specifically called for in the Contract Documents shall be borne by the Contractor and such costs shall be deemed to be included in the Contract price.

Materials and equipment submitted by the Contractor as the equivalent to those specifically named in the Contract may be tested by the Owner for compliance. The Contractor shall reimburse the Owner

for the expenditures incurred in making such tests on materials and equipment which are rejected for non-compliance.

C. Inspection of Materials

The Contractor shall give notice in writing to the Engineer, sufficiently in advance of his intention to commence the manufacture or preparation of materials especially manufactured or prepared for use in or as part of the permanent construction. Such notice shall contain a request for inspection, the date of commencement and the expected date of completion of the manufacture or preparation of materials. Upon receipt of such notice, the Engineer will arrange to have a representative present at such times during the manufacture as maybe necessary to inspect the materials or he will notify the Contractor that the inspection will be made at a point other than the point of manufacture, or he will notify the Contractor that inspection will be waived. The Contractor must comply with these provisions before shipping any material. Such inspection shall not release the Contractor from the responsibility for furnishing materials meeting the requirements of the Contract Documents.

D. Certificate of Manufacture

When inspection is waived or when the Engineer so requires, the Contractor shall furnish to him authoritative evidence in the form of Certificates of Manufacture that the materials to be used in the work have been manufactured and tested in conformity with the Contract Documents. These certificates shall be notarized and shall include copies of the results of physical tests and chemical analyses, where necessary, that have been made directly on the product or on similar products of the manufacturer.

E. Shop Tests of Operating Equipment

Each piece of equipment for which pressure, duty, capacity, rating, efficiency, performance, function or special requirements are specified shall be tested in the shop of the maker in a manner which shall conclusively prove that its characteristics comply fully with the requirements of the Contract Documents. No such equipment shall be shipped to the work until the Engineer notifies the Contractor, in writing, that the results of such tests are acceptable.

Five copies of the manufacturer's actual test data and interpreted results thereof, accompanied by a certificate of authenticity sworn to by a responsible official of the manufacturing company, shall be forwarded to the Engineer for approval.

The cost of shop tests and of furnishing manufacturer's preliminary and shop test data of operating equipment shall be borne by the Contractor.

F. Preliminary Field Tests

As soon as conditions permit, the Contractor shall furnish all labor, materials, and instruments and shall make preliminary field tests of equipment. If the preliminary field tests disclose any equipment furnished under this Contract which does not comply with the requirements of the Contract Documents, the Contractor shall, prior to the acceptance tests, make all changes, adjustments and replacement required. The furnishing Contractor shall assist in the preliminary field tests as applicable.

G. Final Field Tests

Upon completion of the work and prior to final payment, all equipment and piping installed under this Contract shall be subjected to acceptance tests as specified or required to prove compliance with the Contract Documents.

The Contractor shall furnish labor, fuel, energy, and all other materials, equipment and instruments necessary for all acceptance tests, at no additional cost to the Owner. The Supplier shall assist in the final field tests as applicable.

H. Failure of Tests

Any defects in the materials and equipment or their failure to meet the tests, guarantee or requirements of the Contract Documents shall be promptly corrected by the Contractor by replacements or otherwise as directed by the Engineer. The decision of the Engineer as to whether or not the Contractor has fulfilled his obligations under the Contract shall be final and conclusive. If the Contractor fails to make these corrections or if the improved materials and equipment, when tested, shall again fail to meet the guarantees or specified requirements, the Owner, notwithstanding its partial payment for work, and materials and equipment, may reject the materials and equipment and may order the Contractor to remove them from the site at this own expense.

I. Final Inspection

During such final inspections, the work shall be clean and free from water. In no case will the final estimate be prepared until the Contractor has complied with all requirements set forth and the Engineer has made his final inspection of the entire work and is satisfied that the entire work is properly and satisfactorily constructed in accordance with the requirements of the Contract Documents.

1.05 PREPARATION AND CERTIFICATION OF AS-BUILT DRAWINGS

- A. Contractor shall prepare and maintain As-Built drawings. Submission of the As-Built drawings shall be made with each application for payment in accordance with the Agreement; and the final submittal of As-Built drawings, acceptable to the Engineer, shall be made before final payment.
- B. The Contractor shall maintain a complete and accurate log of construction control and survey as the work progresses, including underground construction.
- C. As construction progresses, update the plans to show measured locations of installed pipe, fittings, valves, taps, hydrants, manholes, services and other appurtenances of the completed work – both buried and above ground. Installed inlets, junction structures, curb, and roadway that is constructed as part of the work shall also be field measured. Horizontal and vertical locations of such items, as well as cover over pipe, shall be shown on a marked-up drawing to serve as the basis for preparing final As-Built drawings of the work.
- D. See specification 01050 for As-Built survey requirements.

1.06 TEMPORARY STRUCTURES

A. Temporary Fences

If, during the course of the work, it is necessary to remove or disturb any fence or part thereof, the Contractor shall, at his own expense, if so ordered by the Engineer, provide a suitable temporary fence which shall be maintained until the permanent fence is replaced. The Engineer shall be solely responsible for the determination of the necessity for providing a temporary fence and the type of temporary fence to be used.

Contractor shall provide temporary fencing of the type and at the locations necessary to provide for security, protect public safety, or to meet the requirement of a permit for construction staging areas and areas of construction activity outside of the public right-of-way. All such temporary fencing shall be considered as an incidental cost of performing the work, and the cost of such fencing shall be allocated among the various bid items identified in the bid schedule.

01005-8

(Section 01005 – General Requirements)
(01/07/13)

1.07 TEMPORARY SERVICES

A. First Aid

The Contractor shall keep upon the site, at each location where work is in progress, a completely equipped first aid kit and shall provide ready access thereto at all times when people are employed on the work.

B. Temporary Sanitary Facilities

The Contractor shall provide adequate sanitary facilities for the use of those employed on the work site. Such facilities shall be made available prior to or on the date the first employees arrive on the work site, shall be properly secluded from public view, and shall be maintained during the progress of the work in such numbers and locations as may be required.

The Contractor shall maintain the sanitary facilities in a satisfactory manner at all times, enforce their use, and shall prohibit the committing of any nuisance on the work site, in the road right-of-way, or any adjacent private property. The Health Department, Owner or City Representative shall have the right to inspect the facilities at any time if they have reason to suspect they are not being properly maintained.

1.08 LINES AND GRADE

A. Grade

All work under this Contract shall be constructed in accordance with the lines and grades shown on the Drawings, or as given by the Engineer. The full responsibility for keeping alignment and grade rest upon the Contractor.

The Contractor, prior to commencing of construction, shall have established bench marks and base line controlling points. The Contractor shall so place excavation and other materials as to cause no inconvenience in the use of the reference marks provided. He shall remove any obstructions placed by him contrary to this provision.

B. Surveys

The Contractor shall furnish and maintain, at his own expense, stakes and other such materials to establish all working or construction lines and grades, as required, and shall be solely responsible for the accuracy thereof. The cost of all labor, materials and incidentals required for the performance of any survey and utility location work shall be the responsibility of the Contractor and cost of this work is to be included within the Contractor's bid price (merged with bid line items).

C. 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 them if disturbed, and bear the entire expense of rectifying work improperly installed due to not maintaining or protecting or to removing without authorization such established points, stakes and marks.

The Contractor shall safeguard all existing and known property corners, monuments and marks adjacent to but not related to the work and, if required, shall bear the cost of re-establishing them if disturbed or destroyed.

1.09 ADJACENT STRUCTURES AND LANDSCAPING

A. Protection of Structures

The Contractor shall also be entirely responsible and liable for all damage or injury as a result of his operations to all other adjacent public and private property, structures of any kind and appurtenances thereto met with during the progress of the work. The cost of protection, replacement in their original locations and conditions or payment of damages for injuries to such adjacent public and private property and structures affected by the work, whether or not shown on the Drawings or specified shall be included in the various Contract Items and no separate payments will be made therefor. Where such public and private property, structures of any kind and appurtenances thereto are not shown on the Drawings and when, in the opinion to avoid interference with the work, payment therefor will be made as provided for in the General Conditions.

Contractor is expressly advised that the protection of buildings structures, tunnels, tanks, pipelines, etc. and related work adjacent to and in the vicinity of his operations, wherever they may be, is solely his responsibility. Conditional inspection of buildings or structures in the immediate vicinity of the project which may reasonably be expected to be affected by the Work shall be performed by and be the responsibility of the Contractor.

Contractor shall, before starting operations, make an examination of the interior and exterior of the adjacent structures, buildings, facilities, etc., and record by notes, measurements, photographs, etc., conditions which might be aggravated by open excavation and construction. Repairs or replacement of all conditions disturbed by the construction shall be made to the satisfaction of the Owner and to the satisfaction of the Engineer. This does not preclude conforming to the requirements of the insurance underwriters. Copies of surveys, photographs, reports, etc., shall be given to the Engineer.

Prior to the beginning of any excavations the Contractor shall advise the Engineer of all building or structures on which he intends to perform work or which performance of the project work will affect.

B. Protection of Trees

1. All trees and shrubs shall be adequately protected by the Contractor with boxes and otherwise and in accordance with ordinances governing the protection of trees. No excavated materials shall be placed so as to injure such trees or shrubs. Trees or shrubs destroyed by negligence of the Contractor or his employees shall be replaced by him with new stock of similar size and age, at his proper season and at the sole expense of the Contractor.
2. Beneath trees or other surface structures, where possible, pipelines may be built in short tunnels, backfilled with excavated materials, except as otherwise specified, or the trees or structures carefully supported and protected from damage.
3. It is the intent of the drawings and specifications that every effort is taken to preserve and protect existing trees that the drawings indicate to remain. However, trees adjacent to or along the path of construction having branches that will unreasonably interfere with construction, or with the operation of construction equipment, may be selectively and minimally trimmed upon prior approval by the Engineer. Trimming shall be performed in accordance with the National Arborist Association (NAA) Pruning Standards and in accordance with instructions provided by the City Arborist. The costs of pruning, removal of prunings from the site, and disposal shall be included in the various Contract Items as incidental work pertaining thereto and no separate payment will be made for tree trimming.
4. At the discretion and direction of the Owner's representative, any tree root systems to be disturbed by open cut methods of construction shall be root pruned prior the construction activity.

The Owner may order the Contractor, for the convenience of the Owner, to remove trees along the line or trench excavation. If so ordered the Owner will obtain any permits required for removal of trees. Such tree removal shall be paid for under the appropriate Contract Items.

C. Grass Areas

Grass areas shall be left in as good condition as before the starting of the work. Where sod is to be removed, it shall be carefully removed, and later replaced, or the area where sod has been removed shall be restored with new sod in the manner described in the Workmanship and Materials section.

Areas which have construction equipment tire tracks, or depressions created by construction equipment or material, shall be considered as disturbed by construction and restored appropriately to the satisfaction of the Engineer.

D. Restoration of Fences

Any fence, or part thereof, that is damaged or removed during the course of the work shall be replaced or repaired by the Contractor and shall be left in as good a condition as before the starting of the work. The manner in which the fence is repaired or replaced and the materials used in such work shall be subject to the approval of the Engineer. The cost of all labor, materials, equipment, and work for the replacement or repair of any fence shall be deemed included in the appropriate Contract Item or items, or if no specific Item is provided therefore, as part of the overhead cost of the work, and no additional payment will be made therefore.

E. Landscaped Areas

Landscaped areas outside of right-of-way, easements, or Owner property shall be protected from damage. Any bush, shrub, ornamental, or other landscaping plant or feature that is damaged or removed during the course of the work shall be restored or replaced, at no cost to the Owner, and to the satisfaction of the Engineer.

Landscaping within right-of-way, easements, or Owner property shall be protected as described by the drawings or as directed by the Engineer. In general, landscaping within these areas may be removed as reasonably necessary to perform the work. The limits of landscape removal shall be agreed upon by the Engineer and Contractor prior to beginning work in the affected area, and all landscaping that is to remain shall be protected from damage. Unless otherwise shown on the drawings, landscaping removed within right-of-way, easements, or Owner property does not need to be replaced, but instead the area shall be restored by sodding. When directed by the Engineer, these landscape areas may be restored by fine grading the area in preparation of replanting by others.

1.10 PROTECTION OF WORK AND PUBLIC

A. Barriers and Lights

The Contractor shall provide and maintain proper and adequate barricades, construction signs, torches, flashers, construction tapes, flagmen, guards or other traffic control devices as may be necessary to provide the required safety and protection to the public at and around the perimeter of the construction areas.

The Contractor shall provide suitable barricades, red lights, "danger" or "caution" or "street closed" signs and watchmen at all places where the work causes obstructions to the normal traffic or constitutes in any way a hazard to the public. The Contractor shall comply with all City, County or State regulations.

B. Smoke Prevention

The Contractor shall use hard coal, coke, oil or gas as fuel for equipment generating steam. A strict compliance with ordinances regulating the production of emission of smoke will be required. No open fires will be permitted.

C. Noise

The Contractor shall eliminate noise to as great an extent as practicable at all times. Air compressing plants shall be equipped with silencers and the exhaust of all gasoline motors or other power equipment shall be provided with mufflers. The Contractor shall strictly observe all local regulations and ordinances covering noise control. Furthermore, the Contractor shall meet the noise abatement performance standards as compiled in the City of Venice Noise Ordinance.

If mufflers and silencers cannot achieve the necessary noise reduction, other noise abatement procedures shall be instituted by the Contractor, such as installation of three-quarter inch (3/4") plywood baffles positioned to break off line-of-sight from the noise source to affected residences and/or commercial structures.

Except in the event of an emergency, no work shall be done outside of normal working hours. If the proper and efficient prosecution of the work requires operations during the night, the written permission of the Engineer shall be obtained before starting such items of the work.

D. Access to Public Services

Neither the materials excavated nor the materials or plant used in the construction of the work shall be so placed as to prevent free access to all fire hydrants, valves or manholes.

E. Dust Prevention

The Contractor shall prevent dust nuisance from his operations or from traffic by keeping the roads and/or construction areas sprinkled with water at all times.

F. Safety

It is the Contractor's responsibility to comply with the Occupational Safety and Health Administration excavation safety standards, 29 CFR 1926.650 Subpart P trench safety standards are in effect during the period of construction of the Project. In compliance with current State of Florida statutes, the Contractor or subcontractor performing trench excavation work on the Project shall comply with the applicable trench safety standards.

The Occupational Safety and Health Administration excavation safety standards, 29, CFR 1926.650 Subpart P trench safety standards are in effect during the period of construction of the Project. In compliance with current State of Florida statutes, the Contractor or subcontractor performing trench excavation work on the Project shall comply with the applicable trench safety standards.

G. Water Control

The Contractor shall provide for the disposal of surplus water (wellpoint, mud pumps, etc.,) and shall submit his plan to the Owner Representative for his review prior to initiation and implementation as any such plan may require approval from the proper authorities for the use of public or private lands or facilities for such disposal.

H. Pollution Control

The Contractor shall provide for adequate protection against polluting any private or public lands, streams, ponds, lakes, sanitary or storm drainage systems, etc., by the disposal of surplus materials in the form of solids or liquids or any other deleterious materials (fuels, oils, bitumens, etc.)

1.11 CUTTING AND PATCHING

- A. The Contractor shall do all cutting, fitting or patching of his portion of the work that may be required to make the several parts thereof join and coordinate in a manner satisfactory to the Engineer and in accordance with the Drawings and Specifications. The work must be done by competent workmen skilled in the trade required by the restoration.

1.12 CLEANING

- A. During construction of the work, the Contractor shall, at all times, keep the site of the work and adjacent premises as free from material, debris and rubbish as is practicable and shall remove the same from any portion of the site if, in the opinion of the Engineer, such material, debris, or rubbish constitutes a nuisance or is objectionable.

The Contractor shall remove from the site all of his surplus materials and temporary structures when no further need therefor develops.

- B. Final Cleaning

At the conclusion of the work, all erection plant, tools, temporary structures and materials belonging to the Contractor shall be promptly taken away, and he shall remove and promptly dispose of all water, dirt, rubbish or any other foreign substances.

The Contractor shall thoroughly clean all equipment and materials installed by him and shall deliver such materials and equipment undamaged in a bright, clean, polished and new operating condition.

- C. In the event that the timely clean up and restoration of the job site is not accomplished to the satisfaction of the Owner, the Owner shall make arrangements to affect the necessary clean up by others. The Contractor shall be charged for these costs through deductions in payment due the Contractor. If such action becomes necessary, the Owner shall not be responsible for the inadvertent removal from the work site of materials which the Contractor would not normally have disposed of had he affected the required clean up.

- D. Upon completion of the project, and prior to a final inspection, the Contractor shall examine the project construction area to be certain all excess soil, debris and other unsightly materials have been removed and disposed of in a satisfactory manner. All areas of construction disturbed by the project work shall be restored as specified, and any areas outside the limits of construction and not designated for alteration shall be restored, as near as practicable, to their original or better condition.

1.13 MISCELLANEOUS

- A. Protection against Siltation and Bank Erosion

1. The Contractor shall arrange his operations to minimize siltation and bank erosion on construction sites and on existing or proposed water courses, drainage ditches, wetlands and other areas of concern.
2. The Contractor, at his own expense, shall remove any siltation deposits and correct any erosion problems as directed by the Engineer which results from his construction operations.

3. The Contractor shall be solely responsible for any fines resulting from the encroachment of any environmentally protected areas.

B. Protection of Wetland Areas

The Contractor shall properly dispose of all surplus material, including soil, in accordance with Local, State and Federal regulations. Under no circumstances shall surplus material be disposed of in wetland areas as defined by the Florida Department of Environmental Protection, Southwest Florida Water Management District, U.S. Army Corps of Engineers, etc.

C. Existing Facilities

The work shall be so conducted to maintain existing facilities in operation insofar as is possible. Requirements and schedules of operations for maintaining existing facilities in service during construction shall be as described in the Specific Provisions.

D. Use of Chemicals

All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant, or of other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with manufacturers' instructions.

E. Tree Removal

The Contractor shall be required to notify the Owner forty-eight (48) hours in advance of any removal of trees on the project. No clearing shall occur and no earth moving equipment shall be placed on-site until after the notice has been issued. The Contractor shall provide maintenance of the tree barricades and other preventive measures to protect the trees that are to remain.

F. Sanitary & Storm Sewer Systems

The Contractor shall be entirely responsible for the satisfactory replacement of storm sewer and installation of sanitary sewer systems in substantial conformance to the approved Drawings. It is strongly recommended that no roadway base or paving be constructed until the Contractor has performed lamping of these lines to his and the Engineer's satisfaction, and all storm sewer and sanitary sewer invert grades are verified in the field by the Owner. The lamping of lines and verification of elevations in no way absolves the Contractor from any of his contractual obligations.

G. Related Permits

The Contractor recognizes that the Owner has applied for, and may have received, certain permits pertaining to the work. At the sole discretion of the Owner, the Owner may assign said permits to the Contractor and the Contractor shall accept said assignments upon such request from the Owner.

All work in the vicinity of open waters, wetlands or any jurisdictional area is to be performed in strict accordance with the environmental permits and their conditions. Erosion barriers, when shown on the construction Drawings, are the minimum required. If the Contractor's construction methods require that additional erosion control is necessary to satisfy these permits, such controls shall be supplied, installed and maintained throughout the construction process by the Contractor at no additional cost to the Owner or Engineer.

It is the sole responsibility of the Contractor to submit, in a timely manner, any information, data, etc. which is required as a condition of a permit. Required information, data, etc. shall be submitted directly

to the permitting agency by the Contractor with copies to the Permittee and the Engineer. The Contractor will be held responsible for any fine(s) or other action resulting from a violation of permit conditions.

1.14 RESTORATION OF PROPERTY

A. Responsibility

All damage as a result of construction work done to existing structures, wetland areas, roadway pavement, driveways, other paved areas, fences, utilities, traffic control devices and any other obstruction not specifically named herein, shall be repaired, restored or replaced by the Contractor unless otherwise specified.

B. Temporary Repairs

All damage named in Paragraph A above shall be at least temporarily repaired, restored or replaced immediately following construction efforts at that location. Temporary restoration shall mean putting the affected area back into a safe, usable condition. In no case shall trenches remain open over night within a street right-of-way unless specific approval is granted by the Owner.

C. Permanent Repairs

All damage named in Paragraph A above shall be permanently repaired, restored, or replaced not later than the 30th calendar day following the completion of construction at that location unless otherwise stipulated. Permanent repairs will be accomplished in a professional workmanship-like manner in accordance with Specifications contained herein, or contract documents, if addressed. The Contractor may be relieved of the 30-day time limit above only by specific written agreement with the Owner.

D. Owner Retribution

In the event that the Contractor fails to make the permanent repairs within the time specified in Paragraph A above, the Owner, at its option, will, with its own resources or by contract with others, cause the repair, restoration, or replacement of the affected area to be accomplished. The costs of such work will then be deducted either from the next pay request or from any other monies owed the Contractor by the Owner.

In all areas disturbed by the work, the Contractor shall grade and restore the site to a condition as good as or better than existed before construction. Sodded areas shall be sodded with sod matching the existing adjacent sod. Likewise unseeded and unsodded areas need only to be graded and leveled with existing soil except as directed by the Owner Representative. All removed trees shall be replaced with trees matching the existing trees. Any drives, walks, pavements, structures, survey monuments, property corner markers, shrubs, or any other public or private property damaged or destroyed by the work shall be restored or replaced at the Contractor's expense.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

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SECTION 01014

SUMMARY OF WORK

PART 1 – GENERAL

1.01 LOCATION OF WORK

- A. The project area is bounded by American Legion Way to the west and Warfield Avenue to the east.

1.02 WORK TO BE DONE

- A. The Contractor shall furnish all labor, materials, equipment, tools, services and incidentals to complete all work required by these Specifications and as shown on the Drawings.
- B. The Contractor shall perform the work complete, in place and ready for continuous service, and shall include repairs, testing, permits, clean-up, replacements and restoration required as a result of damages caused during this construction.
- C. All materials, equipment, skills, tools and labor which is reasonably and properly inferable and necessary for the proper completion of the work in a substantial manner and in compliance with the requirements stated or implied by these Specifications or Drawings shall be furnished and installed by the Contractor without additional compensation, whether specifically indicated in the Contract Documents or not.
- D. The Contractor shall comply with all Municipal, County, State, Federal, and other codes which are applicable to the proposed construction work.

1.03 GENERAL DESCRIPTION OF WORK TO BE PERFORMED

- A. The work of this Contract consists of furnishing all material, labor, equipment, etc., necessary for the general construction of the following, as shown on the Drawings and as specified herein.
 - 1. A new 16-inch HDPE or 14-inch FPVC force main installed via horizontal directional drill across the Intracoastal Waterway south of the Venice Avenue Bridge.
 - 2. Abandonment of existing force mains east, west and north of the Venice Avenue Bridge.
 - 3. A new 4" force main installed via open cut methods connecting at Tampa Avenue East running south along the American Legion Way to south of Venice Avenue East.

1.04 CONSTRUCTION ACTIVITIES

- A. Specific requirements for the above activities are outlined in the respective Specification sections and on the Drawings.
- B. Contractor shall ensure that, prior to testing or start-up of any component, all required thrust restraint and associated safety-related facilities are in place.
- C. All work shall be executed in accordance with the project permits.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01030

SPECIAL PROJECT PROCEDURES

PART 1 – GENERAL

1.01 WORKMANSHIP, MATERIAL AND EQUIPMENT

- A. When a particular product is specified or called for, it is intended and shall be understood that the proposal tendered by the Contractor included those products in his bid. Should the Contractor desire products equal to those specified, the Contractor shall furnish information as described in the Standard General Conditions. The alternate product or products submitted by the Contractor shall meet the requirements of the Specifications and shall, in all respects, be equal to the products specified by name herein.
- B. All apparatus, mechanism, equipment, machinery and manufactured articles for incorporation into the Work shall be the new and unused standard products of recognized reputable manufacturers.
- C. Contractor must provide his own disposal of excavation that he removes from the site.

1.02 CONTRACTOR PROVIDED STAGING AREA

- A. The Work of this project is to be performed in a congested area that affords minimal and limited space that the Contractor may use to stage construction activities such as material storage, parking, or tool & supply storage. The Contractor shall secure staging area(s) as he may require and the cost shall be included as part of the price bid for the work.
- B. Appropriate temporary security fencing and effective erosion control measures shall be provided for the staging area(s). In particular, effective measures shall be employed to prevent soil, mud, or dust from being tracked onto roadway surfaces between the site of the work and the staging area. The cost to provide and maintain temporary security fencing and erosion control measures shall be considered an incidental project cost shall not be separately measured for payment.
- C. When the Work of this project is completed, and before final payment is made to the Contractor, the staging area shall be restored according to the agreement between the Contractor and the staging area owner including removal of temporary fencing and erosion control measures. Roadway damage that may have occurred between the project site and staging area because of construction equipment operation between the two sites shall be repaired to the satisfaction of the Engineer. The Owner may withhold payment retainage to the Contractor until the requirements of this paragraph are satisfied.

1.03 CONNECTIONS TO EXISTING SYSTEMS

- A. The Contractor shall perform all work necessary to locate, excavate, restrain or confirm restraint, and prepare for connections to the existing systems, as shown on the Construction Drawings. The cost for this work and for the actual connection to the existing systems shall be included in the various prices bid for the Work, except where specifically indicated as a separate Item, and shall not result in any additional cost to the Owner.
- B. The Contractor shall install, pressure test, and wait for clearance from the Health Department or FDEP for the new force main prior to cutting the existing force main for connection of the new piping. The maximum duration that the force main can be temporarily taken out-of-service shall be as specified herein. The Contractor shall plan his work accordingly so as to comply with these requirements.

- C. The Contractor shall provide, install and test any required piping and valves, including tapping sleeves and valves. The Contractor shall make the tap in the presence of an Owner's Representative, and only in the presence of an Owner's Representative.
- D. The Contractor shall provide the Owner's Project Manager with written notice of any requirement to shut down the system at least 72 hours in advance.
- E. The existing 16-inch force main on the west side of the Intracoastal Waterway and the existing 10-inch force main under the Intracoastal Waterway cannot be taken out-of-service. The design requires that the Contractor install tapping sleeves and valves to make the connection to the existing system. The Contractor shall minimize the duration of time the existing 4-inch force main is taken out-of-service. It shall be noted that for the 4-inch force main tie-in, the existing 4-inch force main can be shut down for a maximum of six (6) hours. The force main can only be shut down between the hours of 9:00 A.M. and 3:00 P.M. All tie-in work must be completed within the 9:00 A.M. - 3:00 P.M. period.

1.04 SLEEVES AND OPENINGS

- A. The Contractor shall provide all openings, channels, chases, etc., and install anchor bolts and other items to be embedded in concrete, as required to complete the work under this Contract, together with those required by subcontractors, and shall do all cutting and patching, excepting cutting and patching of materials of a specified trade and as stated otherwise in the following paragraph.
- B. The Contractor shall coordinate with the subcontractors to provide all sleeves, inserts, hangers, anchor bolts, etc., of the proper size and material for the execution of the work. The Contractor shall be responsible for any corrective cutting and refinishing required to make the necessary openings, chases, etc. In no case shall beams, lintels or other structural members be cut without the written approval of the Engineer.

1.05 PROVISIONS FOR CONTROL OF EROSION

- A. Sufficient precautions shall be taken during construction to minimize the run-off of polluting substances such as silt, clay, fuels, oils, bitumens, calcium chloride, or other polluting materials harmful to humans, fish, or other life, into the supplies and surface waters of the state. Control measures must be adequate to assure that turbidity in the receiving water will not be increased more than 10 nephelometric turbidity units (NTU), or as otherwise required by the state or other controlling body, in water used for public water supply or fish unless limits have been established for the particular water. In surface water used for other purposes, the turbidity must not exceed 25 NTU unless otherwise permitted. Special precautions shall be taken in the use of construction equipment to prevent operations which promote erosion.
- B. Comply with the requirements of the EPA-NPDES general permit for stormwater discharges and the stormwater pollution prevention plan developed for the project.

1.06 OPERATING AND MAINTENANCE DATA

- A. Operating and maintenance data for each piece of equipment furnished shall be delivered directly to the Engineer for approval within 60 days of shop drawing approval. No payment shall be made for equipment installed or stored on-site until the Engineer has approved the adequacy and completeness of operating and maintenance data. Final approved copies of operating and maintenance data shall have been delivered to the Engineer prior to scheduling the instruction period with the Owner.

1.07 SPARE PARTS

- A. Spare parts for certain equipment provided have been specified in the pertinent sections of the Specifications. The Contractor shall collect and store all spare parts, as required by the manufacturer.

In addition, the Contractor shall furnish to the Engineer an inventory listing all spare parts, the equipment they are associated with, the name and address of the supplier, and the delivered cost of each item. Copies of actual invoices for each item shall be furnished with the inventory to substantiate the delivered cost. The Contractor shall deliver the spare parts to the Engineer ten (10) days prior to facility start-up.

- B. All spare parts shall be furnished in containers clearly identified in indelible markings as to contents. Each container shall be packed for prolonged storage.

1.08 MAINTENANCE AND LUBRICATION SCHEDULES

- A. For all mechanical and electrical equipment furnished, the Contractor shall provide a list including the equipment name, address and telephone number of the manufacturer's representative and service company.

1.09 WARRANTIES

- A. The Contractor and the equipment manufacturers shall warranty all equipment supplied under these Specifications for a minimum period of twelve (12) months. Warranty period shall commence on the date of Final Completion by the Owner.
- B. The equipment shall be warranted to be free from defects in workmanship, design and materials. If any part of the equipment should fail during the warranty period, it shall be replaced in the machine(s) and the unit(s) restored to service at no expense to the Owner.
- C. If, within the warranty period, repairs or changes are required in connection with guaranteed work which, in the opinion of the Engineer, is rendered necessary as the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract, the Contractor shall, promptly upon receipt of notice from the Owner and without expense to the Owner, do the following:
 - 1. Place in satisfactory condition in every particular all of such warranted work and correct all defects herein.
 - 2. Make good all damage to the building or site, or equipment or contents thereof, which, in the opinion of the Engineer, is the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract.
 - 3. Make good any work or material, or the equipment and contents of building, or structure or site disturbed in fulfilling any such guarantee.
- D. If the Contractor, after notice, fails within ten (10) days to proceed to comply with the terms of this warranty, the Owner may have the defects corrected, and the Contractor and his surety shall be liable for all expense incurred, provided, however, that in case of an emergency where, in the opinion of the Owner, delay would cause loss or damage, repairs may be started without notice being given to the Contractor and the Contractor shall pay the cost thereof.
- E. All special guarantees or warranties applicable to specific parts of the work, as may be stipulated in the Contract Specifications or other papers forming a part of this Contract, shall be subject to the terms of this paragraph during the first year of life of each such guarantee. All special guarantees and manufacturers' warranties shall be assembled by the Contractor and delivered to the Engineer, along with a summary list thereof, before the acceptance of the Work.
- F. The manufacturer's warranty period shall run concurrently with the Contractor's warranty or guarantee period. No exception to this provision shall be allowed. The Contractor shall be responsible for

obtaining equipment warranties from each of the respective suppliers or manufacturers for all the equipment specified.

- G. The Contractor's twelve (12) month warranty or guarantee period shall be part of the project performance bond.

1.10 CONSTRUCTION CONDITIONS

- A. The Contractor shall strictly adhere to the specific requirements of the governmental unit(s) or agency(ies) having jurisdiction over the work. Wherever there is a difference in the requirements of a jurisdictional body and these Specifications, the more stringent shall apply.

1.11 PUBLIC NUISANCE

- A. The Contractor shall not create a public nuisance including, but not limited to, encroachment on adjacent lands, flooding of adjacent lands, or excessive noise.
- B. Trash accumulation, including accumulation of lunch-break refuse, shall be avoided. The Contractor shall provide appropriate containers for collecting rubbish and the Contractor's superintendent shall enforce their use. The containers shall also be regularly emptied.
- C. No extra charge may be made for time lost due to work stoppage resulting from the creation of a public nuisance.

1.12 HAZARDOUS LOCATIONS

- A. Contractor shall perform work in accordance with OSHA, state and local safety requirements.

1.13 RELOCATIONS

- A. The Contractor shall be responsible for the relocation of structures, including but not limited to: utility poles, signs, sign poles, fences, piping, conduits and drains that interfere with the positioning of the work as set out on the Drawings. The cost of all such relocations shall be included in the bid.

1.14 SUSPENSION OF WORK DUE TO WEATHER

- A. During inclement weather, all work that could be damaged or rendered inferior by such weather conditions shall be suspended. The orders and decisions of the Engineer as to suspensions shall be final and binding. The ability to issue such an order shall not be interpreted as a requirement to do so. During suspension of the work for any cause, the work shall be suitably covered and protected so as to preserve it from injury by the weather or otherwise; and, if the Engineer shall so direct, rubbish and surplus materials shall be removed. Throughout the duration of the Work, the Contractor shall provide temporary connections between new portions of the storm drainage system and existing portions of the storm drainage system in order to allow drainage of storm water runoff from the work area consistent with the requirements for providing effective erosion control.

1.15 HURRICANE PREPAREDNESS PLAN

- A. Within 30 days of the date of Notice to Proceed, the Contractor shall submit to the Engineer and Owner a Hurricane Preparedness Plan. The Plan should outline the necessary measures that the Contractor proposes to perform at no additional cost to the Owner in case of a hurricane warning.
- B. In the event of inclement weather, or whenever Engineer shall direct; the Contractor shall carefully protect the Work and materials against damage or injury from the weather. If, in the opinion of Engineer, any portion of Work or material has been damaged or injured by reason of failure on the part

of the Contractor or subcontractors to set protect the Work, such Work and materials shall be removed and replaced at the expense of the Contractor.

1.16 SALVAGE

- A. Any existing equipment or material including, but not limited to, valves, pipes, fittings, couplings, etc., which is removed or replaced as a result of construction under this project may be designated as necessary and delivered, to the Owner at a location directed by the Owner, at the Contractor's expense. Removed material not designated as salvage, or that the Engineer decides is not to salvage, shall become the property of the Contractor, removed from the site, and properly disposed at the Contractor's expense.

1.17 PERMITS

- A. Several permits have been obtained for the project. Copies of those permits are provided in Appendices at the end of this specification book.
- B. Upon notice of award, the Contractor shall immediately apply for all applicable permits not previously obtained by the Owner to do the work from the appropriate governmental agency or agencies. No work shall commence until all applicable permits have been obtained and copies delivered to the Engineer. The costs for obtaining all permits shall be borne by the Contractor with the exception of the City building permit, for which the building permit fees are waived.
- C. The Contractor shall be responsible for complying with all permit conditions for any permits that the Owner has already obtained and are attached to these specifications.
- D. The Contractor shall attend a Pre-construction meeting with Florida Department of Environmental Protection as required by the Owner.
- E. The Owner has obtained, or is actively in the process of obtaining, the following permits for the Work:
 - 1. Florida Department of Environmental Protection Environmental Resource Permit (ERP)
 - 2. FDEP Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System Permit
 - 3. US Army Corps of Engineers Nationwide Permit.
 - 4. Sarasota County Planning and Development Services Right-of-Way (ROW) Use Permit

1.18 PUMPING

- A. The Contractor shall, for the duration of the contract, and with his own equipment, pump out stormwater runoff or groundwater which may flow, seep or leak into excavations.
- B. Contractor shall provide all labor, material, and equipment necessary to provide a pump discharge that is located and made in a manner acceptable to the Engineer; that meets all permit and environmental protection requirements; and meets all federal, state, and local laws. At no time will the Contractor be allowed to pump sewage or polluted water into storm drains, streams, open channels, or onto streets during the course of the work. The Contractor shall also provide all necessary noise suppression devices to minimize pump noise and comply with the noise requirements of the Contract Documents.

1.19 NOTIFICATION OF WORK ON EXISTING FACILITIES

- A. Before commencing work on any of the existing structures or equipment, the Contractor shall notify the Owner/Engineer, in writing, at least 14 calendar days in advance of the date he proposes to commence such work.

- B. Contractor shall notify the various permitting and regulatory agencies prior to commencing the work permitted and regulated by the affected permits in accordance with the conditions of the permit.

1.20 EXISTING UNDERGROUND PIPING, STRUCTURES AND UTILITIES

- A. The attention of the Contractor is drawn to the fact that during excavation, the possibility exists that the Contractor will encounter various water, gas, telephone, electrical, service laterals or other utility lines not shown on the Drawings. The Contractor shall exercise extreme care before and during excavation to locate and flag these lines so as to avoid damage thereto. Should damage occur to an existing line, the Contractor shall immediately contact the utility and the Owner. If the repair is to be completed by the Contractor it shall be carried out in a timely and quality manner. Costs associated with such damage shall be borne by the Contractor at no additional cost to the Owner.
- 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 supported in position while work proceeds in the vicinity of the pole and that utility or other companies concerned be given reasonable advance notice of any such excavation by the Contractor.
- C. The locations of existing utilities are shown without express or implied representation, assurance, or guarantee that they are complete or correct or that they represent a true picture of underground piping to be encountered. Encountering existing utilities at different depths or locations than shown on the drawings shall not be cause for additional costs to the Owner.
- D. The existing piping and utilities that interfere with new construction shall be rerouted as shown, specified or required. The Contractor shall excavate sufficiently ahead of the proposed work to predict potential conflicts. Before any piping and utilities not shown on the Drawings are disturbed, the Contractor shall immediately notify the Engineer of the location of the pipeline or utility and shall reroute or relocate the pipeline or utility as directed.
- E. The Contractor shall exercise care in any excavation to locate all existing piping and utilities. All utilities that do not interfere with completed work shall be carefully protected against damage. Any existing utilities damaged in any way by the Contractor shall be restored or replaced by the Contractor at his expense, as directed by the Engineer.
- F. It is intended that wherever existing utilities such as water, gas, telephone, electrical, or other service lines must be crossed, deflection of the pipe within recommended limits and cover shall be used to satisfactorily clear the obstruction unless otherwise indicated on the Drawings. However, when in the opinion of the Owner or Engineer this procedure is not feasible, the Engineer may direct the use of fittings for the utility crossing. The Contractor shall verify utility crossings with test pits prior to construction as required by the Engineer.
- G. The contractor shall preserve existing sanitary sewers without interruption while performing the work of the project. When the drawings indicate that all or a portion of a service lateral is to be replaced, the Contractor shall accomplish the work without disruption of service, backup in the structure served, or leakage of sewage into the excavation.

1.21 JOB SITE SECURITY

- A. General
 - 1. The Contractor shall properly protect the work area to prevent the public from entering the work area. The Contractor shall furnish and erect such barricades, fences, lights, and danger signals and shall provide such other precautionary measures for the protection of persons or property and of the work as necessary. Barricades/fencing shall be painted or have a reflective color that will be visible at night. From sunset to sunrise, the Contractor shall

furnish and maintain at least one light at each barricade/fence and sufficient numbers of barricades/fencing shall be erected to keep vehicles or pedestrians from entering on or into any work under construction.

2. The Contractor will be held responsible for all damage to the work due to failure of barricades, fencing signs, and lights to protect it and whenever evidence is found of such damage, the Contractor shall immediately remove the damaged portion and replace it at his cost and expense. The Contractor's responsibility for the maintenance of barricades, signs, and lights shall not cease until the project has been accepted by the Owner.

1.22 DOOR HANGERS

- A. The Contractor shall develop and distribute door hangers to notify residents and businesses of the impending work on their street. The language to be used in the door hanger shall be submitted to the Owner for approval prior to their production.
- B. Door hangers shall be placed on the front door of each affected property on a given street one week prior to commencing work.

1.23 RESTORATION

- A. The Contractor shall restore disturbed areas progressively as the work continues. No more than 500 linear feet of work area along the force main lengths shall remain unrestored at any given time.
- B. No open trenches shall be allowed during non-working hours for all work in this project.
- C. Good housekeeping on this project is extremely important and the Contractor will be responsible for keeping the construction site neat and clean, with debris being removed daily as the work progresses or as otherwise directed by the Engineer. Good housekeeping at the job site shall include: Removing all tools and temporary structures, dirt, rubbish, etc.; hauling all excess dirt, rock, etc., from excavations to a dump provided by the Contractor; and all clean up shall be accomplished to the satisfaction of the Engineer. Dust shall be controlled daily as may be required. Immediately after construction completion in an area or part thereof (including restoration), barricades, construction equipment and surplus and discarded materials shall be removed by the Contractor.
- D. In the event that the timely clean up and restoration of the job site is not accomplished to the satisfaction of the Engineer, the Engineer shall make arrangements to affect the necessary clean up by others. The Contractor shall be charged for these costs through deductions in payment due the contractor. If such action becomes necessary on the part of an in the opinion of the Engineer, the Owner shall not be responsible for the inadvertent removal from the work site of materials which the Contractor would not normally have disposed of had he affected the required clean up.
- E. Access to all businesses along shall be maintained at all times.
- F. The Owner reserves the right to stop new construction until the provisions of this Article are satisfied with no award of additional contract time or cost.

1.24 GEOTECHNICAL INVESTIGATION

- A. Attached to these specifications is the Geotechnical Report as prepared by Driggers Engineering Services, Inc. The information and recommendations provided in the Geotechnical Report is for informational purposes only. The Contractor shall be responsible for performing additional geotechnical investigations and furnishing and installing dewatering, shoring, sheeting, and bracing equipment as necessary in order to complete the contract scope of work.

1.25 DIRECTIONAL BORE HOURS OF CONSTRUCTION

- A. The City of Venice Standard Details restricts the time during which directional bore activity can be performed; directional boring must be completed between the hours of 8:00 a.m. and 3:00 p.m. The Owner will waive this requirement and coordinate with the Contractor the timing of work activities. The Owner will waive the working hours requirement during directional boring activities only; all other work such as, open cut pipe installation, shall conform to the standard working hours.

1.26 UNDERGROUND UTILITY LOCATIONS

- A. The Contractor shall field verify all existing utilities and conditions as may be required for the work area. The Contractor shall contact and coordinate with "Sunshine" as well the individual utilities, i.e., Comcast, Peoples Gas, FPL Fibernet, Verizon, etc., prior to and during construction for utility locations, relocation and assistance while installing in conflict areas. The Contractor shall contact the City of Venice Utilities for storm sewer, sanitary sewer and water locations one week in advance of work as it progresses, as necessary. It shall be the Contractor's responsibility to avoid conflicts with other utilities. The Owner will not be responsible for additional costs incurred by the Contractor for incorrect installations, relocations and breaks due to service conflicts.

1.27 REQUIREMENTS FOR CONTROL OF THE WORK

- A. Prior to the start of the Work described in this contract, a preconstruction conference may be held by the Engineer to be attended by the Contractor and representatives of the various utilities and others as required, for the purpose of establishing a schedule of operations which will coordinate the work to be done under this contract with all related work to be done by others within the limits of the project. All items of work in this contract shall be coordinated so that progress of each related item will be continuous from week to week. The progress of the work will be reviewed by the Engineer at the end of each week, and if the progress of any item of work during that week is found to be unsatisfactory, the Contractor shall be required to adjust the rate of progress on that item or other items as directed by the Engineer without additional compensation. The work will be continuously prosecuted by the Contractor until completed.

1.28 USE OF PRIVATE PROPERTY

- A. All construction activities required to complete this project in accordance with the Contract Documents shall be confined to public right-of-way, easements of record or temporary construction easements, unless the Contractor makes specific arrangements with private property owners for his use of their property. Written authorization from the granting property owner shall be placed on file with the Engineer prior to utilization of said private properties. The Owner assumes no responsibility for damage to private property in such instances. The Contractor is responsible for protection of private property abutting all work areas on this project. Adequate equipment storage and material storage shall also be accomplished outside the City of Venice right-of-way.

1.29 FLORIDA TRENCH SAFETY ACT FORM

- A. The Certification of Compliance with Florida Trench Safety Act form will be required.

1.30 MAINTENANCE OF TRAFFIC

- A. The Contractor shall be responsible for preparing and implementing all Maintenance of Traffic Plans and Maintenance of Pedestrian Traffic Plans for the project in accordance with the Florida Department of Transportation (FDOT) Design Standards Index 600 thru 670 and Sarasota County requirements.

1.31 ABANDONMENT OF EXISTING PIPES

- A. All abandoned pipes two inches and larger shall be pumped filled with grout or flowable fill. All pipes shall be abandoned in a manner which results in the abandoned pipeline not being pressurized. Prior to grouting or filling the force main, the Contractor shall be responsible for removing and properly disposing all existing raw sewage and water, respectively from the pipe. For the force main, this shall include flushing the line with clean water into a downstream sanitary sewer system prior to disconnecting the force main. Flushing rate and water quality shall be coordinated with the Owner. The Contractor shall be responsible for furnishing and installing all necessary temporary pipe, valves, hoses etc. for the flushing operations. Should the Contractor elect to use a water source provided by the Owner, the Contractor shall pay the Owner for the actual volume of water used for flushing operations.

1.32 PIPE STAGING AREAS

- A. The staging areas shown on the drawings are areas that have been approved by the property Owner of that area shown for staging. No other areas for staging pipe or HDD operations are provided or expressly implied from these Contract Documents. Should the Contractor need additional staging area for HDPE or FPVC fused pipe or HDD operations, it shall be the responsibility of the Contractor to obtain the necessary permits or written permission from the property Owner, at the expense of the Contractor. The staging of all HDD operations will temporarily block access to driveways, business's, homes, and other structures along the path of the HDPE or FPVC pipe. The Contractor shall be responsible for furnishing and installing rollers, over head cradles, or other means to provide access to driveways, business's, and homes at all time during construction. Roadways and driveways may be shut down provided that other means of vehicle access is available and the Contractor implements proper detours and MOT. Such detours and shut downs shall be submitted for approval to the Owner's Project Manager a minimum of two (2) weeks prior to the proposed implementation.

1.33 TAPPING EXISTING FORCE MAIN

- A. The Contractor shall install a tap at the locations shown on the Plans to bypass the flow to the new force main, as shown and specified. The tap shall serve as the permanent connection for the new force main, as shown.
- B. The Contractor shall retain a subcontractor to accomplish the work. The subcontractor shall have a minimum of five (5) years experience in performing taps on similar size and type pipelines.
- C. The Contractor shall take all precautions necessary to protect the existing force main and shall be solely responsible to maintain continuous sewage flow during construction.
- D. Existing force main shall not be tapped until the tapping sleeve and resilient wedge gate valve have been hydrostatically tested in the presence of an Owner's Representative.
- E. Prior to ordering any tapping sleeves, the Contractor shall carefully excavate the existing force main at the location where the tapping sleeves will be installed, and shall make the precise measurements of the outside diameter at a sufficient number of locations around the pipe top define its exact cross-sectional configuration and size, all as recommended by the tapping sleeve manufacturer to assure proper fit to the sleeves to the pipe. The Contractor shall be solely responsible for the correctness of fit of the sleeves to the existing force main so that no leakage occurs.
- F. The Contractor shall submit to the Engineer, in advance of construction, a detailed step by step schedule for accomplishment of the tap, including supports of the existing pipe and tapping equipment as required.
- G. The Contractor shall submit to the Engineer for review, shop drawings detailing the valves, tapping sleeves, tapping machine, procedures and temporary supports as required.

- H. Where as shown on the approved plans, Contractor shall install the tapping sleeves and valves, without taking the existing force main out of service. Contractor shall pressure test the tapping sleeve and valve after installation on the main, but prior to tapping operations, the test shall be done in the presence of an Owner's Representative.
- I. The Contractor shall make the tap in the presence of an Owner's Representative, and only in the presence of an Owner's Representative.

1.34 TEMPORARY LINE STOP

- A. The Contractor shall install a temporary line stop at the locations shown on the Plans to stop the flow in the existing force main, as shown and specified. The line stop shall be installed temporarily so that the eccentric plug valve may be installed in the existing force main. Once the eccentric plug valve is installed and accepted the Contractor shall remove the temporary line stop and install the necessary blind flange/plug.
- B. The Contractor shall retain a subcontractor to accomplish the work. The subcontractor shall have a minimum of five (5) years experience in performing line stops on similar size and type pipelines.
- C. The Contractor shall take all precautions necessary to protect the existing force main.
- D. Prior to ordering any line stops, the Contractor shall carefully excavate the existing force main at the location where the line stops will be installed, and shall make the precise measurements of the outside diameter at a sufficient number of locations around the pipe top define its exact cross-sectional configuration and size, all as recommended by the line stop manufacturer to assure proper fit to the stops to the pipe. The Contractor shall be solely responsible for the correctness of fit of the line stops to the existing force main so that no leakage occurs.
- E. The Contractor shall submit to the Engineer, in advance of construction, a detailed step by step schedule for accomplishment of the line stop, including supports of the existing pipe and tapping equipment as required.
- F. The Contractor shall submit to the Engineer for review, shop drawings detailing the valves, tapping sleeves, line stopping machine, procedures and temporary supports as required.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01050

FIELD ENGINEERING AND SURVEY

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall provide and pay for field engineering and survey service required. Such work shall include survey work to establish existing and/or proposed lines and grades and to locate and lay out site boundary's, project control, site improvements, structures, controlling lines and levels and all other survey required for the construction of the work. Also included are such engineering services as are specified or required to execute the Contractor's construction methods. Engineers and surveyors shall be licensed professionals registered in the State of Florida.
- B. The accuracy of any method of staking shall be the responsibility of the Contractor. All surveying for vertical and horizontal control shall be the responsibility of the Contractor.
- C. The Contractor shall be held responsible for the preservation of all stakes and marks. If any stakes or marks are carelessly or willfully disturbed by the Contractor, the Contractor shall not proceed with any work until he has established such points, marks, lines and elevations as may be necessary for the prosecution of the work.

1.02 SURVEY REFERENCE POINTS

- A. Existing basic horizontal and vertical control points for the project are those designated on the Drawings. The Contractor shall locate and protect control points prior to starting site work and shall preserve all permanent reference points during construction. In working near any permanent property corners or reference markers, the Contractor shall use care not to remove or disturb any such markers. In the event that markers must be removed or are disturbed due to the proximity of construction work, the Contractor shall have them referenced and reset by a Florida Registered Land Surveyor and Mapper.

1.03 PROJECT SURVEY REQUIREMENTS

- A. The Contractor shall engage the services of a Florida Registered Land Surveyor and Mapper to establish all lines and grades on the Drawings necessary to fully construct the work in accordance with Chapters 5J-17.050, 5J-17.051, and 5J-17.052 of the Florida Administrative Code.
- B. The Registered Land Surveyor and Mapper shall establish and stake all Right-of-Way adjacent to construction at 100' intervals on tangents, 50' intervals on curves and at all changes in direction. The surveyor shall place lath and hub at such points with stations indicated. Tack in hub shall not be permitted.
 - 1. The Registered Land Surveyor shall utilize current right-of-way maps, plats and property deeds, all being of public record, in conjunction with existing monumentation to establish the existing right-of-way lines and utility easement boundaries.
- C. The Registered Land Surveyor shall establish a temporary benchmark system in accordance with Chapter 5J-17 F.A.C. and shall provide a written list to the Contractor for his use.
- D. The Contractor shall provide an As-Built Survey of all pipelines installed in the project, signed and sealed by a Florida Registered Surveyor and Mapper. As a minimum, the As-Built Survey shall provide at minimum:

1. Top of pipe elevations at every 100 feet;
 2. Top of pipe elevations at any grade change or direction changes;
 3. Top of pipe and top elevations of all utilities at utility crossings where the proposed utility crosses above or below other utilities;
 4. Top elevations and GPS coordinates of all fittings and valves;
 5. GPS coordinates of all ARV enclosures and above grade appurtenances;
 6. All GPS coordinates are to be with sub-meter accuracy;
 7. All other surveying as required to show that the work has been completed to the lines and grades shown on the Drawings or the Specifications.
- E. GPS coordinates shall be survey accuracy and shall conform to the requirements of Chapter 5J-17-6, FAC, pursuant to Chapter 472.
- F. See specification 02071 for horizontal directional drilling survey requirements.

1.04 RECORDS

- A. Maintain a complete, accurate log of all control and survey work as construction progresses. Survey notes indicating the information and measurements used in establishing locations and grades shall be kept in notebooks and furnished to the Engineer with the Record Drawings.

1.05 SUBMITTALS

- A. Submit name and address of surveyor to the Engineer.
- B. On request of the Engineer, submit documentation to verify accuracy of field engineering work.
- C. Submit three (3) full sized 24"x36" of the as-built survey, signed and seal by the Registered Land Surveyor.
- D. Submit two (2) CD-ROMS of the as-built survey in AUTOCAD 2007 or later format.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01090

REFERENCE STANDARDS

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Abbreviations and acronyms used in Contract Documents to identify reference standards.

1.02 QUALITY ASSURANCE

- A. Application: When a standard is specified by reference, comply with requirements and recommendations stated in that standard, except when requirements are modified by the Contract Documents, or applicable codes establish stricter standards.
- B. Publication Date: The publication in effect on the date of issue of Contract Documents, except when a specific publication date is specified.

1.03 ABBREVIATIONS, NAMES, AND ADDRESSES OF ORGANIZATIONS

Obtain copies of referenced standards direct from publication source, when needed for proper performance of Work, or when required for submittal by Contract Documents.

AA	Aluminum Association 818 Connecticut Avenue, NW Washington, DC 20006
AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, Washington, DC 20001
ACI	American Concrete Institute Box 19150 Redford Station Detroit, MI 48219
AI	Asphalt Institute Asphalt Institute Building College Park, MO 20740
AISC	American Institute of Steel Construction 1221 Avenue of the Americas New York, NY 10020
ASIS	American Iron and Steel Institute 1000 16th Street, N.W. Washington, DC 20036
ANSI	American National Standards Institute 1430 Broadway New York, NY 10018

ASME	American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
AWWA	American Water Works Association 6666 W. Quincy Avenue Denver, CO 80235
AWS	American Welding Society 2501 NW 7th Street Miami, FL 33125
CRSI	Concrete Reinforcing Steel Institute 180 North LaSalle Street, Suite 2110 Chicago, IL 60601
FS	Federal Specification General Services Administration Specifications and Consumer Information Distribution Section (WFSIS) Washington Navy Yard, Bldg. 197 Washington, DC 20407
NEMA	National Electrical Manufacturers' Association 2101 L Street, N.W. Washington, DC 20037
NSF	National Sanitation Foundation P.O. Box 130140 789 N. Dixboro Road Ann Arbor, MI 48113-0140
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 20076
PCI	Prestressed Concrete Institute 20 North Wacker Drive Chicago, IL 60606
PPI	Plastics Pipe Institute 105 Decker Court, Suite 825 Irving TX, 75062
SSPC	Steel Structures Painting Council Pittsburgh, PA
UL	Underwriters' Laboratories, Inc. 333 Pfingston Road Northbrook, IL 60062

PART 2 - PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END SECTION

01090-2

(01090 – Reference Standards)
(01/07/13)

SECTION 01120

CONSTRUCTION SEQUENCE

PART 1 – GENERAL

1.01 CONSTRUCTION SEQUENCE

- A. It is the intent of these documents that the existing Venice Intracoastal Waterway Force Main remains in service during construction except for temporary shutdowns described herein. Throughout construction, the Contractor shall cooperate fully with the Owner in order to minimize disruption of force main operation.
- B. The suggested sequencing plan specified herein shall be representative only. It is up to the Contractor to develop their own Sequencing Plan, which will meet the requirements as specified herein. The Contractor shall submit a Sequencing Plan for approval, prior to beginning any construction onsite. The Sequencing Plan shall be coordinated with the Contractors construction schedule.
- C. The Contractor shall maintain clear access to all roadways to be safely accessible by passenger vehicles, trucks, and delivery trucks. The Contractor shall be responsible for implementing any MOT required to maintain safe access to roadways during construction per Section 01570.
- D. The Contractor shall be responsible for constructing any temporary utilities/facilities and temporary pumping in order to keep the force main in-service during construction. All materials, piping, equipment, power, labor, and etc. associated with temporary utilities/facilities or temporary pumping shall be the responsibility of the Contractor.

1.02 DESCRIPTION OF FORCE MAIN OPERATIONS

- A. The Venice Intracoastal Waterway Force Main currently receives sewage from a 4-inch force main and a 16-inch force main that connect on the West side of the Intracoastal Waterway at the base of the Venice Avenue Bridge. The sewage then flows East under the Intracoastal Waterway and continues East along Venice Avenue. The Venice Intracoastal Waterway Force Main sees a peak flow approximately 600 gpm.

1.03 SEQUENCING GUIDELINES

- A. The following provides general guidelines with respect to the timing and sequencing of the work.
 - 1. Installation of the new 16-inch (or 14-inch) force main under the Intracoastal Waterway via horizontal directional drill;
 - 2. Installation of the new 4-inch force main along American Legion Way;
 - 3. Installation of tapping saddle and valve, “wet tap,” on the existing 16-inch force main East of the Intracoastal Waterway along Venice Avenue and connecting to the new force main under the Intracoastal Waterway.
 - 4. Installation of tapping saddle and valve, “wet tap,” on the existing 16-inch force main at the intersection of American Legion Way and Venice Avenue and connecting to the new force main under the Intracoastal Waterway.
 - 5. The existing 4-inch force main along Tampa Ave. shall be shutdown for the tie-in to the new 4-inch force main along American Legion Way.

6. Installation of the line stop and new plug valve on the existing 16-inch force main at the intersection of the American Legion Way and Venice Ave. Remove line stop after installation of plug valve.
7. Installation of the line stop and new plug valve on the existing 16-inch force main on the East side of the Intracoastal Waterway along Venice Ave. Remove line stop after installation of plug valve.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01150

MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.01 GENERAL INFORMATION

The Contractor shall receive and accept the compensation provided in the Proposal and the Agreement as full payment for furnishing certain materials and all labor, tools and equipment, for performing all operations necessary to complete the work under the Agreement, and also in full payment for all loss or damages arising from the nature of the work, or from any discrepancy between the actual quantities of work and quantities herein estimated by the Engineer, or from the action of the elements or from any unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the Owner.

It is the intent of these contract documents that any cost for which compensation is not directly provided by a bid item shall be prorated and included in the bid item(s) for which they are required. Failure of the Contractor to follow this procedure shall be basis for rejection of his bid.

The prices stated in the Proposal include all costs and expenses for taxes, labor, equipment, commissions, transportation charges and expenses, patent fees and royalties, together with any and all other costs and expenses for performing and completing the work as shown on the plans and specified herein. The basis of payment for any item at the unit price shown in the Proposal shall be in accordance with the description of that item in this Section.

All work shall be in accordance with the Technical Specifications.

Unless specifically listed as a Bid Item, no separate payment will be made for the following items and the cost of such work shall be included in the applicable contract pay items of work.

1. Clearing and grubbing;
2. Excavation, including necessary pavement/slab removal;
3. Shoring and sheeting;
4. Dewatering and disposal of surplus water including well point dewatering as directed by Engineer;
5. Backfill and compaction;
6. Grading;
7. Replacement or restoration of paved or unpaved roadways, grass and shrubbery plots outside of established pay limits;
- 8.
9. Temporary facilities and controls during construction such as water/sanitary facilities, traffic control and environmental protection, unless specifically provided for in a pay item;
10. Removing and disposing of waste material due to construction;
11. Cleanup;
12. Refill materials, except as hereinafter specified;
13. Testing and placing system in operation;
14. Any material or equipment required installed and/or used for the tests;
15. Maintaining the existing quality of service during construction;
16. Repair of sanitary sewer house laterals damaged during construction;
17. Repair and/or cleaning of storm sewers, inlets & catch basins damaged or filled with sediment during construction;
18. Color audio-video construction record; and

19. Providing the services of an Independent Testing Laboratory for materials and compaction testing;
20. Providing the services of a professional land surveyor, licensed in the State of Florida, to establish horizontal and vertical control, layout the work, and assist with the preparation of record drawings;
21. Cost to reproduce drawings, specifications, shop drawings, and reports for the Contractor's use and for submissions to the Owner;
22. Temporary fencing;
23. Dust Control;
24. Noise suppression measures;
25. Removing, relocating, resetting existing street signage to facilitate construction;
26. Removing, relocating, resetting mailboxes to facilitate construction;
27. Utility notification and location and exploratory pits;
28. All other appurtenant work as required for a complete and operable system.

The Contractor's attention is again called to the fact that the quotations for the various items of work are intended to establish a total price for completing the work in its entirety. Should the Contractor feel that the cost for any item of work has not been established by the Proposal or Contract Pay Items, he shall include the cost for that work in some other applicable bid item, so that his proposal for the project does reflect his total price for completing the work in its entirety.

Following final payment by the Owner, the Contractor shall maintain the surface of the unpaved trenches, shrubbery, trees, fences, sod, and other surfaces disturbed for a period of six (6) months thereafter. The cost of maintaining the restored areas is considered incidental to the cost of restoring the areas disturbed by the Contractor. These costs shall be prorated and included in the cost for the bid item for which it is required.

1.02 MEASUREMENT

The quantities for payment under this Agreement shall be determined by actual measurement of the completed items, in place, ready for service and accepted by the City, in accordance with the applicable method of measurement therefore contained herein. A representative of the Contractor shall witness all field measurements. Payment shall be made and shall be based on percent complete of the Lump Sum price according to the schedule of values.

1.03 PAYMENT

The Contractor will be paid monthly, by the City, for work performed the previous month. Each application for payment shall be submitted with a copy of "as built" drawings, to date, as well as an updated schedule for the project. Payment shall be for the approved and accepted amount of work that the Contractor has accomplished in the previous month.

Payment shall be made and shall be based on percent complete for Lump Sum pay items and on a measured quantity times unit price basis for unit price pay items.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 BASE AND ALTERNATE BID ITEMS

- A. FORCE MAIN INSTALLED BY HORIZONTAL DIRECTIONAL DRILL METHOD (Bid Items #1)

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(Section 01150 – Measurement & Payment)
(06/17/13)

The Contractor shall provide all labor, equipment and materials to furnish and install pipe by horizontal directional drill (HDD) method. The HDD installation of pipe shall include, but may not be limited to:

1. Performing all evaluations and calculations necessary for the proper implementation of the HDD.
2. Preparing and implementing the HDD work plan, bentonite management and emergency spill plan;
3. Excavating the launch, recovery, intermediate mud and exploratory pits;
4. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
5. Maintaining the pits, which shall include dewatering, barricading, sheeting, shoring, containment, berming and disposal of drill fluid as required or as directed by the Engineer;
6. Furnishing and installing the pipe;
7. Horizontal directional drilling of pipe;
8. Furnishing and installing the locator wires on the pipe;
9. Joining the pipe as required;
10. Furnishing and installing MJ adapters as necessary to connect HDPE pipe to other pipe materials, fittings, and valves;
11. Backfilling and compaction of pits;
12. Hydrostatic pressure testing and cleaning the pipe;
13. Providing and environmental scientist for monitoring HDD activities per the Contract Documents and applicable permits;
14. Connecting piping to existing piping and/or structures; and
15. All other ancillary materials, equipment, labor, water, and power required for the complete installation of the piping by HDD method.

All work shall be in accordance with the Technical Specifications.

Payment for installing pipe by the HDD method shall be based on the size and horizontal distance in linear feet of pipe measured along the top centerline of the installed and connected pipe, in place, complete and acceptable to the Engineer.

B. FORCE MAIN INSTALLED BY OPEN CUT METHOD (Bid Items #2, #3)

The Contractor shall provide all labor, equipment, and materials for installing pipe by the open cut method (OC). The open cut installation of pipe shall include, but may not be limited to:

1. Exploratory pits;
2. Excavating and maintaining the trench, which shall include dewatering, sheeting, shoring and/or bracing where required or as directed by the Engineer;
3. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
4. Cleaning dirt and foreign material from within the pipe and bell;
5. Beveling field-cut joints and pipe shorts;
6. Installing Owner approved pipe and any pipe shorts as part of the pipeline;
7. Furnishing and installing locator wires on PVC pipe;
8. Furnish and install joint restraints complete with all tie rods and hardware;
9. Furnishing and installing pipe;
10. Backfilling and compacting the trench including regrading the terrain;
11. Hydrostatic pressure testing, pigging, and cleaning the pipe;

12. Cleaning up and restoring the job site which shall include removing excess materials and debris and re-grading the terrain;
13. Connecting piping to existing piping and/or structures; and
14. All other ancillary materials, equipment, labor, water and power required for the complete installation of the piping by open cut method.

All work shall be in accordance with the Technical Specifications.

Payment for installing PVC pipe by the open cut method shall be based on the size and horizontal distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the Engineer.

C. DUCTILE IRON FITTINGS (Bid Item #4)

The Contractor shall provide all labor, equipment and materials to completely furnish and install ductile iron fittings. The installation of ductile iron fittings shall include but not be limited to:

1. Excavating the trench/pit;
2. Maintaining the trench/pit which shall include dewatering and bracing and sheeting where required or as directed by the Engineer;
3. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
4. Furnishing, installing and sealing the fittings with polyethylene encasement of not less than 8 mils thick;
5. Furnishing and installing restrained joints;
6. Backfilling and compacting the trench/pit and;
7. All other ancillary materials, equipment, labor, and power required for the complete installation of the ductile iron fittings and joint restraints.

All work shall be in accordance with the Technical Specifications and Plans.

Payment shall be made per ton for the total weight of fittings installed based on manufacturers standards of each size and type of fittings, less bolts and accessories, installed complete with joint restraints and incorporated into the piping system, working, and operating to the satisfaction of the Engineer.

D. COMBINATION AIR/VACUUM VALVE ASSEMBLY (Bid Item #5)

The Contractor shall provide all labor, equipment and certain materials to completely install combination air/vacuum valve assemblies for force mains. The combination air/vacuum valve assembly installation shall include, but may not be limited to:

1. Excavating the trench/pit;
2. Maintaining the trench/pit, which shall include dewatering and bracing and sheeting where required or as directed by the Engineer;
3. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
4. Furnishing and installing combination air/vacuum valves and other ancillary materials shown on the drawings;
5. Furnishing and installing valve assembly enclosures;
6. Backfilling and compacting the trench/pit and;
7. All other ancillary materials, equipment, labor, and power required for the complete installation of combination air release/vacuum valve and air release valve assemblies.

All work shall be in accordance with the Technical Specifications and Plans.

Payment shall be made for the number of each combination air/vacuum valve assembly installed and incorporated into the piping system complete, working, and operating to the satisfaction of the Engineer.

E. ECCENTRIC PLUG VALVES WITH BOX (Bid Items #6a, #6b, #7)

The Contractor shall provide all labor, equipment and certain materials to completely furnish and install all eccentric plug valves. The eccentric plug valve installation shall include, but may not be limited to:

1. Excavating the trench/pit;
2. Maintaining the trench/pit which shall include dewatering and bracing and sheeting where required or as directed by the Engineer;
3. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
4. Furnishing and installing valves and valve boxes;
5. Furnishing and installing mechanical joint restraints;
6. Furnishing and installing valve extension rods where necessary;
7. Furnishing and installing bronze valve identification tag;
8. Backfilling and compacting the trench/pit;
9. Furnishing paint and painting valve cover and;
10. All other ancillary materials, equipment, labor, and power required for the complete installation of eccentric plug valves.

All work shall be in accordance with the Technical Specifications and Plans.

Payment shall be made based on the size and for each eccentric plug valve installation complete, working, and operating to the satisfaction of the Engineer. Operating satisfactorily includes but is not limited to:

1. The valve box and valve is plumb and the valve box is centered on the valve.
2. Owner personnel can insert a valve key through the valve box and completely open and close the valve.

F. FLOWABLE FILL FOR PIPE CONFLICTS (Bid Item #8)

The Contractor shall provide all labor, equipment and materials for flowable fill at pipe conflicts. The flowable fill for pipe conflicts shall include, but may not be limited to:

1. Exploratory pits;
2. Excavating and maintaining the trench, which shall include dewatering, sheeting, shoring and/or bracing where required or as directed by the Engineer;
3. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
4. Furnishing and installing flowable fill for pipe conflicts.
5. Backfilling and compacting the trench including regrading the terrain;
6. Cleaning up and restoring the job site which shall include removing excess materials and debris and re-grading the terrain;
7. All other ancillary materials, equipment, labor, water and power required for the complete installation of the flowable fill pipe conflicts.

All work shall be in accordance with the Technical Specifications and Plans.

Payment for installing flowable fill shall be based on the number of cubic yards of flowable fill placed complete to the satisfaction of the Engineer.

G. ABANDONMENT OF EXISTING FORCE MAIN WITH FLOWABLE FILL (Bid Item #9)

The Contractor shall provide all labor, equipment and materials to abandon existing force mains in all sections of cut/capped pipe. The abandonment of existing force mains shall include, but may not be limited to:

1. Flushing and disposal of all raw sewage in the abandoned line;
2. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
3. Materials, equipment, labor, and power required to furnish and install flowable fill into the abandoned force mains;
4. All other ancillary materials, equipment, labor, water, and power required for the complete abandonment of the existing force mains.

All work shall be in accordance with the Technical Specifications and Plans.

Payment for installing flowable fill shall be based on the number of cubic yards of flowable fill placed in the abandoned pipe complete to the satisfaction of the Engineer.

H. WET TAPPING EXISTING FORCE MAIN (Bid Item #10)

The Contractor shall provide all labor, equipment and materials to tap existing force mains. The tapping of existing force mains shall include, but may not be limited to:

1. Performing all evaluations and calculations necessary for the proper implementation of the tap;
2. Preparing and implementing the tapping work plan;
3. Exploratory pits;
4. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
5. Excavating and maintaining the pits, which shall include dewatering, barricading, sheeting, shoring, containment, berming and support of the existing force main as required or as directed by the Engineer;
6. Backfilling and compaction;
7. Furnishing and installing the tapping sleeve and resilient wedge gate valve;
8. Pressure testing the tapping sleeve;
9. Tapping of pipe;
10. All other ancillary materials, equipment, labor, water, and power required for the complete tapping of existing force main.

All work shall be in accordance with the Technical Specifications and Plans.

Payment shall be made for the number of each tap to existing force main installed and incorporated into the piping system complete, working, and operating to the satisfaction of the Engineer.

I. INSTALLING TEMPORARY LINE STOP (Bid Item #11)

The Contractor shall provide all labor, equipment and materials to install temporary line stops to existing force mains. The temporary line stops shall include, but may not be limited to:

1. Performing all evaluations and calculations necessary for the proper implementation of the line stop;
2. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;
3. Excavating and maintaining the pits, which shall include dewatering, barricading, sheeting, shoring, containment, berming and support of the existing force main as required or as directed by the Engineer;
4. Backfilling and compaction;
5. Furnishing and installing the temporary line stops;
6. Removing the line stop and installing the necessary blind flange/plug;
7. All other ancillary materials, equipment, labor, water, and power required for the complete installation of the temporary line stop.

All work shall be in accordance with the Technical Specifications and Plans.

Payment shall be made for the number of each temporary line stop installed and incorporated into the piping system complete, working, and operating to the satisfaction of the Engineer.

J. SITE RESTORATION (Bid Items #12)

The Contractor shall furnish all labor, equipment, and materials to restore roadway, curbs, driveways, sidewalks, gutters that were cut, removed or damaged during the course of the pipeline construction and miscellaneous roadside site restoration including but not limited to sodding/seeding and tree removal and replacement. The entire construction site must be restored to an equal or better condition than that which existed prior to construction. The site restoration shall include but may not be limited to:

1. Restoring, placing, grading, and compacting approved road sub-base, road base, roadway asphalt, concrete driveways, curbs, gutters and sidewalks;
2. Restoring the roadside area with approved sod shall include furnishing, grading, placing, fertilizing and water the sod per the Technical Specifications;
3. Restoring the roadside area with approved trees shall include furnishing, grading, placing, fertilizing and water the trees per the Technical Specifications;
4. All other ancillary materials, equipment, labor, and power required for the complete restoration of all areas disturbed or damaged by construction.

All work shall be in accordance with the Technical Specifications and Plans.

Payment shall be made on a lump sum basis according to the schedule of values for the complete restoration of all areas disturbed or damaged by construction activities.

K. REVERSE DEAD MAN AND CAST-IN-PLACE THRUST BLOCKS (Bid Item #13)

The Contractor shall provide all labor, equipment and materials to completely furnish and install reverse dead man and cast-in-place concrete thrust blocks. The installation of reverse dead man shall include but not be limited to:

1. Excavating the trench/pit;
2. Maintaining the trench/pit which shall include dewatering and bracing and sheeting where required or as directed by the Engineer;
3. Furnishing, installing and maintaining all necessary erosion control measures including but not limited to artificial coverings, mowing, sandbagging, slope drains, sediment basins, hay bales, straw, floating silt barrier, staked silt barrier and seeding;

4. Pipe clamps, rebar, materials, equipment, labor, and power required to furnish and install the reverse dead man and cast-in-place thrust block;
5. Backfilling and compacting the trench/pit and;
6. All other ancillary materials, equipment, labor, and power required for the complete installation of the reverse deadman and cast-in-place thrust block.

All work shall be in accordance with the Technical Specifications and Plans.

Payment shall be made per cubic yard for the total volume of concrete installed complete to the satisfaction of the Engineer.

L. MAINTENANCE OF TRAFFIC AND TRAFFIC CONTROL (Bid Item #14)

The bid price for Traffic Control shall be a lump sum amount. This bid item shall include preparation of a Maintenance of Traffic plan consistent with the Contractor's work schedule/plan and coordination with through the Project Representative with the Owner, County of State Traffic Control authority. It shall include the construction and maintenance of any necessary detour facilities, traffic control barriers; providing of necessary facilities for access to residences and businesses, etc. along the project; furnishing, installing and maintaining of traffic control and safety devices during construction, including placement and removal of temporary pavement markings, and signs; temporary wheelchair ramps, temporary lighting for nightwork, and any other special requirements for safe and expeditious movement of both vehicular and pedestrian traffic.

Bid price for maintenance of traffic and traffic control shall not exceed 3% of the base bid.

Payment for Maintenance of Traffic and Traffic Control will be on an incremental basis in accordance with the following:

Percent of Original Contract Amount Earned	Allowable Percent of the Lump Sum Price for the Item
20	20
40	40
60	60
80	80
100	100

M. GENERAL CONDITIONS, MOBILIZATION AND DEMOBILIZATION (Bid Item #15)

The bid price for General Conditions, mobilization and demobilization shall be a lump sum amount calculated as a percentage of the subtotal of the bid items to be installed. This bid item shall include obtaining all permits, insurance, and bonds; securing a staging area in proximity to the work if public lands are insufficient; moving onto the site all materials and equipment; furnishing and erecting temporary buildings, access roads and other items as necessary to complete the work; providing a color audio-videotape of existing conditions of the construction site or route; providing field trailers, sanitary facilities and potable water facilities as required for the proper performance and completion of the work.

Bid price for general conditions, mobilization and demobilization shall not exceed 5% of the base bid.

Payment will be on an incremental basis in accordance with the following:

Percent of Original Contract Amount	Allowable Percent of the Lump Sum
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<u>Earned</u>	<u>Price for the Item</u>
5	15
10	25
25	50
50	75
75	85
100	100

N. INDEMNIFICATION (Bid Item #16)

The bid price for Indemnification shall be a lump sum amount for the project. The amount shall be ten dollars (\$10.00). Payment for Indemnification will be made to the Contractor for considerations for indemnification to Owner and Engineer as specified in the General Conditions at the time of the first invoice.

O. CONTINGENCY ALLOWANCE FOR EXTRA WORK AUTHORIZED BY THE OWNER (Bid Item #17)

The bid price for Contingency Allowance shall be a lump sum amount for the project. Payment shall be made to the Contractor, at the sole discretion of the Owner for additional Work related to the project and requested by the Owner but not identified in the Contract Documents.

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SECTION 01152

APPLICATIONS FOR PAYMENT

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Submit Applications for Payment to the Engineer in accordance with the schedule as approved by the Owner.
- B. Contractor shall submit to the Engineer for review, the proposed Application for Payment form and stored materials tracking form, prior to the first Payment Request.

1.02 FORMAT AND DATA REQUIRED

- A. Submit applications typed on forms either provided in these Specifications, furnished by the Owner, as approved by the Owner, with itemized data typed on 8-1/2 inch x 11 inch 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 Engineer.

1.03 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 the Contractor.
- 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.
 - 4. To receive approval for payment on component material stored on site, submit copies of the original invoices with the Application for Payment. The application for payment must also

include a table summarizing the amount of each invoice and the schedule of values line item to which the stored materials apply.

1.04 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

- A. Provide substantiating data, containing suitable information for review of costs requested 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.
 - c. Supplier invoices.
 - d. A table identifying stored material, amount stored, amount installed, monthly activities report, updated cash flow chart, progress photos, and schedule of values item which the material applies.
- B. Submit one copy of data and cover letter for each copy of application.
- C. The Contractor is to maintain an updated set of As-built Drawings to be used as record drawings. As a prerequisite for monthly progress payments, the Contractor shall exhibit the updated record drawings for review by the Owner, the Engineer, or their dedicated representatives.
- D. Contractor shall maintain an updated construction schedule in accordance with the Specifications. As a prerequisite for monthly progress payments, Contractor shall submit the updated construction schedule with the applications for progress payments. If the Contractor fails to submit the required updated schedule within the time prescribed, the Engineer may withhold approval of progress payment estimates until such a time as the Contractor submits the required updated schedule. As-built Drawings shall be in accordance with Section 01720 Project Record Documents.

1.05 PREPARATION OF APPLICATION FOR FINAL PAYMENT

- A. Fill in application form as specified for progress payments.
- B. Use continuation sheet for presenting the final statement of accounting as specified in the Specification.
- C. All appropriate information must be entered on the application form.
 - 1. The line title, "Application Period", must indicate the dates between which all work was completed during the pay period. The period is defined from the first day of the month to the last day of the month, i.e. June 1, 2012 to June 30, 2012.
 - 2. All blank lines within the "Contract Data" and "Summary of Project Status" section of the application must be completed. Also, if any Change Orders have been approved, the "Change Orders" section must include that information.

3. All calculations and arithmetic must be precise to the penny.
4. The application must be signed and dated by an authorized representative of the Contractor and notarized.

1.06 SUBMITTAL PROCEDURE

- A. Prior to submitting a completed Payment Request, the Contractor must arrange a field meeting with the Owner Project Representative to review and verify all installed quantities and/or stored material. Only when the Owner Project Representative and Contractor agree on installed quantities and percentages, should the Payment Request be submitted.
- B. Submit six (6) copies of Applications for Payment to the Engineer at the times stipulated in the General Conditions.
- C. When the Engineer finds Application properly completed and correct, he will transmit certificate for payment to Owner, with copy to Contractor.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

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SECTION 01153

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 Engineer 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.

1.02 DEFINITIONS

- A. Change Order: See General Conditions.
 - 1. Request for Cost Proposal – will be authorized by the Owner prior to all Work Change Directives and Field Orders.
- B. Work Directive Change: A written order to the Contractor, signed By Owner and Engineer, which amends the Contract Documents as described, and authorizes Contractor to proceed with a change that affects the Contract Sum or the Contract Time, for inclusion in a subsequent Change Order.
- C. Engineer's Supplemental Instructions: A written order, instructions, or interpretations, signed by Engineer making minor changes in the Work not involving a change in Contract Sum or Contract Time.
- D. Field Order: A written order to the Contractor, signed by the Engineer and the Contractor, which is issued to interpret/clarify the Contract Documents, order minor changes in the work. 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.

1.03 PRELIMINARY PROCEDURES

- A. Owner and Engineer may initiate changes by submitting a Work Directive Change to the Contractor. Request will include:
 - 1. Detailed description of the change, products, and location of the change in the Project.
 - 2. Supplementary or revised Drawings and/or 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. A specific period of time during which the requested price will be considered valid.
- B. Contractor may initiate changes by submitting a written notice to the Engineer, prior to the work being performed, 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.

1.04 CONSTRUCTION CHANGE AUTHORIZATION

- A. Work Directive Change 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.
- B. Owner and Engineer will sign and date the Work Directive Change as authorization for the Contractor to proceed with the changes.

1.05 DOCUMENTATION OF PROPOSALS AND CLAIMS

- A. 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 the Engineer to evaluate the quotation.
- B. 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.
- C. 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 Owner'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.

1.06 PREPARATION OF CHANGE ORDERS AND FIELD ORDERS

- A. Engineer will prepare each Change Order and Field Order.
- B. Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.
- C. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.
- D. Field Order will describe interpretations or clarifications of Contract Documents, order minor changes in the Work, and/ or memorialize trade-off agreements.
- E. Field Order work will be accomplished without change in the Contract Sum, Contract Time, and/or claims for other costs.

1.07 LUMP SUM/FIXED PRICE CHANGE ORDER

- A. Engineer initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.
- B. Once Engineer has completed and signed the form, all copies should be sent to Contractor for approval. After approval by Contractor, all copies should be sent to Owner for approval. Engineer should make distribution of executed copies.

1.08 UNIT PRICE CHANGE ORDER

- A. Content of Change Orders will be based on either:
 1. Engineer's definition of the scope of the required changes.
 2. Contractor's Proposal for a change, as recommended by Engineer.
 3. Survey of complete work.
- B. The amounts of the unit prices to be:
 1. Those stated in the Agreement.

2. Those mutually agreed upon between Owner 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. Owner and Engineer will sign and date a Work Directive Change as authorization for Contractor to proceed with the changes.
- D. When quantities of the items cannot be determined prior to start of the work:
 1. Engineer or Owner will issue a Work Directive change directing the Contractor to proceed with the change on the basis of unit prices, and the Engineer will cite the applicable unit prices.
 2. Upon completion of the change, the Engineer will determine the cost of such work based on the unit prices and quantities used. Contractor shall submit documentation to establish the number of units of each item and any claims for a change in Contract Time.
 3. Engineer will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
 4. Contractor will sign and date the Change Order to indicate their agreement with the terms therein.
 5. Owner will then sign the change order.

1.09 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/CONSTRUCTION CHANGE AUTHORIZATION

- A. Engineer and Owner will issue a Work Directive Change directing Contractor to proceed with the changes.
- B. Upon completion of the change, the Contractor shall submit itemized accounting and supporting data.
- C. Engineer will determine the allowable cost of such work, as provided in General Conditions and Supplementary Conditions.
- D. Engineer will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
- E. Contractor will sign and date the Change Order to indicate agreement therewith.
- F. Owner will then sign the Change Order.

1.10 CORRELATION WITH CONTRACTOR'S SUBMITTALS

- A. Not greater than monthly revise Schedule of Values and Request for Payment forms to record each change as a separate item of work and to record the adjusted Contract Sum.
- B. Not greater than monthly revise the Construction Schedule to reflect each change in Contract Time. Revise subschedules to show changes for other items of work affected by the changes.
- 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

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SECTION 01310

CONSTRUCTION SCHEDULES

PART 1 - GENERAL

1.01 GENERAL

- A. Construction under this contract must be coordinated to assure that construction is completed within the time allowed by the Contract Documents. The Contractor will also coordinate his activities with the other contractors to allow orderly and timely completion of all the work.
- B. All construction schedules shall be of the critical path method, bar chart type, and shall be prepared using SURETRACK, PRIMAVERA P3, or equal.

1.02 CONSTRUCTION SCHEDULING GENERAL PROVISIONS

- A. Within 10 calendar days after the issuance of the Notice to Proceed, the Contractor shall prepare and submit to the Engineer a preliminary construction progress schedule. The schedule shall contain a sufficient number of tasks such that no single task has a value that exceeds 1.5% of the total Contract Amount. Partial payments will not be approved until an acceptable construction progress schedule has been approved by the Engineer.
- B. The schedule shall be updated monthly reflecting the approved baseline schedule and the Contractor's progress on each activity. No progress payment will be approved until the updated schedule is submitted and approved by the Engineer.
- C. Night work may be established by the Contractor as regular procedure only with the prior written permission of the Owner. Such permission, however, may be revoked at any time by the Owner if the Contractor fails to maintain adequate equipment and supervision for the proper execution and control of the work at night.
- D. The Contractor shall designate an authorized representative of his firm who shall be responsible for development and maintenance of the schedule and of progress and payment reports. This representative of the Contractor shall have direct project control and complete authority to act on behalf of the Contractor in fulfilling the commitments of the Contractor's schedule.

1.03 PROGRESS OF THE WORK

- A. The work shall be executed with such progress as may be required to prevent any delay to the general completion of the work. The work shall be executed at such times and in or on such parts of the project, and with such forces, materials and equipment to assure completion of the work in the time established by the Contract.
- B. If the Contractor for his convenience and at his own expense, should desire to carry on his work at night or outside regular hours, he shall submit written notice to the Engineer and he shall allow ample time for satisfactory arrangements to be made for inspecting the work in progress. The Contractor shall reimburse the Owner for extra inspection required for work outside regular hours. The Contractor shall light the different parts of the project as required to comply with all applicable Federal and State regulations and with all applicable requirements of the municipality in which the work is being done.

PART 2 - PROGRESS SCHEDULE SUBMITTALS

2.01 GENERAL REQUIREMENTS

- A. The Contractor shall submit a critical path progress schedule as described herein. The schedule shall take into considerations all work phasing and restrictions as specified elsewhere in the Contract Documents.
- B. The critical path progress schedule requirement will consist of a detailed schedule, monthly status reports (Monthly Reports), a start-up schedule, and revisions to the schedules and analyses as described. The planning, scheduling, management and execution of the work are the sole responsibilities of the Contractor. The progress schedule shall allow Engineer to review Contractor's planning, scheduling, management and execution of the work; to assist Engineer in evaluating work progress and make progress payments; to allow other contractors to cooperate and coordinate their activities with those of the Contractor; and to provide Owner with information about "construction schedule" and "cumulative outlay schedule."
- C. Engineer's review of the schedule submittals shall not relieve Contractor from responsibility for any deviations from the Contract Documents unless Contractor has in writing called Engineer's attention to such deviations at the time of submission and Engineer has given written concurrence to the specific deviations, nor shall any concurrence by Engineer relieve Contractor from responsibility for errors and omissions in the submittals.
- D. Float or slack time is not for the exclusive benefit of the Owner, the Engineer or the Contractor. Extensions of time for performance, as specified in the General and Supplementary Conditions, will be granted only to the extent that equitable time adjustments for the network activity, or activities affected, exceed the total float or slack time along the affected network paths, as shown in the precedence diagram and computer printout report in effect at the instant of either (a) a notice to proceed with a change, or (b) a notice of suspension of work or possession, or (c) detection of a subsequently acknowledged differing site condition, or (d) occurrence of cause for an excusable delay. Further, use of float time in the schedule, or the allocation of float time to activities by means of special logic restraints or imposed dates, shall be shared to the benefit of Owner, Engineer, Contractor, and his subcontractors and suppliers in proportion of their scope of responsibilities. Excessive use of float time to the detriment of succeeding activities may be cause for denying an extension of time if it can be demonstrated that the float along the network paths affected at the instant of the delaying condition would have been larger than the delay had it not been for the excessive and unreasonable float usage in violation of the sharing concept required by this Specification.
- E. Engineer's review of the schedule submittals shall be only for conformance with the information given in the Contract Documents and shall not extend to the means, methods, sequences and techniques or procedures of construction or to safety precautions or programs incident thereto. Engineer's review of the schedule submittals will be predicated on a Contractor's stamp of approval signed off by Contractor. Contractor's stamp of approval on any schedule submittals shall constitute a representation to Owner and Engineer that Contractor, has either determined or verified all data on the submittal, or assumes full responsibility for doing so, and that Contractor and his subcontractors and suppliers have reviewed and coordinated the sequences shown in the submittal with the requirements of the work under the Contract Documents.

2.02 SUPPLEMENTARY REQUIREMENTS

- A. Graphic network diagrams shall be on a time-scaled precedence network format. The graphic network diagram shall include the following format:
 - 1. Description of each activity, or restraint, shall be brief but convey the scope of work described.

2. Activities shall identify all items of work that must be accomplished to achieve final completion, such as the major disciplines of work; items pertaining to the approval of regulatory agencies; contractor's time required for submittals, fabrication and deliveries; the time required by Engineer to review all submittals as set forth in the Contract Documents; items of work required of Owner to support pre-operational and start-up testing; time required for the relocation of utilities. Activities shall also identify interface milestones with the work of other contract work under separate contracts with Owner.
 3. Any activities not shown on the graphic network diagram shall be considered to have no effect on the Contractor's ability to achieve final completion, within the Contract Time. Any delays to activities that do not appear in the concurred detailed schedule shall give rise only to non-prejudicial delays. Attempts to impose after-the-fact logic constraints where none existed previously to justify time extensions will not be permitted.
 4. Activity durations shall be in whole working days.
 5. Graphic diagrams shall be time-scaled and sequenced by work areas. The Diagram of Activities shall show numerical values for total float and be shown on their early schedules. The diagram shall be neat and legible and submitted on sheets no larger than 24 inches by 36 inches on a medium suitable for reproduction.
 6. All relationships and the critical path shall be shown. The critical path bars shall be different color than other task bars.
- B. Printout reports shall contain the following data for each activity or restraint:
1. Activity identification, activity description, activity duration, activity man-days, computed or specified early start date, computed early finish date, computed late start date, computed or specified late finish date, and total float and free float.
 2. Five separate reports shall be provided, including all activities and restraints, and shall be submitted monthly as follows:
 - a. Activity, sort by early start dates in order of ascending numbers.
 - b. Activity, sort by department.
 - c. Float report, in order of ascending total float values.
 - d. Successor/predecessor report.

PART 3 – EXECUTION

3.01 DETAILED SCHEDULE SUBMITTAL

- A. Submittal shall include a time-scaled graphic diagram showing all Contract activities, computer printout reports, and a supporting narrative. The initial Detailed Schedule submittal shall be delivered within 10 calendar days after the Notice to Proceed, and shall use the Notice to Proceed as the "data date". Upon receipt of Engineer's comments, Contractor shall meet with Engineer and discuss an appraisal and evaluation of the proposed work plan. Necessary revisions resulting from this review shall be made by Contractor and the detailed schedule resubmitted within 15 calendar days after the meeting. The re-submittal, if concurred with by Owner, and unless subsequently changed with the concurrence of or at the direction of Owner, shall be the work plan to be used by the Contractor for planning, scheduling, managing and executing the work. If Contractor fails to provide an acceptable Detailed Schedule submittal, he will be deemed not to have provided a basis upon which progress may be evaluated, which will further constitute reasons for refusing to recommend payment.

- B. The graphic diagram shall be formatted in accordance with Article 2.02(A) above. The diagram shall include (1) all detailed activities grouped by major areas of work. The critical path activities shall be identified, including critical paths for interim dates, if applicable, by clearly highlighting the path on the graphics diagram.
- C. This submittal shall include five copies of the graphic diagram, the printout reports and the narrative, in accordance with Article 2.02 of these scheduling requirements.
- D. The narrative shall include sufficient data to explain the basis of Contractor's determination of durations, describe the contract conditions and restraints plugged into the schedule, and provide a "what-if" analysis pertaining to potential problems and practical steps to mitigate them. Should Engineer require additional data, this information shall be supplied by Contractor within ten calendar days.

3.02 MONTHLY STATUS REPORTS

- A. Beginning with the first month, and every month thereafter, Contractor shall submit to Engineer a Monthly Status Report (based on the Detailed Schedule) with data as of the last day of the pay period. The monthly Status Report shall include a revised copy of the currently accepted graphic diagram, computer printouts and a narrative. The Monthly Status Report will be reviewed by the Engineer. The Contractor will address the Engineer's comments in the subsequent Monthly Status Report. If Contractor fails to provide acceptable Monthly Status Reports, he will be deemed not to have provided a basis upon which progress may be evaluated, which will be reason for refusing to recommend progress payments.
- B. The revised diagram shall show, for the currently accepted detailed diagram, percentages of completion for all activities, actual start and finish dates, and remaining durations, as appropriate. Activities not previously included in the currently accepted detailed schedule shall be added, except that contractual dates will not be changed except by Change Order. Review of a revised diagram by the Engineer will not be construed to constitute concurrence with the time frames, duration, or sequencing for such added activities; instead the corresponding data as ultimately incorporated into an appropriate change order shall govern.
- C. The narrative shall include the information shown in the following outline in a narrative form:
 - 1. Construction progress (refer to activity number in the Detailed Schedule) including:
 - a. Activities completed this reporting period;
 - b. Activities in progress this reporting period;
 - c. Activities scheduled to commence next reporting period.
 - 2. Description of problem areas
 - 3. Current and anticipated delays
 - a. Cause of the delay;
 - b. Corrective action and schedule adjustments to correct the delay;
 - c. Impact of the delay on other activities, on milestones, and on completion dates.
 - 4. Changes in construction sequence
 - 5. Pending items and status thereof
 - a. Permits

- b. Change Orders
 - c. Time extensions
 - d. Other
- 6. Contract completion date status
 - a. Ahead of schedule and number of days
 - b. Behind schedule and number of days

3.03 REVISIONS

- A. All revised Detailed Schedule submittals shall be in the same form and detail as the initial submittal and shall be accompanied by an explanation of the reasons for such revisions, all of which shall be subject to review by Engineer. The revision shall incorporate all previously made changes to reflect current as-built conditions. Minor changes to the submittal may be reviewed at monthly meetings. Changes to activities having adequate float shall be considered a minor change.
- B. A revised detailed work plan submittal shall be submitted for review, when required by Engineer, for one of the following reasons:
 - 1. Owner or Engineer directs a change that affects the date(s) specified in the Agreement or alters the length of a critical path.
 - 2. Contractor elects to change any sequence of activities so as to affect a critical path of the currently accepted detailed schedule documents.
- C. If, prior to agreement on an equitable adjustment to the Contract Time, Engineer requires revisions to the Detailed Schedule in order to evaluate planned progress, Contractor shall provide an interim revised submittal for review with change effect(s) incorporated as directed. Approved interim revisions to the documents will be incorporated during the first subsequent Monthly Status Report.

3.04 CONSTRUCTION PERIOD

- A. Whenever it becomes apparent from the current monthly progress evaluation and updated schedule data that any milestone and/or Contract completion date will not be met, the Contractor shall take appropriate action to bring the work back on schedule. Actions could include:
 - 1. Increase construction manpower in such quantities and crafts as to substantially eliminate the backlog of work;
 - 2. Increase the number of working hours per shift, shifts per work day, work days per week, or the amount of construction equipment, or any combination of the foregoing sufficient to substantially eliminate the backlog of work; and
 - 3. Reschedule work items to achieve concurrency of accomplishment.
- B. The addition of equipment or construction forces, increasing the working hours or any other method, manner, or procedure to return to the current Detailed Schedule shall be at the Contractor's own cost and shall not be considered justification for a Change Order or treated as an acceleration order.

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SECTION 01340

SHOP DRAWINGS, PRODUCT DATA, WORKING DRAWINGS AND SAMPLES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall submit to the Engineer for review such working drawings, shop drawings, test reports and data on materials and equipment (hereinafter in this Section called data), and material samples (hereinafter in this Section called samples) as are required for the proper control of work, including but not limited to those working drawings, shop drawings, data and samples for materials and equipment specified elsewhere in the Specifications and in the Contract Drawings.
- B. The Contractor shall note that there are specific submittal requirements in other sections of these Specifications.

1.02 SHOP DRAWINGS

- A. When used in the Contract Documents, the term "shop drawings" shall be considered to mean Contractor's Drawings for material and equipment which become an integral part of the Project. These drawings shall be complete and detailed. Shop drawings shall consist of fabrication, erection and setting drawings and schedule drawings, manufacturer's scale drawings, bills of material, wiring and control diagrams, and inspection and test reports including performance curves and certifications as applicable to the Work.
- B. All details on shop drawings submitted for review shall show clearly the elevations of the various parts to the main members and lines of the structure and/or equipment, and where correct fabrication of the work depends upon field measurements, such measurements shall be made and noted on the shop drawings before being submitted for review.

1.03 PRODUCT DATA

- A. Product data as specified in individual sections, include, but are not necessarily limited to, standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturers product specification and installation instructions, availability of colors and patterns, manufacturer's printed statements of compliances and applicability, roughing-in diagrams and templates, catalog cuts, product photographs, standard wiring diagrams, printed performance curves and operational-range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance instructions and recommended spare-parts listing storage instructions, and printed product warranties, as applicable to the work.

1.04 WORKING DRAWINGS

- A. When used in the Contract Documents, the term "working drawings" shall be considered to mean the Contractor's Drawings for temporary structures such as temporary bulkheads, support of open cut excavation, support of utilities, ground water control systems, forming and falsework; for underpinning; and for such other work as may be required for construction but does not become an integral part of the Project.
- B. Working drawings shall be signed and sealed by a registered Professional Engineer, currently licensed to practice in the State and shall convey, or be accompanied by, calculations or other sufficient information to completely explain the structure, machine, or system described and its intended manner

of use. Prior to commencing such work, working drawings must have been reviewed without specific exceptions by the Engineer. Such review will be for general conformance and will not relieve the Contractor in any way from his responsibility with regard to the fulfillment of the terms of the Contract. All risks of error are assumed by the Contractor; the Owner and Engineer shall have no responsibility therefore.

1.05 SAMPLES

- A. The Contractor shall furnish, for review of the Engineer, samples required by the Contract Documents or requested by the Engineer. Samples shall be delivered to the Engineer as specified or directed and in quantities and sizes as specified. A minimum of two samples of each item shall be submitted unless otherwise specified. The Contractor shall prepay all shipping charges on samples. Materials or equipment for which samples are required shall not be used in work until reviewed by the Engineer.
- B. Samples specified in individual sections, include, but are not necessarily 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 units of work to be used by the Engineer or Owner for independent inspection and testing, as applicable to the Work.
- C. The Contractor shall prepare a transmittal letter for each shipment of samples. He shall enclose a copy of this letter with the shipment and send a copy of this letter to the Engineer. Review of a sample shall be only for the characteristics or use named in such review and shall not be construed to change or modify any Contract requirements.

1.06 SUBMITTAL REQUIREMENTS

- A. The Contractor shall review, approve, and submit, with reasonable promptness and in such sequence, so as to cause no delay in the Contract Work or in the Work of the Owner or any separate contractor, all shop drawings, product data, working drawings and samples required by the Contract Documents.
- B. Shop drawings, product data, working drawings and samples shall be furnished with the following information:
 - 1. Number and title of the drawing.
 - 2. Date of drawing or revision.
 - 3. Name of project building, facility or system.
 - 4. Name of contractor, subcontractor, and manufacturer submitting drawing.
 - 5. Clear identification of contents, location of the work, and the sheet numbers where the product is found in the contract drawings.
 - 6. Contractor Certification Statement.
 - 7. Submittal Identification Number.
 - 8. Contract Drawing Number Reference.
- C. All items specified are not necessarily intended to be a manufacturer's standard product. Variations from specified items will be considered on an "or equal" basis. If submittals show variations from Contract requirements because of standard shop practice or for other reasons, the Contractor shall

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describe such variations in his letter of transmittal and on the shop drawings along with notification of his intent to seek contract adjustment. If acceptable, proper adjustment in the Contract shall be implemented where appropriate. If the Contractor fails to describe such variations he shall not be relieved of the responsibility for executing the work in accordance with the Contract, even though such drawings have been reviewed. Variations submitted but not described may be cause for rejection. Any variations initiated by the Contractor will not be considered as an addition to the scope of work unless specifically noted and then approved as such in writing by the Engineer.

- D. Data on materials and equipment shall include materials and equipment lists giving, for each item thereon, the name and location of the supplier or manufacturer, trade name, catalog reference, material, size, finish and all other pertinent data.
- E. For all mechanical and electrical equipment furnished, the Contractor shall provide a list including the equipment name, and address and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained. In addition, a maintenance and lubrication schedule for each piece of equipment shall be submitted
- F. All working drawing shall be scaled drawings and shall be generated using Computer-Aided Design (CAD) software.
- G. The Contractor shall use the color "green" to make his remarks on the Submittals. Only the Engineer will utilize the color "red" in marking submittals.

1.07 CONTRACTOR'S RESPONSIBILITY

- A. It is the duty of the Contractor to check, and coordinate with the work of all trades, all drawings, data, schedules and samples prepared by or for him before submitting them to the Engineer for review. Each and every copy of any drawing or data sheet larger than 11"x17" shall bear Contractor's stamp showing that they have been so checked and approved. Drawings or data sheets 11"x17" and smaller shall be bound together in an orderly fashion and bear the Contractor's stamp on the cover sheet. The cover sheet shall fully describe the packaged data and include a list of all sheet numbers within the package. Shop drawings submitted to the Engineer without the Contractor's stamp will be returned to the Contractor, without review at the Engineer's option, for conformance with this requirement.
- B. The Contractor shall review shop drawings, product data, and samples prior to submission to determine and verify the following:
 - 1. Field measurements.
 - 2. Field construction criteria.
 - 3. Manufacturer's catalog numbers and similar data.
 - 4. Conformance with Specifications.
- C. Shop drawings shall indicate any deviations in the submittal from the requirements of the Contract Documents.
- D. At a time decided upon at the preconstruction meeting the Contractor shall furnish the Engineer a Shop Drawing schedule fixing the respective dates for the initial submission of shop and working drawings, the beginning of manufacture, testing and installation of materials, supplies and equipment. This schedule shall be provided as a separate entity and indicate those submittals that are critical to the progress schedule. The Contractor shall 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 sections of the Specifications, so that the installation will not be delayed by processing times including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery, and similar sequenced activities. No extension of time will be

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authorized because of the Contractor's failure to transmit complete and acceptable submittals sufficiently in advance of the Work.

- E. The Contractor shall not begin any work affected by a submittal returned, "Rejected. Revise as indicated and resubmit". Before starting this work all revisions must be corrected by the Contractor. After resubmittal they will be reviewed and returned to him by the Engineer. If returned marked, "No exceptions noted" or "Exceptions as noted", then the Contractor may begin this work. Any corrections made to the shop drawings are to be followed without exception.
- F. The Contractor shall submit to the Engineer all shop drawings and data sufficiently in advance of construction requirements. Extension of the Contract time will not be granted because of the Contractor's failure to make timely and correctly prepared and presented submittals with allowance for the checking and review periods. The need for resubmission or delay in obtaining the Engineer's review or approval of submittals will not entitle the Contractor to an extension of time for Contract Completion.
- G. The Contractor shall be responsible for and bear all cost of damages which may result from the ordering of any material or from proceeding with any part of work prior to review by the Engineer of the necessary shop drawings.
- H. All shop drawings, product data, working drawings and samples submitted by subcontractors for review shall be sent directly to the Contractor for checking. The Contractor shall be responsible for their submission according to the approved shop drawing schedule so as to prevent delays in delivery of materials and project completion.
- I. The Contractor shall check all subcontractor's shop drawings, product data, working drawings and samples regarding measurements, size of members, materials, and details to satisfy himself that they are in conformance to the Contract Documents. Shop drawings found to be inaccurate or otherwise in error shall be returned to the subcontractors for correction before submission to the Engineer.

1.08 ENGINEER'S REVIEW OF SHOP DRAWINGS, PRODUCT DATA, WORKING DRAWINGS AND SAMPLES

- A. The Engineer's review is for general conformance with the design concept and contract drawings. Markings or comments shall not be construed as relieving the Contractor from compliance with the Contract Drawings and Specifications or from departures therefrom. 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.
- B. The review of shop drawings, data, and samples will be general. 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 Engineer, except as otherwise provided herein.
- C. If the shop drawings, data or samples as submitted describe variations per and show a departure from the Contract requirements which Engineer finds to be in the interest of the Owner and to be so minor as not to involve a change in Contract Price or time for performance, the Engineer may return the reviewed drawings without noting an exception.

- D. Not less than 21 calendar days shall be allowed for the review of submittals, not including the time necessary for delivery or mailing, and shall cause no delay in the work.
- E. Submittals will be returned to the Contractor under one of the following:
- "NO EXCEPTIONS NOTED" 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.
- "EXCEPTIONS AS NOTED" is assigned when notations or comments have been made on the submittal pointing out minor discrepancies as compared with the Contract Documents. Resubmittal or confirmation is not necessary prior to release for manufacturing.
- "EXCEPTIONS 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 is to address the omissions and/or nonconforming items that were noted. Only the items to be "confirmed" need to be resubmitted.
- "EXCEPTIONS AS NOTED/RESUBMIT." This combination of codes is assigned when a resubmittal is required by the Contractor. The Contractor may release a portion of the equipment or material for manufacture; however, all notations and comments must be incorporated into the final submittal. This resubmittal is to address the omissions and/or nonconforming items that were noted.
- "REJECTED. REVISE AS INDICATED AND RESUBMIT." This combination of codes is assigned when the submittal is in noncompliance with the Contract Documents and must be corrected and the entire package resubmitted. This code generally means that the equipment or material cannot be released for manufacture unless the Contractor takes full responsibility for providing the submitted items in accordance with Contract Documents.
- "FOR YOUR INFORMATION" is assigned when the package provides information of a general nature that may or may not require a response.
- F. Resubmittals will be handled in the same manner as first submittals. On resubmittals the Contractor shall direct specific attention, in writing, on the letter of transmittal and on resubmitted shop drawings by use of revision triangles or other similar methods, to revisions other than the corrections requested by the Engineer on previous submissions. Any such revisions which are not clearly identified shall be made at the risk of the Contractor. The Contractor shall make corrections to any work done because of this type revision that is not in accordance to the Contract Documents as may be required by the Engineer.
- G. If the Contractor considers any correction indicated on the shop drawings to constitute a change to the Contract Documents, the Contractor shall give written notice thereof to the Engineer within the time constraints defined by the General and Supplementary Conditions.
- H. The Engineer will review a submittal/resubmittal a maximum of two (2) times after which cost of review will be borne by the Contractor. The cost of engineering shall be equal to the Engineer's charges to the Owner under the terms of the Engineer's agreement with the Owner.
- I. When the shop drawings have been completed to the satisfaction of the Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.

- J. Partial submittals may not be reviewed. The Engineer will be the only judge as to the completeness of a submittal. Submittals not complete will be returned to the Contractor. The Engineer may at his option provide a list or mark the submittal directing the Contractor to the areas that are incomplete.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01385

COLOR AUDIO-VIDEO CONSTRUCTION RECORDS

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Audio-Video recording of all work areas in the Contract will be prepared by the Contractor. The video recording shall be in DVD format.
- B. Prior to commencing work, the Contractor shall have a continuous color audio-video recording taken along the entire length of the Project including all affected project areas. Streets, easements, rights-of-way, lots or construction sites within the Project must be recorded to serve as a record of the pre-construction conditions. One copy of the recording and video log shall be submitted to the Owner and one copy to the Engineer. The Engineer shall designate those areas, if any, to be omitted from or added to the audio-visual coverage. All recordings and written records shall become property of the Owner.
- C. No construction shall begin prior to review and approval of the recordings covering the Project construction area(s) by the Owner. The Owner shall have the authority to reject all or any portion of a recording not conforming to specifications and order that it be re-recorded at no additional charge. The Contractor shall reschedule unacceptable coverage within seven (7) days after being notified.
- D. The Contractor shall engage the services of a professional videographer known to be skilled and regularly engaged in the business of pre-construction color audio-video documentation.
- E. Each recording shall begin with the current date, project name and the general location. Accompanying the video recording shall be a corresponding and simultaneously recorded audio recording. This audio recording, exclusively containing commentary of the camera operator or an aide, shall assist in viewer orientation and in any needed identification, differentiation, clarification, or objective description of the features being shown in the video portion of the recording. The audio recording shall also be free from any conversations.
- F. All video recordings must continuously display transparent digital information to include the date and time of recording. The date information shall contain the month, day and year. The time information shall contain the hour, minute and seconds. Additional information shall be displayed periodically. Such information shall include, but not be limited to, project name, project number and direction of travel.
- G. All recording shall be done during time of good visibility. No recording shall be done during precipitation, mist or fog. The recording shall only be done when sufficient sunlight is present to properly illuminate the subjects of recording and to produce bright, sharp video recordings of those subjects.
- H. The average rate of travel during a particular segment of coverage shall be directly proportional to the number, size and value of the surface features within the construction areas zone of influence. The rate of speed in the general direction of travel of the vehicle used during recording shall not exceed 44 feet per minute.
- I. Video Log/ Index – All DVDs shall be permanently labeled and shall be properly identified by number and project title. Each recording shall have a log of its content. The log shall describe the various segments of coverage contained in terms of street names or location of easements; coverage beginning and end; directions of coverage; video unit counter numbers, engineering survey or coordinate values and the date.

- J. Recording coverage shall include all surface features located within the zone of influence of construction supported by appropriate audio coverage. Such coverage shall include, but not be limited to, existing driveways, sidewalks, curbs, pavements, drainage system features, mailboxes, landscaping, culverts, fences, signs, etc. within the area covered by the project. Of particular concern shall be the existence of any faults, fractures, or defects. Recorded coverage shall be limited to one side of the site, street, easement of right-of-way at any one time.
- K. The cost to complete the requirements under this section shall be included in the contract items provided in the proposal sheet. There is no separate pay item for this work.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01410

TESTING AND TESTING LABORATORY SERVICES

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall employ and pay for the services of an Independent Testing Laboratory to perform all geotechnical materials testing including but limited to compaction density testing as indicated in the Contract Documents or described in the Specifications.
 - 1. Contractor shall cooperate with the laboratory to facilitate the execution of its required services.
 - 2. Employment of the laboratory shall in no way relieve Contractor's obligations to perform the work of the Contract.
 - 3. The Owner or Engineer may elect to have additional materials and equipment tested for conformity with the Contract Documents.
- B. All laboratories used by the Contractor are subject to the Owner's approval.

1.02 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY

- A. Laboratory is not authorized to:
 - 1. Release, revoke, alter or enlarge on requirements of Contract Documents.
 - 2. Approve or accept any portion of the Work.
 - 3. Perform any duties of the Contractor.

1.03 CONTRACTOR'S RESPONSIBILITIES

- A. Cooperate with laboratory personnel and provide access to work.
- B. Secure and deliver to the laboratory, adequate quantities of representational samples of materials proposed to be used and which require testing.
- C. Provide to the laboratory, the preliminary design mix proposed to be used for concrete, asphalt and other materials mixes which require control by the testing laboratory.
- D. Materials and equipment used in the performance of work under this Contract are subject to inspection and testing at the point of manufacture or fabrication. Standard specifications for quality and workmanship are indicated in the Contract Documents. The Engineer may require the Contractor to provide statements or certificates from the manufacturers and fabricators that the materials and equipment provided by them are manufactured or fabricated in full accordance with the standard specifications for quality and workmanship indicated in the Contract Documents. All costs of this testing and providing statements and certificates shall be a subsidiary obligation of the Contractor, and no extra charge to the Owner shall be allowed on account of such testing and certification.
- E. Furnish incidental labor and facilities:

1. To provide access to work to be tested.
 2. To obtain and handle samples at the Project site or at the source of the product to be tested.
 3. To facilitate inspections and tests.
 4. For storage and curing of test samples.
- F. Notify laboratory sufficiently in advance (minimum 48 hours) of operations to allow for laboratory assignment of personnel and scheduling of tests.
- G. Employ and pay for the services of the same or a separate, equally qualified independent testing laboratory to perform additional inspections, sampling and testing required for the Contractor's convenience and as approved by the Engineer.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.01 TESTING REQUIREMENTS

- A. Testing shall be conducted in accordance with the following Table. The Owner and Engineer reserve the right to require additional tests.
- B. Lab technician shall notify the Contractor, the Owner's representative and the Engineer upon failing results. Work shall not continue in a given area until passing results are obtained.
- C. The Owner and the Engineer shall be provided with copies of all test reports.

MATERIAL TESTING TABLE

ITEM	TEST	TEST IDENTIFICATION	TEST REQUIREMENTS VERTICAL	TEST FREQUENCY HORIZONTAL
UTILITY TRENCH BACKFILL	MAXIMUM DENSITY OPTIMUM MOISTURE FIELD DENSITY	AASHTO T-180 AASHTO T-180	PER SOIL CLASSIFICATION/ PER LABORATORY PER PLANS	PER SOIL CLASSIFICATION/ PER LABORATORY ONE PER 200 LF
SUBGRADE UNCLEAR NEW CURB	MAXIMUM DENSITY OPTIMUM MOISTURE LBR FIELD DENSITY	AASHTO T-180 FM 5-515 AASHTO T-180	N/A PER PLANS	PER SOIL CLASSIFICATION/ PER LABORATORY ONE PER 1320 LF AND IN EACH ISOLATED AREA OF WORK ONE PER 200 LF
LIMEROCK/SHELL BASE	MAXIMUM DENSITY OPTIMUM MOISTURE LBR FIELD THICKNESS FIELD DENSITY	AASHTO T-180 FM 5-515 AASHTO T-180	N/A N/A FULL BASE THICKNESS PER PLANS	PER SOIL CLASSIFICATION/ PER LABORATORY THREE PER SOURCE ONE PER 200 LF AND IN EACH ISOLATED AREA ONE PER 200 LF AND IN EACH ISOLATED AREA OF WORK
SOIL CEMENT BASE	SOIL CEMENT PLACEMENT/ MONITORING DENSITIES THICKNESS DETERMINATIONS	AASHTO T-134 AND AASHTO T-135	PER PLANS	ONE PER 200 LF
CONCRETE	COMPRESSIVE STRENGTH (THREE CYLINDERS/TEST) SLUMP, AIR CONTENT	AASHTO T-23 AND AASHTO T-119 AASHTO T-22 AND AASHTO T-152	PER SPECS PER SPECS	PER SPECS/MIN. OF ONE SET/DAY FOR POURS BETWEEN 10 & 50 CY, ADDITIONAL SET FOR EACH 50 CY DAILY OR 1 PER 50 CY MAX

ITEM	TEST	TEST IDENTIFICATION	TEST REQUIREMENTS VERTICAL	TEST FREQUENCY HORIZONTAL
ASPHALT	MATERIAL QUALITY: GRADATION ASHPALT CONTENT SPECIFIC GRAVITY TEMPERATURE FIELD THICKNESS AND FIELD DENSITY	FM 1-T 030 FM 5-563 FM 1-T 209 FM 1-T 166	N/A CORE SAMPLE THROUGH FULL THICKNESS OF WEARING COURSE	DAILY OR 1 PER 250 CY (500 TONS) PER TRUCK DELIVERED ONE CORE PER 500 LF AND IN EACH ISOLATED AREA OF WORK
RECYCLED CONCRETE BASE	GRADATION DENSITIES THICKNESS DETERMINATIONS	AASHTO T-180	PER SPECS	PER SOIL CLASSIFICATION PER LABORATORY ONE PER 200 LF

END OF SECTION

SECTION 01500

TEMPORARY FACILITIES

PART 1 - GENERAL

1.01 SANITARY FACILITIES

- A. Contractor shall furnish temporary sanitary facilities at the site, as provided herein, for the needs of all construction workers and others performing work or furnishing services on the Project.
- B. Sanitary facilities shall be of reasonable capacity, properly maintained throughout the construction period, and obscured from public view to the greatest practical extent. If toilets of the chemically treated type are used, at least one toilet will be furnished for each 20 persons. Contractor shall enforce the use of such sanitary facilities by all personnel at the site.

1.02 PARKING

- A. Contractor shall provide and maintain suitable parking areas for the use of all construction workers and others performing work or furnishing services in connection with the Project, as required to avoid any need for parking personal vehicles where they may interfere with public traffic, Owner's operations, or construction activities.

1.03 DUST CONTROL

- A. Contractor shall take reasonable measures to prevent unnecessary dust. Earth surfaces subject to dusting shall be kept moist with water or by application of an approved chemical dust suppressant. Dusty materials in piles or in transit shall be covered when practicable to prevent blowing.
- B. Buildings or operating facilities that may be adversely affected by dust shall be adequately protected from dust. Existing or new machinery, motors, instrument panels or similar equipment, shall be protected by suitable dust screens. Proper ventilation shall be included with dust screens.

1.04 SWEEPING

- A. The Contractor shall sweep loose material from all pavements at the end of each workday.

1.05 POLLUTION CONTROL

- A. Contractor shall prevent the pollution of drains and watercourses by sanitary wastes, sediment, debris and other substances resulting from construction activities. No sanitary wastes will be permitted to enter any drain or watercourse other than sanitary sewers. No sediment, debris or other substance will be permitted to enter sanitary sewers and reasonable measures will be taken to prevent such materials from entering any drain or watercourse.

1.06 COMBUSTIBLES STORAGE

- A. The Contractor shall protect all combustible products and materials placed on site from vehicular damage and vandalism.
- B. Contractor shall submit a plan for all locations of fuel and vehicle storage through the duration of the project, updated as necessary to address specific phases or locations of the work.
- C. There shall be no fuel storage in wetland areas.

- D. Fuel storage containers shall be limited to 549 gallons or less. The Contractor is solely responsible for maintaining fuel containers and ensuring that all measures for protection and containment are provided as required by law.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01510

TEMPORARY UTILITIES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Furnish, install and maintain temporary utilities required for construction, remove on completion of Work.

1.02 REQUIREMENTS OF REGULATORY AGENCIES

- A. Comply with National Electric Code.
- B. Comply with Federal, State and local codes and regulations and with utility company requirements.
- C. Comply with regulations of Health Department of the municipalities.

PART 2 – PRODUCTS

2.01 MATERIALS, GENERAL

- A. Materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.

2.02 TEMPORARY ELECTRICITY AND LIGHTING

- A. Arrange with utility company and Owner to provide service required for power and lighting, and pay all costs for service and for power used in the construction, testing and trial operation prior to final acceptance of the work by the Owner as stipulated by the Engineer. All cost associated with obtaining temporary and permanent power will be at Contractor expense.
- B. Provide adequate artificial lighting for all areas of work when natural light is not adequate for work, and for areas accessible to the public.

2.03 TEMPORARY WATER

- A. If applicable, install at each and every connection to the Owner's water supply a backflow preventer and meter meeting local requirements. This does not include water for testing.
- B. The Contractor shall include in its bid any cost(s) anticipated for the use of temporary water facilities as a part of the construction of this project.

2.04 TEMPORARY SANITARY FACILITIES

- A. Provide sanitary facilities in compliance with laws and regulations.
- B. Service, clean and maintain facilities and enclosures.

PART 3 - EXECUTION

3.01 GENERAL

- A. Maintain and operate systems to assure continuous service.
- B. Modify and extend systems as work progress requires.
- C. Allow the Owner and Engineer reasonable use of all temporary utilities.

3.02 REMOVAL

- A. Completely remove temporary materials and equipment when their use is no longer required as determined by the Engineer, but not before achieving Final Completion.
- B. Clean and repair damage caused by temporary installations or use of temporary facilities.

END OF SECTION

SECTION 01530

PROTECTION OF EXISTING FACILITIES

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall protect all existing utilities, facilities, and improvements not designated for removal and restore damaged or temporarily located utilities, facilities, and improvements to a condition equal to or better than they were prior to such damage or temporary relocation in accordance with the requirements of the Contract Documents.
- B. The number of exploratory excavations required shall be that number sufficient to determine the alignment and depth of the existing utility or facility.
- C. The Contractor shall determine the exact locations and depths of all existing utilities indicated on the Drawings that affect the Work. In addition to those indicated, the Contractor shall make exploratory excavations of all utilities. All such exploratory excavations shall be performed as soon as practicable after Notice to Proceed and, in any event, a sufficient time in advance of construction to avoid possible delays to the Contractor's Work.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 RIGHTS-OF-WAY

- A. The Contractor shall not do any Work that would affect any utility; any fence; or any other structure, nor shall the Contractor enter upon the rights-of-way or easements involved with any such utilities until the Contractor has secured authority therefore from the utility, rights-of-way or easement owner, and has provided the Engineer with written proof of same. After authority has been obtained, the Contractor shall give said facility owner a minimum of one week's notice of the Contractor's intention to begin Work, and shall give said facility owner convenient access for removing, shoring, supporting, or otherwise protecting its utility, fence, or structure and for replacing same.

3.02 PROTECTION OF STREET OR ROADWAY MARKERS

- A. The Contractor shall not destroy, remove, or otherwise disturb any existing survey markers, or other existing street or roadway markers, without proper authorization. No pavement breaking or excavation shall be started until all survey or other permanent marker points that may be disturbed by the construction operations have been properly referenced for easy and accurate restoration. It shall be the Contractor's responsibility to notify the proper representatives of the Owner of the time and location that work will be done. Such notice shall be sufficiently in advance of construction that there shall be no delay due to waiting for survey points to be satisfactorily referenced for restoration. All survey markers or points disturbed without proper authorization by the Engineer will be accurately restored by the Contractor at no additional cost to the Owner after all street or roadway resurfacing has been completed.

3.03 RESTORATION OF PAVEMENT

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

Documents or in the requirements of the agency issuing the permit. All temporary and permanent pavements shall conform to the requirements of the affected pavement owner. All pavement subject to partial removal shall be neatly saw cut in straight lines. All restoration shall be performed in accordance with these Specifications.

- B. Temporary Resurfacing: Wherever required by the authorities having jurisdiction, the Contractor shall place temporary surfacing promptly after backfilling and maintain such surfacing for the period of time fixed by said authorities before proceeding with the final restoration of improvements. Temporary resurfacing shall be constructed in accordance with these Specifications.
- C. Permanent Resurfacing: All pavement restoration shall be in accordance with these Specifications.

3.04 EXISTING UTILITIES AND IMPROVEMENTS

- A. General: The Contractor shall protect all utilities and other improvements that may be impaired during construction operations. It shall be the Contractor's responsibility to ascertain the actual location of all existing utilities and other improvements indicated on the Drawings that may be encountered during construction, and to assure that such utilities or other improvements are adequately protected from damage due to such operations. The Contractor shall take all possible precautions for the protection of unforeseen utility lines, for uninterrupted utility service and such special protection as may be directed by the Owner.
- B. Utilities To Be Moved: If it becomes necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon proper application by the Contractor, be notified by the Owner to relocate such property within a specified reasonable time. The Contractor shall not interfere with said property until it has been relocated by the utility or franchise holder.
- C. Owner's Right of Access: The right is reserved by the Owner, and by the owners of public utilities and franchises, to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the Work.
- D. Known Utilities: Existing utility lines that are shown on the Drawings or the locations of which are made known to the Contractor prior to excavation that are to be retained and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired by the Contractor at no additional cost to the Owner.
- E. Unknown Utilities: If the Contractor damages any existing utility lines that are not shown on the Drawings or the locations of which are not made known to Contractor prior to excavation, or were not, or could not have been verified or located by the Contractor prior to starting the Work, a written report thereof shall be made immediately to the Owner. If directed by the Owner, repairs shall be made by the Contractor under the provisions of the Contract Documents.
- F. Utilities To Be Removed: When utility lines that are to be removed are encountered within the area of operations, the Contractor shall notify the utility owner and the Owner a sufficient time in advance for the necessary measures to be taken to prevent interruptions of the service.
- G. Approval Of Repairs: All repairs to a damaged improvement facility shall be inspected and approved by an authorized representative of the improvement's Owner before being concealed by backfill or other Work.
- H. Relocation of Utilities: Where the proper completion of the Work requires the temporary or permanent removal and/or relocation of an existing utility, or other improvement that is shown on the Drawings, the Contractor shall, at Contractor's own expense, remove, and without unnecessary

delay, temporarily replace or relocate such utility or improvement in a manner satisfactory to the Owner and the owner of the facility. In all cases of such temporary removal or relocation, restoration to the former location shall be accomplished by the Contractor in a manner that will restore or replace the utility or improvement as nearly as possible to its former location and to as good or better condition as prior to removal.

- I. Maintaining In Service: All utilities encountered along the line of the Work shall be maintained continuously in service during all the operations, unless other arrangements satisfactory to the Engineer are made with the Owner of said utility. The Contractor shall be responsible for and shall make good all damage due to Contractor's operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

3.05 TREES WITHIN RIGHTS-OF-WAY AND PROJECT LIMITS

- A. General: The Contractor shall exercise all necessary precautions to prevent damage or destruction of any trees or shrubs, including those lying within street rights-of-way and Project limits. The Contractor shall not trim or remove any trees unless such trees have been approved for trimming or removal by all jurisdictional agencies and the Owner. All existing trees and shrubs that are damaged during construction shall be trimmed or replaced by Contractor under permit from the jurisdictional agencies and the Owner and to the satisfaction of said agencies and the Owner. Tree trimming, tree planting and transplanting shall be accomplished in accordance with these specifications.

3.06 NOTIFICATION BY THE CONTRACTOR

- A. Prior to any excavation in the vicinity of any existing underground facilities; all traffic signal and street lighting facilities; and all roadway and state highway rights-of-way, the Contractor shall notify the respective authorities representing the owners or agencies responsible for such facilities not less than three (3) working days nor more than five (5) working days prior to excavation so that representatives of said owners or agencies can be present during such work if they so desire.

3.07 SUBSURFACE OBSTRUCTIONS

- A. The Contractor shall field determine, before pipeline trenching, drilling or any other excavations are begun, the depth and location of existing utilities. Utility locations indicated on the Drawings are shown based on available data. The Contractor shall submit descriptions, depths, and locations of subsurface obstructions to the Engineer for review if they differ from those shown on the Drawings.
- B. In installing pipe, care shall be taken not to remove, disturb, or damage existing pipes, conduits, or structures. If necessary, the Contractor shall sling, shore-up, and maintain such structures in operation at no additional cost to the Owner.
- C. The Contractor shall obtain the permission of and give sufficient Notice to the proper authorities of the Contractor's intention to remove or disturb any pipe, conduit, structure or facility, and shall abide by their requirements and Laws and Regulations governing such work.
- D. In the event subsurface structures are broken or damaged in the execution of the Work, the Contractor shall immediately notify the proper authorities and, at the option of said authorities, either repair the damage at once or pay the proper charges for repairing said damage at no additional cost to the Owner. Repairs shall be made to the satisfaction of the Engineer. The Contractor shall be responsible for any damage to persons or property caused by such breaks or due to the neglect in reporting and/or repairing such damages.

- E. Neither the Owner nor the Engineer will be liable for any claims made by the Contractor based on underground obstructions that could have been reasonably identified as being different than that indicated on the Drawings. The Contractor shall uncover subsurface obstructions in advance of construction so that the method of avoiding same may be determined before the Work reaches the obstruction.

3.08 CONFLICTS WITH OTHER UTILITIES

- A. It shall be the Contractor's responsibility to provide the appropriate utility company sufficient advance Notice so their representatives may verify the utility location on the Project site when construction begins. The Contractor shall coordinate and cooperate with these utilities to ensure that no damages occur which may cause interruption of their services.
- B. All temporary support or minor adjustment that does not require replacement or direct by-pass connections to these existing services (such as all direct-buried telephone cables or two-inch and smaller gas lines) shall be the responsibility of the Contractor.
- C. Where it may be necessary to relocate gas mains or telephone ducts (defined here as gas lines larger than 2-1/2 inches and telephone cables within ductwork) to allow construction of the Work or where major relocation of small services requires replacement or performing connections to the existing lines, all such relocation work is the responsibility of and must be performed by the respective utility companies. The Contractor shall immediately provide Notice to the proper utility company and the Engineer of the occurrence and location of such required relocations.
- D. The Owner will not be responsible for any delay or inconvenience to the Contractor resulting from the existence, removal, or adjustment of any public or private utility that could have been reasonably identified. Additional costs incurred as a result thereof shall be borne by the Contractor and considered as included in the price bid for the various pay items.
- E. Relocation or realignment of storm drains or sewer lines that may interfere with the construction of the Work shall be the responsibility of the Contractor.
- F. Where storm drains or sewer lines are removed by the Contractor to facilitate construction and replaced in their original position, there shall be no direct payment made. All related costs shall be included in the price bid for the various pay items.

3.09 POLE RELOCATION AND PROTECTION

- A. The Contractor shall take notice of the number of power, telephone, and traffic signal support poles along the length of the Project. Several may be in proximity to or in direct conflict with the alignment of the proposed new pipelines. The Contractor shall immediately provide Notice to the proper utility company and the Engineer of the occurrence and location of such required relocations. It is intended that poles shall be supported with mud jacks or by other means of bracing as required to maintain them in a stable condition. The Contractor shall coordinate relocation and protection activities with the pole owner.

3.10 EXISTING FENCE LINES

- A. At various locations along the length of the Project, existing fences may conflict with or impair construction operations for the installation of the Work. The Contractor shall protect these fences in places where they do not conflict with construction operations. Where a fence may conflict with the backswing of machinery or otherwise impede construction, the Contractor shall contact the owner and arrange for the temporary removal or relocation of the fence. Any fence temporarily relocated shall be placed in a manner to maintain the intent and integrity of the original fenced area. Any fence removed or temporarily relocated shall be restored to its original condition and location unless otherwise arranged with the owner of the fence. Where it is

impossible to salvage the existing materials to reconstruct the fence, the fence shall be replaced "in kind."

- B. All cost for such temporary removal, temporary replacement, or "in kind" replacement shall be included in the price bid for the various pay items. No direct payment shall be made for fence replacement.

3.11 UTILITY INVESTIGATION

- A. Prior to commencing with trench or other excavations required for the performance of the Work, the Contractor shall conduct a field investigation for the purpose of determining existing locations of all underground utilities and facilities which are shown on the Drawings. The Contractor shall coordinate all utility investigations with Sunshine. The investigation shall be made by hand or machine excavation. All such excavations shall include removal of surface material and obstructions required to perform the excavations. The Contractor shall notify, in writing, the owner of the facility to be excavated and request that a representative of the owner be present during the excavation. The Contractor shall provide the utility owner adequate Notice so that a representative can be there. The Contractor shall provide sheeting, shoring, and bracing as required to minimize the required size of the excavation and support adjacent ground, structures, roadways, and utilities. After the data is obtained at each excavation site, the Contractor shall immediately backfill each excavation site. Backfill shall be compacted sand for the full depth. The surface shall be returned to its original grade and condition except that paved areas may be temporarily surfaced and maintained where excavations required for the performance of the Work coincide with the location of the investigative location. The Contractor shall be responsible for all costs associated with the repair of roadways, paving, structures, underground and above ground utilities and facilities damaged in conducting the investigations.
- B. Findings of the investigation shall be reported to the Engineer. The Engineer will furnish one (1) set of full-size Drawings for the Contractor's field use in recording the findings of the investigation. The Contractor shall describe the size, material, and location of existing underground utilities and facilities. Locations and elevations shall be referenced to Project stationing, distance from base line, and Project bench marks. The Contractor shall provide written detailed description of any underground utility or facility conflicting with the elevation or alignment of the Work.

END OF SECTION

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SECTION 01570

TRAFFIC REGULATION

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall be responsible for providing safe and expeditious movement of traffic through construction zones. A construction zone is defined as the immediate areas of actual construction and all abutting areas which are used by the Contractor and which interfere with the driving or walking public.
- B. Remove temporary equipment and facilities when no longer required, restore grounds to original, or to specified conditions.

1.02 TRAFFIC CONTROL

- A. The necessary precautions shall include, but not be limited to, such items as proper construction warning signs, variable message boards, signals, lighting devices, markings, barricades, channelization and hand signaling devices. The Contractor shall be responsible for installation and maintenance of all devices and requirements for the duration of the construction period.
- B. The Contractor shall provide at least 72 hours notification to the applicable City, County or State Highway Department of the necessity to close any portion of a roadway carrying vehicles or pedestrians so that the final approval of such closings can be obtained at least 48 hours in advance.
- C. The Contractor shall also be responsible for completing and submitting Road Closure Requests at least 48 hours in advance.
- D. The Contractor shall be responsible for removal, relocation, or replacement of any traffic control device in the construction area which exists as part of the normal pre-construction traffic control scheme. Any such actions shall be performed by the Contractor under the supervision, and in accordance with the Specifications, of the Owner, unless otherwise specified.
- E. The Contractor shall immediately notify the Owner of any vehicular or pedestrian safety or efficiency problems incurred as a result of the construction of the project.

1.03 MAINTENANCE OF TRAFFIC

- A. The Contractor shall maintain traffic within the construction area throughout the duration of the construction in accordance with Section 102 of the Florida Department of Transportation (FDOT) "Standard Specifications for Road and Bridge Construction," latest edition (the Standard Specifications) except as may be modified herein. Sections 102-11 "Method of Measurement," 102-12 "Submittals," and 102-13 "Basis of Payment" do not apply and are replaced by the measurement and payment requirements of Section 01150 of this contract.
- B. Roadways shall be kept open to one-way traffic in each direction during all phases of the construction period except that daylight lane closures with flagger control will be allowed. The Contractor will not be permitted to isolate residences or places of business. Alternate access shall be provided to all residences and all places of business whenever construction interferes with the existing access.
- C. The Contractor shall maintain access at all times for postal delivery, emergency services and trash pickup. The postal service, police department, fire department and solid waste services shall be

notified of the need to temporarily close any roadway and an alternate means of access to affected properties shall be provided.

- D. The Contractor shall conduct his operations in such a manner that will maintain access to private property/driveways and will result in minimum inconvenience to the public accessing the neighborhood roads and/or business establishments and shall provide temporary access during construction.
- E. In the event that vehicular access to residences and/or driveways will be temporarily blocked, the Contractor shall notify the Owner three (3) days in advance and shall assist the Owner with coordinating with affected residents. Blocking vehicular access to any residence shall not exceed one calendar day.
- F. The Contractor shall prepare Traffic Control Plans for review by the Engineer prior to implementation of the plan. Prior to initiating each phase of a detour system, the Contractor shall prepare a specific detour letter/map, to be approved by the Engineer, and deliver by hand to each home or business affected.
- G. The Contractor shall furnish, erect and maintain all necessary traffic control and safety devices in accordance with the Florida Department of Transportation (FDOT) Index 600 series of "Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway System," latest edition, and shall take all necessary precautions for the protection of the work and the safety of the public for the duration of the construction period.
- H. The work shall include the furnishing, erection, maintenance and removal upon completion of construction, all temporary traffic barricades of whatever type required, and for such duration as may be required by the Engineer. Also included as part of the work is material and construction necessary for temporary connections, sidewalk maintenance and driveway maintenance.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END SECTION

SECTION 01580

PROJECT IDENTIFICATION AND SIGNS

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Furnish, install prior to construction, and maintain (2) two temporary project signs.
- B. Remove all signs on completion of construction.
- C. Allow no other signs to be displayed.

1.02 INFORMATIONAL SIGNS

- A. Painted signs with painted lettering, or standard products.
 - 1. Size of signs and lettering: as required by the Owner, or as appropriate to usage.
 - 2. Colors: as required by the Owner, otherwise of uniform colors throughout Project.
- B. Erect at an appropriate location, as directed by the Owner, to provide required information.

1.03 QUALITY ASSURANCE

- A. Sign Painter: Professional Experience in type of work required.
- B. Finishes, Painting: Adequate to resist weathering and fading for scheduled construction period.

PART 2 – PRODUCTS

2.01 PROJECT IDENTIFICATION SIGN MATERIALS

- A. Structure and Framing: May be new or used, wood or metal, in sound condition structurally adequate to work and suitable for specified finish.
- B. Sign Surfaces: Exterior softwood plywood with medium density overlay, standard large sizes to minimize joints.
- C. Thickness: As required by standards to span framing members, to provide even, smooth surface without waves or buckles.
- D. Rough Hardware: Galvanized.
- D. Paint: Exterior quality.

PART 3 – EXECUTION

3.01 PROJECT IDENTIFICATION SIGNS

- A. Paint exposed surface of supports, framing and surface material; one coat of primer and one coat of exterior paint.

3.02 MAINTENANCE

- A. Maintain sign and supports in a neat, clean condition; repair damages to structures, framing or sign.

3.03 REMOVAL

- A. Remove sign, framing, supports and foundations at completion of project.

END OF SECTION

SECTION 01600

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

Material and equipment incorporated into the Work:

1. Shall conform to applicable specifications and standards.
2. Shall comply with size, make, type and quality specified, or as specifically approved in writing by the Engineer.
3. Manufactured and Fabricated Products:
 - a. Design, fabricate and assemble in accord with the best engineering and shop practices.
 - b. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
 - c. Two or more items of the same kind shall be identical, by the same manufacturer.
 - d. Products shall be suitable for service conditions.
 - e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
4. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.02 APPROVAL OF MATERIALS

- A. All materials and equipment furnished by the Contractor shall be subject to the inspection and approval of the Engineer. No material shall be delivered to the work site without prior review of the Engineer.
- B. Facilities and labor for handling and inspection of all materials and equipment shall be furnished by the Contractor. If the Engineer requires, either prior to beginning or during the progress of the work, the Contractor shall submit samples of materials for such special tests as may be necessary to demonstrate that they conform to the specifications. Such samples shall be furnished, stored, packed, and shipped as directed at the Contractor's expense. Except as otherwise noted, the Owner will make arrangements for and pay for the tests.
- C. The Contractor shall submit data and samples sufficiently early to permit consideration and review before materials are necessary for incorporation in the work. Any delay resulting from the Contractor's failure to submit samples or data promptly shall not be used as a basis of claims against the Owner or the Engineer.
- D. The materials and equipment used on the work shall correspond to the approved samples or other data previously submitted to the Engineer for review.

1.03 MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION

- A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including four copies to the Engineer.
 - 1. Maintain one set of complete instructions at the job site during installation and until completion.
- B. Handle, install, connect, clean, condition and adjust products in strict accord with such instructions and in conformity with specified requirements.
 - 1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Engineer for further instructions.
 - 2. Do not proceed with work without clear instructions.
- C. Perform work in accord with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

1.04 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of Products in accord with construction schedules, coordinate to avoid conflict with work and conditions at the site.
 - 1. Deliver Products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
 - 2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that Products are properly protected and undamaged.
- B. Provide equipment and personnel to handle Products by methods to prevent soiling or damage to Products or packaging.

1.05 STORAGE AND PROTECTION

- A. The Contractor shall furnish a covered, weather-protected storage structure providing a clean, dry, noncorrosive environment for all mechanical equipment, valves, architectural items, electrical and instrumentation equipment, and special equipment to be incorporated into this project. Storage of equipment shall be in strict accordance with the "instructions for storage" of each equipment supplier and manufacturer including connection of heaters, placing of storage lubricants in equipment, etc. The Contractor shall furnish a copy of the manufacturer's instructions for storage to the Engineer prior to storage of all equipment and materials. Corroded, damaged or deteriorated equipment and parts shall be replaced before acceptance of the project. Equipment and materials not properly stored will not be included in a payment estimate.
- B. Store Products in accord with manufacturer's instructions, with seals and labels intact and legible.
 - 1. Store products subject to damage by the elements in weathertight enclosures.
 - 2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.

3. Store fabricated products above the ground, on blocking or skids, prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
 4. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- C. All materials and equipment to be incorporated in the work shall be handled and stored by the Contractor before, during, and after shipment in a manner to prevent warping, twisting, bending, breaking, chipping, rusting, and any injury, theft or damage of any kind whatsoever to the material or equipment.
 - D. Cement, sand and lime shall be stored under a roof and off the ground and shall be kept completely dry at all times. All miscellaneous steel, and reinforcing steel shall be stored off the ground or otherwise to prevent accumulations of dirt or grease, and in a position to prevent accumulations of standing water and to minimize rusting. Precast concrete sections shall be handled and stored in a manner to prevent accumulations of dirt, standing water, staining, chipping or cracking. Brick, block and similar masonry products shall be handled and stored in a manner to reduce breakage, chipping, cracking, and spilling to a minimum.
 - E. All materials which, in the opinion of the Engineer, have become so damaged as to be unfit for the use intended or specified shall be promptly removed from the site of the work, and the Contractor shall receive no compensation for the damaged material or its removal.
 - F. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored Products to assure that Products are maintained under specified conditions, and free from damage or deterioration.
 - G. Protection After Installation:
 1. Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove covering when no longer needed.
 - H. The Contractor shall be responsible for all material, equipment, and supplies sold and delivered to the Owner under this Contract until final inspection of the work and acceptance thereof by the Owner. In the event any such material, equipment, and supplies are lost, stolen, damaged, or destroyed prior to final inspection and acceptance, the Contractor shall replace same without additional cost to the Owner.
 - I. Should the Contractor fail to take proper action on storage and handling of equipment supplied under this Contract within seven days after written notice to do so has been given, the Owner retains the right to correct all deficiencies noted in previously transmitted written notice and deduct the cost associated with these corrections from the Contractor's Contract. These costs may be comprised of expenditures for labor, equipment usage, administrative, clerical, engineering and any other costs associated with making the necessary corrections.

1.06 SUBSTITUTIONS AND PRODUCT OPTIONS

- A. Contractor's Options:
 1. For Products specified only by reference standard, select any product meeting that standard.
 2. For Products specified by naming several Products or manufacturers, submit the Products or manufacturers named in the Contractors Bid, which complies with the specifications.

3. For Products specified by naming one or more Products or more products or manufacturers and "or equal", Contractor must submit a request as for substitutions for any Product or manufacturer not specifically named.

1.07 SPECIAL TOOLS

- A. Manufacturers of equipment and machinery shall furnish any special tools (including grease guns or other lubricating devices) required for normal adjustment, operations and maintenance, together with instructions for their use. The Contractor shall preserve and deliver to the Owner these tools and instructions in good order no later than upon completion of the Contract.

1.08 WARRANTY

- A. For all major pieces of equipment, submit a warranty from the equipment manufacturer as specified in Section 01030. The manufacturer's warranty period shall be concurrent with the Contractor's for twelve (12) months after the time of completion and acceptance.

1.09 SPARE PARTS

- A. Spare parts for certain equipment have been specified in the pertinent sections of the Specifications. The Contractor shall collect and store all spare parts so required in an area to be designated by the Engineer. In addition, the Contractor shall furnish to the Engineer an inventory listing all spare parts, the equipment they are associated with, the name and address of the supplier, and the delivered cost of each item. Copies of actual invoices for each item shall be furnished with the inventory to substantiate the delivered cost.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01700
CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

Comply with requirements stated in General Conditions and in Specifications for administrative procedures in closing out the Work.

1.02 FINAL INSPECTION

- A. When Contractor considers the Work is complete, he shall submit to the Engineer:
1. A written notice that the Work is complete.
 2. A copy of all applicable, executed:
 - Manufacturer Certifications of Proper testing, Ready for Operation and Completion
 - Calibration and Testing Certificates
 - Transmittals of Operations and Maintenance Manuals
 - Transmittals of Spare Parts
 - Owner's Equipment Training Attendance Sign-in sheets
 - Warranties and guarantees of the manufacturer(s).
- B. When Contractor considers the Work to be complete, he shall submit written certification that:
1. Contract Documents have been reviewed.
 2. Work has been inspected for compliance with Contract Documents.
 3. Work has been completed in accordance with Contract Documents.
 4. Equipment and systems have been tested in the presence of the Owner's representative and are operational.
 5. Work is completed and ready for final inspection.
- C. The Engineer will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.
- D. Should the Engineer consider that the Work is incomplete or defective:
1. The Engineer will promptly notify the Contractor in writing, listing the incomplete or defective work.
 2. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to the Engineer that the Work is complete.
 3. The Engineer will re-inspect the Work.

- E. When the Engineer finds that the Work is acceptable under the Contract Documents, he shall request the Contractor to make closeout submittals.
- F. After receiving the Contractor's closeout submittals and consideration of any objections made by the Owner as provided in Conditions of the Contract, and when the Engineer considers the Work Complete, the Engineer will execute and deliver to the Owner and the Contractor a Certificate of Final Completion.

1.03 REINSPECTION FEES

- A. Should the Engineer perform re-inspections, due to failure of the Work, to comply with the claims of status of completion made by the Contractor:
 - 1. Owner will compensate the Engineer for such additional services.
 - 2. Owner will deduct the amount of such compensation from the final payment to the Contractor.

1.04 CONTRACTOR'S CLOSEOUT SUBMITTALS TO ENGINEER

- A. Evidence of compliance with requirements of governing authorities.
- B. Project Record Documents and As-built Drawings.
- C. Operating and Maintenance Data, Instructions to Owner's Personnel.
- D. Warranties and Bonds.
- E. Keys and Keying Schedule.
- F. Spare Parts and Maintenance Materials.
- G. Evidence of Payment and Release of Liens.
- H. Certificate of Insurance for Products and Completed Operations.
- I. Contractor's Final Affidavit.
- J. Lien Waivers from Subcontractors and Suppliers.
- K. Consent of Surety from the bonding company.
- L. Contractor's Guarantee.

1.05 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit a final statement of accounting to the Engineer.
- B. Statement shall reflect all adjustments to the Contract Sum:
 - 1. The original Contract Sum.
 - 2. Additions and deductions resulting from:
 - a. Previous Change Orders.

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- b. Unit Prices.
 - c. Deductions for uncorrected Work.
 - d. Penalties and Bonuses.
 - e. Deductions for liquidated damages.
 - f. Deductions for re-inspection payments.
 - g. Other adjustments.
- 3. Total Contract Sum, as adjusted.
- 4. Previous payments.
- 5. Sum remaining due.
- C. Engineer will prepare a final Change Order, reflecting approved adjustments to the Contract Price, which were not previously made by Change Orders.

1.06 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in the General Conditions.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

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SECTION 02071

DIRECTIONAL BORING

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. The work of this Section includes all labor, machinery, construction equipment and appliances required to perform in a good workmanlike manner all directional boring.
- B. The overall work scope shall include, but not be limited to steerable directional boring equipment, boring pits and equipment, sheeting, location signs as required, maintenance of traffic and miscellaneous appurtenances to complete the entire Work as shown on the Contract Drawings, and restoration. Directional boring operations shall be performed within the right-of-way and/or easements shown on the Drawings.
- C. The equipment used in directional boring, also known as horizontal directional drilling, shall be of adequate commercial size and satisfactory working condition for safe operation, and may be subject to approval by the City or State at the discretion of the Engineer. Such approval, however, shall not relieve the Contractor of the responsibility for making a satisfactory installation meeting the criteria set forth herein. Only workmen experienced in directional boring operations shall be used in performing the Work.
- D. Provide all structures, safety equipment, and professional services required to provide for the health and safety of the general public and of personnel involved in directional boring work in accordance with the requirements of the regulatory agencies having jurisdiction.
- E. Potential locations for entry and exit points are shown on the drawings. The Contractor shall submit proposed locations as part of his drilling plan for approval by the Engineer. The Contractor shall employ licensed, professional land surveyors to locate the entry and exit points, and to establish horizontal and vertical datum for the bore and the pipe layout and fabrication areas.
- F. Take all measures necessary to protect surrounding public and private property, adjacent buildings, roads, drives, sidewalks, and appurtenances from damage due to directional boring work. Responsibility and payment for correction of such damage shall be the sole responsibility of the Contractor.
- G. The Directional Boring operation is to be operated in a manner to eliminate the discharge of water, drilling mud, and cuttings to nearby water bodies or to the land areas involved during the construction process. If inadvertent spills to nearby water bodies occur, the Contractor shall immediately provide environmental controls and clean up to the satisfaction of, and at no additional expense to the Owner.
- H. Best Management Practices (BMP's) for erosion control within the Contractor's work area shall be implemented and maintained at all times during drilling and back-reaming operations to prevent siltation and turbid discharges in excess of State Water quality Standards pursuant to Rule 62-302, F.A.C. Methods shall include, but are not limited to the immediate placement of turbidity containment devices such as turbidity screen, silt containment fence, hay bails, and earthen berms, etc to contain the drilling mud.
- I. The Contractor shall be responsible for preparing and submitting to the Engineer and all permitting agencies (described in the permits attached to these specifications) sheeting, shoring, and bracing plan and dewatering plan for all excavations required in the project. The Contractor shall be responsible for obtaining all necessary permits including but not limited to a Generic Permit under F.A.C. 62-621.300 for dewatering activities.

1.02 REFERENCE DOCUMENTS

- A. Florida Department of Transportation (FDOT) Utility Accommodation Guide
- B. American Society for Testing and Materials (ASTM).
- C. American Water Works Associations (AWWA).
- D. American Petroleum Institute (API).
- E. Plastic Pipe Institute (PPI).

1.03 QUALIFICATIONS

- A. The following requirements represent the minimum qualifications required by the Owner for this project. The Contractor shall submit proof to the Engineer that the Contractor or the HDD contractor meets these requirements below:
 - 1. Contractor shall have been in business under the current name for the past 36 months.
 - 2. Contractor shall have a minimum of five (5) years of successful experience in installing pipelines using horizontal directional drill (HDD) methods.
 - 3. Contractor must submit on above referenced jobs the successful deployment of downhole survey tools that record fluid pressure and provide steering and tracking.
 - 4. Qualifications and Experience of Contractor Personnel: The Contractor shall employ skilled, experienced superintendent(s), drill rig operators, and key personnel. The superintendent(s) and drill rig operators shall have at least three years of successful experience using the HDD process, on at least five (5) projects with similar diameters, pull back length and ground conditions. The superintendent(s), drill rig operator, and key personnel shall demonstrate successful completion of at least three (3) projects where pipe was installed with horizontal directional drilling techniques. The Contractor shall furnish resumes of the superintendent(s) and operators. Personnel experience records should include project names, locations, pull back lengths, ground conditions, pipe materials, project description, project owner, engineer, and references with names, addresses and telephone numbers. The superintendent and operators listed in the submittal shall be on site during all construction related activities required for HDD installation.
 - 5. The Contractor shall employ the services of environmental scientists/biologists with at least five (5) years of experience in water quality monitoring and habitat protection.

1.04 SUBMITTALS

- A. All submittals shall be in conformance with Section 01340.
- B. Prior to beginning work, the contractor must submit to the Owner and Engineer the following items:
 - 1. The Contractor shall provide a complete HDD work plan with a written description identifying details of the proposed method of construction and sequence of operations to be performed during construction. The work plan shall be comprehensive, realistic and based on actual working conditions for this particular project. The work plan shall address the following requirements as a minimum:
 - a. Pre-construction walkover and site inspection.

- b. Sunshine One Call for utilities location within the limits of the HDD project (Ground Penetrating Radar (GPR) Electronic Locate, Subsurface Location as required).
 - c. The Contractor shall video tape and take photographs of nearby structures which may be affected by inadvertent fluid returns.
 - d. The Contractor shall review as-built drawing and prior geotechnical reports of past projects in the area, if available and identify and potential concerns.
 - e. The work plan shall include the exact locations and dimensions of all drill entry/exit pits, equipment staging areas, and dewatering plans.
 - f. The work plans shall include a traffic control plan, a spill cleanup/environmental protection plan, dewatering plan and contingency plans for possible problems.
 - g. The Contractor shall establish a drill profile between the entry and exit point by observing various framework conditions mentioned below in order to ensure, that the intended theoretical drilling profile line can also be realized in practice.
 - 1) Entry and exit angle
 - 2) Slant tangential sections
 - 3) Radii of curvature
 - 4) Cover
 - 5) Borehole diameter
 - h. The Contractor shall provide anticipated drilling rates for pilot bore, reaming and pullback procedures. These drilling rates shall be used by the Contractor to calculate drilling fluid volumes required for pilot hole, each reaming pass and pullback. The Contractor shall verify pump capacity and that the drilling fluid cleaning system is capable of sustaining the anticipated drilling rates during the pilot bore, reaming and pullback.
 - i. The Contractor shall submit qualification documents for the HDD superintendent and key personnel experience in accordance with Section 1.3A of this specification. Also, the Contractor shall have personnel with a Florida/OSHA Certification for the site Safety Representative.
 - j. The Contractor shall submit a detailed schedule for the HDD installation. The detail schedule shall identify all major construction activities and durations, with beginning and completion dates shown. The detail schedule shall be updated at least every two weeks or more frequently, as directed by the Engineer, and shall include but not limited to the following items:
 - 1) Pre-construction walk over and inspection.
 - 2) Regular Mobilization and set-up.
 - 3) Pilot bore
 - 4) Pre-reaming and reaming.
 - 5) Layout and fusing of pipe.
 - 6) Pressure Testing of pipe prior to pullback and after installation.
 - 7) Final reaming and pullback of product pipe.
 - 8) Mandrel/pig test to confirm deformations of product pipe are within allowable tolerances.
 - 9) Cleanup, surface restoration, and demobilization.
 - k. MSDS of any potentially hazardous substances to be used.
- C. The Contractor shall make available complete, legible, written daily logs and records.

- D. The Contractor shall submit a drill profile for approval by the Engineer and shall be based on the control elevations and stationing of the applicable construction baseline shown on the plans. The Contractor shall notify the Engineer immediately upon discovery of any deviations from the design plans.
- E. The Contractor shall submit an as-built profile of the pilot bore within twenty-four (24) hours of completion of the pilot bore. The pilot bore profile may be submitted in digital format (AUTOCAD or PDF) for review. The Engineer will review and will contact the HDD Contractor to approve or discuss remedy options if the desired tolerances are not met as specified within this specification section. Hand written sketches/drawings will not be accepted.
- F. The Contractor shall submit records of equipment calibrations and certifications for all equipment used for tracking of the drill head. Procedures shall be as recommended by the equipment manufacturer, including measures to verify the accuracy of the equipment readings. If the Contractor is proposing to use a surface wire grid system, the Contractor shall submit a drawing with the surveyed location of the surface wire grid system. The Contractor shall submit methods for surveying the coordinates of the surface wire grid system both outside and under the waterway. The Contractor shall submit a drilling bore log within seven (7) days of performing the bore. Depths shall be recorded at a maximum of every ten (10) feet. Elevations shall be indicated on record drawings. During pilot bore, reaming passes and pipe pullback the Contractor shall electronically record and evaluate the following information a maximum of once every ten (10) feet:
1. Rate of Penetration
 2. Rotation
 3. Thrust
 4. Pump Rates
 5. Measured Depth
 6. Annular Pressure
 7. Flow Meter (Returns Suction Line)

Any unexpected deviations from expected values shall be immediately investigated and the cause of which determined and reported to the Engineer.

- G. The Contractor shall submit calculations prepared by a licensed professional engineer to show that the Contractor's proposed method and profile of installing the pipe is within the allowable tensile force of the pipe. The maximum tensile force shall be calculated with a 1.5 safety factor. If required to maintain the 1.5 safety factor, the Contractor shall submit plans on ballasting the pipe by filling it with water prior to install or other methods to reduce tensile force. The Contractor shall also submit the following calculations:
1. Contractor shall provide calculations (in accordance with ASTM F 1962 or equal) for pull back force required and the resulting rig size proposed for this project.
 2. Contractor shall provide calculations (in accordance with industry standards) predicting the expected annular pressure and identify areas subject to hydro fracture.
 3. Contractor shall provide calculations demonstrating that the pipe will not be overstressed.
 4. Contractor shall provide calculations for rate of penetration and maximum allowable drilling fluid pressure calculations.
 4. Contractor shall verify that the information and calculations presented herein will be fully incorporated into the work plan.

The Contractor shall identify which, if any, items of the basis of design that the Contractor proposes to change (entry/exit angles, depth, radius, etc.). These changes shall be reflected in the calculations and information required in these evaluation criteria.

- H. Pressure testing procedures prior to pullback and after completed installation.
- I. A drilling bore log shall be submitted within seven (7) days of performing the bore. Depths shall be recorded at a maximum of every ten (10) feet. Record drawings shall indicate elevations.
- J. Contractor shall submit specifications on directional drilling equipment to be used to ensure that the equipment will be adequate to complete the project. Equipment shall include but not be limited to: drilling rig of sufficient capacity, drilling rods, appropriate drill bit, reamer, product pipe, mud system, mud motors (if applicable), down-hole tools, guidance system and rig safety systems. All surveying equipment used for downhole wireline surveying and tracking of the bore path and drill head and layout of the surface wire grid system or other guidance system shall be inspected and calibrated by the equipment manufacturer prior to use. Proof of this inspection and calibration shall be provided to the Engineer prior to the commencement of drilling operations. Specifications for any drilling fluid additives that Contractor intends to use or might use shall be submitted.
- K. The Contractor shall submit plans for disposal of waste materials resulting from the pipeline construction, including drilling fluids, cuttings, waste oil, fuel, discharge water, etc. The Contractor shall identify the disposal site and submit a letter indicating willingness and legal authority to accept the described anticipated waste products.
- L. The Contractor shall provide details on measures to be taken to monitor and protect adjacent utilities, structures, and roadways, and provide details on monitoring equipment and provisions, including the layout of all settlement points, and other monitoring points.
- M. The Contractor shall submit to the Engineer prior to construction a Frac-out/ Bentonite Management and Emergency Spill Plan for the installation of pipelines using HDD under the waterways. The Contractor shall submit a letter of intent signed by an authorized representative of Contractor, confirming that the plan shall be followed. The Plan shall address all potential pathways for release of drilling fluid, and shall address containment, cleanup, and mitigation measures as well as reporting procedures and points of contact for regulatory and permitting agencies. The Plan shall address releases to the ground surface and to waterways. Stand-by equipment shall be provided by the Contractor to recover fluids from the waterway. Floating turbidity barriers shall be part of the stand-by equipment to minimize dispersion into surface waters or storm drains. The Plan shall include the following as a minimum.
 - 1. Prior to commencement of construction, the Contractor shall employ the services of an environmental scientist/biologist experience in water quality monitoring and habitat protection to conduct visual inspections during drilling operations for all subaqueous crossings for any signs of frac-out. The monitoring shall cover the area of 10 feet on either side from the centerline of the HDD route for the entire length of the route. The Contractor shall provide all necessary watercraft or boats to perform this inspection during all water crossings.
 - 2. Rapid response procedures - Directional drilling shall be performed by a Contractor who has the expertise required to perform the related work. The Contractor shall designate qualified personnel and equipment on the site during directional drilling operations responsible for watching surface conditions for visual signs of frac-out and for monitoring drilling fluid pressure; and other indicators of potential frac-out. The Contractor shall provide immediate response and initiate containment procedures in the event of an occurrence of a bentonite spill. In the event of a bentonite spill or frac-out all drilling activities shall be stopped immediately. Drill stem shall be removed from the bore and the hole abandoned. The Florida Department of Environmental Protection (FDEP) shall be notified immediately (within 2 hours) of the frac-out by telephone.

3. Containment procedures - Sediment control systems such as, silt fence or earth berms on uplands, and floating silt barriers or other aquatic barriers in water, and other means necessary to prevent the spread of the bentonite spill shall be installed. If return drilling mud/fluid is less than the projected amount to be recovered, search for the missing material shall begin immediately. Once the frac-out is located, then the drilling mud containment plan shall be immediately implemented. Any escaped drilling lubricant shall be pumped into filter bags or directly into a vactor truck.
4. Timely cleanup capability - Remediation of the lost drilling mud/fluid shall begin immediately. Clean-up with a vacuum system shall commence within two (2) hours of a confirmed frac-out and/or breach of containment. Cleanup shall include removal of the material from the site and disposal of the material to an approved upland disposal location. All adjacent wetlands affected by the spill shall be restored to pre-drilling condition of grade and vegetation.
5. Reports - Should a release occur, a detailed written report shall be submitted to the FDEP within ten (10) business days, after containment/recovery of the drilling material/resources, indicating the location of the frac-out, amount of drilling material discharged and the amount of drilling mud recovered, the process in which the drilling mud was recovered, and the area that was affected by the drilling discharge.
6. To provide an additional level of resource protection, the following measures shall be included in the plan to monitor any potential release of drilling fluid:
 - a. At all times, adequate protection shall be taken to avoid impacts to Aquatic Preserve/Outstanding Florida Waters and /or contiguous wetlands. This shall include, but is not limited to implementation of BMPs and/or ultimately stopping construction/drilling activities.
 - b. Photographs and/or video of the drilling site shall be taken of pre and post-recovery conditions including lat/long coordinates of release locations.
 - c. A vactor truck (or equal) shall be available at all times. Clean-up shall immediately commence upon detection of a frac-out. The environmental scientist/biologist and divers shall guide the suction hose of the vacuum system to minimize the removal of unaffected natural bottom materials and the disturbance of any existing vegetation. Any escaped drill fluids shall be pumped into filter bags or directly into a vactor truck. Once the spill is contained, the Contractor shall be responsible for disposing of the drilling fluid in an approved upland disposal site.
 - d. A spill kit (i.e., absorbent pads/boom, goggles, gloves, etc) shall be available at all times
 - e. Additionally, connections between the pump and drill pipe shall be leak-free. Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and properly disposed of. The Contractor shall install and maintain a containment area around drill rigs, drilling fluid mixing systems, entry and exit pits and drilling fluid recycling systems, etc. to prevent spills into the surrounding environment. Pumps of sufficient size shall be in place to convey excess drilling fluid from containment areas to storage and facilities.

PART 2 – PRODUCTS

2.01 DIRECTIONAL BORING EQUIPMENT

- A. The directional boring equipment shall be suitable for installing the diameter and length of pipe as indicated in the drawings. The drilling equipment shall be capable of advancing through the geologic conditions to be encountered at the site, as described in the geotechnical report, and as anticipated by the Contractor.
- B. The directional boring equipment shall be steerable by means of an electronic tool directional system and shall provide a bentonite clay slurry to completely seal around the installed carrier pipe.
- C. At all times during the pilot bore the Contractor shall provide and maintain a bore tracking system that is capable of accurately locating the position of the drill head in the x, y, and z axes. The Contractor shall record these data at least once per drill pipe length or every ten (10) feet, whichever is more frequent.
- D. Deviations between the recorded and design bore path shall be calculated and reported on the daily log. If the deviations exceed tolerances specified elsewhere, such occurrences shall be reported immediately to the Engineer. The Contractor shall undertake all necessary measures to correct deviations and return to design line and grade.
- E. Drilling fluid pressures and flow rates shall be continuously monitored and recorded by the Contractor. The pressures shall be monitored at the pump and within the annular space with a downhole pressure-sensing tool located within thirty (30) feet of the drilling head.
- F. Maximum allowable drilling speeds shall be calculated by the Contractor for pilot boring and each reaming pass and shall not be exceeded for pilot boring or reaming passes. Measurements shall be taken every ten (10) feet.
- G. The Contractor shall provide all materials for completing the installation and for adequate protection of the work.
- H. The carrier pipe shall be high density polyethylene (HDPE) or Fusible polyvinylchloride (FPVC) of the type and class shown on the drawings and specified. All pipe 4-inch diameter or greater shall conform to standard ductile iron pipe outside diameters for use with standard ductile iron fittings.
- I. Pipe shall be color-coded by the pipe manufactured during fabrication indicating appropriate service.

2.02 DRILLING PIPE

- A. Drill rods shall be Firestick II or equivalent. Drill rods shall be of a diameter sufficient for the torque and longitudinal loads and fluid capacities required for the work.
- B. The Contractor shall use high quality drill pipes. The drill pipe shall be inspected periodically by the Contractor and properly maintained within the manufacturer's prescribed limits.
- C. The Contractor shall adhere to the manufacturer's guidelines for using their pipe, and sound practices must be followed to ensure reduced risk of downhole failure, i.e. the Contractor shall not bend the drill pipe sharper than the minimum bend radius stated by the manufacturer, especially on HDD enter and exit locations.

2.03 BENTONITE DRILLING MUD

- A. Bentonite technical criteria shall be as described in API Specification 13A, "Specification for Oil Well Drilling Fluids Material" for fresh water drilling fluids.
- B. Any modification to the basic drilling fluid involving additives must describe the type of material to be used and be included in Contractor's drilling plan presented to the Owner. The Owner retains the right to sample and monitor the waste drilling mud, cuttings and water.

- C. The drilling fluid shall be designed for the geologic conditions to be encountered at the site, as described in the geotechnical report and as anticipated by the Contractor.

2.04 PIPE LOCATION WIRE

- A. All directional drilled pipe shall be installed with two (2) insulated tracer wires with a 45 mil HDPE jacket and minimum average break load of 1150 lbs. Tracer wires shall be 12 AWG-Solid CCS EHS Copperhead Directional Drill Wire as manufactured by Copperhead Industries or approved equal. This wire shall to be continuous and brought up in the valve boxes at the ends of each line segment with splices made only by methods per the equipment manufacturer's recommendation. All miscellaneous splicing components shall be furnished and installed by the Contractor.

2.05 EROSION CONTROL MEASURES

- A. Provide silt fence as approved under FDOT Standard Specifications for use near open water bodies, wetlands, ditches, inlets or other areas where runoff could pollute nearby water bodies. The Contractor shall place silt fence between all drilling operations and any drainage, wetland, waterway, or other area designated for protection by the contract documents, state, federal or local regulations. Additional environmental protection necessary to contain any hydraulic or drilling fluid spills shall be put in place, including berms, liners, turbidity curtains and other measures. The Contractor shall adhere and comply with all applicable permits/permit conditions.

2.06 STORAGE AND HANDLING OF MATERIALS

- A. Inspect materials delivered to the site for damage. All materials found to have cracks, flaws, cuts, abrasions or other major defects shall be rejected and removed from the job site immediately.
- B. Store materials under cover out of direct sunlight. Do not store directly on the ground. Keep all materials free of dirt and debris.
- C. Disposal of fluids is the responsibility of the Contractor, and shall be performed in accordance with all permits and applicable federal, state or local environmental regulations. Upon completion, the Contractor shall thoroughly clean the entire area of all debris, spilled fluids and damaged plants, and restored to existing or better conditions.

PART 3 – EXECUTION

3.01 GENERAL

- A. All spoil and slurry must be contained in trucks, tanks, approved recirculation pits, or other containers at all times. Dumping of spoil or slurry on the ground, discharge into sewer, or discharge into the water bodies will not be permitted. All spoils will be transported and disposed of off site at an approved disposal facility that meets all State of Florida and local requirements.
- B. Perform all work within areas shown on the plans. The Contractor shall provide adequate control of surface water and drilling fluids drainage and runoff, and provide silt fences and hay bales to prevent surface water or drilling fluids from entering the adjacent environmentally sensitive area.
- C. Surface settlement or heave of utilities and other features above the HDD centerlines and within the zone influenced by the HDD construction shall be limited in values that avoid damage. The Contractor shall repair any damage resulting from settlement or heave caused by HDD activities at no additional cost to the Owner.
- D. It shall be the Contractor's sole responsibility that all work is done in conformance with all applicable federal, state, and local safety requirements. Required safety equipment and procedures shall be employed by the Contractor at all times. All materials and methods of construction shall meet the

applicable requirements of Pinellas County and the applicable requirements of the State of Florida Administrative Code.

- E. Contractor shall comply with the City of Venice Noise Ordinance per Chapter 34 Article II of the City of Venice Code of Ordinances. Sound levels in excess of these values are sufficient cause to have the work halted until equipment can be quieted to these levels. Work stoppage by the Owner for excessive noise shall not relieve the Contractor of the other portions of this specification including, but not limited to, completion of all Work within specified contract time and contract price. The Contractor shall submit a plan prior to construction identifying all noise reduction/abatement procedures. The plan will be approved by the Engineer prior to construction. If mufflers cannot achieve the necessary noise reduction, noise abatement shall be accomplished by the Contractor's installation of baffles (or other acceptable means) positioned to break line-of-sight from the noise source to affected residences and/or commercial structures. Minimum noise abatement measures shall consist of equipping all engines with hospital grade mufflers or silencers.
- F. Contractor shall provide at least seventy-two (72) hours advance written notice to the Owner of the planned inception of major drilling activities, including pilot bore launch, pre-reaming, reaming, and product pipe pullback. The Contractor shall immediately notify the Owner, in writing, when any significant problems are encountered or if ground conditions are considered by the Contractor to be materially and significantly different than those represented within the Contract Documents. The Contractor shall perform the pilot bore in the presence of the Owner, unless Owner grants prior written approval to perform such work in Owner's absence.
- G. All surveying equipment used tracking of the bore path and drill head shall be inspected and calibrated by the equipment manufacturer prior to use. Proof of this inspection and calibration shall be provided to the Engineer prior to the commencement of drilling operations.
- H. The directional boring equipment shall be operated by individuals trained by the manufacturer as experienced operators.
- I. The directional boring equipment shall produce a stable, clay sealed tunnel with a minimum burial depth consistent with the design profile or approved drill profile.
- J. The directional boring equipment shall employ a fluid cutting technique. The soil shall be cut by small diameter, high pressure jets of liquefied clay. The jets shall cut the soil in advance of the boring tool, impregnating and lining the tunnel wall with clay. The clay shall be totally inert and pose no environmental risk. A pilot hole shall be drilled with an appropriately sized drill pipe. The pilot hole will then be increased to the appropriate diameter by a reaming operation. The boring tool will then be connected to the pipe, and the boring tool shall pull the carrier pipe through the clay lined tunnel as it traverses under the surface being crossed. The pulling strength of the boring equipment shall not exceed pipe safety pull strength as per manufacturer's recommendations. Surface excavations shall be limited to small launching and receiving pits. Pits shall be no larger than that required for launching and receiving. Adequate "pit-tail" lengths of service connection piping shall be provided at both the launching and receiving ends to facilitate service connection assembly.
- K. The Contractor shall notify the Engineer immediately in the event that any obstruction is encountered that prevents further advancement of the drill pipe, or pull back of the pre-reamer, reamer, and/or pipe. The Contractor shall make all diligent and reasonable efforts to advance past the object by drilling slowly through the object, pulling back, and drilling along a new bore path that avoids the object, or excavating and exposing and removing the object, and all other reasonable attempts to continue the bore. The Contractor shall notify the Engineer of proposed measures to attempt to advance past the object, prior to initiating the attempt. If the Contractor attempts to pull back and re-drill, the Contractor shall adhere to line and grade tolerances established in this specification section, unless the Engineer approves variance, in writing, prior to the Contractor's attempt to re-drill. The Contractor shall investigate the cause and together determine an appropriate response. Appropriate response may include revisions to equipment or methods, retraction and re-drilling of a portion of the borehole, or abandonment of the borehole. If abandonment is deemed necessary, the Contractor shall recover, to the

extent practicable, any drill pipe, product pipe, and tools in the borehole, and properly abandon the borehole by contact grouting, unless otherwise directed in writing by the Engineer. If the borehole is abandoned, the Contractor shall be allowed to begin a second attempt to install the pipeline at an alternate location subject to approval, in writing, by the Engineer at no additional expense to the Owner. The Contractor shall take all reasonable actions to complete the installation with minimal delays.

- L. The Contractor shall monitor for settlement or heave before and during drilling and grouting operations. The Contractor shall measure and record drilling fluid viscosity and density at least three times per shift with at least two hours between readings, using calibrated Marsh funnel and mud balance. These measurements shall be included in daily logs submitted to the Engineer. The Contractor shall document modifications to the drilling fluids, by noting the types and quantities of drilling fluid additives and the dates and times when introduced. The reason for the addition of drilling fluid additives or other modifications shall be documented and reported.
- M. The Contractor shall measure and record the pH on a regular basis (three times per shift with at least two hours between readings) with pH strips, paper or a pH meter.
- N. The Contractor shall constantly monitor and record the circulating volume, particularly for the early detection of drilling fluid losses, or thinning, or the danger of borehole collapse. Ground upheavals can also be detected early from such differences, and necessary action can be implemented to prevent further damage.
- O. Butt fused MJ adapters are required at both ends of the bore for HDPE pipe only.
- P. All directional bores crossing a ditch/swale/creek must be at least 36 inches below actual/design bottom of conveyance.

3.02 PILOT BORE

- A. The pilot bore shall follow the design path of the bore shown on the Drawings.
- B. Horizontal and vertical deviations shall be less than plus or minus one foot from the design path centerline. The Contractor shall continuously monitor horizontal and vertical position and record the position at least once per drill pipe length, or at ten (10) feet intervals, whichever is most frequent.
- C. The radius of curvature shall not be less than that shown on the Drawings. The radius of curvature shall be calculated over the distance of three drill pipe sections.
- D. The Contractor shall be solely responsible for all work necessary to correct excessive deviations from line and grade, including re-drilling, redesigning connections, and acquiring additional easement, at no additional cost to the Owner and without schedule extension.

3.03 REAMING

- A. Upon approval of the pilot hole location by the Engineer, the hole opening or enlarging phase of the installation shall begin. The bore hole shall be reamed to 120% to 150% larger than the pipe or per the manufactures recommendation. Drilling mud shall then be injected into the hole to stabilize the hole and remove soil cuttings. The type of reamer to be utilized in this phase shall be determined by the types of subsurface soil conditions that have been encountered during the pilot hole drilling operation. The reamer type shall be at the Contractor's discretion.

3.04 PIPE PULLBACK OPERATION

- A. The pipes shall be assembled in a manner that does not obstruct adjacent roads, driveways or public activities adjacent to the layout areas except as directed otherwise by the Owner.

- B. The Contractor shall provide adequate support/rollers along the stringing area to support the required length of pipe for each bore. Such support/rollers shall be comprised of a non-abrasive material arranged in a manner to provide support to the bottom and bottom quarter points of the pipeline allowing for free movement of the pipeline during pullback. Pulling/dragging the pipe on asphalt or concrete shall not be permitted.
- C. Each length of pipe shall be inspected and cleaned as necessary to be free of debris immediately prior to joining.
- D. The Contractor shall perform air pressure test in accordance with the manufacture's guidelines prior to pipe pullback. Air pressure test shall be a minimum 4 psi or per the pipe manufacturer's recommendation. The Contractor shall perform hydrostatic water pressure test in accordance with the manufacturer's guidelines after installation. Hydrostatic pressure test shall be a minimum 150 psi or per the pipe manufacturer's recommendation.
- E. All plastic pipe installed by directional boring shall be provided with a minimum of two (2) insulated 12 AWG-Solid CCS Directional Drill Copperhead Tracer Wire as manufactured by Copperhead Industries or approved equal. This wire is to be continuous and brought up in the valve boxes at the ends of each line segment with splices made only by methods approved by the Engineer. Trace wires shall be secured to the pipe prior to pulling. The locator wire shall be tested by voltage of at least 12 DC. Test each wire with both positive and negative charge with not more than 1 volt of loss per 1000 feet will be allowed. The wire will be tested prior to the pressure test of pipeline. If wire fails, pressure test will not be done until wire is repaired.
- F. Pulling Loads: The maximum pull (axial tension force) exerted on the pipelines shall be measured continuously and limited to the maximum allowed by the pipe manufacturer so that the pipe or joints are not overstressed.
- G. Torsion and Stresses: A swivel shall be used to connect the pipeline and tracer wires to the drill pipe to prevent torsional stresses from occurring in the pipe.
- H. Pipeline Support: The pipelines shall be adequately supported during installation so as to prevent oversteering or buckling.
- I. The Contractor shall at all times handle the pipe in a manner that does not overstress the pipe. Vertical and horizontal curves shall be limited so that wall stresses do not exceed 50% of yield stress for flexural bending of the pipe. If the pipe is buckled or otherwise damaged, the damaged section shall be removed and replaced by the Contractor at his expense. The contractor shall take appropriate steps during pullback to ensure that the pipe will be installed without damage.
- J. During the pullback operation, the Contractor shall monitor roller operation and sidebooms if required to assist above ground movement of the pipe. Surface damage or cuts that exceed 10% of the pipe wall thickness shall be repaired by Contractor before pulling operations resume.
- K. The lead end of the pipe shall be closed during the pull back operation. If necessary to reduce pull back loads and to ensure that adequate internal pressure is maintained at all points to counter balance collapse pressures, the pipe shall be filled with water as it enters the borehole.
- L. After completion of "pull back" and prior to the final pipe tie-in, pipe shall be provided a sufficient relaxation period as recommended by the specified pipe manufacturer.
- M. The Contractor shall install, maintain, and leave in place any sheeting, underpinning, cribbing, and other related items (other than that required for the boring and receiving pits) to support any structure or facility affected by the boring operations. The Engineer, depending upon existing conditions, may require that additional sheeting for the excavation be left in place.

- N. Damage to the product pipe resulting from manufacturer defects, installation, contact grouting, or grouting of the annulus is the responsibility of the Contractor, including costs for replacement and labor and materials. To confirm no damage to the pipe, upon completion of pull back and grouting, the Contractor shall perform the following test on the completed pipeline:
1. A sphere or pig, one inch less in diameter than the internal diameter of the product pipe, which is capable of allowing water to pass through it, complete with a pulling cable on either side of sphere or pig, shall be pulled through the entire length of the pipeline. If the pig or sphere cannot pass through the pipe, it shall be considered collapsed and damaged.
 2. After the product pipe is completely pulled through the borehole, a sufficient relaxation period, if recommended by the pipe manufacturer, shall be provided before the final pipe tie-in.
- O. Contractor shall flush, clean, pig and hydrostatically test each pipeline according to the test procedures required for the respective material per Sections 15066 and Section 02600.

3.05 HANDLING DRILLING FLUIDS AND CUTTINGS

- A. During the drilling, reaming, or pullback operations, the Contractor shall make adequate provisions for handling the drilling fluids, or cuttings at the entry and exit pits. These fluids shall not be discharged into the waterways. Care shall be taken to avoid spillage on sidewalks, roadways or other public thorough fares. Spills shall be cleaned prior to resuming public access to construction area. When the Contractor's provisions for storage of the fluids or cuttings on site are exceeded, these materials shall be hauled away to a suitable legal disposal site. After completion of the directional drilling work, the entry and exit pit locations shall be restored to original conditions. The Contractor shall comply with all Florida Department of Environmental Protection permit provisions.

3.06 WATER

- A. The Contractor shall be responsible for providing/obtaining water for construction purposes. The Contractor shall be responsible to pay for all costs for water for construction purposes.

3.07 NEARBY UTILITIES

- A. The drawings show existing buried utilities that are assumed to be near the directional drill alignment. There is no guarantee that these utilities are located as shown or that additional utilities may not be present. It will be the Contractor's responsibility to locate all nearby utilities or other subsurface obstructions that may interfere with the work by contacting Sunshine One Call, excavating windows along the pipeline drill alignment, or other means.

3.08 RESPONSIBILITY

- A. The Contractor shall be fully responsible for the steerable, clay lined directional drilling operation. Any noticeable surface defects resulting from installation activities or operation of boring equipment shall be repaired by the Contractor, at his expense. All exploratory, entrance, exit and slurry pits shall be restored by the Contractor to the preconstruction condition or better at no additional cost. Care shall be taken to avoid unnecessary construction equipment traffic on sidewalks, driveways and green spaces. Damage to these areas shall be repaired by the Contractor, at his expense.

3.09 CLEANING AND SIZING PIGS

- A. After the pipe is in place, cleaning pigs shall be used to remove residual water and debris. After the cleaning operation, the Contractor shall provide and run a sizing pig to check for abnormalities in the form of buckles, dents, excessive out-of-roundness, and any other deformations. The sizing pig run shall be considered acceptable if the survey results indicate that there are no sharp anomalies (e.g. dents, buckles, gouges, and internal obstructions) greater than 2-percent of the nominal pipe diameter, or excessive ovality greater than 5-percent of the nominal pipe diameter. For gauging purposes, dent

locations are those defined above which occur within a span of five feet or less. Pipe ovality shall be measured as the percent difference between the maximum and minimum pipe diameters.

3.10 SUCCESSFUL COMPLETION

- A. The contractor shall be considered as having completed the requirements of any directional boring when he has successfully completed the work and tested the pipe to the satisfaction of the Engineer.
- B. At the completion of construction, the Contractor shall remove all temporary facilities installed by the Contractor. Unused soil, aggregate, and other materials shall be removed and disposed of at approved sites in accordance with all Federal, State, and Local regulations. Any damage to streets, lawns, common areas, and sidewalks shall be restored to original or better conditions. All disturbed areas shall be re-vegetated.

3.11 RECORD KEEPING

- A. Daily logs and records shall be maintained by the Contractor and shall include annular pressure, drilling lengths, location of drill head, drilling fluid pressures and flow rates, drilling fluid losses, inadvertent returns, drilling times required for each pipe joint, any instances of retraction and re-drilling of the pilot bore or segments thereof, and any other relevant observations, including any observed settlement, heave, frac-outs or surface spills. The drilling fluid pressures shall be measured at the entry point and at the drill head and recorded at least twice per drill pipe length. These records shall be maintained and provided daily to the Engineer. The position of the drill head shall be continuously tracked and recorded by a downhole wireline tracking locator system, Sharewell MGS, and shall be supplemented by a surface grid or equivalent tracking system installed that completely encompasses the area between the entry point and the exit point. The coordinates of the surface wire grid system shall be surveyed and recorded. A plot of actual locations of the bore path shall be maintained and updated daily, or more frequently, as directed by the Engineer. Contractor shall maintain a daily project log of drilling operations and a guidance system log with a copy given to Engineer at completion of boring. As-built drawings with x, y, z coordinates of the pipe shall be certified by the Contractor, for accuracy and shall be provided to the Engineer within 48 hours after completion of the boring.
- B. Drill profile submitted by the Contractor shall be based on the control elevations and stationing of the applicable construction baseline shown in the drawings.
- C. The Contractor shall submit measured mud and/or drilling fluid weights used during pilot boring and reaming of the bore measured at a minimum of twice per shift or at least once per two hundred (200) feet of drilled or reamed length, whichever is more frequent.

END OF SECTION

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SECTION 02125

SILT BARRIERS

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. The work included under this section consists of furnishing all necessary labor, equipment, tools and materials, and in performing all operations in connection with the installation of a staked silt barrier, of cloth or straw bales, or a floating silt barrier for the protection of open water, wetland systems or areas intended to remain undisturbed by adjoining work.
- B. This work shall be performed in strict accordance with the requirements of all applicable sections of these specifications and in conformity with lines, grades, notes and typical sections as shown on the drawings, as directed by the Design Engineer or as directed by representatives of governmental agencies having jurisdiction over areas to be protected.

PART 2 – PRODUCTS

2.01 STAKED FABRIC SILT BARRIER

The sediment control fabric is to be woven polypropylene meeting the following standards:

Mullen Burst Test	(ASTM D-3786) 200 psi (min.)
Grab Elongation	(ASTM D-1682) 30% (max.)
Slurry Flow Rate	(VTM-51) 0.3 gpm/sf (min.)
Retention Efficiency	(VTM-51) 75% (min.)

The fabric is to be provided in widths adequate to provide a barrier of 24 inches in height and allow for 8 inches of fabric to be buried for toe restraint.

2.02 FLOATING SILT CURTAIN

- A. The floating silt curtain is to be provided in pre-manufactured segments to the depth shown on the plans. Each segment is to have integral flotation, ballast and tension reinforcing. The silt curtain may be manufactured of nylon reinforced vinyl or other fabric having suitable resistance to sunlight and oils and having a minimum tensile strength of 300 pounds per inch of fabric.

PART 3 – EXECUTION

3.01 STAKED CLOTH SILT BARRIER

- A. The sediment control fabric is to be attached, per the manufacturer's recommendation, to the uphill or sediment producing side of the stakes. The stakes are to be spaced at no greater than 10 feet intervals. Where silt barriers are required within the FDOT Right of Way, the stakes shall be spaced per the FDOT Design Standards Index. A 4" to 6" trench is to be dug along the fence line and backfilled with the bottom 8 inches of fabric in place.
- B. The ends of each unit of fence is to be connected to the adjoining fence with a connector provided by the manufacturer or the fabric is to be lapped sufficiently to prevent sediment from escaping.

3.02 STAKED STRAW BALES

- A. Securely bound bales of straw may be used as a sediment barrier. The bales are to be securely bound with two strands of rope or wire. The bales are to be positioned in a 4 inch trench along the plan alignment and each bale is to be secured by driving two 2"x 2" stakes or #5 rebar through the bale and 18" to 24" into the ground. The tops of the stakes are then to be secured by a continuous wire tie.
- B. Deteriorated bales shall be replaced as directed by the Owner & Engineer.

3.03 FLOATING SILT CURTAIN

- A. The floating silt curtain is to be securely fastened to solid ground at any points of contact with the shoreline and is to be anchored or restrained at intermediate locations sufficient to prevent the distortion of the curtained area due to the action of wind, waves, currents, or the effects of the work in progress.

3.04 REMOVAL

- A. Upon acceptance of the completed work the contractor shall be responsible for the complete removal of all silt barriers unless so directed by the Owner & Engineer. Following removal, all materials shall become the property of the Contractor.

END OF SECTION

SECTION 02222

EXCAVATION AND BACKFILL FOR PIPES

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. It is the Contractor's responsibility to obtain all permits, furnish all labor, materials, equipment, and incidentals necessary to perform all excavation, backfill, fill grading, and slope protection required to complete the work shown on the approved construction plans and specified herein. The work shall include, but not necessarily be limited to: excavation for pipe bedding, cutting and excavation of roadways and pavement, all backfilling, fill, and required borrow, grading, disposal of surplus and unsuitable materials, and related work such as sheeting, bracing, and dewatering.
- B. The Contractor shall furnish and place all sheeting, bracing and supports necessary to keep excavations dry and shall provide all sheeting, shoring and bracing necessary to protect adjacent structures and utilities or to minimize trench width, and shall remove from the excavation all materials which the Engineer may deem unsuitable for backfilling. The bottom of the excavation shall be firm, dry and in all respects, acceptable with absolutely no standing water. The length of open trench shall be related closely to the rate of pipe laying. The Contractor shall not have any open trenches during non-working hours. All trenches shall be filled and protection as required at the end of each work day. All excavations shall be made in open trenches.
- C. All pipe and fittings shall be clearly marked with the name or trademark of the manufacturer, the batch number, the location of the plant and strength designation, as applicable. All pipe (including all service laterals) shall be laid with a 2-inch metallic tape, appropriately color-coded and imprinted with the type of service, 18 to 24 inches directly above the utility for identification and ease of location. The appropriate tape color codes are as follows:

Green – Sewer
- D. All PVC pipe shall be installed with two (2) insulated tracer wires as specified in section 02650.

1.02 BURNING

- A. Burning of debris shall not be permitted.

1.03 CLEAN-UP

- A. Clean-up is an essential part of the work. As the work progresses and is completed, the Contractor shall clean the various sites of all operations and completely restore all work areas to the satisfaction of the Engineer and the Owner. This clean-up shall be done as promptly as practical and shall not be left until the end of the construction period. No part of the work shall be considered complete, and no payment will be made, until clean-up is completed.
- B. It is the Contractor's responsibility to assure that all construction sites and all their affected properties are restored to a condition equal to, or better than, the existing conditions prior to construction. All restoration is subject to the approval of the Engineer and/or Property Owners.

1.04 DRAINAGE

- A. It is the responsibility of the Contractor to maintain the existing drainage systems during construction. Any damage done to an existing drainage structure or system is to be immediately repaired to a condition equal to or better than its original condition.

1.05 DUST CONTROL

- A. It is the responsibility of the Contractor to control all dust problems that may occur during the construction with required watering. Dust control will be required seven days a week.

1.06 SPRINKLER

- A. The Contractor shall be responsible for sprinklers encountered within the area of excavation and shall make sure that if disturbed or damaged, they shall be rebuilt to the satisfaction of the Engineer or property Owner and with no additional cost to the Owner.

1.07 EROSION CONTROL

- A. It is the Contractor's responsibility to erect suitable silt fences, hay bales or other erosion runoff control devices prior to commencement of earth moving or excavation activities. The Contractor shall be responsible for maintaining the silt fences, hay bales or other erosion runoff control devices in an effective manner, repairing or replacing damaged or ineffective section during the course of the work until a ground cover of grass is established and final environmental approval has been obtained.
- B. During all dewatering or other operations involving the use and disposal of water, suitable means shall be provided by the contractor to minimize soil erosion, siltation, and sedimentation of natural or artificial ditches, drainage channels, streams, wetlands, lakes or other waterways. Appropriate erosion and sediment control best management practices (BMP's) shall be employed to protect stormwater conveyances.
- C. Discharges to the Municipal Separate Storm Sewer System (MS4), or to surface waters of the State of Florida shall be appropriately permitted, and shall comply with all state and local regulations.

1.08 PERMITS FOR DEWATERING OPERATIONS

- A. The Contractor shall be responsible for preparing and submitting to the Engineer and all permitting agencies (described in the permits attached to these specifications) sheeting, shoring, and bracing plans and a dewatering plan for all excavations required in the project. The Contractor is responsible for obtaining all permits required for dewatering discharges, including a Florida Department of Environmental Protection Generic Permit for Produced Groundwater under FAC 62-621.300.

1.09 REFERENCE DOCUMENTS

- A. Sarasota County Land Development Regulations (LDR);
- B. FDOT, "Standard Specifications for Road and Bridge Construction";
- C. American Society for Testing and Materials (ASTM);
- D. American Association of State Highway Transportation Officials (AASHTO);
- E. U.S. Department of Labor Occupational Safety and Health Administration (OSHA);
- F. Florida Trench Safety Act.
- G. National Pollutant Discharge Elimination System (NPDES)
- H. Best Management Practices (BMP's)

PART 2 – PRODUCTS

2.01 MATERIALS

- A. General

1. Materials for use as fill are described below. For each material, the Contractor shall notify the testing lab of the source of the material at least ten (10) calendar days prior to the date of anticipated use of such material.
 2. Materials shall be furnished as required from off site sources and hauled to the site.
 3. Disposal of unsuitable material is specified in this Section.
- B. Common Fill
1. Common fill shall consist of mineral soil, free of organic material, loam, wood, trash and other objectionable materials, which may be compressible or which cannot be compacted properly. Common fill shall not contain stones larger than four inches in any dimension, broken concrete, masonry, rubble, or other similar materials. It shall have physical properties such that it can be readily spread and compacted during filling.
 2. Material falling within the above Specification, encountered during the excavation, may be stored in segregated stockpiles for reuse. All material, which in the opinion of the Engineer, is not suitable for reuse shall be spoiled as specified herein for disposal of unsuitable materials.
- C. Crushed Stone
1. Pea gravel for PVC/HDPE pipe bedding shall be FDOT No. 89 in accordance with Section 901-2 of the FDOT Standard Specifications for Road and Bridge Construction.
- D. Select Fill
1. Select fill shall be noncohesive, non-plastic material free of all debris, lumps or clods. Fill material shall be clean earth fill composed of sand or an approved mixture of clay and sand. Backfill material placed within one foot of piping and appurtenances shall not contain any stones or rocks larger than two inches in diameter, or three-quarter inch in diameter for PVC pipe.
- E. Borrow
1. If there is insufficient satisfactory material from the excavations to meet the requirements for fill material, borrow shall be obtained from pits secured by the Contractor and approved by the EOR. The Contractor shall be responsible for obtaining permits and meeting the standards, as required by appropriate regulatory agencies.

PART 3 – EXECUTION

3.01 SAFETY PRECAUTIONS AND TEMPORARYWORKS

- A. The Contractor shall provide and maintain adequate barricades, construction signs, torches, flashers and guards as required in pedestrian and vehicular traffic areas. All safety rules and regulations of local authorities shall be observed. Local fire officials shall be kept advised of roads closed and roads re-opened.
- B. Where required, the Contractor shall provide suitable crossings at street intersections and driveways, and supply such aid, as may be required for pedestrians and motorists, including delivery vehicles, to safely negotiate the construction area. "Street Closed to Through Traffic" signs and "Detour" routes shall be indicated and maintained by the Contractor when the job is

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located in a public or private street or way. In the case of dead end streets, the Contractor shall advise all concerned residents and make all arrangements to maintain reasonable ingress and egress for the residents. Particular attention shall be given to residents in bad health, emergencies and emergency vehicles. The Contractor shall be responsible for building and maintaining all bypass roadway areas and restoring those areas to their original condition.

- C. The Contractor shall furnish temporary or permanent support, adequate protection and maintenance of all underground facilities and utilities encountered. Support, protection, maintenance and restoration are the Contractor's responsibility at no additional cost to the Owner.

3.02 CLEARING AND GRUBBING

- A. The Contractor shall remove only vegetation such as trees, shrubs, and grass which interfere with the construction, as may be determined by the Engineer, and he shall preserve and protect all other existing vegetation.

3.03 EXCAVATION

A. General

1. The Contractor shall perform all excavation of every description, and of whatever substances encountered, to the depth indicated on the Drawings, or as otherwise specified.
2. Trench excavation shall be such that the pipe can be laid to the alignment and grade required. Trenches shall be shored and drained in such a manner that work may proceed safely and efficiently.
3. Trench dewatering pumps shall discharge to natural drainage channels, drains or sewers and shall be adequate to remove accumulated storm and/or subsurface water. The Contractor shall take necessary action to prevent surface water from flowing into the trenches. It is the responsibility of the Contractor to assure that all trench walls and trench bottoms are dry and remain dry during pipeline construction.
4. The Contractor shall separate, remove and dispose of excavated material not suitable for backfill, as directed by the Engineer.
5. All excavated material retained for backfill shall be piled in such a manner as not to endanger the work or obstruct the sidewalks, driveways or drainage. Fire hydrants, valve pit covers and hoses, curb stop boxes, fire and police call boxes and other utility controls shall be unobstructed and accessible at all times during construction.

B. Unclassified Excavation

1. Unclassified excavation shall include soil, clay, silt, sand, muck, gravel, hardpan, loose shale, loose stones in masses and boulders measuring less than one-half cubic yard in volume.

C. Classified Excavation

1. Classified excavation shall be rock further defined as follows:

boulders, measuring one-half cubic yard or more in volume, rock material in ledges, bedded deposits and unstratified masses, conglomerate deposits firmly cemented and concrete or masonry structures, except sidewalks and paving, that in the opinion of the

Engineer required for its removal drilling and blasting, wedging, sledging, barring or breaking up with a power operated hand tool.

2. No soft or disintegrated rock that can be removed with a hand pick or power operated excavator or shovel, no loose, shaken, or previously blasted rock or broken stone in rock fillings or elsewhere, and no rock exterior to the minimum limits of measurement allowed, which may fall into the excavation, will be considered as rock.

3.04 TRENCH PREPARATION

- A. Unsupported trench width shall be limited to the minimum practicable width allowing working space to place and compact the haunching material. The maximum width shall be the pipe diameter plus one foot on each side of the pipe at springline for pipe in unsupported trenches. In sheeted trenches the width of trench between faces of the sheeting shall be adequate to allow the pipe bedding and haunching to be placed and completed, and the sheeting removed without disturbing the bedding and haunching material within two pipe diameters on each side of the pipe. Trench boxes and moveable sheeting shall be wide enough to allow moving without disturbing the bedding and haunching within two pipe diameters on each side of the pipe. Trench boxes and moveable sheeting shall be constructed and used in the trench to avoid disturbing the piping, bedding and haunching when being moved forward in the trench.
- B. Dewatering of the trench bottom shall be accomplished using adequate means to allow preparation of bedding, placement of haunching and pipe in a trench environment without standing water. Dewatering shall continue until sufficient backfill is placed above the pipe to prevent flotation.
- C. The trench shall be dug so that the pipe can be laid to the alignment and depth required, and it shall be excavated only so far in advance of the pipe laying as allowed by the Engineer. The trench shall be so braced and drained that the workmen may work in it safely and efficiently. All trench preparation shall comply with all the latest applicable Local, State (Florida Trench Safety Act) and Federal Regulations (OSHA: Safe Trench Act). It is essential that the discharge of the trench dewatering pumps be conducted to natural drainage channels, drains or storm sewers.
- D. Bell holes shall be provided at each joint to permit the joint to be made properly. Ledge rock, boulders and large stones shall be removed to provide a clearance of six inches on all pipe twenty-four (24) inches and smaller and nine inches on pipe larger than twenty-four (24) inches. If such removal is required, backfilling will be done with selected material approved by the Engineer and tamped to establish the proper grade.
- E. Trench Bottom
 1. Where the bottom of the trench at subgrade is found to be unstable or to include ashes, cinders, refuse, vegetable or other organic matter, or large pieces or fragments of inorganic material that, in the judgment of the Engineer, should be removed, the Contractor shall excavate and remove such unsuitable material to the width and depth as directed by the Engineer. Before the pipe is laid, the subgrade shall be made by backfilling with an approved material in three inch uncompacted layers. The layers shall be thoroughly tamped as specified by the Engineer to provide the uniform and continuous bearing support as heretofore described.
 2. The trench shall be dry when the bottom is prepared. The trench bottom shall be excavated, or filled and compacted, as required to bring it to grade and shaped to receive and support the pipe barrel. In addition, bell holes shall be excavated so that after placement only the barrel of the pipe receives bearing pressure from and is uniformly supported by, the bottom of the trench. Preparation of the trench bottom and placement of the pipe shall be such that the final position of the pipe is true to line and grade, and uniformly supported throughout the barrel of each length. When pipe is placed in refill

material, additional refill of the same material shall be tamped on each side of the barrel to the springline, thus forming a trough of firm bedding.

- F. All materials that, in the opinion of the Engineer, are suitable for reuse in restoring the disturbed surface shall be kept separated from the general excavation material and can only be used as directed by the Engineer.
- G. All excavated material shall be piled in a manner that will not endanger the work and that will avoid obstructing sidewalks and driveways. Hydrants, valve pit covers, valve boxes, curb stop boxes, fire and police call boxes, or other utility controls shall be left unobstructed and accessible until the work is completed. Gutters, drainage inlets, natural water courses and miscellaneous drainage structures shall be kept clear or other satisfactory provisions made for their proper operation.
- H. Hand methods for excavation shall be employed when damage to existing facilities is likely if heavy equipment is utilized or as directed by the Engineer.

3.05 PIPE BEDDING

- A. The Contractor shall furnish and install pipe on the type of bedding shown on the Drawings or as specified by the Engineer. Regardless of the type of bedding used by the Contractor, holes in the trench shall be provided to receive the pipe bell. The hole excavated shall be sufficient to relieve pipe bells of all loads and yet provide support over the total length of the pipe barrel.
- B. Pipe should be installed with proper bedding providing uniform longitudinal support under the pipe. Backfill material should be worked under the sides of the pipe to provide satisfactory haunching. All pipe bedding material should be select fill. Sharp stones and crushed rock (larger than 3/4-in.), which could cause significant scratching or abrasion of the pipe, should be excluded from the embedment material. Proper compaction procedures should be exercised.
- C. Where required to provide a dry, firm bedding, compacted crushed stone shall be provided from a depth of 12" below the pipe up to the pipe haunches.

3.06 DEPTH

- A. Force Mains
 - 1. The depth of trenches for force mains shall be such that the invert of the pipe will be at elevations shown on the plans.
- B. Overdepth
 - 1. When classified excavation is required, the rock shall be excavated to a minimum depth of six inches below the trench depths as indicated on the drawings or Specifications. Authorized overdepths in rock excavation shall be refilled to grade with loose granular moist earth or shell thoroughly tamped in place.
- C. Trench shall be excavated to the depth required so as to provide a uniform and continuous bearing and support for the pipe on solid and undisturbed ground at every point between bell holes, except as necessary for removal of pipe slings or other lifting tackle. Any part of the bottom of the trench excavated to a point below the specified grade shall be corrected with approved material at the Contractor's expense and thoroughly tamped as directed by the Engineer.
- D. Wherever unstable soil or muck that is determined by the Engineer to be incapable of properly supporting the pipe is encountered in the bottom of the trench, such material shall be removed to the required depth and the trench refilled as specified to proper grade. If, in the opinion of the

Engineer, removal of the unstable material by this method is impractical, then the Contractor shall support the pipe as detailed on the plans, or as directed by the Engineer.

3.07 BACKFILL

A. General

1. The Contractor shall not perform any of the backfilling operations until after he has inspected the lines and found them to be acceptable to the Owner.
2. Backfill material shall consist of earth, loam, sandy clay, sand, gravel, soft shale or other materials, free from organic materials, large clods of earth, or stones. Where excavated material is not suitable for backfill, it shall be replaced by suitable fill.
3. Should bedding be required, primarily to bring the trench up to proper grade level, due to the removal of unsuitable materials, clean Class II or Class III fill shall be properly placed and compacted evenly along the trench bottom in such a manner that the entire pipe lays evenly, without bridging, holes or dips. Backfill material shall be clean fill approved by the EOR. Backfill materials shall be free of organic material, debris, lumps, broken pavement or any other unsuitable material.
4. Flowable fill will be allowed as an alternative to backfill compaction requirements, at the discretion of Utilities. Measures shall be taken to prevent the pipe from floating as the flowable fill is placed. The Contractor shall provide a detail and the EOR shall approve the detail describing the anchor system to be used with the flowable fill prior to construction plan approval.
5. In all areas, backfill material shall be deposited in six inch layers and carefully tamped until the compacted backfill depth reaches one foot above the top of pipe.
6. No mechanical equipment, or machinery other than a hand operated mechanical vibrator, will be allowed within the trench area until the backfill has been properly tamped to one foot above the top of pipe. The remainder of the backfill shall be deposited in one foot layers and thoroughly tamped. In all cases walking or working on the completed pipelines, except as may be necessary in tamping or backfilling, shall not be permitted until the trench has been backfilled to a point twelve inches (12") above the top of the pipe.
7. The first lift shall be no more than twelve inches (12") in thickness and shall start twelve inches (12") above utility line. The second lift shall start two feet (2') above utility line and any subsequent twelve inch (12") lifts are to end at finished grade.
8. Where trenches are improperly backfilled, or where settlement occurs, the trenches shall be reopened to the depth required for proper compaction, refilled and compacted, and the surface restored to the required grade and compaction, mounded over and smoothed off.
9. The filling of the trench and the compacting of the backfill shall be carried out simultaneously on both sides of the pipe. This shall be done in such a manner that the completed pipeline will not be disturbed, and injurious side pressures to the pipe do not occur. Particular attention and care shall be exercised in obtaining thorough support for the branch of all service connection fittings.
10. When directed by the EOR, the Contractor shall add water to the backfill material or dry out the material when needed to attain a condition near optimum moisture content, for the purpose of obtaining maximum density of the material when it is compacted.

11. Before final acceptance, the Contractor shall level off all trenches or bring the trench up to the level of the surrounding terrain. The Contractor shall also remove from roadways, right-of-way(s), and/or private property all excess earth or other materials resulting from construction.

B. Force Mains

1. Haunching of native material shall be placed to the springline and compacted. If ground water, or trench bottom conditions, is such as to require use of Class I material, either to aid in dewatering, or to provide foundation and bedding for the pipe, the haunching shall also be of Class I material. Class I material contains angular, 1/4 inch to 1 1/2 inch graded stone. Care shall be taken to place the haunching material, without voids, completely filling the trench from pipe wall to trench wall.

C. Compaction Requirements

1. Trenches located under pavement or inside the two feet horizontal to one foot vertical slope, downward from roadway shoulder or the back of curb and from spring line to bottom of sub-grade or the finished surface of the embankment, as appropriate, shall be compacted to a density of ninety eight (98) percent as determined by *Modified Proctor Test* (AASHTO T- 180 Method C).
2. Trenches located outside of the two feet horizontal to one foot vertical slope downward from roadway shoulder or the back of curb and where no vehicular traffic will pass over the trenches, back fill shall be compacted to a density approximately equal to that soil adjacent to the trench but not less than ninety-five (95) percent of the maximum density as determined by *Modified Proctor Test* (AASHTO T-180, Method-C).
3. Minimum compaction shall be accomplished by use of a motorized compacting device starting from twelve inches (12") above the main to the top of the trench.

D. Testing of Backfill

1. Density tests for backfilled trenches within, or across roadways, shall be performed as specified or as directed by the Engineer. Compaction testing shall be performed every 200 feet, with at least one test taken at different locations for each vertical foot beginning from two feet over pipe to ground level.
2. Where unsatisfactory compaction is revealed by the test, the Contractor shall re-excavate, backfill, re-compact and/or rework the backfill as required, to obtain the required degree of compaction over the entire depth of the trench.
3. Satisfactory backfill compaction is an integral part of pipe laying, paving, and stabilizing. Satisfactory density reports shall be on file before each Contractor's statement is submitted for payment.

E. Disturbance of Underground Piping

1. All underground piping shall be checked by the Contractor to determine whether any displacement of the pipe has occurred after the trench has been backfilled to two feet above the pipe. If such inspection shows poor alignment, displaced pipe or any defects, these defects shall be remedied to the satisfaction of the Engineer by the Contractor at his expense.

3.08 DISPOSAL OF SURPLUS MATERIAL

- A. All excavated material not required or not suitable for fill, or backfill, shall be disposed of by the Contractor, as directed by the Engineer.
- B. Work site cleanup and property restoration shall follow construction operations without delay. Excavation and pipe-laying shall be coordinated to minimize the amount of overnight open trench, pits or materials storage. Construction site maintenance, along with ongoing cleanup and debris removal to maintain an orderly construction site is expected.
- C. Suitable excavated materials may be used for fill or backfill if it meets the requirements of this specification and is approved by the Engineer. Excavated material so approved may be neatly stockpiled at the site where designated by the Engineer provided there is an area available that will not interfere with the daily activities of the residents or inconvenience traffic or adjoining property owners. If space limitations do not permit stockpiling on the site, the Contractor will be required to make arrangements for off-site stockpiling. Transport of such material from and to the immediate site including any stockpiling agreements shall be entirely at the Contractor's expense and shall not constitute grounds for additional payment.
- D. Excess, unsuitable, or cleared and grubbed material shall be removed from the work site and legally disposed of at locations secured by the Contractor/Developer and approved by the applicable authorities. Excess excavated material shall be spread on the disposal site and graded for proper drainage without disturbing the existing drainage conditions.

3.09 SHEETING AND BRACING

- A. The Contractor shall do all shoring and sheeting required to perform and protect the excavation and, as required, for the safety of the employees.
- B. All trenches shall be sheeted and braced as required by the Engineer and all applicable Federal, State, County and Municipal regulations. Sheeting and bracing shall be used to prevent shifting of adjacent soil and to prevent damage to structures or the work. The sole responsibility for the design, methods of installation, and adequacy of the sheeting and bracing, shall be and shall remain that of the Contractor.
- C. Sheeting and bracing or approved laying box shall be used in all trenches unless the slopes are excavated until the natural angle of repose of the soil is encountered.
- D. Sheeting shall be removed when the trench has been backfilled to at least one-half (1/2) its depth or when removal would not endanger the construction of adjacent structures.
- E. When required, to eliminate excessive trench width or other damage, sheeting, bracing, or shoring shall be left in place and the top cut off at an elevation of two feet (2') six inches (6") below finished grade, unless otherwise directed by Utilities.
- F. In general, sheeting and bracing shall be removed as the excavation is backfilled in such a manner as to avoid the caving in of the bank or disturbance of adjacent areas or structures. The voids left by withdrawal of the sheeting and bracing shall be carefully filled by jetting, ramming or other means approved by the Engineer. Permission shall be obtained from the Engineer prior to removal of any sheeting or bracing. Permission shall not relieve the Contractor of any responsibility for damage due to failure to leave such sheeting and bracing in place.
- G. Wood sheeting shall only be left in place when directed by the EOR. All such sheeting shall be pressure treated with a preservative in accordance with the current requirements of the American Wood Preservers Association Manual of Recommended Practices.

- H. Sheeting and bracing materials shall conform to the standard requirements of the FDOT Standard Specifications for Road and Bridge Construction, when tested in accordance with AASHTO T60. Steel sheeting to be left in place, shall be as specified in ASTM Designation A3212.
- I. The Engineer may order, in writing, any or all sheeting or bracing to be left in place for the purpose of preventing injury to adjacent structures, property, etc. If left in place, such sheeting shall be cut off at the elevation ordered, but in no case less than thirty-six (36) inches below the existing grade. Bracing remaining in place shall be driven in tight. The right of the Engineer to order sheeting and bracing to remain in place shall not be construed as creating any obligation on his part to issue such orders. Payment for sheeting and bracing, unless specifically called for on the Drawings shall not be paid under separate item, but shall be included in the payment for other items of Work.

3.10 DEWATERING

- A. The Contractor shall furnish all materials and equipment and perform all incidental work required to install and maintain the dewatering and drainage system he proposes for handling ground water or surface water encountered. He shall assume all responsibility for the adequacy of the methods, materials, and equipment employed. Construction shall not begin until the Engineer is assured that the proposed method will be satisfactory. The requirements for a stable subgrade are indicated below, and the Contractor must alter his drainage methods, if, in the opinion of the Engineer, the trench bottom is unsatisfactory. The Contractor shall construct and place all pipelines, concrete work, backfill, structural fill, bedding rock, or clean native soils in dry, suitable material.
- B. The Contractor shall provide pumping equipment and devices to properly remove and dispose of all water entering trenches and excavation. The grade shall be maintained acceptably dry until structures and pipe to be constructed therein are completed. All drainage shall be performed without damage to the trench, pavements, pipes, electrical conduits, or other utilities. Excavations shall be dry so as to obtain a satisfactory undisturbed subgrade foundation condition until the fill, structure, or pipes to be built thereon have been completed to such extent that they will not be damaged by hydrostatic pressure from natural groundwater.
- C. If the Contractor elects to dewater using wellpoints, all wellpoints shall be spaced and at sufficient depths as required to eliminate water during the excavation period until the work is completed. Ample means and equipment shall be provided with which to remove promptly, and dispose properly all water entering any excavation. This includes the use of sand or gravel as required to maintain adequate flow during the pipe laying or installation of other items of work within the excavation.
- D. Water pumped or drained shall be disposed of in a suitable manner without damage to adjacent property to other work under construction or to street pavements or public parks. Water shall not be discharged onto streets without adequate protection of the surface at the point of discharge. All gutter, drains, culverts, sewers and inlets shall be kept clean and open for surface drainage. Water shall not be directed across or over pavements except through approved pipes or properly constructed troughs. Contractor shall obtain permission from the owner of any property involved before digging ditches or constructing water courses for removal of water, and provide for disposal of the water without ponding or creating a public nuisance. Water may be discharged into storm sewers. Payment for dewatering shall not be paid for under a separate item, but shall be included in the payment for other items of work, unless it is specifically included as a Pay Item in the Contract.
- E. The Contractor shall be responsible for obtaining permits and meeting the standards, as required, by appropriate regulatory agencies for any dewatering system installed.

3.11 APPURTENANCES

02222-10

(Section 02222 – Excavation and Backfill – Pipes)
(01/07/13)

- A. Excavation for manholes and other appurtenances shall be made to size that will allow at least twelve (12) inches between their outer surfaces and the embankment or shoring. Overdepth excavation and backfill to required depth below such appurtenances, that have not been directed by the Engineer, shall be at the expense of the Contractor.

3.12 TEST PITS

- A. The Contractor may be required to excavate test pits for the purpose of locating underground utilities or structures as an aid in establishing the precise location of new work. 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 hereinafter specified.
- B. Excavation of test pits shall be considered work incidental to the project and shall be done at the Contractor's expense.
- C. If, for any reason, a test pit is left open for any period of time, it shall be properly barricaded and lighted by the Contractor, when directed by the Engineer, in accordance with State and Local laws.

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SECTION 02335

FLOWABLE FILL

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. This Section specifies the requirements for flowable fill used in backfill and to fill all abandoned pipelines. All existing mains shown on the Drawings to be cut and capped shall be filled with flowable fill meeting the requirements specified herein.
- B. Flowable fill for the roadway restoration shall be as shown on the Drawings and shall meet all FDOT Standard Specification.

1.02 REFERENCES

The materials used shall conform with the requirements specified in Division III of the Standard Specifications, and herein. Specific references are as follows:

- (1) Portland Cement (Types I, II, or III) Section 921
- (2) Fly Ash, Slag and other Pozzolanic
Materials for Portland Cement Concrete Section 929
- (3) Fine Aggregate (Sand)* Section 902
- (4) Water Section 923

* Any clean sand with 100% passing 3/8" sieve and not more than 10% passing the 200 mesh may be used.

1.03 SUBMITTALS

- A. Technical information for equipment and operational procedures including projected slurry injection rate, flowable fill pressure, method of controlling flowable fill pressure.
- B. At least 60 days prior to commencing abandonment activities, submit plan for abandonment, describing proposed sequence and any other information pertinent to completion of work.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. The Contractor shall be responsible for producing a flowable mixture using these guidelines and adjusting his mixture design as called for by circumstances or as may be directed by the Engineer.
- B. The Flowable fill material shall be proportioned to produce a 28-day compressive strength of approximately 150-450 psi.
- C. General mix requirements are as follows:

<u>Components</u>	<u>Pounds per Cubic Yard</u>
Cement	50-100*

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(Section 02335-Flowable Fill)
(06/17/13)

Fly Ash or Granulated Blast Furnace Slag	0-600
Find Sand	2750
	(adjust to yield one cubic yard of flowable fill)
Water	500 (maximum)

* The percentage of cement may be increased above these limits only when early strength is required and future removal is very unlikely.

- D. Weights for fine aggregate and water shall be adjusted according to cementitious content. The mix proportions shall be adjusted for removability, pumpability and flowability. If required, strength test data shall be provided prior to batching.
- E. If required by the Engineer, the flowability can be measured by afflux time determined in accordance with ASTM C 939 and shall be 30 seconds +/- 5 seconds as measured on mortar passing the No. 4 sieve. The equipment required to perform this test shall be provided by the Contractor.

PART 3 – EXECUTION

3.01 PREPARATION

- A. The Contractor shall flush all raw sewage, sludge, debris, and water from the force mains prior to filling pipeline with flowable fill. If not discharged into a sanitary sewer system, the Contractor shall collect all flushing water and disposed of at a wastewater treatment facility.
- B. Locate previously unidentified connections, which have not been redirected and reconnected as part of this project, and report them to the Engineer. During placement of fill, compensate for irregularities in sewer pipe, such as obstructions, open joints, or broken pipe to ensure no voids remain unfilled.
- C. Clean placement areas of sewer and water lines of debris that may hinder fill placement. Remove excessive amounts of sludge and other substances that may degrade performance of fill.
- D. Remove free water prior to starting fill placement.
- F. All proposed new force mains shall be installed, pressure tested, and placed in-service prior to abandoning the existing force mains.

3.02 PRODUCTION AND PLACING

- A. Flowable fill shall be produced and delivered using concrete construction equipment. Placing flowable fill shall be by chute, pumping or other methods approved by the Engineer.
- B. The flowable fill shall be placed to the designated fill line without vibration or other means of compaction. Placement shall be avoided during inclement weather, e.g. rain or ambient temperatures below 40 degrees F. The Contractor shall take all necessary precautions to prevent any damages caused by the hydraulic pressure of the fill during placement prior to hardening. Also, necessary means to confine the materials within the designated space shall be provided by the Contractor.
- C. All pipes shall be abandoned in the manner which results in the abandoned pipeline not being pressurized.
- D. During placement of the fill the Contractor is to avoid construction stoppage that would exceed the working time of the fill. If for any case that the fill would harden the Contractor is responsible for properly installing fill into the abandoned pipeline from another location and shall meet the requirements specified herein.

3.03 ACCEPTANCE

- A. An Owner Representative shall be present to witness the placement of flowable fill in abandoned pipelines. A 48-hour notice shall be given by the Contractor before the placement of fill.
- B. The flowable fill shall be proportioned and placed as specified herein. In general, the strength desired is the maximum hardness that can be excavated at a later date using conventional excavating equipment. No curing protection is required.
- C. The fill shall be left undisturbed until material obtains sufficient strength. Sufficient strength is 250 psi penetration resistance as measured using a hand held penetrometer. The penetrometer, shall be provided by the Contractor.
- D. All flowable fill areas subjected to traffic loads must have a durable riding surface.

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SECTION 02485

SURFACE RESTORATION

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, and equipment necessary to satisfactorily return all disturbed areas to their original conditions or better.
- B. Work includes furnishing and placing beach sand, sod, fertilizer, gravel, concrete sidewalk, asphalt, planting, watering and maintenance until acceptance by the Owner.
- C. Unless otherwise shown on the Drawings or directed, all disturbed grass areas shall be restored with solid sod of the same type which existed prior to construction.

1.02 QUALITY ASSURANCE

- A. For purposes of grassing, a satisfactory stand of grass is herein defined as a full lawn cover over areas to be sodded, with grass free of weeds, alive and growing, leaving no bare spots larger than 3/4 sq. yd. within a radius of 10 ft.
- B. It is the intent of this Specification that the Contractor is obliged to deliver a satisfactory stand of grass as specified. If necessary, the Contractor shall repeat any or all of the work, including grading, fertilizing, watering, and sodding at no additional cost to the Owner until a satisfactory stand is obtained.

1.03 SUBMITTALS

- A. Provide technical data as required for shop drawings on all materials or installation procedures required under this Section.
- B. Submit representative topsoil samples for analysis by a private laboratory to determine nutrient deficiencies and outline a proper fertilization program.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Fertilizer
 - 1. Fertilizer shall be a complete fertilizer, the elements of which are derived from organic sources. Fertilizer shall be a standard product complying with State and Federal fertilizer laws.
 - 2. Percentages of nitrogen, phosphorus and potash shall be based on laboratory tests on soils outlined in Paragraph 1.3B and approved by the Engineer. For purpose of bidding, assume 6% nitrogen, 6% phosphorus and 6% potash by weight. At least 50% of the total nitrogen shall contain no less than 3% water-insoluble nitrogen.
 - 3. Fertilizer shall be delivered to the site, mixed as specified, in the original unopened standard size bags showing weight, analysis and name of manufacturer. Containers shall bear the manufacturer's guaranteed statement of analysis, or a manufacturer's certificate of compliance

covering analysis shall be furnished to the Engineer. Store fertilizer in a weatherproof place and in such a manner that it will be kept dry and its effectiveness will not be impaired.

4. Superphosphate shall be composed of finely ground phosphate rock as commonly used for agricultural purposes containing not less than 20% available phosphoric acid.

B. Sod

1. All areas disturbed by construction shall be replaced with sod. Sod shall be St. Augustine or Argentine Bahia of firm texture having a compacted growth and good root development. The type of sod used for restoration shall match the existing grass type prior to construction.
2. Sod shall be certified to meet Florida State Plant Board Specifications, absolutely true to varietal type, and free from weeds or other objectionable vegetation, fungus, insects and disease of any kind.
3. Before being cut and lifted the sod shall have been mowed 3 times with the final mowing not more than a week before cutting into uniform dimensions.

C. Mulch

Mulch shall be fresh hay. Rate of application specified herein shall correspond to depth not less than 1 inch or more than 3 inches according to texture and moisture content of mulch material.

D. Water

It is the Contractor's responsibility to water the site as required during sodding operations, through the maintenance period, until the work is accepted. The Contractor shall make whatever arrangements may be necessary to ensure an adequate supply of water to meet the needs for his work. The Contractor shall also furnish all necessary hoses, equipment, attachments and accessories for the adequate irrigation of lawns and planted areas as may be required.

E. Trees and Shrubs

All trees and shrubs removed or damaged by the Contractor for his/her operations shall be replaced with the same type of trees and shrubs.

F. Pavement

1. Materials and methods used by the Contractor for pavement replacement shall conform to the specifications and details as shown on the drawings.

PART 3 – EXECUTION

3.01 LAWN BED PREPARATION

- A. Areas to be sodded shall be cleared of all rough grass, weeds, and debris; and the ground brought to an even grade as approved.
- B. The soil shall then be thoroughly tilled to a minimum 8-inch depth.
- C. The areas shall then be brought to proper grade, free of sticks, stones, or other foreign matter over 1-inch in diameter of dimension. The surface shall conform to finish grade, less the thickness of sod, free of water-retaining depressions, the soil friable and of uniformly fill texture.

- D. Superphosphate at a rate of 5 pounds per 1,000 square foot and 6-6-6, 40% organic, slow or controlled release fertilizer at a rate of 16 pounds per 1000 square foot shall be evenly distributed over entire area and cross-disced into a depth of 4-6 inches. The ground shall be wet down before the seed or sod is laid in place.

3.02 SOD HANDLING AND INSTALLATION

- A. During delivery, prior to planting, and during the planting of the lawn areas, the sod panels at all times be protected from excessive drying and unnecessary exposure of the roots to the sun. All sod shall be stacked during construction and planting so as not to be damaged by sweating or excessive heat and moisture.
- B. Solid sod shall be laid tightly with closely abutting staggered joints with an even surface edge and sod edge, in a neat and clean manner to the edge of all the paving and shrub areas. Cut down soil level to 1 inch to 1-1/2 inches below top of walks prior to laying sod.
- C. Within 2 hours after installing sod and prior to rolling, irrigate the sod. Sufficient water shall be applied to wet the sod thoroughly and to wet the sod to a depth of 2 inches (50 millimeters). Watering shall be done in a manner that will avoid erosion due to the application of excessive quantities, and the watering equipment shall be a type that will prevent damage to the finished sod surface. Watering shall be repeated as necessary to keep sod moist until rooted to subgrade.
- D. The sod shall be pressed firmly into contact with the sod bed using a turf roller or other approved equipment so as to eliminate air pockets, provide a true and even surface and insure knitting without any displacement of the sod or deformation of the surfaces of sodded areas. After the sodding operation has been completed, the edges of the area shall be smooth and shall conform to the grades indicated.
- E. If, in the opinion of the Owner, top dressing is necessary after rolling, clean silica sand shall be used to fill voids. Evenly apply sand over the entire surface to be leveled, filling-in dips and voids and thoroughly washing into the sod areas.
- F. On slopes steeper than 2:1 and as required, the sod shall be fastened in place with suitable wooden pins or by other approved method.

3.03 CLEANUP AND PROTECTION

- A. Soil, stone, fertilizer or similar materials spilled onto paved areas shall be removed promptly, keeping those areas as clean as possible at all times. Upon completion of sodding operations, all excess soil, stones, and debris remaining shall be removed from the construction areas.
- B. Sodded areas shall be protected against the traffic or other use by placing warning signs or erecting barricades as necessary. Any areas damaged prior to actual acceptance by the Owner shall be repaired by the Contractor as directed by the Engineer.

3.04 MAINTENANCE

- A. Maintain landscape work until Owner accepts project. Watering, weeding, cultivating, restoration of grade, mowing and trimming grass, protection from insects and diseases, fertilizing and similar operations as needed to ensure normal growth and good health for live plant material shall be the responsibility of the Contractor and at no additional cost to the Owner. Sodded areas shall receive no less than 1.5 inches of water per week.

3.05 ROADWAY REMOVAL AND RESTORATION

- A. Bituminous pavement shall be removed in clean straight lines by saw cutting. Where bituminous pavement adjoins a trench, the edges adjacent to the trench shall be trimmed to neat straight lines before resurfacing to ensure that all areas to be resurfaced are accessible to rollers or tampers used to compact the sub-grade or paving materials.
- B. Concrete pavement shall be removed with sawed edges and cut at a minimum depth of one and one-half inches (1 and ½"). If a saw cut in concrete pavement falls within three feet (3') of a construction joint, cold joint, expansion joint or edge, the concrete shall be removed to the joint or edge. The edges of existing concrete pavement adjacent to trenches, which had been damaged subsequent to saw cutting of the pavement, shall be saw cut to neat straight lines for the purpose of removing the damaged pavement areas. Such saw cuts shall be parallel to the original saw cuts or shall be cut on an angle which departs from the original saw cut not more than one inch (1") in six inches (6").
- C. Concrete curb, sidewalk, gutters and driveways shall be removed with neatly sawed edges, cut at a minimum depth of one and one-half inches (1 ½"). Concrete sidewalk or driveway to be removed shall be neatly sawed in straight lines parallel to the curb or at right angles to the alignment of the sidewalk. No section to be replaced shall be smaller than four feet (4') in either length or width. If the saw cut in sidewalk or driveway should fall within three feet (3') of a construction joint, expansion joint, or edge, the concrete shall be removed to the joint or edge except that where the saw cut would fall within twelve inches (12") of a score mark, the saw cut shall be made in and along the score mark. Curb and gutter shall be sawed to a depth of one and one-half (1½") inches in a neat line at right angles to the curb face.
- D. In the event that pavement is not replaced immediately following trench backfilling in streets and highways, the contractor shall be responsible for maintaining the trench surface in a level condition, at proper pavement grade, at all times.

END OF SECTION

SECTION 02520

PORTLAND CEMENT CONCRETE

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. The work included under this section consists of furnishing all materials, equipment, and labor required to construct all concrete work shown on the drawings or incidental to the proper execution of the work.

1.02 SUBMITTALS

- A. Prior to placing any concrete, the Contractor shall submit for the Owner's Engineer's approval, a design mix, calculated by a recognized testing laboratory, and using the approved aggregates to produce a workable mix of the desired strength, together with certified copies of 7 day and 28 day tests of cylinders taken from concrete made according to the design mix.

1.03 ALTERNATE SPECIFICATIONS

- A. Special attention is called to the fact that certain portions of the work for this project are described by reference to the "Standard Specifications". The term "Standard Specifications" refers to "The Standard Specifications for Road and Bridge Construction", latest edition, by the Florida Department of Transportation. In any case, where a specific detail regarding materials or method of construction has been omitted in the specifications, such work shall be performed in accordance with the requirements of the "Standard Specifications".

PART 2 – PRODUCTS

2.01 PORTLAND CEMENT

- A. General: For general concrete construction ASTM Designation C-150 Type I or Type II, or Federal Specifications SS-C-192 Type I or II.
- B. Type II Cement: For construction of pump station structures and sanitary sewer manhole inverts Type II cement shall be used.
- C. Slag Cement: Slag cement shall conform to ASTM Designation C-205 or Federal Specification SS-C-197. Slag cement may be used in the maximum ratio of 1 part of slag cement by weight to 6 parts of total cement by weight if approval by the Design Engineer is obtained prior to use.

2.02 FINE AGGREGATE

- A. General: Fine aggregate shall be clean, hard, strong, durable uncoated particles of natural sand known as Lake Wales, Interlachen or approved equal. The source, composition, quality and gradation of the fine aggregate shall be subject to the approval of the Owner's Engineer. Samples of the sand shall be furnished, together with certified copies of the gradation and analysis from a recognized testing laboratory. Concrete aggregate shall conform to the current specifications for "Concrete Aggregate," ASTM Designation C33.
- B. Deleterious Substances: The weight of extraneous or deleterious substances shall not exceed the following percentages:

Loss by decantation:	3%
Shale:	1%
Clay lumps:	1%
Coal and lignite:	1%

02520-1

- C. Sieve Analysis: The fine aggregate shall be reasonably well graded from coarse to fine, and when tested by means of laboratory sieves shall meet the following requirements in percent of total weight:

<u>Total Retained On</u>	<u>Percent</u>
No. 4 Sieve:	0 - 5
No. 10 Sieve:	3 - 30
No. 30 Sieve:	30 - 70
No. 50 Sieve:	65 - 95
No. 100 Sieve:	95 - 100

Deficiencies in the percentages of the fine aggregates passing the No. 50 and No. 100 sieves may be remedied by the addition of pozzolanic or cementitious materials excepting Portland cement. Such materials must meet the approval of the Owner's Engineer.

2.03 COARSE AGGREGATE

- A. General: Coarse aggregate shall consist of hard, tough, durable components, free from adherent coatings and vegetable matter, and shall not contain soft, friable, thin, or elongated particles in quantities considered deleterious by the Engineer. Coarse aggregate shall be properly graded from fine to coarse to produce concrete of the desired strength, density, and workability. The source, composition, quality and gradation of the coarse aggregate shall be subject to the approval of the Owner's Engineer. Samples of the coarse aggregate shall be furnished together with certified copies of the gradation and analysis from a recognized testing laboratory.
- B. Deleterious Substances: All coarse aggregate shall be washed and shall be free from disintegrated pieces, salt, alkali, vegetable matter, and adherent coatings. The total percentage of all deleterious substances shall not exceed 5 percent by weight. The substances designated shall not be present in excess of the following amounts:

Loss by decantation:	1%
Clay lumps or other soluble materials:	1/4%
Soft fragments:	5%

- C. Sieve Analysis: Where the cover over reinforcing is 2" or more, the maximum size of aggregate shall be 1-1/2". Where the cover over reinforcing is less than 2", the maximum size of aggregate shall be 3/4". The maximum size of aggregate shall not exceed 1/5 of the narrowest dimension between forms nor 3/4 of the minimum clear spacing between reinforcing bars. The grading of the coarse aggregate in the concrete shall be within the following limits:

Maximum size square mesh screen:	97	-100%
1/2 maximum size square mesh screen:	40	- 70%
No. 4 Sieve:	0	- 6%

2.04 WATER

- A. The water used in mixing concrete shall be fresh, clean and free from injurious amounts of oil, acid, alkali, or organic matter.
- B. Water from any other source other than a municipal water supply shall be shown by test to comply with Florida Department of Transportation requirements for mixing water.
- C. Reclaimed water shall not be used for mixing or curing concrete.

2.05 READY-MIXED CONCRETE

- A. Ready-mixed concrete may be used at the option of the contractor, provided such concrete is machine mixed and meets the requirements of these specifications and of ASTM C94 for "Ready-Mixed Concrete." Concrete shall be mixed at least five (5) minutes after all water has been added and shall be discharged into forms within one and one-half (1 ½) hours after water is added to the mix.
- B. Should there be any conflicts between this CODE and ASTM Specifications, the CODE shall govern.

2.06 HIGH-EARLY-STRENGTH CONCRETE

- A. Concrete made with high-early-strength Portland cement shall be used only when specifically authorized by the EOR and approved by UTILITIES.
- B. The seven (7) day compressive strength of concrete made with high-early-strength cement shall be at least equal to the minimum twenty-eight (28) day compressive strength specified previously.
- C. All provisions of these specifications shall be applicable to high-early-strength concrete except that cement shall conform to ASTM Designation C150, Type III.

2.07 DESIGN MIX

- A. The mixes shall be designed to secure concrete having a minimum compressive strength at age 28 days as shown in the following table.

Compressive Strength In Pounds Per Square Inch

COMPRESSIVE STRENGTH IN POUNDS PER SQUARE INCH				
Class	Use	Mix Design (psi)	Cylinder Strength (psi)	
			7 Days	28 Days
A	Pump stations, wastewater and storm structures	4,000	2,500	3,700
B	Curb, driveways, sidewalks	3,200	1,800	3,000
C	Manhole cradles	2,700	1,500	2,500

2.08 REINFORCING STEEL

- A. General: The reinforcing steel, fabricated to shapes and dimensions shown, shall be placed where indicated on the drawings. Before placing, all reinforcements shall be thoroughly cleaned of rust, mill scale, or coatings, which would reduce or destroy the bond.
- B. Reinforcing steel shall be detailed, fabricated, and placed according to the methods and standards recommended in the "Manual of Standard Practice for Detailing Reinforced Concrete Structures" of the American Concrete Institute.
- C. Splices in reinforcing mats shall be staggered. Horizontal mats shall be supported on metal chairs with all sills or pads below subgrade. Spacers shall be provided for wall and column steel and shall be removed as the concrete is placed.
- D. The concrete covering over steel reinforcement shall be as shown on the plans.

- E. Reinforcing Bars: Reinforcing bars shall conform to the requirements of Federal Specification QQ-S-632, ASTM Designation A615, Grade 60, and shall be as follows:
1. Bent: Type II (deformed), Class B40
 2. Straight: Type II (deformed), Class B40
 3. Column Ties: Type I (plain), Class B40
- F. Wire Mesh: Wire mesh, unless otherwise shown on the drawings or specified, shall be 6" x 6" - No. 10 woven or electrically welded wire fabric conforming to the requirements of ASTM Designation A 185 Latest Revision.

PART 3 – EXECUTION

3.01 STORAGE

- A. Immediately upon receipt at the site, cement shall be stored in a dry, weather-tight building, properly ventilated and with provisions for prevention of moisture absorption

3.02 MIXING

- A. General: Concrete shall be machine-mixed in standard equipment in good condition, operated within its rated capacity. The batching plant shall be equipped with facilities for measurement of dry materials by weight, and water by weight or volume. Mixing equipment may be a portable plant (job-mix), or truck mounted (transit-mix). The use of transit-mix concrete will be limited by length of haul. Transit-mixing will be required to meet the requirements for mixing time. Batching plant and handling equipment shall be of sufficient capacity to produce and place concrete without interruption or cold joints. All equipment shall be subject to the approval of the Owner's Engineer.
- B. Proportioning: All materials except water shall be proportioned into the mix by weight. Water may be proportioned either by weight or volume. Delivery tickets for transit mix concrete shall show the weight of cement of each type incorporated in the batch. Precise control of the proportions and amounts of all materials will be required. Unauthorized changes in proportions or addition of water shall be sufficient cause for rejection of the batch. The proportions of the approved design mix may be changed only upon specific approval of the Design Engineer. The use of admixture to improve workability will not be approved unless such admixture is a part of the design mix. Only admixture of pozzolanic, cementitious, or silicious nature will be considered.
- C. Slump: The amount of water used in the mix shall be kept at the minimum necessary to produce concrete of a workable consistency. Consistency shall be measured at the time of pouring by slump tests when directed by the Owner's Engineer. The slump shall fall within the following tabulated limits:

Type of Structure	Slump in Inches	
	Minimum	Maximum
Pavement, slabs on ground, curb, sidewalks, driveways	1-1/2	4

- D. Mixing Duration: The minimum time for mixing each batch after all materials are in the mixer shall be 1 minute for 1/2 to 1-1/2 cubic yard mixers, and 1-1/2 minutes for mixers over 1-1/2 cubic yard capacity. The mixer shall revolve at a uniform speed, a minimum of twelve revolutions after all materials have been placed therein. Neither the speed nor the volume capacity of the mixer shall exceed those recommended by the manufacturer. Excessive over-mixing requiring addition of water to preserve the consistency will not be permitted.

3.03 PLACING

- A. Time Limit: Concrete shall be placed before the initial set has occurred and in no event after it has contained its water content for more than 30 minutes. All concrete shall be placed during daylight hours, allowing sufficient time for adequately finishing the concrete surfaces during daylight hours unless approved by the Owner for nighttime construction.
- B. Placing: The concrete shall be placed by suitable equipment as nearly possible to its final location and without any segregation of the aggregate. Any free vertical drop shall not exceed three feet. The concrete shall be compacted and worked in an approved manner into all corners and angles of the forms and around reinforcement and embedded fixtures in such a manner as to prevent segregation of the coarse aggregate.
- C. Vibrator: All concrete shall be placed with the aid of mechanical vibrating equipment supplemented by hand forking or spading. Vibration shall be transmitted directly to the concrete and not through the forms. The duration of vibration at any location in the forms shall be held to the minimum necessary to produce thorough consolidation.
- D. Cold Joints: Before depositing new concrete on or against concrete which has set, the existing surfaces shall be cleaned of all laitance, foreign matter and loose particles, and covered with a neat cement grout. Grout for horizontal construction joints shall be of cement and fine aggregate in the same proportions as in the concrete to be placed, and shall be from 1/2" to 1" thickness.
- E. Finishing: Top Surfaces which are not covered by forms and which are not to be covered by additional concrete or backfill shall be carried slightly above grade and struck off by board finish.

3.04 FORMS

- A. Forms shall be of wood, steel, or other approved material, securely braced and unyielding, and of sufficient strength to hold the concrete without bulging between supports or without deviation from the neat lines as shown on the plans. Forms shall be designed to withstand the action of vibrators, and the type, shape, size, quality, and strength of all materials used for forms shall be subject to approval by the EOR.
- B. Forms shall be built to line and grade. Formwork shall be preformed in such a manner that concrete surfaces, upon removal of forms, will be free of excessive ridges and depressions. Snap ties shall be used where the concrete surface will be exposed to weathering or gases, and the void sealed with grout or caulk to the finished surface.
- C. Forms for exposed surfaces shall be coated with a non-staining mineral oil which shall be applied shortly before the concrete is placed. Forms for unexposed surfaces may be thoroughly wet in lieu of oiling, immediately before the concrete is placed.
- D. Forms shall be constructed in such a manner as to prevent seepage of concrete or water. Water stops or joint compound may be used if approved by the EOR and/or the Owner.

3.05 SLABS

- A. No special concrete or cement mortar topping course shall be used for slab finish unless shown on the drawings. The slab shall be brought to a true and even finish by power or hand-floating. Unless otherwise specified, the surface shall be floated to a true, regular surface with a wood float and shall be steel-troweled to a smooth finish. Troweling shall be the minimum to obtain a smooth, dense surface and shall not be done until the mortar has hardened sufficiently to prevent excess fine material from being worked to the surface. All floor surfaces except those which are to be painted, shall immediately after troweling, be brushed lightly with a soft bristle janitor's push broom to produce a non-slip surface. The brushing shall be sufficient to mark the surface only, without appreciably disturbing the troweled finish.

3.06 RUBBING

- A. Exposed formed surfaces shall be rubbed with carborundum brick or otherwise dressed to produce a smooth, true surface. Interior surfaces of tanks, wet wells, etc., shall be considered as exposed to a point 6" below low water level. Special care shall be taken in dressing circular structures to obtain a true circular surface.

3.07 CURING AND PROTECTING

- A. Curing: All concrete shall be kept wet by covering with water or approved water saturated covering, or by other method approved by the Owner's Engineer which will keep all surfaces continuously wet, for a period of 7 days unless otherwise directed by the Owner's Engineer. Water for curing shall be clear and entirely free from any elements which might cause staining or discoloration of the concrete. Where wood forms are left in place during curing, they shall be kept wet at all times to prevent opening at the joints and drying out of the concrete.
- B. Weather Protection: No concrete shall be mixed or placed when the air temperature in the shade and away from artificial heat is as low as 40 Fahrenheit, and falling. Concrete may be mixed and placed when the air temperature in the shade and away from artificial heat is 35 degrees Fahrenheit, and rising. Fresh concrete shall be protected from rain, flowing water and mechanical injury and all concrete shall be protected from injurious action by the sun.

3.08 JOINTS

- A. Water Stops: Water stops shall be installed at all expansion, contraction, and construction joints subject to water pressure and where indicated on the drawings. Materials for stops shall be 16 ounce copper sheets soldered into a continuous strip 6" wide, 1/8" steel plate welded into a continuous strip, or an approved alternate material.
- B. Expansion Joints: Expansion joints shall be placed as indicated on the plans. Joint material shall be installed as indicated and as directed by the Owner's Engineer.
- C. Construction Joints: Construction joints shall be located as shown on the plans and/or in accordance with an approved schedule of pours. Vertical construction joints will not be allowed unless so detailed on the drawings.

3.09 GROUTING AND PATCHING

- A. Cement for use in grouting and patching shall be non-shrinking material, free of stain-causing agents and matching the adjacent concrete in appearance. Before depositing new concrete on or against concrete that has set, existing surfaces shall be thoroughly roughened and cleaned of glaze, foreign matter, and loose particles. An epoxy coating shall be applied for bonding the new concrete to the old.

3.10 TESTS

- A. General: The quality of the concrete as to conformance to the specifications is the entire responsibility of the Contractor until it is accepted in place in the structure and verified by the final cylinder tests made by the laboratory. Arrangements for field testing shall be made by the Contractor with a laboratory hired by the Owner.
- B. Compressive Strength Test: Compressive strength tests shall be made by breaking standard 6" diameter by 12" high test specimens prepared, cured and broken in accordance with the American Society for Testing Materials Standard Methods C 31 and C 39 Latest Revision. Four specimen test cylinders shall be taken from each concrete pour of five cubic yards or more. One additional test shall be taken from each 30 cubic yards or fraction thereof in each pour in excess of 30 cubic yards. Test specimens shall be taken from manhole bottom pours and other pours of less than five cubic yards as directed by the Owner's Engineer. One cylinder from each pour shall be broken at 7 days, the remainder at 28 days. Additional

test cylinders may be ordered for determining the characteristics of a new design mix or changes in equipment or methods, and under adverse weather or curing conditions.

- C. Slump Test: Slump test shall be made in accordance with ASTM C 143, and shall be made whenever directed by the Owner's Engineer.
- D. Reports: Proper reports of all tests performed by the laboratory shall be prepared by the laboratory and submitted promptly to the Owner's Engineer. Such reports shall be properly labeled so as to identify the portions of the project into which the materials are being placed, and the results of the test indicating whether or not the test met the requirements of these specifications.

3.11 CAUSE FOR REJECTION

- A. Should the concrete fail to conform to all the requirements of this Section, the Design Engineer may require the Contractor to remove the defective concrete and reconstruct the work as directed.

END OF SECTION

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SECTION 02525

CONCRETE CURB

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. The work included under this section consists of furnishing all necessary labor, equipment, tools and materials, and in performing all operations in connection with the construction of concrete curb, concrete valley curb, concrete swale curb, median curb, and traffic separators.
- B. This work shall be performed in strict accordance with the requirements of all applicable sections of these specifications and in conformity with lines, grades, notes and typical cross sections shown on the drawings or as directed by the Design Engineer.

1.02 ALTERNATE SPECIFICATIONS

- A. Special attention is called to the fact that certain portions of the work for this project are described by reference to the "Standard Specifications". The term "Standard Specifications" refers to "The Standard Specifications for Road and Bridge Construction" approved and adopted in 2000 by the Florida Department of Transportation. In any case where a specific detail regarding materials or method of construction has been omitted in the specifications, such work shall be performed in accordance with the requirements of the "Standard Specifications".

1.03 TESTING STANDARDS

- A. One set of three cylinders are to be made and tested by an independent testing laboratory per 1000 LF or part thereof of curb for each side of road. A minimum of one set of cylinders is required for each day concrete is poured.
- B. Concrete Compressive Strength - (ASTM C-31 or ASTM C-39): 3000 psi minimum at 28 days.
- C. All damaged curb shall be replaced in-kind. Alternate curb designs that meet or exceed FDOT Specifications may be used upon approval by the Owner.

PART 2 – PRODUCTS

2.01 CONCRETE

- A. Concrete for use in the construction of curbs and other miscellaneous items shall be Class "B" concrete. Membrane curing compound may be used in lieu of the wet cure method or the initial cure may be by the wet method followed by a membrane cure. Membrane curing compound shall be applied at a uniform rate of one gallon per 200 square feet.

PART 3 – EXECUTION

3.01 GENERAL

- A. Curbs shall be constructed on a prepared smooth stabilized subgrade of uniform density. Large boulders and other obstructions shall be removed to a minimum depth of 6 inches below the finished subgrade elevation and the space shall be backfilled with sand or gravel or other suitable material which shall be thoroughly compacted by rolling or tamping. The Contractor shall furnish a template and shall thoroughly check the subgrade prior to depositing concrete.

3.02 JOINTS

- A. One-half inch expansion joints shall be placed through curbs at all inlet structures, at all radius points, and at other locations as may be required by the plans and specifications. Contraction joints shall be formed not later than the morning after the pour, and shall be placed in all concrete items at intervals not to exceed 10-feet. Joints may be either formed or sawed and shall extend the full perimeter of the exposed portion of the curb. Contraction joints shall be a minimum of 1-inch in depth. Joints shall be constructed for pavements or other items as required by the plans or specifications.

3.03 BACKFILLING

- A. After the concrete has sufficiently set (a minimum of 12 hours); the Contractor shall remove the forms and shall backfill the space on each side of the concrete. The backfill material shall be compacted and graded in a satisfactory manner.

END OF SECTION

SECTION 02600

FUSIBLE POLYVINYLCHLORIDE (FPVC) PIPE

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. This section specifies fusible polyvinylchloride pipe, including standards for dimensionality, testing, quality, acceptable fusion practice, safe handling, storage and installation of the pipe by horizontal directional drilling, directional boring, or guided boring.
- B. Contractor shall provide fusible polyvinylchloride pipe conforming to all standards and procedures, and meeting all testing and material properties as described in this specification for installation by horizontal directional drilling.
- C. Contractor shall be responsible for all installation processes and procedures associated with the installation by horizontal directional drilling in accordance with this specification and Section 02071.
- D. Pipe Supplier shall furnish fusible polyvinylchloride pipe conforming to all standards and procedures, and meeting all testing and material properties as described in this specification.
- E. Pipe shall conform to the following dimensionality and general characteristics table:

1.02 REFERENCES

- A. This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those other standards are included as references under this section as if referenced directly. In the event of a conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.
- B. Unless otherwise specified, references to documents shall mean the documents in effect at the time of design, bid, or construction, whichever is earliest. If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued.
- C. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date, regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.
- D. American Water Works Association (AWWA)
 - 1. C110 - American National Standard for Ductile-Iron and Gray-Iron Fittings, 3-inch through 48-inch, for Water and Other Liquids
 - 2. C111 - American National Standard for Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings
 - 3. C153 - AWWA Standard for Ductile-Iron Compact Fittings for Water Service
 - 4. C605 - Standard for Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water

5. C651 - Standard for Disinfecting Water Mains
 6. C905 - Standard for Polyvinyl Chloride (PVC Pressure Pipe and Fabricated Fittings, 14 in. through 48 in. (350mm Through 1200mm), for Water Distribution and Transmission
 7. M23 - AWWA Manual of Supply Practices PVC Pipe—Design and Installation, Second Edition
- E. American National Standards Institute (ANSI)
1. A21.10 - American National Standard for Ductile-Iron and Gray-Iron Fittings, 3-inch through 48-inch, for Water and Other Liquids
 2. A21.11 - American National Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
 3. A21.53 - AWWA Standard for Ductile-Iron Compact Fittings for Water Service
- F. American Society for Testing Materials (ASTM)
1. C923 - Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals
 2. D1784 - Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
 3. D2152 - Test Method for Degree of Fusion of Extruded Poly(Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion
 4. D2241 - Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)
 5. F477 - Elastomeric Seals (Gaskets) for Joining Plastic Pipe
 6. F1057 - Standard Practice for Estimating the Quality of Extruded Poly (Vinyl Chloride) (PVC) Pipe by the Heat Reversion Technique
 7. F1417 - Standard Practice for Estimating the Quality of Extruded Poly (Vinyl Chloride) (PVC) Pipe by the Heat Reversion Technique
- G. Uni-Bell PVC Pipe Association (UNI)
1. UNI-B-6 - Recommended Practice for Low-Pressure Air Testing of Installed Sewer Pipe Reinforced Concrete Manhole Structures, Pipes and Laterals
 2. UNI-PUB-08 - Tapping Guide for PVC Pressure Pipe
- H. NSF International, The Public Health and Safety Company (NSF)
1. NSF-14 - Plastics Piping System Components and Related Materials
 2. NSF-61- Drinking Water System Components--Health Effects
- I. Plastics Pipe Institute (PPI)
1. PPI TR-2 - PVC Range Composition Listing of Qualified Ingredients

- J. All piping shall be made from PVC compound conforming to cell classification 12454 per ASTM D1784.
- K. Fusion Technician shall be fully qualified by the pipe supplier to install fusible polyvinylchloride pipe of the type(s) and size(s) being used. Qualification shall be current as of the actual date of fusion performance on the project.
- L. Fusible polyvinylchloride pipe shall be used as manufactured under the trade names Fusible C-900®, Fusible C-905®, and FPVC®, for Underground Solutions, Inc., Poway, CA, (858) 679-9551. Fusion process shall be as patented by Underground Solutions, Inc., Poway, CA, Patent No. 6,982,051. Owner and Engineer are aware of no other supplier of fusible polyvinylchloride pipe that is an equal to this specified pipe supplier and products.
- M. The pipe shall be warranted for one year per the pipe supplier's standard terms. In addition to the standard pipe warranty, the fusion services shall be warranted for one year per the fusion service provider's standard terms.

1.03 SUBMITTALS

- A. All submittal shall be in conformance with Section 01340.
- B. The Contractor shall submit Shop Drawings to the Engineer of pipe in accordance with these Contract Documents. The requirements of AWWA C905 and the following supplemental requirements are applicable:
 - 1. Certified catalog-cut type dimensional drawings of all pipe included size, dimensionality, pressure class per applicable standard, color, recommended minimum bending radius, recommended maximum safe pull force, fusion technician qualification indicating conformance with this specification.
 - 2. Joint and pipe/fitting wall construction details, which indicate the type and thickness of the wall; manufacturing tolerances; performance history; and all other pertinent information required for the manufacture of the product.
 - 3. The Supplier of the pipe shall submit, through the Contractor, an affidavit that the pipe furnished for this Project comply with all applicable provisions of these Specifications.
 - 4. A complete field pressure testing, and flushing plan for review and approval prior to the performance of any of these activities.
- C. Approval of the Shop Drawings and the design report and acceptance of the certifications by the Engineer shall not relieve the Contractor of the responsibility to ensure that the pipe is designed and installed in strict accordance with the Contract Documents.
- D. The following AS-RECORDED DATA is required from the contractor and/or fusion provider to the owner or pipe supplier upon request:
 - 1. Approved datalogger device reports
 - 2. Fusion joint documentation containing the following information: pipe size and thickness, machine size, fusion technician identification, job identification, fusion joint number, fusion, heating, and drag pressure settings, heat plate temperature, time stamp, heating and cool down time of fusion, and ambient temperature.

PART 2– PRODUCTS

2.01 FUSIBLE POLYVINYLCHLORIDE PRESSURE PIPE

- A. Fusible polyvinylchloride pipe shall conform to AWWA C-905 standard. All Fusible PVC Pipe shall be Class 235 DR-18.
- B. Fusible polyvinylchloride pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.
- C. Fusible polyvinylchloride pipe shall be manufactured in a standard 40' nominal length, or custom lengths as specified.
- D. Fusible polyvinylchloride pipe shall be green in color for wastewater use.
- E. Pipe shall be marked as follows:
 - 1. Nominal pipe size
 - 2. PVC
 - 3. Dimension Ratio, Standard Dimension Ratio, or Schedule
 - 4. AWWA pressure class
 - 5. AWWA standard designation number
 - 6. Extrusion production-record code
 - 7. Trademark or trade name
 - 8. Cell Classification 12454 and/or PVC material code 1120 may also be included
- F. Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.

2.02 FUSION JOINTS

- A. Unless otherwise specified, fusible polyvinylchloride pipe lengths shall be assembled in the field with butt-fused joints. The Contractor shall follow the pipe supplier's written guidelines for this procedure. All fusion joints shall be completed as described in this specification.

2.03 CONNECTIONS AND FITTINGS FOR PRESSURE APPLICATIONS

- A. Connections shall be defined in conjunction with the coupling of project piping, as well as the tie-ins to other piping systems.
- B. All fittings shall be of ductile iron per Section 02650.

2.05 PIPE PULL HEADS

- A. Pipe pull heads shall be utilized that employ a positive through-bolt design assuring a smooth wall against the pipe cross-section at all times.
- B. Pipe pull heads shall be specifically designed for use with fusible polyvinylchloride pipe, and shall be as recommended by the pipe supplier.

2.06 PIPE LOCATION WIRE

- A. All directional drilled pipe shall be installed with two (2) insulated tracer wires with a 45 mil HDPE jacket and minimum average break load of 1150 lbs. Tracer wires shall be 12 AWG-Solid CCS EHS Copperhead Directional Drill Wire as manufactured by Copperhead Industries or approved equal. This wire shall to be continuous and brought up in the valve boxes at the ends of each line segment with splices made only by methods per the equipment manufacturer's recommendation. All miscellaneous splicing components shall be furnished and installed by the Contractor.

PART 3 – EXECUTION

3.01 DELIVERY AND OFF-LOADING

- A. All pipe shall be bundled or packaged in such a manner as to provide adequate protection of the ends during transportation to the site. Any pipe damaged in shipment shall be replaced as directed by the Owner or Engineer.
- B. Each pipe shipment should be inspected prior to unloading to see if the load has shifted or otherwise been damaged. Notify Owner or Engineer immediately if more than immaterial damage is found. Each pipe shipment should be checked for quantity and proper pipe size, color, and type.
- C. Pipe should be loaded, off-loaded, and otherwise handled in accordance with AWWA M23, and all of the pipe supplier's guidelines shall be followed.
- D. Off-loading devices such as chains, wire rope, chokers, or other pipe handling implements that may scratch, nick, cut, or gouge the pipe are strictly prohibited.
- E. During removal and handling, be sure that the pipe does not strike anything. Significant impact could cause damage, particularly during cold weather.
- F. If appropriate unloading equipment is not available, pipe may be unloaded by removing individual pieces. Care should be taken to insure that pipe is not dropped or damaged. Pipe should be carefully lowered, not dropped, from trucks.

3.02 HANDLING AND STORAGE

- A. Any length of pipe showing a crack or which has received a blow that may have caused an incident fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work. Damaged areas, or possible areas of damage may be removed by cutting out and removing the suspected incident fracture area. Limits of the acceptable length of pipe shall be determined by the Owner or Engineer.
- B. Any scratch or gouge greater than 10% of the wall thickness will be considered significant and can be rejected unless determined acceptable by the Owner or Engineer.
- C. Pipe lengths should be stored and placed on level ground. Pipe should be stored at the job site in the unit packaging provided by the manufacturer. Caution should be exercised to avoid compression, damage, or deformation to the ends of the pipe. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.
- D. Pipe shall be handled and supported with the use of woven fiber pipe slings or approved equal. Care shall be exercised when handling the pipe to not cut, gouge, scratch or otherwise abrade the piping in any way.
- E. If pipe is to be stored for periods of 1 year or longer, the pipe should be shaded or otherwise shielded from direct sunlight. Covering of the pipe which allows for temperature build-up is strictly prohibited.

Pipe should be covered with an opaque material while permitting adequate air circulation above and around the pipe as required to prevent excess heat accumulation.

- F. Pipe shall be stored and stacked per the pipe supplier's guidelines.

3.03 FUSION PROCESS

A. GENERAL

1. Fusible polyvinylchloride pipe will be handled in a safe and non-destructive manner before, during, and after the fusion process and in accordance with this specification and pipe supplier's guidelines.
2. Fusible polyvinylchloride pipe will be fused by qualified fusion technicians, as documented by the pipe supplier.
3. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine.
4. Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process. Fusion machines must incorporate the following elements:
 - a) **HEAT PLATE** - Heat plates shall be in good condition with no deep gouges or scratches. Plates shall be clean and free of any debris or contamination. Heater controls shall function properly; cord and plug shall be in good condition. The appropriately sized heat plate shall be capable of maintaining a uniform and consistent heat profile and temperature for the size of pipe being fused, per the pipe supplier's guidelines.
 - b) **CARRIAGE** – Carriage shall travel smoothly with no binding at less than 50 psi. Jaws shall be in good condition with proper inserts for the pipe size being fused. Insert pins shall be installed with no interference to carriage travel.
 - c) **GENERAL MACHINE** - Overview of machine body shall yield no obvious defects, missing parts, or potential safety issues during fusion.
 - d) **DATA LOGGING DEVICE** – An approved datalogging device with the current version of the pipe supplier's recommended and compatible software shall be used. Datalogging device operations and maintenance manual shall be with the unit at all times. If fusing for extended periods of time, an independent 110V power source shall be available to extend battery life.
5. Other equipment specifically required for the fusion process shall include the following:
 - a) Pipe rollers shall be used for support of pipe to either side of the machine
 - b) A weather protection canopy that allows full machine motion of the heat plate, fusion assembly and carriage shall be provided for fusion in inclement, extreme temperatures, and /or windy weather, per the pipe supplier's recommendations.
 - c) An infrared (IR) pyrometer for checking pipe and heat plate temperatures.
 - d) Fusion machine operations and maintenance manual shall be kept with the fusion machine at all times.

- e) Facing blades specifically designed for cutting fusible polyvinylchloride pipe shall be used.

B. JOINT RECORDING

- 1. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine. The fusion data logging and joint report shall be generated by software developed specifically for the butt-fusion of fusible polyvinyl chloride pipe. The software shall register and/or record the parameters required by the pipe supplier and these specifications. Data not logged by the data logger shall be logged manually and be included in the Fusion Technician's joint report.

3.04 DRILLING OPERATIONS

A. GENERAL

- 1. Bore path and alignment are as indicated in the contract documents. The path of the bore may be modified based on field and equipment conditions. Entry and exit locations and control-point elevations shall be maintained as indicated in the contract documents.
- 2. Bend radii shown in the contract documents are minimum allowable radii and shall not be reduced.

B. LOCATION AND PROTECTION OF UNDERGROUND UTILITIES

- 1. Correct location of all underground utilities that may impact the HDD installation is the responsibility of the Contractor, regardless of any locations shown on the drawings or previous surveys completed.
- 2. Utility location and notification services shall be contacted by the Contractor prior to the start of construction.
- 3. All existing lines and underground utilities shall be positively identified, including exposing those facilities that are located within an envelope of possible impact of HDD installation as determined for the project specific site conditions. It is the Contractor and HDD system operator's responsibility to determine this envelope of safe offset from existing utilities. This will include, but is not limited to, soil conditions and layering, utility proximity and material, HDD system and equipment, and foreign subsurface material.

C. SITE LOCATION PREPARATION

- 1. Work site as indicated on drawings shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made
- 2. Contractor shall confine all activities to designated work areas.

D. DRILLING LAYOUT AND TOLERANCES

- 1. The drill path shall be accurately surveyed with entry and exit areas placed in the appropriate locations within the areas indicated on drawings. If using a magnetic guidance system, drill path will be surveyed for any surface geomagnetic variations or anomalies.
- 2. Instrumentation shall be provided and maintained at all times that accurately locates the pilot hole, measures drill-string axial and torsional loads and measures drilling fluid discharge rate and pressure.

3. Entry and exit areas shall be drilled so as not to exceed the bending limitations of the pipe as recommended by the pipe supplier.

E. PILOT HOLE BORE

1. Pilot hole shall be drilled along bore path. In the event that the pilot bore does deviate from the bore path, it may require contractor to pull-back and re-drill from the location along bore path before the deviation.
2. The Contractor shall limit curvature in any direction to reduce force on the pipe during pull-back. The minimum radius of curvature shall be no less than that specified by the pipe supplier and as indicated on the drawings.

F. REAMING

1. After successfully completing the pilot hole, the bore hole shall be reamed to a diameter which meets the requirements of the pipe being installed. The following table is offered as an estimated guide:

Nominal Pipe Diameter	Bore Hole Diameter
< 8 inches	Pipe Dia. + 4 inches
8 inches to 24 inches	Pipe Dia. X 1.5
> 24 inches	Pipe Dia. + 12 inches

2. Multiple reaming passes shall be used at the discretion of the Contractor and shall conform to his specification.
3. In the event of a drilling fluid fracture, returns loss or other loss of drilling fluid, the Contractor shall be responsible for restoring any damaged property to original condition and cleaning up the area in the vicinity of the damage or loss.

3.05 PIPE PULL-BACK AND INSERTION

- A. Pipe shall be fused prior to insertion, if the site and conditions allow, into one continuous length.
- B. Contractor shall handle the pipe in a manner that will not over-stress the pipe prior to insertion. Vertical and horizontal curves shall be limited so that the pipe does not bend past the pipe supplier's minimum allowable bend radius, buckle, or otherwise become damaged. Damaged portions of the pipe shall be removed and replaced.
- C. The pipe entry area shall be graded as needed to provide support for the pipe and to allow free movement into the bore hole.
 1. The pipe shall be guided into the bore hole to avoid deformation of, or damage to, the pipe.
 2. The fusible polyvinylchloride pipe may be continuously or partially supported on rollers or other Owner and Engineer approved friction decreasing implement during joining and insertion, as long as the pipe is not over-stressed or critically abraded prior to, or during installation.
 3. A swivel shall be used between the reaming head and the fusible polyvinylchloride pipe to minimize torsion stress on the pipe assembly.
- D. Buoyancy modification shall be at the sole discretion of the Contractor, and shall not exceed the pipe supplier's guidelines in regards to maximum pull force or minimum bend radius of the pipe. Damage caused by buoyancy modifications shall be the responsibility of the Contractor.

- E. Once pull-back operations have commenced, the operation shall continue without interruption until the pipe is completely pulled through the bore hole.
- F. The pipe shall be installed in a manner that does not cause upheaval, settlement, cracking, or movement and distortion of surface features. Any damages caused by the Contractor's operations shall be corrected by the Contractor.

3.06 INSTALLATION CLEANUP

- A. Following the installation, the project site shall be returned to a condition equal to or better than the pre-construction condition of the site. All excavations will be backfilled and compacted per the construction documents and jurisdictional standards. All pavement and hardscape shall be repaired per applicable jurisdictional standards, excess materials shall be removed from the site, and disturbed areas shall be re-landscaped. All drilling fluid shall be properly disposed of per these specifications and all applicable jurisdictional laws.
- B. Contractor shall verify that all utilities, structures, and surface features in the project area are sound.

3.07 PREPARATION PRIOR TO MAKING CONNECTIONS INTO EXISTING PIPING SYSTEMS

- A. Approximate locations for existing piping systems are shown in the construction documents. Prior to making connections into existing piping systems, the contractor shall:
 - 1. Field verify location, size, piping material, and piping system of the existing pipe.
 - 2. Obtain all required fittings, which may include saddles, sleeve type couplings, flanges, tees, or others as shown in the construction documents.
 - 3. Have installed all temporary pumps and/or pipes in accordance with established connection plans.
- B. Unless otherwise approved, new piping systems shall be completely assembled and successfully tested prior to making connections into existing pipe systems.

3.08 PIPE SYSTEM CONNECTIONS

- A. Pipe connections shall be installed per applicable standards and regulations, as well as per the connection manufacturer's guidelines and as indicated in the construction documents. Pipe connections to structures shall be installed per applicable standards and regulations, as well as per the connection manufacturer's guidelines.

3.09 TESTING

- A. The Contractor shall perform air pressure test in accordance with the manufacture's guidelines prior to pipe pullback. Air pressure test shall be a maximum of 4 psi or per the pipe manufacturer's recommendation.
- B. After installation of the FPVC pipe, but prior to connection to any other pipe, the FPVC pipe shall be hydrostatically pressure tested. Testing shall be as specified in section 02650. The allowable leakage formula is based on 18' length between unfused pipe joints. Therefore, the calculated allowable leakage shall be adjusted by dividing the calculated allowable leakage by the length of the fused FPVC pipe divided by 18.

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SECTION 02650

FORCE MAINS

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall supply all labor, equipment, materials and incidentals necessary to install and test all force mains and appurtenances as shown on the Drawings and as specified herein.
- B. This work shall include, but not be limited to the following: PVC pipe, high density polyethylene (HDPE), fusible polyvinylchloride (FPVC), valves and fittings. All concrete thrust blocks and restrained joints required for all types of piping. Also all excavation, backfilling, sheeting, slope protection, drainage, concrete work, riprap, grading, disinfection, testing and all other work necessary to complete the construction and installation and testing of the piping.
- C. Unless otherwise shown on the drawings, all buried force mains shall be AWWA C900/C905 PVC. Force mains installed by directional drill shall be as specified in Section 02071.
- D. Valves and appurtenances shall be as specified in Section 15100.

1.02 SUBMITTALS

- A. Submit shop drawings to the Engineer for review in accordance with the Section 01340 for all pipe, fittings, restrained joints and appurtenances.
- B. The pipe manufacturer shall inspect all pipe joints for out-of-roundness and pipe ends for squareness. The manufacturer shall furnish to the Engineer a notarized affidavit stating all pipe meets the requirements of ASTM, ASCE, ANSI, etc., these Specifications, and the joint design with respect to square ends and out-of-round joint surfaces.
- C. Furnish in duplicate to the Engineer sworn certificates that all tests and inspections required by the Specifications under which the pipe is manufactured have been satisfied.
- D. The Supplier of the pipe shall submit, through the Contractor, a Certificate of Compliance that the pipe, fittings and other products or materials furnished for this project comply with all applicable provisions of these Specifications.
- E. A complete field pressure testing and flushing, plan for review and approval prior to the performance of any of these activities.

1.03 INSPECTION

- A. All pipe and fittings to be installed under this contract may be inspected at the site of manufacture for compliance with these Specifications by an independent laboratory selected by the Owner. The manufacturer's cooperation shall be required in these inspections. The cost of inspection by an independent laboratory will be borne by the Owner.

PART 2 - PRODUCTS

2.01 DUCTILE IRON FITTINGS

- A. Ductile iron fittings for buried service, where required due to conflicts, shall meet the following requirements:
1. The Contractor shall provide a polyethylene encasement over all buried ductile iron fittings. The material, installation and workmanship shall conform to applicable sections of AWWA C105/ANSI Standard A21.5. Installation methods A or B shall be employed using flat tube polyethylene. The Contractor shall make provisions to keep the polyethylene from direct exposure to sunlight prior to installation; and backfilling following installation shall be completed without delay to avoid exposure to sunlight. Polyethylene shall be color coded green.
 2. Fittings for buried service shall be mechanical joint ductile iron with a minimum pressure rating of 350 psi. Fittings shall meet the requirements of AWWA C153/ANSI A21.53 as applicable. Rubber gasket joints shall conform to AWWA C111/ANSI A21.11 for mechanical and push-on type joints. All fittings shall be mechanically restrained.
 3. Fittings shall be compact, ductile iron, fusion bonded epoxy coated inside and out per City of Venice Engineering Department Standard Details and meet the requirements of ANSI/AWWA C116/A21.16 standards.
 4. All fittings shall be furnished with all joint material (bolts, nuts, gaskets and glands) complete, ready for installation.
 5. All fittings shall have distinctly cast upon them the manufacturer's identification, pressure rating, nominal diameter and the number of degrees or fraction of a circle on all bends. Ductile iron fittings shall have the letters "DI" or "DUCTILE" cast on them.
- B. Fittings shall be as manufactured by the American Cast Iron Pipe Company, U.S. Pipe and Foundry Company, or equal.

2.02 POLYVINYL CHLORIDE PIPE AND FITTINGS FOR OPEN CUT INSTALLATION

- A. Class-Rated Polyvinyl Chloride (PVC) Pipe:
1. Class-rated PVC pipe and accessories four to twelve inches (4"-12") in diameter, where shown or as specified on the Drawings, shall meet the requirements of AWWA Specification C900 "Polyvinyl Chloride (PVC) Pressure Pipe." Pipe shall be Class 235, meeting requirements of Dimension Ratio (DR) 18 with ductile iron outside diameters. Each length of pipe shall be hydrotested to four (4) times its class pressure by the manufacturer in accordance with AWWA C900/C905.
 2. Class-rated PVC pipe fourteen to 24 inches (14"-24") in diameter shall meet the requirements of AWWA Specification C905. Pipe shall be Class 235 meeting the requirements of DR 18.
- B. Joints:
1. Joints for buried PVC pipe 4" and greater and for pressure rated pipe less than 4" shall be of the rubber gasket push-on type. The bell shall consist of an integral wall section with a solid cross-

section elastomeric ring which shall meet requirements of ASTM D1869. The thickened bell section shall be designed to be at least as strong as the pipe wall. Lubricant furnished for lubricating joints shall be nontoxic, shall not support the growth of bacteria, shall have no deteriorating effects on the gasket or pipe material, and shall not impart color, taste, or odor to the water.

C. Fittings:

1. All fittings for class-rated PVC pipe four inches (4") in diameter and greater shall be ductile iron with mechanical joints and polyethylene encased as specified in paragraph 2.01, A. above.
2. The manufacturer of the pipe shall supply all polyvinyl chloride accessories as well as any adaptors and/or specials required to perform the work as shown on the Drawings and specified herein. Standard double bell couplings will not be accepted where the pipe will slip completely through the coupling.

2.03 RESTRAINED JOINTS

- A. All buried piping and fittings shall be restrained with mechanical restrainers in accordance with the restrained joint table provided in the Drawings. Pipes subject to pressure or being fed by a pumping system shall be restrained based on a 150 psi working pressure. Restrained joint length indicated in the Tables represents the length on all sides of fittings and valves within which all joints must be restrained. As a minimum, the joints at all fittings and valves shall be restrained.
- B. Restrained joints shall be capable of holding against withdrawal for line pressures 50 percent above the normal working pressure but not less than 150 psi. The pipe and fittings shall be restrained push-on joints or restrained mechanical joints.
- C. 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 cut out that corresponds with the minimum specified wall thickness for the rest of the pipe.
- D. Ductile iron mechanical joint fittings on ductile iron pipe shall be restrained with EBAA Iron Mega-Lug Series 1100 or Ford Uni-Flange Series 1400 restrainers. Ductile iron pipe with push-on joints shall be restrained with EBAA Iron Series 1100 HD or Ford Uni-Flange 1390-C restrainers. The restraining device and Tee head bolts shall be manufactured of high strength ductile iron meeting ASTM A-536, Grade 65-45-12. Clamping bolts and nuts shall be manufactured of corrosion resistance high strength, low alloy CORTEN steel meeting the requirements of ASTM A-242.
- E. Ductile iron mechanical joint fittings used with PVC pipe shall be restrained with the Uni-Flange Corp. Series 1500 Restrainer or EBAA Iron, Inc., Series 2000PV Mechanical Joint Restraint Gland. PVC pipe with push-on joints shall be restrained with EBAA Iron Series 1500/2800 or Ford Uni-Flange 1390 restrainers. The restraining device and Tee head bolts shall be manufactured of high strength ductile iron meeting ASTM A-536, Grade 65-45-12. Clamping bolts and nuts shall be manufactured of corrosion resistant high strength, low alloy CORTEN steel meeting the requirements of ASTM A-242.
- F. Thrust blocks shall be as detailed on the Drawings. Thrust blocks for pipe 10" and smaller shall be precast. Thrust blocks for pipe 12" and greater shall be poured in place.
- G. Where ductile iron pipe manufactured with restrained joints is utilized, all restrained joints shall be fully extended and engaged prior to backfilling the trench and pressurizing the pipe.
- H. Mechanical joint ductile iron glands shall not be substituted for the restrained joints manufacturer's standard glands.

PART 3 - EXECUTION

3.01 GENERAL

- A. Care shall be taken in loading, transporting, and unloading to prevent injury to the pipe or coatings. Pipe or fittings shall not be dropped. All pipe or fittings shall be examined before laying, and no piece shall be installed which is found to be defective. Any damage to the pipe coatings shall be repaired as directed by the Engineer.
- B. All pipe and fittings shall be subjected to a careful inspection just prior to being laid or installed. 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 at no additional expense to the Owner. 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. All buried piping shall be installed to the lines and grades as shown on the Drawings. All underground piping shall slope uniformly between joints where elevations are shown.
- D. Contractor shall exercise extreme care when constructing piping to shore up and protect from damage all existing underground water lines and power lines, and all existing structures.

3.02 DUCTILE IRON FITTINGS

- A. Ductile iron fittings shall be installed in accordance with requirements of AWWA Standard Specification C600 except as otherwise provided herein. A firm, even bearing throughout the length of the fittings shall be constructed by tamping selected material at the sides of the fittings up to the springline. **BLOCKING WILL NOT BE PERMITTED.**
- B. All fittings shall be sound and clean before laying. When laying is not in progress, including lunchtime, the open ends of the fittings shall be closed by watertight plug or other approved means. Good alignment shall be preserved in laying. 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 which may be encountered upon opening the trench. Solid sleeves shall be used only where approved by the Engineer.
- C. All valves, fittings and other appurtenances needed on the pipe lines shall be set and jointed as indicated on the Drawings or as required by the manufacturer.

3.03 HANDLING

- A. Care shall be taken in loading, transporting, and unloading to prevent injury to the pipe, fittings or coatings. Pipe or fittings shall not be dropped. Pipe and fittings shall be examined before installation, and no piece shall be installed which is found to be defective. Any damage to the coatings shall be repaired as directed by the Engineer.
- B. All fittings shall be subjected to a careful inspection and hammer test just prior to being installed.
- C. 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 at no additional expense to the Owner.

3.04 PVC PIPE

- A. PVC piping shall be installed in strict accordance with the manufacturer's instructions. The pipe shall be backfilled with selected fine excavated material as shown on the Drawings and thoroughly compacted to one foot above the top of the pipe and thereafter backfilled as specified in Section 02221.
- B. Solvent weld joint shall be permitted to cure for a minimum of 24 hours prior to pressurizing the pipe.
- C. All open-cut PVC pipe 4" and greater shall be installed with one (1) insulated tracer wire. Tracer wires shall be solid 12 AWG Copperhead #1230HS Wire as manufactured by Copperhead Industries or approved equal. This wire shall to be continuous and brought up in the valve boxes at the ends of each line segment with splices made only by methods per the equipment manufacturer's recommendation. All miscellaneous splicing components shall be furnished and installed by the Contractor.

3.05 JOINING PIPE TO MANHOLES OR OTHER STRUCTURES

- A. Structure Connection: Approved standard groutable PVC-to-manhole fitting or a flexible boot as manufactured by the NPC Kor-N-Seal, Harrington Corporation or equal shall be used at the manhole to pipe connection. The boot shall be manufactured of neoprene or isoprene compounds formulated and tested to resist deterioration due to sewage, hydrogen sulfide, oils, fats, greases, petroleum products and by-products. The connection at the manhole wall shall be flexible and water-tight. Any annular space inside the manhole at the connection shall be filled with approved caulking material or joint filler.
- B. For manholes greater than or equal to 20 feet deep, all sewer connections to precast manholes shall be grouted on the interior and on the exterior in addition to the use of the rubber boot. The interior and exterior of connections to fiberglass manholes greater than or equal to 20 feet deep shall be glassed in.
- C. No pipe to manhole connection shall occur within 12-inches of a manhole-to-manhole section joint.
- D. No leakage will be allowed at the manhole to pipe connection. If leakage is found, the Contractor shall repair and/or replace the manhole to pipe boot/fitting at no additional cost to the Owner.

3.06 PIPE SUPPORTS

- A. Supports:
 - 1. All piping shall be properly and adequately supported. Hangers, supports, base elbows and tees, and concrete piers and pads shall be provided as indicated on the Drawings. If the method of support is not indicated on the Drawings, exposed piping shall be supported by hangers wherever the structure is suitable and adequate to carry the superimposed load. The Engineer shall determine if the structure is adequate. Supports shall be placed approximately 8 feet on centers and at each fitting.
 - 2. Hangers shall be attached to the structure, where possible, by beam clamps and approved concrete inserts set in the forms before concrete is poured. Where this method is impractical, anchor bolts with expanding lead shields, Rawl Drives, or other approved means, shall be used. No lag screws or malleable iron expansion shields will be permitted.
 - 3. Where hangers cannot be used, the Contractor shall provide pipe saddle supports with pipe column and floor flange.

3.07 UNDERGROUND PIPE INSTALLATION

- A. Alignment and Grade: The pipelines shall be laid and maintained to lines and grades established by the Drawings and Specifications, with fittings, valves and hydrants at the required locations unless otherwise approved by the Engineer. Valve-operating stems shall be oriented to allow proper operation.
- B. Proper implements, tools, and facilities shall be provided and used for the safe and convenient performance of the work. All pipe, fittings, valves, and hydrants shall be lowered carefully into the trench by means of a derrick, ropes, or other suitable tools or equipment in such a manner as to prevent damage to pipeline material and protective coatings and linings. Under no circumstances shall pipeline materials be dropped off or dumped into the trench. The trench should be dewatered prior to installation of the pipe.
- C. All pipe fittings, valves, hydrants, and other appurtenances shall be examined carefully for damage and other defects immediately before installation. Defective materials shall be marked and held for inspection by the Engineer who may prescribe corrective repairs or reject the materials.
- D. As each length of pipe is placed in the trench, the joint shall be assembled and the pipe brought to correct line and grade. The pipe shall be secured in place with approved backfill material.
- E. Joint Assembly: Pipe joints shall be assembled in accordance with the Manufacturer's instructions and the requirements of ANSI/AWWA C600.
- F. Pipe Deflection: When it is necessary to deflect pipe from a straight line in either the vertical or horizontal plane, or where long radius curves are permitted, the amount of deflection shall not exceed that shown in ANSI/AWWA C600.
- G. Pipe Cutting: Cutting pipe for the insertion of valves, fittings, or closure pieces shall be done in a neat, workmanlike manner without creating damage to the pipe or lining. Ductile cast iron may be cut using an abrasive pipe saw, rotary wheel cutter, guillotine pipe saw, milling wheel saw, or oxyacetylene torch. Cut ends and rough edges shall be ground smooth and for push-on joint connections, the cut end shall be beveled.
- H. Thrust Restraint:
 - 1. All plugs, caps, tees, and bends shall be suitably restrained by attaching clamps or restrained joints as specified.
 - 2. Thrust-restraint design pressure shall be equal to the test pressure of the line.
 - 3. Tie rods clamps, or other components of dissimilar metal shall be protected against corrosion by hand application of a bituminous coating or by encasement of the entire assembly with 8-mil thick, loose polyethylene film in accordance with ANSI/AWWA C105.

3.08 ABOVE GROUND PIPE INSTALLATION

- A. Install pipe in horizontal or vertical planes, parallel or perpendicular to building surfaces unless otherwise shown. Support pipe and fittings to prevent strain on joints, valves and equipment. Install flanged joints so that contact faces bear uniformly on the gasket. Tighten bolts with relatively uniform stress.
- B. Bolt holes of flanges shall straddle the field horizontal and field vertical centerlines of the pipe. The Contractor shall clean flanges by wire brushing before installing flanged fittings. The Contractor shall clean flange bolts and nuts by wire brushing.

- D. If flanges leak under pressure testing, loosen or remove the nuts and bolts, reset or replace the gasket, reinstall or retighten the bolts and nuts, and retest the joints. Flanged joints shall be watertight.
- E. Care shall be taken in bolting flanged joints so that there is no restraint on the opposite end of one piece which would induce stresses in the pipe or fitting or prevent pressure from being evenly and uniformly applied upon the gasket. The pipe or fitting shall be free to move in any direction while bolting. Bolts shall be gradually tightened, each in turn, at a uniform rate of gasket compression around the entire flange.

3.09 PRESSURE AND LEAKAGE TESTS OF UNDERGROUND PUSH-ON JOINT PVC PRESSURE PIPING

- A. Field tests shall be made to confirm compliance with the contract and to establish compliance with the technical provision. The test shall be performed by the Contractor as herein specified. All piping, and equipment shall be tested in the field in the presence of the Engineer or his authorized assistant, in the manner prescribed in the Sections of these Specifications pertaining to such installation.
- B. Prior to pressure testing, all mains shall be flushed and pigged to remove all sand and other foreign matter. The velocity of the flushing water shall not be less than 2 feet per second. Flushing shall be terminated at the direction of the Engineer. The Contractor shall dispose of the flushing water without causing a nuisance or property damage.
- C. Pressure and Leakage Test of Underground Piping.
 - 1. Hydrostatic pressure and leakage tests shall conform with Section 4 of AWWA C600 Specification with the exception that the Contractor shall furnish all gauges, meters, pressure pumps and other equipment needed to test the line. Pressure tests for HDPE pipe shall be as specified in section 15066.
 - 2. The pressure required for the field hydrostatic pressure and leakage test shall be 150 psi. The Contractor shall provide temporary plugs and blocking necessary to maintain the required test pressure. Corporation cocks at least 2 inches in diameter, pipe riser and angle globe valves shall be provided at each pipe dead-end in order to bleed air from the line. The cost of these items shall be included as part of testing.
 - 3. All leaks evident at the surface shall be repaired and leakage eliminated regardless of 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. The pipe lines shall be tested in such sections as may be directed by the Engineer by shutting valves or installing temporary plugs as required. The line shall be filled with water and all air removed and the test pressure shall be maintained in the pipe for the entire test period by means of a force pump to be furnished by the Contractor. Accurate means shall be provided for measuring the water required to maintain this pressure. The amount of water required is a measure of the leakage.
 - 4. During the duration of the test, the line pressure shall not be permitted to drop more than 5 psi below the test pressure. Once the pressure drops 5 psi below the test pressure, the line shall be refilled until the test pressure is restored.
 - 5. The amount of leakage which will be permitted shall be in accordance with AWWA, C600 Standards for all pressure. No pipe installation shall be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{SD(P)^{1/2}}{1000}$$

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148,000

In which L is the allowable leakage in gallons per hour; S is the length of pipe tested, in feet; D is the nominal diameter of the pipe, in inches; and P is the average test pressure during the leakage test, in pounds per square inch gauge. The duration of the leakage test shall be two (2) hours for pressurized pipes, and one (1) hour for force mains and gravity flow pipes. The equation is based on 18' pipe lengths and shall be adjusted accordingly for other lengths between gasketed joints.

6. The Contractor must submit his plan for testing to the Engineer for review at least ten (10) days before starting the test. The Contractor shall remove and adequately dispose of all blocking material and equipment after completion and acceptance of the field hydrostatic test, unless otherwise directed by the Engineer. Any damage to the pipe coating shall be repaired by the Contractor. Lines shall be totally free and clean prior to final acceptance.

END OF SECTION

SECTION 15066

HIGH DENSITY POLYETHYLENE (HDPE) PIPE

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. This Section includes materials and methods of installation of HDPE pipe and fittings 4” in diameter and greater for force mains.

1.02 SUBMITTALS

- A. Submit shop drawings to the Engineer for review in accordance with the Section 01340 for all pipe and appurtenances.
- B. Furnish in duplicate to the Engineer sworn certificates that all tests and inspections required by the Specifications under which the pipe is manufactured have been satisfied.
- C. Provide a statement in writing from the HDPE pipe manufacturer that it is listed with the Plastic Pipe Institute as a qualified extruder for the polyethylene resin being used to manufacture the pipe for this project.
- D. Provide a certified statement from the pipe supplier that those personnel responsible for fusing the pipe have been trained and certified.
- E. Contractor shall also submit the following to the Engineer for approval:
 - 1. Certified dimensional drawings/profile of all pipe, specials and fittings.
 - 2. Details of fittings and specials such as elbows, wyes, tees, outlets, connections, test bulkheads, bosses and nozzles or other specials where shown on the Construction Drawings, which indicate amount and position of reinforcement. All fittings and specials shall be properly reinforced to withstand the internal pressure both circumferential and longitudinal, and the external loading conditions as indicated in the Contract Documents. Shop Drawings shall clearly detail special castings indicating all pertinent dimensions.
 - 3. The Supplier of the pipe shall submit, through the Contractor, an Certificate of Compliance that the pipe, fittings and other products or materials furnished for this project comply with all applicable provisions of these Specifications.

1.03 REFERENCE DOCUMENTS

- A. AWWA C906, Standard for Polyethylene (PE) Pressure Pipe and Fittings.
- B. AWWA C901, Standard for Polyethylene (PE) Pressure Pipe and Fittings.
- C. ASTM D1248-84, Polyethylene Plastics Molding and Extrusion Materials.
- D. ASTM D3350-84, Polyethylene Plastic Pipe and Fittings Material.
- E. ASTM F714-85, Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter.

PART 2 – PRODUCTS

2.01 HIGH DENSITY POLYETHYLENE PIPE

A. General:

1. All High Density Polyethylene (HDPE) shall be manufactured by Driscopipe, a subsidiary of Phillips Petroleum Company; PLEXCO, Division of Chevron Chemical Company; ISCO or approved equal. All HDPE piping system components shall be the products of one manufacturer.
2. All HDPE pipe 4" and greater shall have a Ductile Iron Pipe Sizing (DIPS) outside diameter unless otherwise specified in the Contract Documents.

B. HDPE Pipe Specifications

1. High Density Polyethylene pipe 4-inches diameter and larger shall conform to material standard ASTM D3350 345434 C cell classification rated as PE 3408 by the Plastics Pipe Institute. Minimum pressure rating shall be 200 psi DR 9. All pressure ratings are at standard test conditions and temperature of 73.4 degrees F (23 degrees C).
2. The polyethylene compound shall be suitably protected against degradation by ultraviolet light by means of carbon black, well dispersed by pre-compounding in a concentration of not less than 2 percent.
3. The maximum allowable hoop stress shall be 800 psi at 73.4 degrees F.
4. The pipe manufacturer shall be listed with the Plastic Pipe Institute as meeting the recipe and mixing requirements of the resin manufacturer for the resin used to manufacture the pipe in this project.
5. All pipe shall be color coded for the intended service. For pipe 6" and greater, color coding shall be accomplished through an exterior surface of the required color or through striping. Pipe and tubing less than 6" shall be manufactured entirely in the required color. The color coding shall be permanently co-extruded on pipe outside surface as part of the pipe's manufacturing process. Painting HDPE pipe to accomplish color coding is not permitted. Color coding shall be as follows:
 - a. Sewer - green

C. Fittings.

1. Where shown on the drawings, fittings for HDPE pipe, 4" and larger shall be ductile iron mechanical joint as specified in Section 02650. Connection to the mechanical joint fittings shall be accomplished using a mechanical joint adapter kit. The mechanical joint adapter shall be fused onto the pipe and shall result in a restrained joint with a pressure rating no less than 150 psi. The D.I./HDPE mechanical joint adaptor shall consist of:
 - a. A molded or fabricated HDPE mechanical joint transition fitting.
 - b. A rubber gasket.
 - c. A mechanical joint backup drive ring.
 - d. Corten mechanical joint tee bolts.
2. The HDPE transition fittings shall be molded by the manufacturer of the HDPE pipe and shall be fully pressure rated to match the DR pressure rating of the adjoining pipe. If molded fittings are not available in certain sizes, the HDPE transition fitting shall be fabricated by the manufacturer of the HDPE pipe and shall have a minimum pressure rating of 150 psi.

D. HDPE Pipe Jointing Method

1. HDPE pipe shall be jointed by the butt-fusion process in accordance with pipe manufacturer's directions. Contractor shall provide butt-fusion technicians who are trained and certified by the HDPE pipe manufacturer to complete the project. The date of technician certification shall not exceed 12 months before commencing construction.
2. All HDPE pipe joined by butt-fusion shall be made from the same class and type of raw material made by the same raw material supplier.
3. Butt-fusion means the butt-joining of the pipe by softening the aligned faces of the pipe ends in a suitable apparatus and pressing them together under controlled pressure.
4. The internal and external beads resulting from the butt-fusion process shall be visible and examined for penetration 360 degrees around the pipe diameter.
5. Short pieces of pipe between valves and fittings shall be PVC with all joints restrained for sizes 4-inches and larger. For 2 and 3-inch, the short pieces shall be brass with IP threads and DI, HDPE or brass fittings and all joints restrained.

2.02 LOCATOR WIRE

- A. All HDPE pipe 4" and greater shall be installed with two (2) insulated tracer wires with a 45 mil HDPE jacket and minimum average break load of 1150 lbs. Tracer wires shall be 12 AWG-Solid CCS EHS Copperhead Directional Drill Wire as manufactured by Copperhead Industries or approved equal. This wire shall to be continuous and brought up in the valve boxes at the ends of each line segment with splices made only by methods per the equipment manufacturer's recommendation. All miscellaneous splicing components shall be furnished and installed by the Contractor.

PART 3 – EXECUTION

3.01 GENERAL

- A. All HDPE pipe shall be cut, fabricated, and installed in strict conformance with the pipe manufacturer's recommendations. Joining, laying, and pulling of polyethylene pipe shall be accomplished by personnel experienced in working with polyethylene pipe. The pipe supplier shall certify in writing that the Contractor is qualified to join, lay, and pull the pipe or representative of the pipe manufacturer shall be on site to oversee the pipe joining. Expenses for the representative shall be paid for by the Contractor.

3.02 HANDLING AND STORAGE

- A. All pipe and accessories shall be loaded and unloaded by lifting with hoists or by skidding in order to avoid shock or damage. Under no circumstances shall materials be dropped. Pipe handled on skidways shall not be rolled or skidded against pipe on the ground. Slings, hooks or pipe tongs shall be padded and used in such a manner as to prevent damage to the exterior surface or interior of the pipe.
- B. Materials, if stored, shall be kept safe from damage. The interior as well as all sealing surfaces of all pipe and other appurtenances shall be kept free from dirt or foreign matter at all times.
- C. Pipe stored outside and exposed to prolonged periods of sunlight shall be covered with canvas or other opaque material. Air circulation shall be provided under covering.
- D. Pipe shall not be stacked higher than the limits recommended by the manufacturer. The bottom tiers shall be kept off the ground on timbers, rails, or concrete. Pipe shall not be stored close to heat sources.

3.03 PIPE INSPECTION

- A. The Contractor shall obtain from the pipe manufacturer a certificate of inspection to the effect that the pipe and fittings supplied for this Contract have been inspected at the plant and that they meet the requirements of these specifications. The Contractor shall submit these certificates to the Engineer prior to installation of the pipe materials. All pipe and fittings shall be subjected to visual inspection at time of delivery and before they are lowered into the trench to be laid. Joints or fittings that do not conform to these specifications will be rejected and must be removed immediately by the Contractor. The entire product of any plant may be rejected when, in the opinion of the Owner, the methods of manufacture fail to secure uniform results, or where the materials used are such as to produce inferior pipe or fittings.

3.04 TRANSPORTATION

- A. Care shall be taken during transportation of the pipe that it is not cut, kinked, or otherwise damaged.

3.05 HANDLING PIPE

- A. The handling of the joined pipeline shall be in such a manner that the pipe is not damaged by dragging it over sharp and cutting objects. Ropes, fabric, or rubber-protected slings and straps shall be used when handling pipes. Chains, cables, or hooks inserted into the pipe ends shall not be used. Two slings spread apart shall be used for lifting each length of pipe. Pipe or fittings shall not be dropped onto rocky or unprepared ground. Slings for handling the pipeline shall not be positioned at butt-fused joints. Sections of the pipes with cuts and gouges exceeding 10 percent of the pipe wall thickness or kinked sections shall be removed and the ends rejoined. The dragging of fused HDPE pipe along asphalt and concrete paving shall not be permitted.
- B. The open ends of all sections of joined and/or installed pipe (not in service) shall be plugged at night to prevent animals or foreign material from entering the pipe line or pipe section.
- C. Waterproof nightcaps of approved design may be used but they shall be so constructed that they will prevent the entrance of any type of natural precipitation into the pipe and will be fastened to the pipe in such a manner that the wind cannot blow them loose.
- D. The practice of stuffing cloth or paper in the open ends of the pipe will not be permitted.
- E. Where possible, the pipe shall be raised and supported at a suitable distance from the open end such that the open end will be below the level of the pipe at the point of support.

3.06 LAYING PIPE

- A. HDPE Pipe by Directional Boring - See Section 02071.
- B. Joints:
 - 1. All HDPE pipe shall be jointed by the heat fusion process which produces homogeneous, seal, leak tight joints.
 - 2. Restrained mechanical joint adapter kits shall be provided at valves, fittings and transition to other pipe materials.
- C. The pipe fusion machine shall be a self-contained hydraulic fusion machine capable of butt fusing HDPE pipe. The carriage must be removable from the chassis for in-ditch use. The machine must be compatible with an electronic data recording device. Accessories will include all butt fusion inserts for the specified range of pipe sizes, a pyrometer kit for checking the surface temperature of the heater, extension cord (25' minimum), and hydraulic extension hoses (minimum of four). The butt fusion machine will be McElroy, or approved equivalent. In areas where there may be insufficient space to layout the entire length of fused pipe to be pulled-back, the Contractor shall utilize a continuous HDPE pipe fusion equipment such as a PolyHorse by McElroy or other means in order to fuse the length of pipe necessary for the

installation. The Contractor shall be responsible for securing and obtaining permission/permits from adjacent property if necessary, for staging and/or fusing of the pipe and HDD equipment at no additional cost to the Owner.

- D. The Data Recording System shall consist of a hand-held, battery operated computer that records and documents the profile of each fusion joint made. This device shall be rugged, portable and weather-resistant. It will be compatible with the fusion equipment. The data recorded will include the date and time, machine identification and model, pipe size, heater plate surface temperature, and hydraulic cylinder pressure of each fusion process. The recording device will have the ability to produce printouts as well as download the information to an IBM compatible personal computer.
- E. Butt Fusion Testing:
 - 1. Contractor shall test the first fusion of the day on a daily basis.
 - 2. In testing, the fusion shall be allowed to cool completely, then fusion test straps shall be cut out. The test shall be minimum of 30 times the wall thickness in length with the fusion in the center, and minimum of 1.5 times the wall thickness in width. Bend the test strap until the ends of the strap touch. Contractor shall not commence until a fusion test has passed the bent strap test.

3.07 PIGGING, FLUSHING AND CLEANING

- A. All mains shall be pigged, cleaned and flushed to remove all sand and other foreign matter. The Contractor shall be responsible for developing a pigging and flushing plan to be submitted to the Engineer for approval prior to pigging and flushing.

3.08 TESTING AND LEAKAGE

- A. The Contractor shall furnish all valves, gauges, meters, pressure pumps and other equipment required to test the line.
- B. The Contractor shall perform air pressure test in accordance with the manufacture's guidelines prior to pipe pullback. Air pressure test shall be a maximum of 4 psi or per the pipe manufacturer's recommendation.
- C. Hydrostatic Tests – HDPE PIPE ONLY
 - 1. The piping shall be tested between valved sections to a maximum length of 3,000 feet.
 - 2. In testing, the part of the system under test shall be filled with water and subjected to a sustained pressure of 150 pounds per square inch. The piping shall be tested in sections, thereby, testing each valve for secure closure. While the system is being filled with water, air shall be carefully and completely exhausted. If permanent air vents are not located at all high points, the Contractor shall install corporation stops or fittings and valves at such points so the air can be expelled as the pipe system is slowly filled with water. Service shall be tested as part of the main pipeline.
 - 3. All components of the piping system, including fittings, service connections and valves shall be hydrostatically tested per the test method given in the Plastic Pipe Institute Technical Report #31 (TR #31). The test procedure for HDPE pipe consists of two steps: 1) the initial expansion and 2) the test phase. During the expansion phase, sufficient make-up water shall be added hourly for 3 hours to return to the test pressure. The test phase shall not begin until the pipeline has been under pressure for a minimum of 3 hours. Under no circumstances shall the total time under test exceed eight (8) hours. If the test is not completed due to leakage, equipment failure or any other reason, the test section shall be permitted to "relax" for eight (8) hours prior to the next testing sequence.
 - 4. All pumps, gauges and measuring devices shall be furnished, installed and operated by the Contractor and all such equipment and devices and their installation shall be approved by the

Owner's Engineer. The pressure gauges or data recorders should be calibrated and sufficiently sized to provide mid-range data, easy reading, interpretation, and accuracy of resolution to 2.0 psi. The test pressure should be taken at the position in the pipeline at the lowest point in elevation along the test section's vertical pipeline profile. All pressure and leakage testing shall be done in the presence of a representative of the Owner and Engineer.

5. If the Contractor elects to perform hydrostatic testing against valves in an existing distribution system, he does so at his own risk and will bear the cost of any damages to the existing valve, piping system, private or public property, or the new pipeline under test.
6. The Contractor may backfill fittings, valves and service connections prior to testing at his own risk. Any section of piping system which fails to meet the testing criteria will be excavated and repaired by the Contractor, including restoration, at his own expense.
7. Test pressure shall be maintained by pumping for at least 2 hours and until all sections under test have been checked for evidence of leakage. Rate of loss shall not exceed that specified, in Table 1, "Allowance for Expansion Under Pressure". Visible leaks shall be corrected regardless of total leakage shown by test.

Table 1: Allowance for Expansion Under Test Pressure*
Allowance for Expansion (U.S. Gals/100 ft of pipe)

Nominal Pipe Size, in.	1-Hour Test	2-Hour Test	3-Hour Test
3	0.10	0.15	0.25
4	0.13	0.25	0.40
6	0.30	0.60	0.90
8	0.50	1.0	1.5
10	0.75	1.3	2.1
11	1.0	2.0	3.0
12	1.1	2.3	3.4
14	1.4	2.8	4.2
16	1.7	3.3	5.0
18	2.2	4.3	6.5
20	2.8	5.5	8.0
22	3.5	7.0	10.5
24	4.5	8.9	13.3
28	5.5	11.1	16.8
32	7.0	14.3	21.5
36	9.0	18.0	27.0
40	11.0	22.0	33.0
48	15.0	27.0	43.0
54	22.0	35.0	55.0

*These allowances only apply to the test period and not to the initial expansion phase.

END OF SECTION

SECTION 15100

VALVES AND APPURTENANCES

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and complete and ready for operation all valves and appurtenances shown on the Drawings and as specified herein.
- B. All valves and appurtenances shall be of the size shown on the Drawings. Insofar as possible, all equipment of the same type shall be from one manufacturer.
- C. All valves and appurtenances shall have the name of the maker and the pressure for which they are designed cast in raised letters some appropriate part of the body.
- D. The equipment shall include, but not be limited to, the following:
 - 1. Resilient wedge gate valves
 - 2. Ball valves
 - 3. Air release valves
 - 4. Valve boxes
 - 5. Valve tags
 - 6. Tapping sleeves
 - 7. Eccentric plug valves
 - 8. Restrained Pipe Sleeve Coupling

1.02 DESCRIPTION OF SYSTEMS

- A. All of the equipment and materials specified herein are intended to be standard for use in chlorinated potable water, reclaimed water or wastewater.
- B. Valves and appurtenances for use with potable water shall be NSF-61 certified.
- C. All buried valves shall have polyethylene encasement as specified in Sections 02650.

1.03 QUALIFICATIONS

All of the types of valves and appurtenances shall be products of well established firms, who are fully experienced, reputable and qualified in the manufacture of the particular equipment to be furnished. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications, as applicable.

1.04 SUBMITTALS

Complete shop drawings of all valves and appurtenances shall be submitted to the Engineer for review, in accordance with the requirements of Section 01340.

1.05 TOOLS

Special tools, if required for normal operation and maintenance, shall be supplied with the equipment.

1.06 VALVE INDICES

The Contractor shall be responsible for furnishing tags for all valves required on the work and installing the tags required for his own work. Tags on above ground valves shall be noncorrosive metal or plastic, 2 inches in diameter, 19 gauge thick. Tags for buried valves shall be secured to a concrete base as shown on the Drawings. Submit to the Engineer for approval, two (2) samples of each type of tag proposed and manufacturer's standard color chart and letter styles. Tags shall have stamped on them the information shown on the Drawings and the data described herein

PART 2 – PRODUCTS

2.01 RESILIENT WEDGE GATE VALVES

- A. All gate valves 4" to 24" in diameter shall be resilient wedge, manufactured to meet or exceed the requirements of AWWA C509 or AWWA C515 of latest revision and in accordance with the following Specifications. Valves shall have an unobstructed waterway equal to or greater than the full nominal diameter of the valve.
- B. The valves are to be non-rising stem with the stem made of cast, forged or rolled bronze shown in AWWA C509. Two stem seals shall be provided and shall be of the O-ring type, one above and one below the thrust collar.
- C. The sealing mechanism shall consist of a cast iron gate having a vulcanized synthetic rubber coating, or natural rubber seat ring. The resilient sealing mechanism shall provide zero leakage at the force main working pressure when installed with the line flow in either direction.
- D. The valve body, bonnet, and bonnet cover shall be cast iron ASTM A126, Class B. All ferrous surface inside and outside shall be meet AWWA C550 fusion-bonded epoxy coating. A handwheel or wrench nut shall be provided for operating the valve. All Valves are to be tested in strict accordance with AWWA C509.
- E. Valves shall be manufactured by American Flow Control Series 2500, Mueller A2360/A2361, or equal.
- F. Valves shall open left (counter clockwise)
- G. Bonnet hex head nuts and bolts shall be 316 stainless steel (no socket head bolts allowed). Brass nuts shall be used with packing gland bolts if required for OS&Y valves.
- H. Buried Valves:
 - 1. In-line valves shall have mechanical joint ends in accordance with ANSI/AWWA C111/A21.11.
 - 2. Tapping valves shall have a mechanical joint connection, for connection to the tapping sleeve; and a mechanical joint connection on the outlet side of the valve.
 - 3. The valves are to be non-rising stem with the stem made of copper alloy in accordance with AWWA C515. Two stem seals shall be provided and shall be of the O-ring type, Nitrile Buna-N or EPDM rubber, one above and one below the thrust collar.
 - 4. Provide two-inch square operating nut.
 - 5. Provide bevel gear for valve when shown on the drawings or when necessary to allow using a valve box in locations where depth of bury is limited.

2.02 BALL VALVES

- A. Stainless steel ball valves shall be of 2-piece (1" and smaller) or 3-piece (1-1/2" and larger) construction. Valves shall be rated for 150 psi saturated steam pressure and 400 psi WOG pressure. Valves shall have

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stainless steel body, stainless steel ball, replaceable Teflon or TFE seats and seals, blowout proof stem and vinyl covered steel handle. All end connections shall be threaded.

- B. All valves shall be mounted in such a position that valve position indicators are plainly visible when standing on the floor.
- C. Valves shall be manufactured by Jamesbury or equal.

2.03 COMBINATION AIR AND VACUUM VALVES

- A. Combination Air Valves shall conform to the following: Automatic Air and Vacuum Valves shall be infinitely variable automatic air and vacuum valves designed to allow escape of air for a operating range starting from pressure range: 0,0 through 250 psi (0 – 17,2 bar), close watertight when liquid enters the valve even when the fluid is rising without pressure (no minimum operating pressure required), allow air to enter in the event of a vacuum, and soft working behavior as water hammer inhibition realized by roll-on diaphragm and spring mechanism. When the sealing device of the valve is closed an air cushion is trapped between the fluid and sealing area, a mud deflector made of PE allows no contact between fluid and sealing area. The Sch 80 threaded nipple, valve body and spindle spring shall be stainless steel, grade 316Ti, designed to facilitate disassembly for cleaning and maintenance. The float shall be Delrin (POM); the valve seat and all working parts shall be of corrosion-resistant materials. Valves shall be equipped with the necessary attachments, including ball valve and camlock fitting to permit back flushing after installation without dismantling the valve. Valves shall be recommended by the manufacturer for wastewater service. Air and vacuum valves shall be H-Tec as manufactured by Hawle. No equals shall be accepted.

2.04 VALVE BOXES

- A. All buried valves shall have ductile-iron three-piece valve boxes and rated H-20 loading. Valve boxes shall be provided with suitable heavy bonnets and to extend to such elevation at or slightly above the finished grade surface, as directed by the Engineer. The barrel shall be two-piece, screw type, having 5-1/4-inch shaft. The upper section shall have a flange at the bottom having sufficient bearing area to prevent settling and shall be complete with cast iron covers.
- B. All valves shall have actuating nuts extended within 12 inches of the top of the valve boxes. Valve boxes shall be provided with concrete base and valve nameplate engraved with lettering 1/8-inch deep as shown on the Drawings.
- C. Valve box covers shall indicate the type of service “Water”, “Reclaimed Water” or “Sewer”.

2.05 VALVE TAGS

- A. Valve Identification Disk: Solid cast bronze, three (3) inch diameter with integral anchor pin for embedment in concrete. Anchor shall be suitable for securing to a concrete base in theft or tamper proof manner. Surface of disk shall be engraved with 1/4” to 3/8” capital letters and numbers, approximately 0.015 inch depth, as shown in City of Venice detail drawing. Surface shall be ground smooth and epoxy-coated to prevent tarnishing.

2.06 TAPPING SLEEVES

- A. Tapping sleeves shall be constructed of (316) stainless steel. All tapping sleeves shall be suitable for tapping cast iron pipe, ductile iron pipe, C-905 PVC pipe, asbestos cement pipe and all pipe manufactured in accordance with ANSI A21 Standard.
- B. All tapping sleeves shall be split sleeve design with one half containing the outlet half of the sleeve, the hub, and the other half completing the encompassing effect of the sleeve, the back. A 3/4-inch NPT test plug shall be provided on the outlet throat of the sleeve for pressure testing the sealed sleeve at 150 psi

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prior to tapping the pipe. All tapping sleeves shall allow a full size cutting head to pass through the outlet of the hub. All bolts joining the two halves of the sleeve shall be type (316) stainless steel in accordance with ASTM A193 and A194, latest edition.

- C. Tapping sleeves shall seal to the pipe by the use of a confined "O" ring gasket around the tap opening between the sleeve and pipe or by a full circumferential gasket between the sleeve and pipe.
- D. Welds shall be fully passivated for corrosion resistance.
- E. Mechanical joint tapping sleeves shall, after bolting the halves together, form a mechanical joint at each end of the sleeve. The sleeve shall then be sealed to the pipe by assembling the mechanical joint using split gaskets and follower glands.
- F. All tapping sleeves shall be PowerSeal Pipeline Products Corporation model 3490MJSS-316, no equals will be accepted.

2.07 ECCENTRIC PLUG VALVES

- A. All plug valves shall be manufactured and installed in accordance with standard ANSI/AWWA C517 Table 1, Resilient-Seated Cast-Iron Eccentric Plug Valves, of the latest revision unless otherwise specified. The Manufacturer shall provide affidavit of compliance with AWWA Standard. Valves shall be as manufactured by DeZurik, Clow, Homestead or approved equal.
- B. Plug valves shall be tested in accordance with AWWA C517, latest edition. Each valve shall be performance tested in accordance with Paragraph 5.2 of the above reference and shall be given a leakage test and hydrostatic test as described in Paragraphs 5.2.2 and 5.2.3 of the above reference. The leakage test shall be applied to the face of the plug tending to unseat the valve. The manufacturer shall furnish certified copies of reports covering proof of design testing as described in Section 5.2.4 of the above reference.
- C. Valves shall be of the non-lubricated eccentric type with resilient faced plugs and shall be furnished with end connections as shown on the plans. Flanged valves shall be faced and drilled to the ANSI B16.1 125/150 lb. standard. Mechanical joint ends shall be in full compliance with ANSI/ AWWA C111/A21.11. Screwed ends shall be to the NPT standard.
- D. Valve bodies shall be of ASTM A126 Class B or ASTM A48, Class 40 cast iron.
- E. Port areas for valves 20 inches and smaller shall be a minimum of 80 percent of full pipe area. Valves 24-inch and larger shall have a minimum port area of 100 percent of full nominal pipe area.
- F. All exposed nuts, bolts, springs, washers, etc., shall be zinc or cadmium plated. Valve plugs shall be constructed of ASTM A-48, Class 40 cast iron or ASTM A-536 ductile iron. Resilient plug facings shall be of Neoprene.
- G. Valves shall be furnished with permanently lubricated stainless steel, oil-impregnated bronze or non-metallic upper and lower plug stem bearings.
- H. Valve seats shall be either nickel or stainless steel. Epoxy seats are not acceptable.
- I. Plug valves greater than 6 inches in diameter shall be supplied with manual gear actuators unless otherwise shown on the Drawings.
- J. Shaft seals shall be of the multiple V-ring type with a packing gland follower. Shaft seals shall be externally adjustable and repackable without removing the actuator or bonnet from the valve.

- K. Valves shall have a factory-applied, internal and external, fusion bonded epoxy resin coating with a minimum thickness of 8 mils, conforming to all applicable requirements of the American Water Works Association Standard C550-90 entitled "Protective Interior Coatings for Valves and Hydrants".
- L. No ¼ turn valves shall be allowed.

2.08 RESTRAINED PIPE SLEEVE COUPLING

- A. Joint Restraint to prevent axial separation shall be incorporated into the design of the sleeve or coupling used to connect two plain pipe ends of same or dissimilar materials. The restraint mechanism shall consist of a plurality of individually actuated gripping surfaces to maximize restraint capability. Torque limiting twist off nuts shall be used to insure proper actuating of the restraint devices.
- B. The coupling sleeve internal surfaces shall be lined with a minimum of 15 mils of fusion bonded epoxy conforming to the applicable requirements of ANSI/AWWA C213. Sealing gaskets shall be constructed of Nitrile Buna-N. The coating and gaskets shall meet ANSI/NSF-61. Exterior surfaces shall be coated with a minimum of 6 mils of fusion bonded epoxy conforming to the applicable requirements of ANSI/AWWA C116/A21.16. Ductile Iron components shall meet or exceed the requirements of ASTM A536, and shall be tested in accordance with said standard. The restrained joining system shall meet the applicable requirements of AWWA C219, ANSI/AWWA C111/A21.1 and ASTM D2000.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. All valves and appurtenances shall be installed in the locations shown, true to alignment and rigidly supported. Any damage to the above items shall be repaired to the satisfaction of the Engineer before they are installed.
- B. Buried Valves
 - 1. Valve stems shall be vertical.
 - 2. Provide bevel gear actuators for large valves to allow use of valve box when depth of bury is limited.
 - 3. The Contractor shall provide, install, and test tapping valves and sleeves. Taps on all mains shall be made by the Contractor in the presence of the Owner's Representative.
 - 4. Buried valves, including tapping valves and sleeves, shall be wrapped with polyethylene encasement material before backfilling.
- C. Valves above grade or in vaults
 - 1. Position valve with the actuator in the position indicated by the drawings; or positioned to be accessible from the floor, vault access, or cabinet opening. Valve position indicators shall be plainly visible when standing on the floor or ground surface.
- D. Valve Boxes
 - 1. Place valve box over each stem with base bearing on compacted fill and top flush with final grade. Valve box shall be aligned vertically and plumb over the valve operating nut.
 - 2. Base of valve box shall be positioned to just cover the top of the valve but not rest directly on the valve. Inserting a PVC riser pipe between valve and valve box base is not acceptable.

3. Boxes shall have sufficient bracing to maintain alignment during backfilling.
 4. Prior to acceptance by the Owner, Contractor shall remove any sand or other undesirable material from the box.
- E. Install all floor boxes, brackets, extension rods, guides, the various types of operators and appurtenances as shown on the Drawings that are in masonry floors or walls, and install concrete inserts for hangers and supports as soon as forms are erected and before concrete is poured. Before setting these items, the Contractor shall check all plans and figures which have a direct bearing on their location and he shall be responsible for the proper location of these valves and appurtenances during the construction of the structures.

3.02 INSPECTION AND TESTING

- A. Valve and service components shall be inspected for damage and shall be repaired to the satisfaction of the Engineer before they are installed.
- B. Completed pipe, valves and service lines shall be subjected to a hydrostatic pressure and leakage test in accordance with City of Venice technical specification Section 02650 – Force Mains. All leaks shall be repaired and lines retested. Prior to testing, the pipelines shall be restrained to prevent movement during tests. If any joint, connection, or device proves to be defective, it shall be repaired or replaced to the satisfaction of the Engineer.

END OF SECTION

GEOTECHNICAL REPORT

**REPORT OF THE
GEOTECHNICAL INVESTIGATION**

**VENICE FORCE MAIN
VENICE, FLORIDA**

King Engineering Associates, Inc.
4921 Memorial Highway
Suite 300
Tampa, Florida 33634

December 14, 2012

Attention: Mr. Loc P. Truong, P.E.

**RE: Report of the Geotechnical Investigation
Venice Force Main
Venice, Florida
Our File: DES 127060**

Dear Loc:

Pursuant to your authorization, **DRIGGERS ENGINEERING SERVICES, INC.** completed the requested geotechnical investigation for the subject project. Presented herein are the results of the field and laboratory testing together with a discussion of our findings and geotechnical recommendations.

PROJECT DESCRIPTION

The project consists of the subaqueous installation of a force main below the Intracostal Waterway. The subaqueous portion of the force main will consist of a nominal 16-inch diameter HDPE pipe. The subaqueous force main will connect to a new 4-inch PVC line that will be installed northward to the terminus of the project. The 4-inch PVC line will be constructed by direct embedment within an open cut including Venice Avenue.

A program of subsurface investigation was authorized to provide a general overview of subsurface conditions to assist in the design of the facilities.

GEOTECHNICAL INVESTIGATION PROGRAM

FIELD INVESTIGATION - Plate I of the report illustrations identifies the respective positioning of four (4) Standard Penetration Test borings that were requested to investigate subsurface conditions. Test borings B-1 and B-3 on the east and west sides of the Intracostal Waterway respectively, were requested to a nominal depth of 40 feet. The test boring within the waterway, which was conducted utilizing our portable barge-mounted drilling unit, was requested to a nominal depth of 65 feet below the water surface. Test boring B4 was also requested to a depth of 40 feet.

The Standard Penetration Test method of sampling was utilized in our investigation to obtain soil samples for visual classification and to develop Standard Penetration resistance data reflective of the strength and bearing capability of the soils and rock formations penetrated. Logs of the Standard Penetration Test borings are presented in the report attachments reflecting visual together with estimated Unified and AASHTO Soil Classification. The test boring logs also present tabulated and graphically plotted Standard Penetration resistance values corresponding to each sample interval. Please recognize that the graphical plot is for pictorial illustration and does not imply linear variation in soil or rock properties. Furthermore, the soil strata lines depicted on the test boring logs are also estimated. Actual transitions between soil or rock strata may be gradual and indistinct. A brief description of the Standard Penetration Test method of sampling is appended for the interested reader.

LABORATORY TESTING - A limited laboratory testing program was undertaken to aid in characterizing the engineering properties of the some of the representative subsurface soils. Our laboratory tests included grainsize analyses and Atterberg limits determinations together with natural moisture content tests. Results of our laboratory tests are included in the report attachments.

GENERALIZED SUBSURFACE CONDITIONS

Plate II of the report illustrations presents the Standard Penetration Test borings in profile. As seen from Plate II, the subsurface soil profile generally consists of an upper unit of predominantly sandy soils with variable silt and shell content commonly extending to the range of about EL -12 ± ft. to about EL -15 ± ft. (NGVD). The soils generally comprised the SP to SP-SM or SM Unified Soil Classification or the AASHTO A-3 to A-2-4. You will note that in some of the sandy strata, the shell content was very abundant and there appeared to be localized traces of phosphate. Penetration resistance values generally indicate that the sands are loose to very loose in consistency with the exception of surficial zones with somewhat higher penetration resistance suggesting a medium dense relative density.

These upper sandy soils generally overlay a variable thickness unit of moderate to high plasticity clay with variable silt and sand content locally containing evidence of cemented sand and phosphate. Where present, this intermediate clay unit exhibited a firm to very stiff consistency.

The top of the first evidence of limestone generally occurred in the range of about EL -20 ± ft. to about EL -21.5 ± ft. (NGVD). However, the uppermost limestone unit appeared to be relatively thin with thicknesses at the locations tested varying from about 3 to 6 feet. This upper limestone layer was typically underlain by very stiff to hard clays, in some cases, interlayered with calcareous variably cemented sands or limestone seams. The deeper penetration borings reflected a deeper limestone layer in the range of about EL -28.5 ± ft. to about EL -35.5 ± ft. (NGVD). The deepest boring in the waterway indicated that the deeper limestone unit continued to approximate EL -46.2 ± ft. (NGVD) and terminated above stiff clays with variable silt content which continued to the termination depth at approximate EL -63.7 ± ft. (NGVD).

The limestone formation exhibited relatively high Standard Penetration resistance values as indicated on the attached test boring logs. You will note that each of the test borings includes information as to the time rate of drilling in advancing our boring to provide some relative indication of comparative consistency of the limestone formation. It should also be noted that a loss of circulation of drilling fluid occurred in boring B-2 near EL -39.5 ft. (NGVD). Such losses of circulation of drilling fluid are relatively common within the limestone formations and are suggestive of localized crevices or pervious seams that can occur at varying and unpredictable elevations.

Groundwater was encountered in the land test borings typically in the range of EL 1.4 ft. to EL 3.5 ft. (NGVD). It is likely that groundwater levels will be tidally influenced. We generally anticipate that wet season groundwater levels would probably be in the range of EL +3.5 ft. to EL +4 ft. (NGVD) with the exception of during significant storm events where groundwater and tidal levels could be substantially higher in elevation.

GEOTECHNICAL EVALUATION AND CONSTRUCTION CONSIDERATIONS

ANTICIPATED CONSTRUCTION METHODOLOGY - It is our understanding that the 16-inch diameter HDPE force main will be installed below the Intracostal Waterway utilizing horizontal directional drilling methodologies. It is further our understanding that the horizontal directional drilling profile will probably extend down to perhaps EL -45 ± ft. (NGVD).

The 4-inch PVC piping extending northward on the west bank of the Intracostal Waterway is anticipated to be installed with a minimum cover of 3 to 4 feet utilizing open cutting.

DIRECTION DRILLING - The directional drilling will encounter varying subsurface conditions ranging from surficial units of sands with variable shell content, firm to stiff clays with localized cemented seams as well as perhaps two (2) layers of limestone depending upon the position within the directional drilling profile. Accordingly, the contractor must anticipate encountering zones of differing permeability and potential for losses of circulation of drilling fluid. The contractor must, therefore, use ways and means to maintain borehole stability for the protection of any overlying structures or utilities and also avoid a potential release of drilling fluid to the ground surface or within the Intracostal Waterway.

It is anticipated that the deeper portions of the directional drilling will be within the underlying limestone and perhaps seams of firm to very stiff or hard clays. It must be recognized that the limestone formations may be lenticular with variable thickness and hardness. These geological formations were also subjected to significant erosion and dissolution activity that can create a rather irregular topography and consistency. Loss of circulation of drilling fluid must be anticipated at potentially varying elevations. It must also be anticipated that the limestone consistency may vary in the degree of lithification and may include pockets or seams of infilled sediment that may be poorly consolidated. Conversely, there is the potential for the presence of chert seams or nodules although such zones are generally rather isolated and of limited lateral extent.

DIRECT EMBEDMENT PIPING - The relatively shallow embedded pipe would be expected to primarily encounter predominately fine sands with variable silt and shell content. Obviously, the potential exists that localized unsuitable material may have been buried during the historical filling that occurred along the Intracostal Waterway. For example, our test boring B-3 encountered an 18-inch thick zone of what appeared to be mulch in the depth of about 1 to 2.5 feet.

These upper fine sands representing the SP to SP-SM and SM Unified Soil Classification or the AASHTO A-3 to A-2-4 Soil Classification should provide suitable subgrade support for the planned piping. Furthermore, the sandy materials excavated for installation of the piping may also be utilized as backfill when compacted to project specification requirements.

The contractor must give careful consideration to the potential fluctuations in groundwater levels that may occur depending upon tidal levels or rainfall conditions that may be occurring at the time or prior to construction. The need for construction dewatering will naturally be dependent upon these conditions and final required pipe embedment. In general, however, it would appear that minimal dewatering would be required especially where pipe embedment will be occurring within the upper 3 or 4 feet.

Soils excavated for use as backfill may require some adjustment in moisture content to facilitate compaction in accordance with specification requirements. In general, it is preferable to maintain moisture contents to within $\pm 2\%$ of optimum moisture as established by the Modified Proctor moisture density relationship of ASTM D-1557. These sandy soils would generally respond more favorably to vibratory compaction placed in relatively thin lifts on the order of 6 inches when using hand-guided compaction equipment.

Where deeper excavations may be necessary below the water table, the contractor should plan for installation or appropriate dewatering system to maintain the groundwater levels no less than 1 foot below the deepest excavation bottom. It is anticipated that the dewatering will be accomplished by the utilization of wellpoints. We would certainly encourage the general contractor to employ a dewatering consultant as may be warranted to properly design the wellpoint system to efficiently pre-drain the subsurface soils especially when considering the stratified nature of the subsurface deposits.

Where there may be a necessity for the installation of sheeting to maintain excavation stability, the contractor should use due caution in the installation and removal of the sheeting to avoid damage to any proposed or existing facilities. In particular, the use of vibratory or impact hammers for installation or extraction of sheeting can result in significant induced settlements of neighboring facilities. In that event, the contractor should use ways and means specifically designed to protect existing structures.

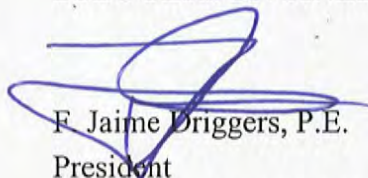
LIMITATIONS

Our geotechnical investigation herein consisted of a general program of test borings intended to be utilized in the design of the proposed facilities. Our studies may not have included development of all subsurface information that may be needed by a prospective contractor. The contractor is certainly encouraged to conduct such additional studies as he may deem necessary in order to qualify his bid proposal.

DRIGGERS ENGINEERING SERVICES, INC. appreciates this opportunity to serve you and we trust, if you have any questions regarding our report, you will not hesitate to contact this office at your convenience.

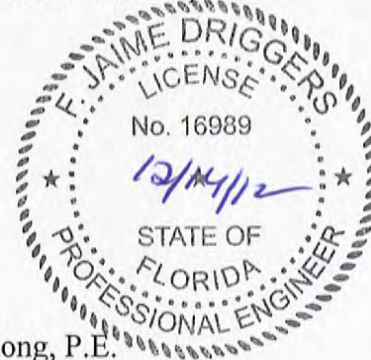
Respectfully submitted,

DRIGGERS ENGINEERING SERVICES, INC.



F. Jaime Driggers, P.E.
President

FL Registration No. 16989



FJD/cmc

FJD-REP\127060a

Copies submitted: (3) King Engineering Associates, Inc.; Attn: Loc P. Truong, P.E.

APPENDIX

PLATE I - BORING LOCATION PLAN

PLATE II - STANDARD PENETRATION TEST BORING PROFILE

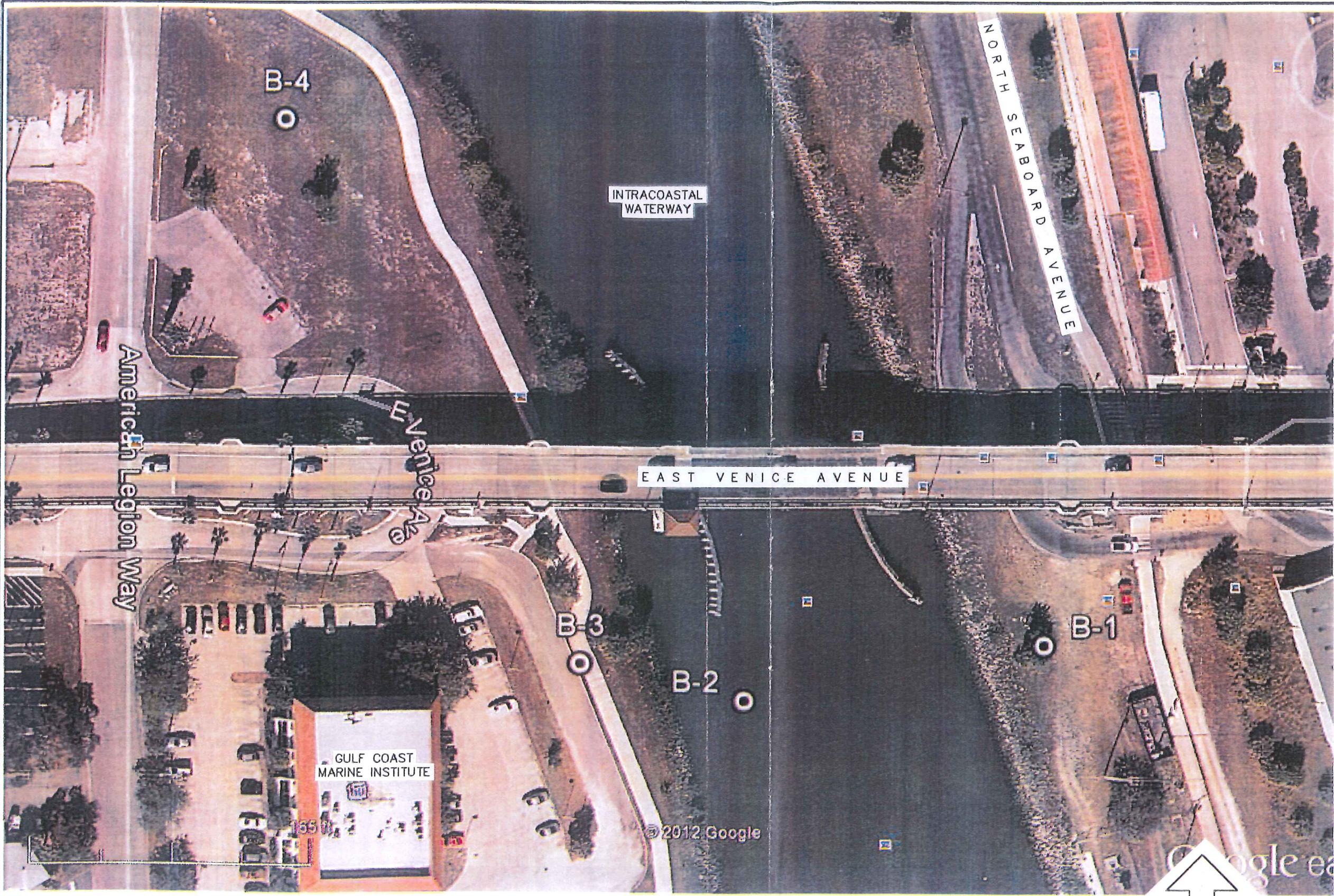
STANDARD PENETRATION TEST BORING LOGS

SUMMARY OF LABORATORY TEST RESULTS

GRAINSIZE ANALYSES

METHOD OF TESTING

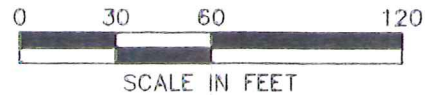
PLATE I - BORING LOCATION PLAN



DATE: 10/31/12

LEGEND:

- STANDARD PENETRATION TEST BORING LOCATION



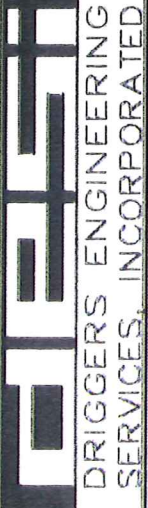
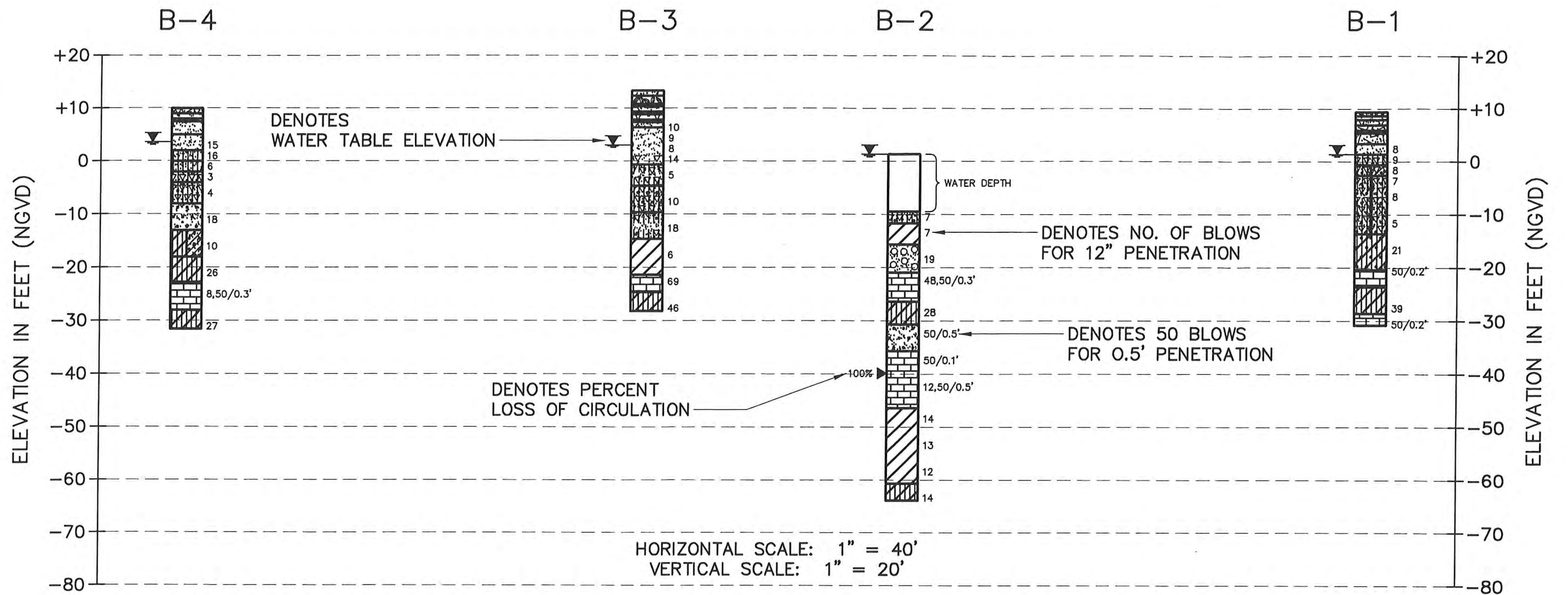
CAD / ENGINEER	SHEET TITLE	PROJECT NO.
R.D.B. / F.J.D.	BORING LOCATION PLAN	DES 127060
PREPARED BY	PROJECT NAME	SHEET NO.
 DRIGGERS ENGINEERING SERVICES, INCORPORATED	VENICE FORCE MAIN E. VENICE AVENUE & N. SEABOARD AVENUE VENICE, FLORIDA	PLATE 1

PLATE II - STANDARD PENETRATION TEST BORING PROFILE



LEGEND OF SOIL BORING PROFILE STRATUM SYMBOLS:

FINE SAND (SP) (A-3)	SLIGHTLY CLAYEY FINE SAND (SP-SM) (A-3)	SILTY CLAY (CH) (A-7-6)	SHELL
SLIGHTLY SILTY FINE SAND (SP-SM) (A-3)	CLAYEY FINE SAND (SC) (A-2-6)	LIMESTONE	ROOTS
SILTY FINE SAND (SM) (A-2-4)	CLAY (CH) (A-7-6)	CEMENTED SAND FRAGMENTS OR PHOSPHATE	LIMESTONE FRAGMENTS

CAD / ENGINEER	SHEET TITLE	PROJECT NO.	DATE
R.D.B. / F.J.D.	SOIL BORING PROFILE	DES 127060	12/14/12
PREPARED BY	PROJECT NAME	CAD FILE NAME	SHEET NO.
DRIGGERS ENGINEERING SERVICES, INCORPORATED	VENICE FORCE MAIN E. VENICE AVENUE & N. SEABOARD AVENUE VENICE, FLORIDA	N: \ACLTWIN\ PROFILE\127060-PROFILE	PLATE II

STANDARD PENETRATION TEST BORING LOGS

DRIGGERS ENGINEERING SERVICES INCORPORATED

Project No. DES 127060

BORING NO. B-1

Project Venice Force Main, E. Venice Ave. & N. Seaboard Ave., Venice, Florida

Location See Plate I

Foreman

J.R.

Completion

Depth 40.2'

Date

10/18/12

Depth To

Water

8.0'

Time

Date

10/18/12

DEPTH, FT	SYMBOL	SAMPLES	SOIL DESCRIPTION	BLOWS ON SAMPLER PER 6" OR PEN. STR.	STANDARD PENETRATION TEST BLOWS/FT. ON 2" O.D. SAMPLER-140 LB. HAMMER, 30" DROP (AUTOMATIC HAMMER)				
					10	20	40	60	80
			SURF. EL: +9.4+/-' (NGVD)						
0			Brown Fine SAND with cemented sand (SP) (A-3)						
			Brown Fine SAND (SP) (A-3)						
			Grayish-brown Fine SAND with trace of shell (SP) (A-3)						
			Brown Fine SAND with roots (SP) (A-3)						
5			Dark brown Fine SAND (SP) (A-3)						
			Light brown Fine SAND with roots (SP) (A-3)						
			Loose light grayish-brown Fine SAND (SP) (A-3)	2/3/5					
			Loose brown silty Fine SAND with abundant shell (SM) (A-2-4)	2/3/6					
10			Loose light brown silty to slightly clayey Fine SAND with cemented sand and shell (SM) to (SP-SM) (A-2-4) to (A-3)	2/4/4					
			Loose gray to dark grayish-green slightly silty to silty Fine SAND with shell and phosphate (SP-SM to SM) (A-2-4)	3/4/3					
15				2/4/4					
20				3/2/3					
25			Very stiff light grayish-tan calcareous, silty CLAY with cemented sand (CH) (A-7-6)	13/15/6					
30			Cream colored to tan LIMESTONE	50*					
			Hard green silty CLAY (CH) (A-7-5)						

DRILLING RATE (min/ft.)

0.4
0.3
0.4
0.6

Remarks Borehole Grouted

Casing Length

25.0'

237

DRIGGERS ENGINEERING SERVICES INCORPORATED

Project No. DES 127060

BORING NO. B-1

Project Venice Force Main, E. Venice Ave. & N. Seaboard Ave., Venice, Florida

Location See Plate I

Foreman

J.R.

Completion

Depth 40.2'

Date

10/18/12

Depth To

Water 8.0'



Time

Date

10/18/12

DRILLING RATE (min/ft)

0.8

DEPTH, FT	SYMBOL	SAMPLES	SOIL DESCRIPTION	BLOWS ON SAMPLER PER 6" OR PEN. STR.	STANDARD PENETRATION TEST BLOWS/FT. ON 2" O.D. SAMPLER-140 LB. HAMMER, 30" DROP (AUTOMATIC HAMMER)
			SURF. EL: +9.4+/-' (NGVD)		10 20 40 60 80
35			Hard green silty CLAY (CH) (A-7-5)	8/11/28	
40			Gray LIMESTONE	50*	* 0.2' Penetration
45					
50					
55					
60					
65					

Remarks Borehole Grouted

Casing Length

25.0'



DRIGGERS ENGINEERING SERVICES INCORPORATED

Project No. DES 127060BORING NO. B-2Project Venice Force Main, E. Venice Ave. & N. Seaboard Ave., Venice, FloridaLocation See Plate I

Foreman

J.R.

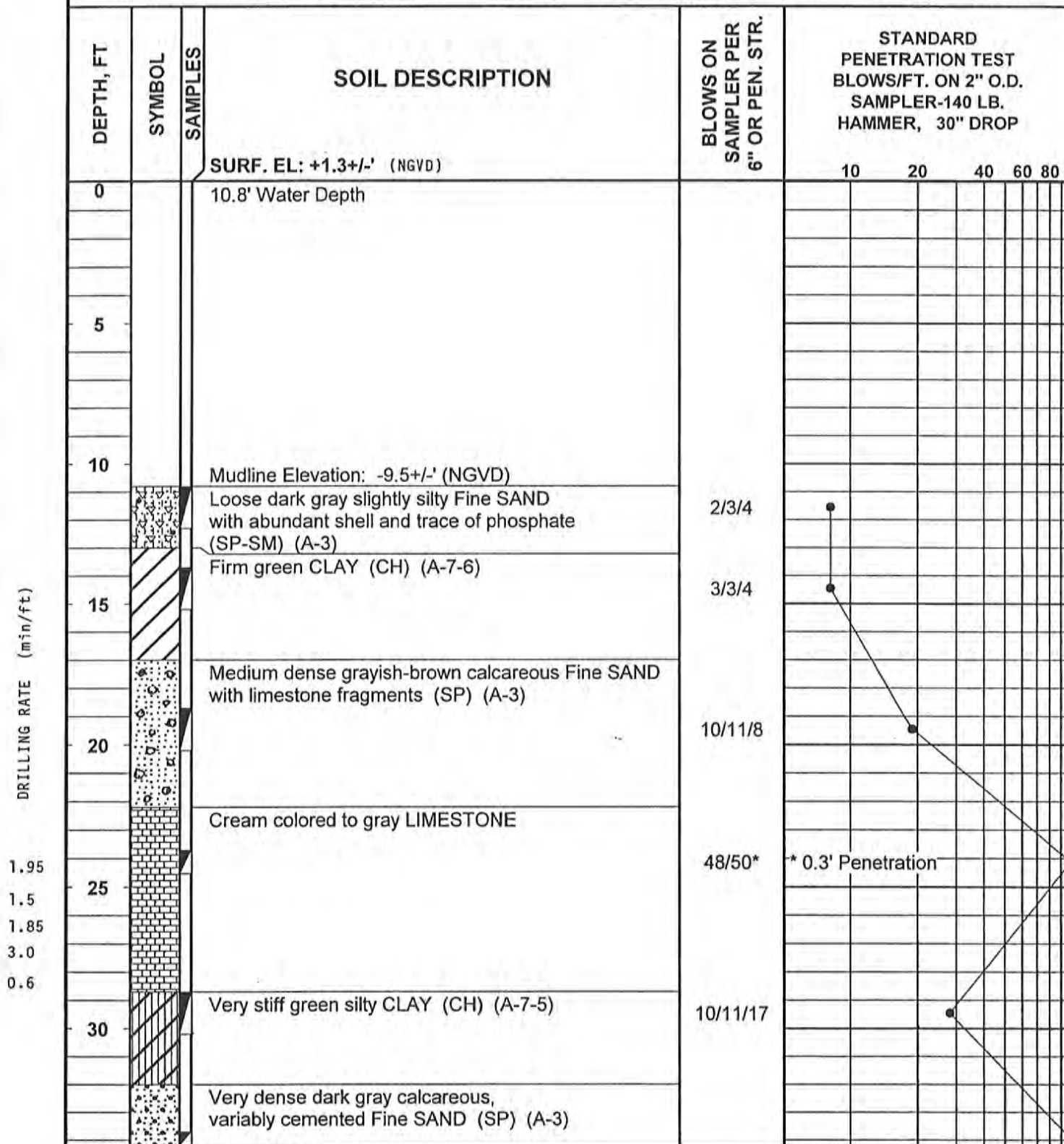
Completion

Depth 65.2'Date 10/22/12

Depth To

Water +10.8'

Time

Date 10/22/12Remarks Borehole Grouted

Casing Length

30.0'



DRIGGERS ENGINEERING SERVICES INCORPORATED

Project No. DES 127060

BORING NO. B-2

Project Venice Force Main, E. Venice Ave. & N. Seaboard Ave., Venice, Florida

Location See Plate I

Foreman

J.R.

Completion

Depth 65.2'

Date

10/22/12

Depth To

Water

+10.8'

Time

Date

10/22/12

DRILLING RATE (min/ft)

1.2
0.95
3.1
1.6
1.4
0.6
1.05
0.7
1.2
0.9

DEPTH, FT	SYMBOL	SAMPLES	SOIL DESCRIPTION	BLOWS ON SAMPLER PER 6" OR PEN. STR.	STANDARD PENETRATION TEST BLOWS/FT. ON 2" O.D. SAMPLER-140 LB. HAMMER, 30" DROP
			SURF. EL: +1.3+/-' (NGVD)		
35			Very dense dark gray calcareous, variably cemented Fine SAND (SP) (A-3)	50*	* 0.5' Penetration
40			Gray to cream colored and gray LIMESTONE	50*	* 0.1' Penetration
			- 100% loss of circulation at depth 41.2'		
45				12/50*	* 0.5' Penetration
50			Stiff dark green CLAY (CH) (A-7-5)	5/6/8	
55				4/6/7	
60				4/5/7	
65			Stiff light green silty CLAY (CH) (A-7-5)	5/6/8	
Remarks <u>Borehole Grouted</u>					Casing Length <u>30.0'</u>

DRIGGERS ENGINEERING SERVICES INCORPORATED

Project No. DES 127060

BORING NO. B-3

Project Venice Force Main, E. Venice Ave. & N. Seaboard Ave., Venice, Florida

Location See Plate I

Foreman

J.R.

Completion

Depth 41.5'

Date

10/18/12

Depth To

Water

10.3'

Time

Date

10/18/12

DEPTH, FT	SYMBOL	SAMPLES	SOIL DESCRIPTION	BLOWS ON SAMPLER PER 6" OR PEN. STR.	STANDARD PENETRATION TEST BLOWS/FT. ON 2" O.D. SAMPLER-140 LB. HAMMER, 30" DROP (AUTOMATIC HAMMER)				
					10	20	40	60	80
0			SURF. EL: +13.3+/-' (NGVD)						
			Brown Fine SAND with roots (SP) (A-3)						
			Light brown Mulch						
			Gray Fine SAND with roots (SP) (A-3)						
			Light gray Fine SAND (SP) (A-3)						
5			Dark brown Fine SAND (SP) (A-3)						
			Brown Fine SAND with trace of shell (SP) (A-3)						
			Orangish-brown Fine SAND with roots (SP) (A-3)	2/5/5					
			Loose dark gray Fine SAND (SP) (A-3)						
			Loose to medium dense tan to light grayish-brown Fine SAND (SP) (A-3)	3/4/5					
10				3/4/4					
			- trace of shell at depth 12.0'	4/5/9					
15			Loose dark gray slightly silty Fine SAND with shell (SP-SM) (A-2-4)	2/2/3					
20			Loose dark gray silty Fine SAND with cemented sand and shell (SM) (A-2-4)	1/2/8					
25			Medium dense dark grayish-green slightly silty Fine SAND with trace of shell and phosphate (SP-SM) (A-3)	7/8/10					
30			Firm light green CLAY (CH) (A-7-5)	2/3/3					

Remarks Borehole Grouted

Casing Length

25.0'

DRIGGERS ENGINEERING SERVICES INCORPORATED

Project No. DES 127060

BORING NO. B-3

Project Venice Force Main, E. Venice Ave. & N. Seaboard Ave., Venice, Florida

Location See Plate I

Foreman J.R.

Completion

Depth 41.5'

Date 10/18/12

Depth To

Water 10.3'

Time

Date 10/18/12

DRILLING RATE (min/ft)

0.1
0.1
0.1
0.6
0.7

DEPTH, FT

SYMBOL
SAMPLES

SOIL DESCRIPTION

SURF. EL: +13.3+/-' (NGVD)

Firm light green CLAY (CH) (A-7-5)
Tan to gray LIMESTONE

Hard light green silty CLAY (CH) (A-7-5)

BLOWS ON
SAMPLER PER
6" OR PEN. STR.

16/28/41

20/21/25

STANDARD
PENETRATION TEST
BLOWS/FT. ON 2" O.D.
SAMPLER-140 LB.
HAMMER, 30" DROP
(AUTOMATIC HAMMER)

10 20 40 60 80

45

50

55

60

65

Remarks Borehole Grouted

Casing Length 25.0'

DRIGGERS ENGINEERING SERVICES INCORPORATED

Project No. DES 127060

BORING NO. B-4

Project Venice Force Main, E. Venice Ave. & N. Seaboard Ave., Venice, Florida

Location See Plate I

Foreman

J.R.

Completion

Depth

41.5'

Date

10/18/12

Depth To

Water

6.4'

Time

Date

10/18/12

DEPTH, FT	SYMBOL	SAMPLES	SOIL DESCRIPTION	BLOWS ON SAMPLER PER 6" OR PEN. STR.	STANDARD PENETRATION TEST BLOWS/FT. ON 2" O.D. SAMPLER-140 LB. HAMMER, 30" DROP (AUTOMATIC HAMMER)				
					10	20	40	60	80
0			SURF. EL: +9.9+/-' (NGVD)						
			Dark brown Fine SAND with roots and trace of shell (SP) (A-3)						
			Gray Fine SAND (SP) (A-3)						
			Dark reddish-brown Fine SAND (SP) (A-3)						
			Light brown Fine SAND (SP) (A-3)						
5			Medium dense light grayish-brown Fine SAND (SP) (A-3)	4/7/8					
			Medium dense light grayish-brown slightly silty Fine SAND (SP-SM) (A-3)	5/6/10					
10			Loose brown silty Fine SAND (SM) (A-2-4)	8/4/2					
			Very loose dark gray slightly silty Fine SAND with abundant shell (SP-SM) (A-3)	1/1/2					
15			Very loose dark gray silty Fine SAND with shell and trace of phosphate (SM) (A-2-4)	2/1/3					
			Medium dense dark green Fine SAND with phosphate (SP) (A-3)	4/7/11					
20			Stiff gray and tan silty CLAY and medium dense dark gray clayey Fine SAND with cemented sand and phosphate (CH/SC) (A-7-6/A-2-6)	9/4/6					
25			Very stiff light green very silty CLAY (CL) (A-4)	3/4/22					
30			Tan LIMESTONE						

Remarks Borehole Grouted

Casing Length

25.0'

DRIGGERS ENGINEERING SERVICES INCORPORATED

Project No. DES 127060

BORING NO. B-4

Project Venice Force Main, E. Venice Ave. & N. Seaboard Ave., Venice, Florida

Location See Plate I

Foreman

J.R.

Completion

Depth 41.5'

Date 10/18/12

Depth To

Water 6.4'

Time

Date 10/18/12

DRILLING RATE (min/ft)

0.1
0.3
0.35
0.9
0.6

DEPTH, FT

SYMBOL

SAMPLES

SOIL DESCRIPTION

SURF. EL: +9.9+/-' (NGVD)

Tan LIMESTONE

Very stiff green silty CLAY (CH) (A-7-5)

BLOWS ON
SAMPLER PER
6" OR PEN. STR.

8/50*

6/14/13

STANDARD
PENETRATION TEST
BLOWS/FT. ON 2" O.D.
SAMPLER-140 LB.
HAMMER, 30" DROP
(AUTOMATIC HAMMER)

10 20 40 60 80

* 0.3' Penetration

45

50

55

60

65

Remarks Borehole Grouted

Casing Length

25.0'

SUMMARY OF LABORATORY TEST RESULTS

SUMMARY OF LABORATORY TEST RESULTS

BORING NO.	DEPTH (ft)	DESCRIPTION	W %	Y _d (pcf)	G _s	ATTERBERG LIMITS			P.P. (tsf)	U.C.	CON.	G.S.	ORG. (%)	pH	CL (ppm)	SO ₄ (ppm)	RES. (ohm-cm)
						LL	PL	SL									
B-1	6.0-7.5	Light grayish-brown Fine SAND										*					
B-1	15.0-16.5	Dark grayish-green slightly silty Fine SAND with shell and phosphate				NP	NP					*					
B-2	13.7-15.2	Green CLAY	50.3			99	25		2.75			** 84.7					
B-2	28.7-30.2	Green silty CLAY	35.2			58	38		4.50+			** 85.3					
B-2	53.7-55.2	Dark green CLAY	160.4			274	97					** 99.4					
B-2	63.7-65.2	Light green silty CLAY	49.4			87	33					** 97.1					
B-3	10.0-11.5	Light grayish-brown Fine SAND										** 2.3					
B-3	15.0-16.5	Dark gray slightly silty Fine SAND with shell				NP	NP					*					
B-3	25.0-26.5	Dark grayish-green slightly silty Fine SAND with shell and phosphate										*					
B-4	12.0-13.5	Dark gray slightly silty Fine SAND with abundant shell				NP	NP					*					
B-4	30.0-31.5	Light green very silty CLAY	31.0			38	20										

W %	=	Water Content	Con.	=	Consolidation Test
Y _d (pcf)	=	Dry Density	G.S. (+1)	=	Grainsize Analysis (Hydrometer)
G _s	=	Specific Gravity	ORG. (%)	=	Organic Content
LL	=	Liquid Limit	Cl. (ppm)	=	Total Chloride
PL	=	Plastic Limit	SO ₄ (ppm)	=	Total Sulfate
SL	=	Shrinkage Limit	RES. (ohm-cm)	=	Lab Resistivity
P.P. (tsf)	=	Pocket Penetrometer	*	=	See Test Curves
U.C.	=	Unconfined Compression	**	=	Percent Passing No. 200 Sieve

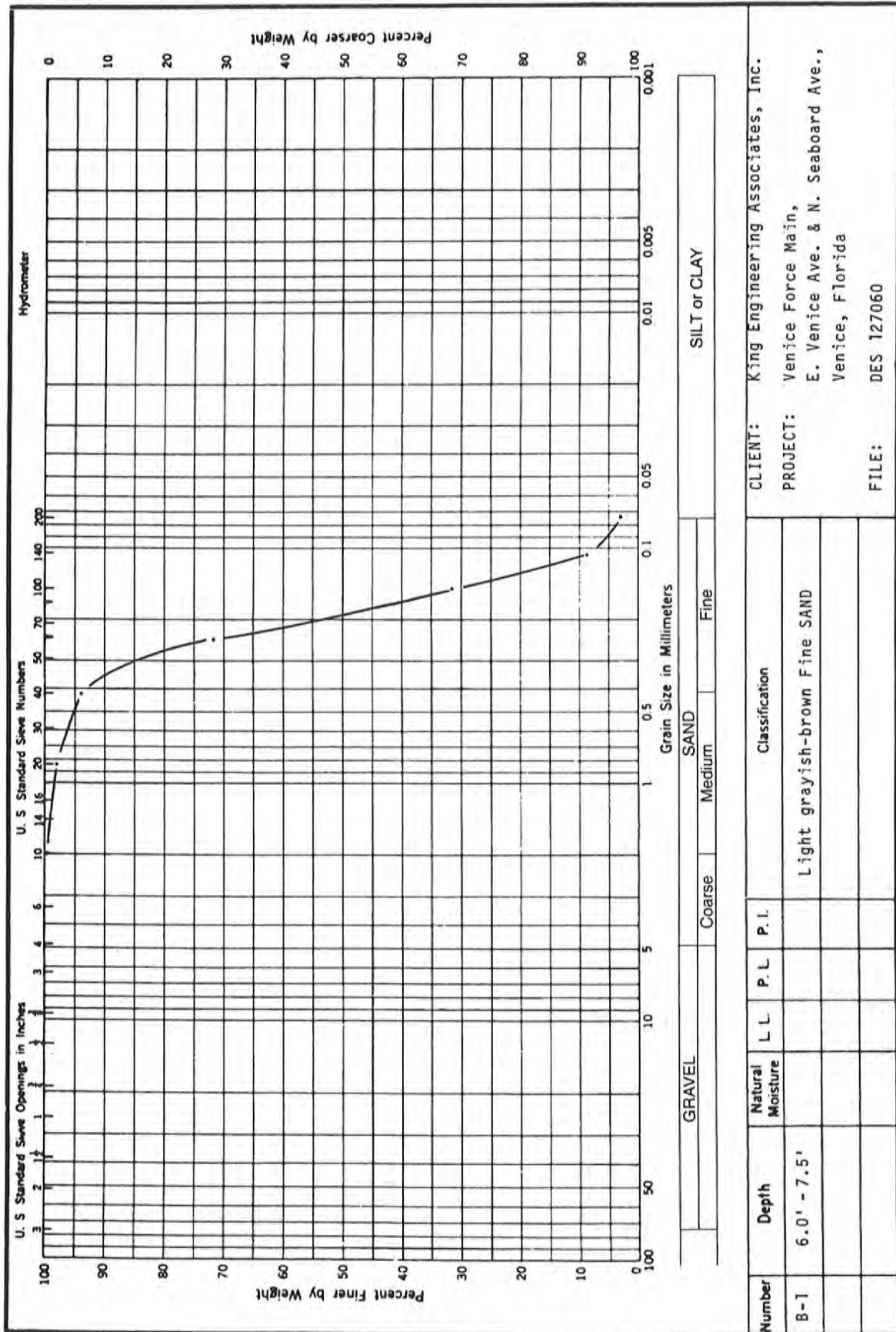
CLIENT: King Engineering Associates, Inc.

PROJECT: Venice Force Main, East Venice Avenue & North Seaboard Avenue, Venice, Florida

FILE: DES 127060

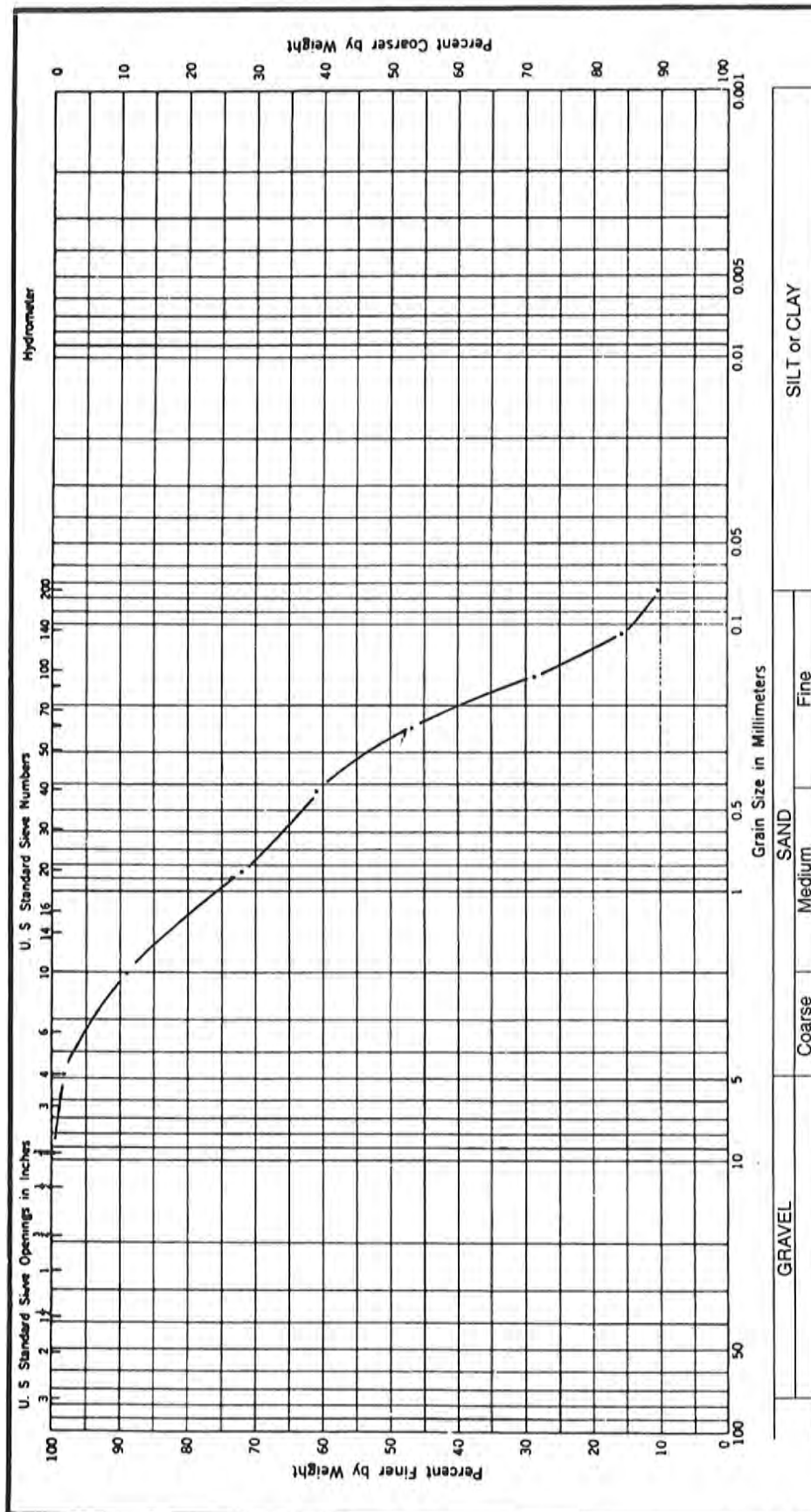
GRAINSIZE ANALYSES

DRIGGERS ENGINEERING SERVICES, INC.

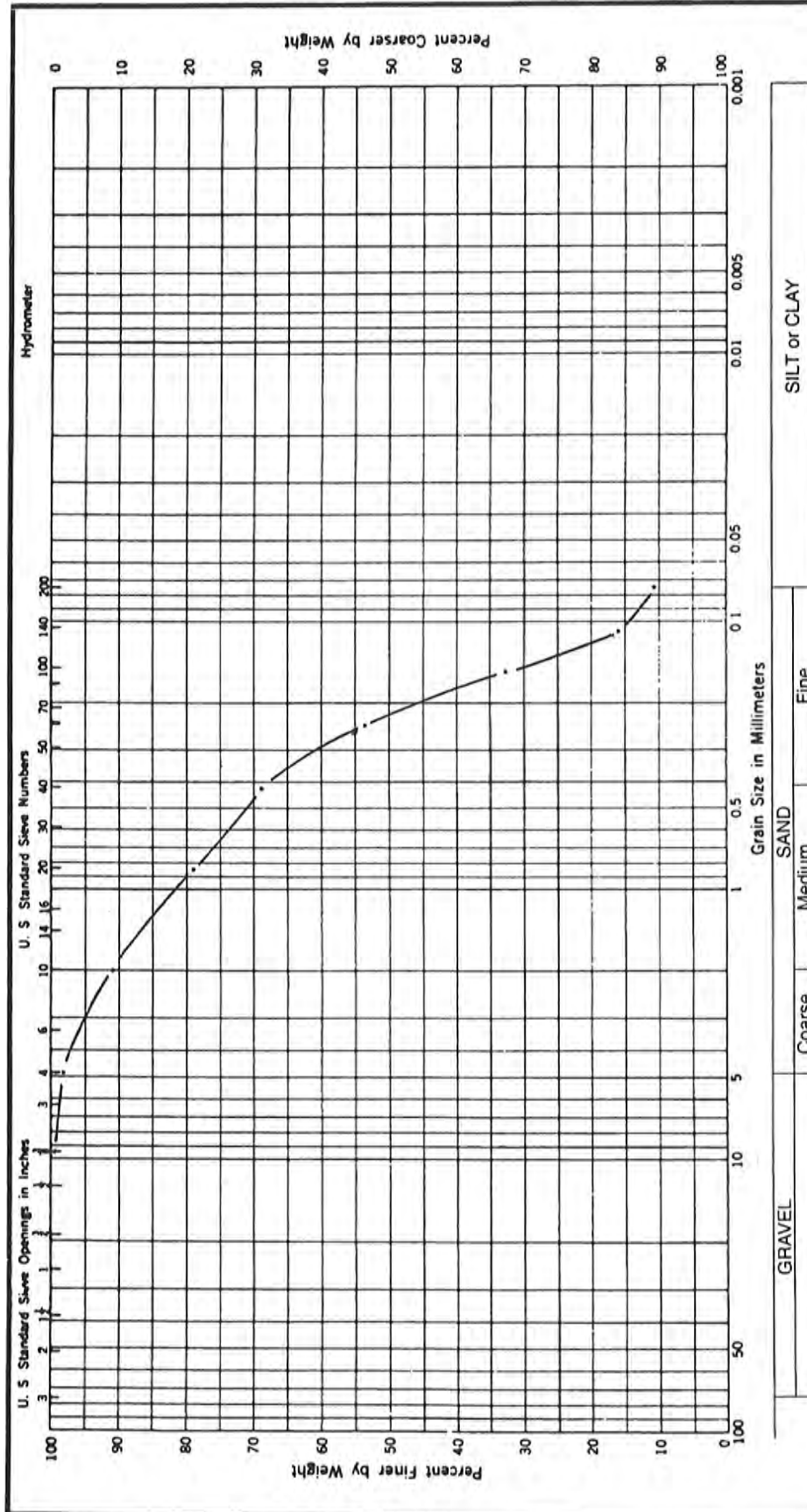


Number	Depth	Natural Moisture	L L	P. L	P. I.	Classification	CLIENT:
B-1	6.0' - 7.5'					Light grayish-brown Fine SAND	King Engineering Associates, Inc.
							PROJECT: Venice Force Main, E. Venice Ave. & N. Seaboard Ave., Venice, Florida
							FILE: DES 127060

DRIGGERS ENGINEERING SERVICES, INC.

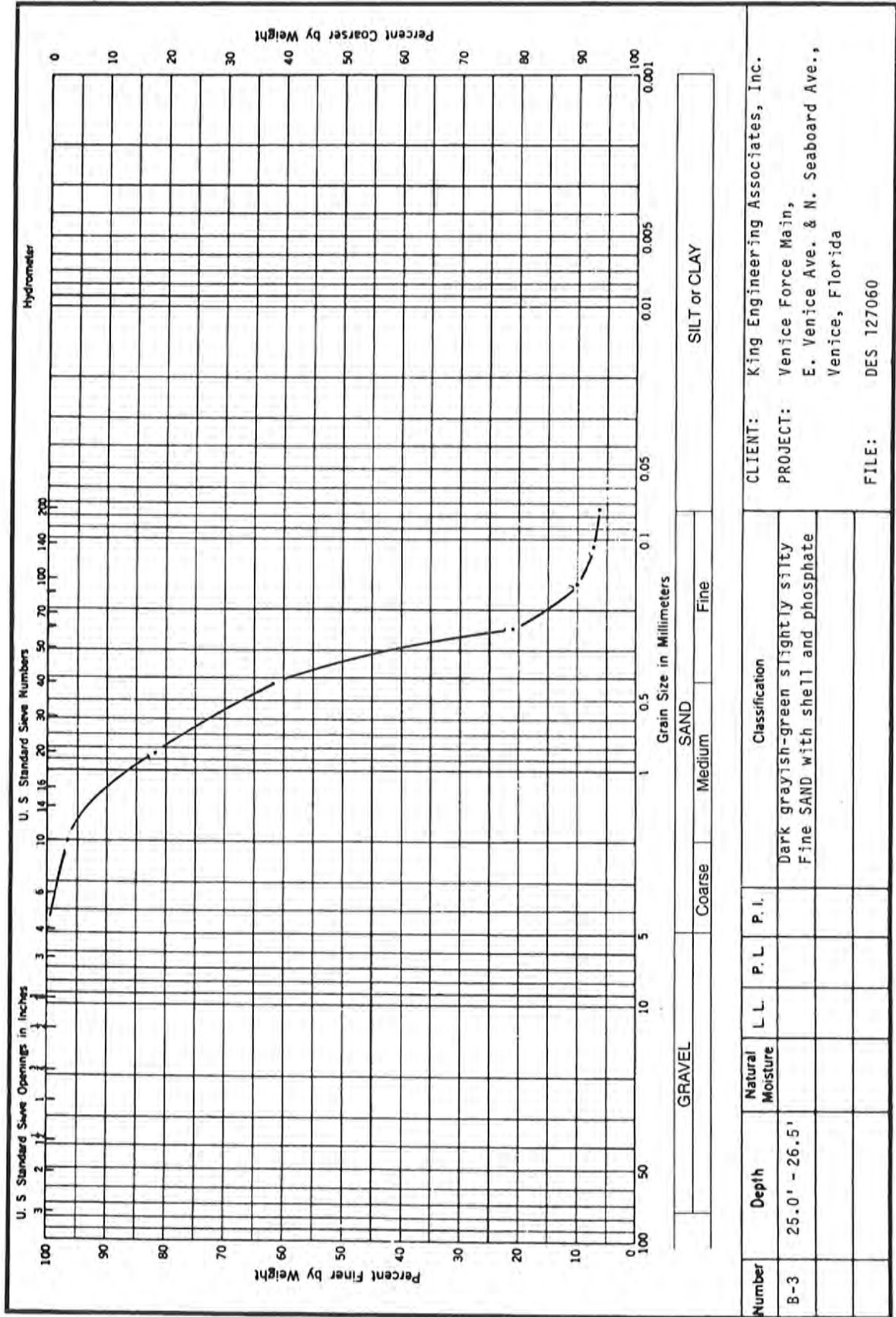


DRIGGERS ENGINEERING SERVICES, INC.

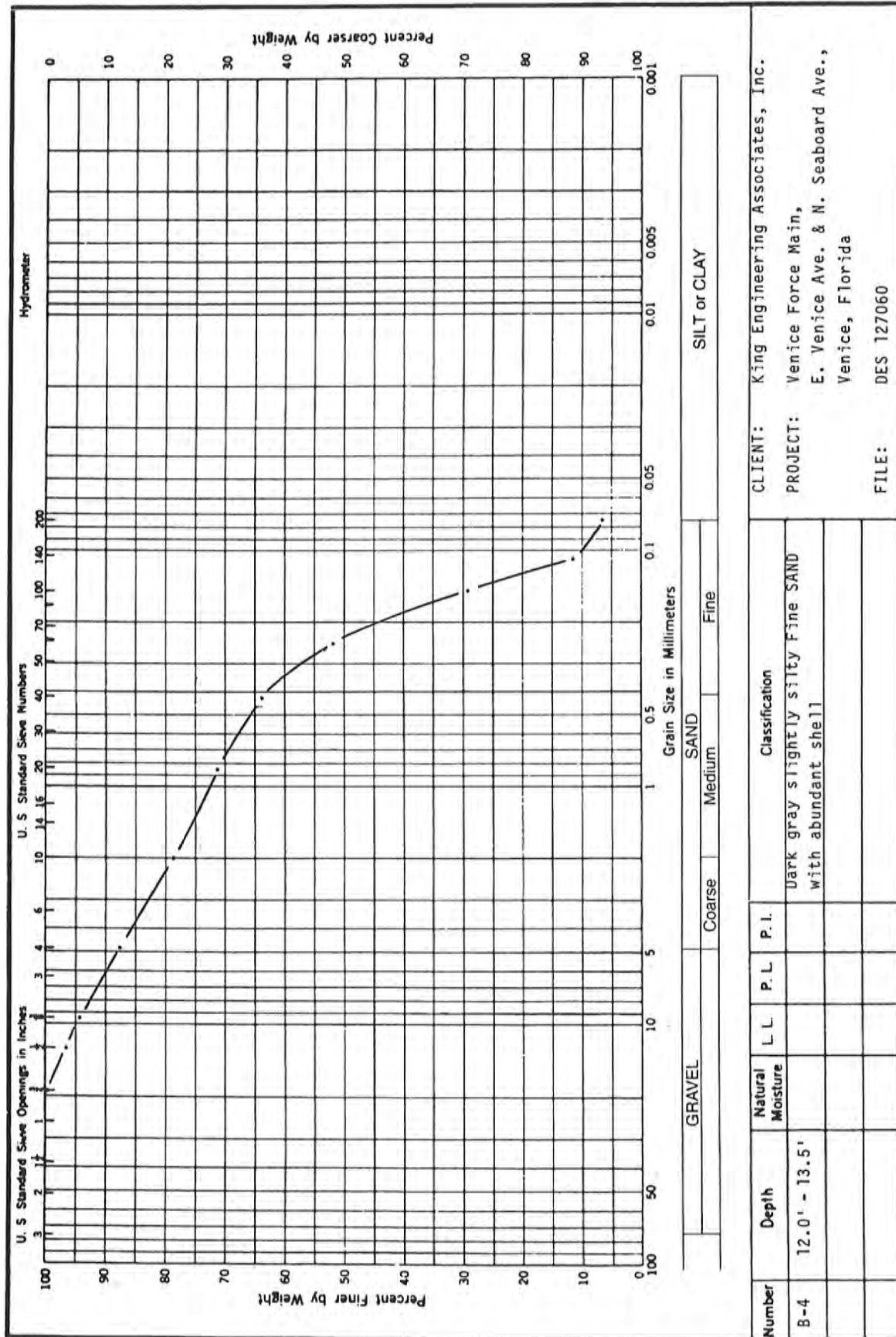


Number	Depth	Natural Moisture	L L	P. L	P. I.	Classification	CLIENT:
B-3	15.0' - 16.5'					Dark gray slightly silty Fine SAND with shell	King Engineering Associates, Inc.
							PROJECT: Venice Force Main,
							E. Venice Ave. & N. Seaboard Ave.,
							Venice, Florida
							FILE: DES 127060

DRIGGERS ENGINEERING SERVICES, INC.



DRIGGERS ENGINEERING SERVICES, INC.



Number	Depth	Natural Moisture	L L	P. L	P. I.	Classification	CLIENT:
B-4	12.0' - 13.5'					Dark gray slightly silty Fine SAND with abundant shell	King Engineering Associates, Inc.
							PROJECT: Venice Force Main, E. Venice Ave. & N. Seaboard Ave., Venice, Florida
							FILE: DES 127060

METHOD OF TESTING

STANDARD PENETRATION TEST AND SOIL CLASSIFICATION

STANDARD PENETRATION TEST (ASTM D-1586)

In the Standard Penetration Test borings, a rotary drilling rig is used to advance the borehole to the desired test depth. A viscous drilling fluid is circulated through the drill rods and bit to stabilize the borehole and to assist in removal of soil and rock cuttings up and out of the borehole.

Upon reaching the desired test depth, the 2 inch O.D. split-barrel sampler or "split-spoon", as it is sometimes called, is attached to an N-size drill rod and lowered to the bottom of the borehole. A 140 pound hammer, attached to the drill string at the ground surface, is then used to drive the sampler into the formation. The hammer is successively raised and dropped for a distance of 30 inches using a rope and "cathead" assembly. The number of blows is recorded for each 6 inch interval of penetration or until virtual refusal is achieved. In the above manner, the samples are ideally advanced a total of 18 inches. The sum of the blows required to effect the final 12 inches of penetration is called the blowcount, penetration resistance or "N" value of the particular material at the sample depth.

After penetration, the rods and sampler are retracted to the ground surface where the core sample is removed, sealed in a glass jar and transported to the laboratory for verification of field classification and storage.

SOIL SYMBOLS AND CLASSIFICATION

Soil and rock samples secured in the field sampling operation were visually classified as to texture, color and consistency. The Unified Soil Classification was assigned to each soil stratum per ASTM D-2487. Soil classifications are presented descriptively and symbolically for ease of interpretation. The stratum identification lines represent the approximate boundary between soil types. In many cases, this transition may be gradual.

Consistency of the soil as to relative density or undrained shear strength, unless otherwise noted, is based upon Standard Penetration resistance values of "N" values and industry-accepted standards. "N" values, or blowcounts, are presented in both tabular and graphical form on each respective boring log at each sample interval. The graphical plot of blowcount versus depth is for illustration purposes only and does not warrant continuity in soil consistency or linear variation between sample intervals.

The borings represent subsurface conditions at respective boring locations and sample intervals only. Variations in subsurface conditions may occur between boring locations. Groundwater depths shown represent water depths at the dates and time shown only. The absence of water table information does not necessarily imply that groundwater was not encountered.

PERMITS

SARASOTA COUNTY PLANNING AND DEVELOPMENT SERVICES

RIGHT-OF-WAY USE PERMIT

PERMIT NO. 13 116229 00 BW

Applicant:	(CITY OF VENICE ENGINEERING)		
Applicant Address:	401 W VENICE AVE VENICE FL 34285		
Applicant Phone:	9412322633	24 Hr Emergency Phone:	(941) 486-2770
Project Type:	WATER/SEWER LINE INSTALL		
Work Location:	312 E VENICE AVE		
Reference File:			
Process:	RIGHT OF WAY REVIEW	Process Status:	APPROVED
Description:	INSTALL FORCE MAIN VIA DIRECTIONAL DRILL IN VENICE AVE R/W AND UNDER GULF INTRACOASTAL WATERWAY(VENETIAN WATERWAY)		
Conditions:	NO SPECIAL PROVISION STIPULATIONS		

Subject to the Sarasota County Land Development Regulations and the General Provisions noted hereof, which have been carefully read and understood to form a part of this permit, and any Special Provision stipulations:

1. Land Development Services MUST be notified at least 24 hours prior to commencement of construction operations. Fax notification to North County (941) 861-6431 or South County (941) 861-3282, as applicable.
- Inspector: Steve Brendel Phone Number: 941-232-0694
2. All construction and restoration must meet those requirements determined applicable by Sarasota County before work will be deemed complete and before applicant will be released from said responsibility or posted bond returned.
3. The applicant declares that all existing aerial and underground utilities have been located and the appropriate utilities notified of the proposed work.
4. All required sketches, plans and cross-sections covering details of this work shall be attached to and become a part of this permit. Any changes made to the drawings or stipulations made thereon must be approved and shall become part of the permit. A copy of all required sketches, plans, cross-sections and any subsequent changes to these must be retained at the job site and an additional copy filed with Land Development Services.
5. Prior to construction the applicant receiving the permit shall make all necessary provisions for the accomodation and convenience of traffic and shall take safety measures, including the placing and display of caution signs and signals as required by the Manual on Uniform Traffic Control Devices for Streets and Highways. The applicant shall further prevent obstructions or conditions, which are or may become dangerous to the traveling public. The authority to close off a street or an easement in its entirety rests entirely with the County Engineer.
6. Fire hydrants shall be left accessible at all times.
7. All pavement repairs shall be effected under the direct supervision of Land Development Services.
8. Existing utility services shall not be disrupted without the specific authority of the concerned utility and public notification by newspapers or the airways that said disruption shall occur. Repairs determined to be of an emergency nature are not subject to the notification procedure.
9. The flow of stormwater within drainage facilities shall remain unimpeded. Adequate measures will be taken to prevent pollution in the area from run-off, and pollution of the air from dust, during the course of construction and restoration.
10. Any public or private property which is used or affected by permitted work shall be repaired and reconstructed, maintained and preserved from damage during the operation, and restored to its original condition upon completion or cessation of work.
11. Any damage to sidewalk, driveway, curbs or other public or private property in the right-of-way as a result of utility work shall be repaired within 45-days of identification of the damage, or be subject to work stoppage. Should the utility be unresponsive to the work stoppage after the 45 day window, the county has the right to pursue efforts to exercise the bond.
12. It is expressly stipulated that any permit issued is a license for permissive use only and that the placing of facilities upon public property pursuant to the issuance of a permit shall not operate or create or to vest any property rights in a permit holder and that said holder may be required to make, at their own expense, any changes, alterations or replacement as necessitated by changed conditions.
13. All suits, actions or claims of whatever nature, which may arise, occasioned whether directly or indirectly by the work permitted or the special privileges granted hereunder, shall be assumed by the applicant. The Board of County Commissioners and all its officers, agents and employees shall be indemnified and held harmless.
14. Land Development Services reserves the right to revoke any permit issued without other formality than notifying the applicant to this effect.
15. NOTICE: This Right of Way Use Permit will become invalid on the expiration date. If an extension is necessary, the request, along with a check in the amount of \$100.00 must be submitted 10 days prior to the expiration date or this permit will become invalid and a Stop Work Order may be placed on the project. If a Stop Work Order is issued, a fee in the amount of \$300.00 will be required to have it removed.

Date of Issuance:05/14/2013

Expiration Date:05/14/2014

Final Inspection Date:_____

By Inspector:_____



Authorized By



**FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION**

South District Office
Post Office Box 2549
Fort Myers, Florida 33902-2549

RICK SCOTT
GOVERNOR

HERSCHEL T. VINYARD JR.
SECRETARY

PERMITTEE:

City of Venice
Len Bramble, P.E., Utilities Director
200 N. Warfield Avenue
Venice, Florida 34285
lbramble@venicegov.com

Permit Number: 41756-008-DWC/CG

Issue Date: March 26, 2013

Expiration Date: March 25, 2018

Project: Intracoastal Waterway Force Main
Replacement Project

Connected to: City of Venice Eastside WRF

County: Sarasota

Dear Mr. Bramble:

This letter acknowledges receipt of your Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System for the subject project. Our office received the Notice on March 4, 2013 with additional information last received March 25, 2013. This is to advise you that the Department does not object to your use of such General Permit.

Please note; the attached requirements apply to your use of the General Permit for constructing the proposed domestic wastewater collection/transmission system.

You are further advised that the construction activity must conform to the description contained in your Notification/Application for Constructing Domestic Wastewater Collection/Transmission Systems. Any substantial deviation will subject the permittee to enforcement action and possible penalties.

Sincerely,

for

Abdul B. Ahmadi, Ph.D., P.E.
Water Facilities Administrator

AA/OJO/MAC/jl

Copies furnished to:

Loc P. Truong, P.E., ltruong@kingengineering.com

Ajaya Satyal, FDEP, Air Section, ajaya.satyal@dep.state.fl.us

REQUIREMENTS FOR USE OF THE GENERAL PERMIT FOR DOMESTIC WASTEWATER COLLECTION/TRANSMISSION SYSTEMS:

1. This general permit is subject to the general permit conditions of Rule 62-4.540, F.A.C., as applicable. This rule is available at the Department's Internet site at: <http://www.dep.state.fl.us/water/wastewater/rules.htm#domestic> [62-4.540, 8-31-88].
2. This general permit does not relieve the permittee of the responsibility for obtaining a dredge and fill permit where it is required [62-604.600(6)(b)1, 11-6-03].
3. This general permit cannot be revised, except to transfer the permit [62-604.600(6)(b)2, 11-6-03].
4. Upon completion of construction of the collection/transmission system project, and before placing the facilities into operation for any purpose other than testing for leaks or testing equipment operation, the permittee shall submit to the South District Office, Form 62-604.300(8)(b), Request for Approval to Place a Domestic Wastewater Collection/Transmission System into Operation. This form is available at the Department's Internet site at <http://www.dep.state.fl.us/water/wastewater/forms.htm> [62-604.700(2), 11-6-03].
5. The new or modified collection/transmission facilities shall not be placed into service until the Department clears the project for use [62-604.700(3), 11-6-03].
6. Abnormal events shall be reported to the Departments South District Office per Rule 62-604.550, F.A.C. For unauthorized spills of wastewater in excess of 1000 gallons per incident, or where information indicates that public health or the environment may be endangered, oral reports shall be provided to the STATE WARNING POINT TOLL FREE NUMBER (800) 320-0519 as soon as practical, but no later than 24 hours from the time the permittee or other designee becomes aware of the circumstances. Unauthorized releases or spills less than 1000 gallons per incident are to be reported orally to the Department's South District Office within 24 hours from the time the permittee, or other designee becomes aware of the circumstances [62-604.550, 11-6-03].
7. The design and construction of the wastewater collection/transmission system shall be in accordance with provisions of Florida Administrative Code (F.A.C.) Rule 62-604 [62-604.300(1) and 62-604.400, 11-6-03].
8. When any existing asbestos cement (AC) pipes are replaced under this permit, the permittee shall do so in accordance with the applicable rules of Federal Asbestos Regulation and Florida DEP requirements. For specific requirement applicable to AC pipes, the permittee should contact the Air and Waste Management section managers prior to commencing any such activities at (239) 344-5600. Please be aware that a notification is required to be submitted to the Department for a regulated project.

VIA ELECTRONIC MAIL

April 2, 2013

City of Venice Utility Department
c/o King Engineering Associates, Inc
4921 Memorial Highway, One Memorial Center, Suite 300
Tampa FL 33634
pbottone@kingengineering.com

Re: Sarasota County – ERP
File No.: 58-0317119-0001

Dear Mr. Bramble:

This is to acknowledge receipt of your notice on March 4, 2013 of intent to use a Noticed General Permit (NGP), pursuant to the provisions of Rule 62-330.453 Florida Administrative Code (F.A.C.) to replace approximately 440 linear feet of 4 inch diameter sewer force main and 1,080 linear feet of 16 inch diameter sewer force main in uplands, and the Gulf Intracoastal Waterway, via HDD at the South side of Venice Avenue Bridge at GIW in the Gulf Intracoastal Waterway, Class III Waters, Section 7, Township 39 South, Range 19 East, Sarasota County.

Your notice of intent to use a Noticed General Permit has been reviewed by Department staff for regulatory compliance under Rule 62-330.453, F.A.C. In addition to regulatory authorization, this type of activity may require authorization to use state-owned submerged lands (proprietary authorization) for private purposes. Federal authorization for works in wetlands and/or waters of the United States may also be required for this activity. Your notice has been reviewed for the regulatory, proprietary and Federal authorization for works in waters of the United States through the State Programmatic General Permit (SPGP) program (SPGP IV). The authority for review and the outcomes of the reviews are listed below. Please read each section carefully. Your project **MAY NOT** have qualified for all three authorizations. If your project did not qualify for one or more of the authorizations, the specific section dealing with that authorization will advise you how to obtain it. You may **NOT** commence your project without all three authorizations. **If you change the project from what you submitted, the authorizations(s) granted may no longer be valid at the time of commencement of the project. Please contact us prior to beginning your project if you wish to make any changes.**

REGULATORY REVIEW – APPROVED

Based on the forms, drawings, and documents submitted with your notice, it appears that the project meets the requirements for the Noticed General Permit (NGP) under Rule 62-330.453, F.A.C.

Please be advised that the construction phase of the NGP must be completed within five years from the date the notice to use the NGP was received by the Department. If you wish to extend this NGP beyond the expiration date, you must notify the Department at least 30 days before its expiration.

Activities performed by way of a NGP are subject to the General Conditions in Rule 62-330.405, F.A.C. (attached), and the Specific Conditions of Rule 62-330.453, F.A.C. (attached). Any deviations from these conditions may subject the permittee to enforcement action and possible penalties.

PROPRIETARY REVIEW – NOT REQUIRED

The Department of Environmental Protection has reviewed the location of the proposed project as described in the above referenced application and has determined that the project, as described, does not involve the use of sovereign submerged lands. Accordingly, no further authorization will be required from the Submerged Lands and Environmental Resources Program, designated agent to the Board of Trustees of the Internal Improvement Trust Fund, pursuant to Section 253.77, F.S.

SPGP (FEDERAL) REVIEW –NOT APPROVED

A copy of your notice was sent to the U.S. Army Corps of Engineers (Corps) for review. The Corps determined that your proposed activity as outlined in your application is **NOT in compliance with the Corps State Programmatic General Permit (SPGP IV-R1)** effective July 25, 2011. The Corps may require a separate permit. **Failure to obtain this authorization prior to construction could subject you to enforcement action by that agency.** For further information you should contact the Corps at 239-334-1975.

Authority for review – an agreement with the U.S. Army Corps of Engineers entitled “Coordination Agreement between the U.S. Army Corps of Engineers (Jacksonville District) and the Florida Department of Environmental Protection State Programmatic General Permit, Section 10 of the Rivers and Harbor Act of 1899 and Section 404 of the Clean Water Act.”

This notice constitutes final agency action and is subject to the provisions of Chapter 120, F.S., which **does not** apply to the SPGP review.

NOTICE OF RIGHTS OF SUBSTANTIALLY AFFECTED PERSONS

This letter acknowledges that the proposed activity may be conducted under general permit Rule 62-330.453, F.A.C. This determination is final and effective on the date filed with the Clerk of the Department unless a sufficient petition for an administrative hearing is timely filed under Sections 120.569 and 120.57, F.S., as provided below. If a sufficient petition for an administrative hearing is timely filed, this determination automatically becomes only proposed agency action subject to the result of the administrative review process. Therefore, on the filing of a timely and sufficient petition, this action will not be final and effective until further order of the Department. The procedures for petitioning for a hearing are set forth below.

Mediation is not available.

A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed (received by the clerk) in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

Under Rule 62-110.106(4), F.A.C., a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, before the applicable deadline. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon. If a request is filed late, the Department may still grant it upon a motion by the requesting party showing that the failure to file a request for an extension of time before the deadline was the result of excusable neglect.

If a timely and sufficient petition for an administrative hearing is filed, other persons whose substantial interests will be affected by the outcome of the administrative process have the right to petition to intervene in the proceeding. Intervention will be permitted only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

In accordance with Rule 62-110.106(3), F.A.C., petitions for an administrative hearing by the applicant must be filed within 21 days of receipt of this written notice. Petitions

filed by any persons other than the applicant, and other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 21 days of publication of the notice or within 21 days of receipt of the written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who has asked the Department for notice of agency action may file a petition within 21 days of receipt of such notice, regardless of the date of publication.

The petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition for an administrative hearing within the appropriate time period shall constitute a waiver of that right.

A petition that disputes the material facts on which the Department's action is based must contain the following information:

- a) The name and address of each agency affected and each agency's file or identification number, if known;
- b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests are or will be affected by the agency determination;
- c) A statement of when and how the petitioner received notice of the agency decision;
- d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
- e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;
- f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action; and
- g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts on which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Under Sections 120.569(2)(c) and (d), F.S., a petition for administrative hearing must be dismissed by the agency if the petition does not substantially comply with the above requirements or is untimely filed.

This determination constitutes an order of the Department. Subject to the provisions of Section 120.68(7)(a), F.S., which may require a remand for an administrative hearing, the applicant has the right to seek judicial review of the order under Section 120.68, F.S., by the filing of a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000; and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days from the date when the final order is filed with the Clerk of the Department. The applicant, or any party within the meaning of Section 373.114(1)(a) or 373.4275, F.S., may also seek appellate review of the order before the Land and Water Adjudicatory Commission under Section 373.114(1) or 373.4275, F.S. Requests for review before the Land and Water Adjudicatory Commission must be filed with the Secretary of the Commission and served on the Department within 20 days from the date when the order is filed with the Clerk of the Department.

Complete copies of all documents relating to this Notice General Permit are available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, at Florida Department of Environmental Protection, South District Office, 2295 Victoria Avenue, Fort Myers, FL 33901.

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Thank you for applying to the Submerged Lands and Environmental Resource Program. If you have any questions, please contact Patricia Clune by telephone at (239) 344-5639 or by e-mail at Patricia.Clune@dep.state.fl.us When referring to this project, please reference the file number listed above.

Sincerely,



Patricia Clune
Environmental Specialist
Submerged Lands and
Environmental Resource Program

PC/mv

Enclosures:

17 drawing(s)
General Conditions for NGP 62-330.405 F.A.C.
Rule 62-330.453, F.A.C.

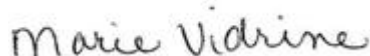
cc: U.S. Army Corps of Engineers, Tampa, Permit SAJ 2013-00373

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this document, including all copies, was mailed before the close of business on April 2, 2013 to the above listed person(s).

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52(7), F.S., with the designated Department clerk, receipt of which is hereby acknowledged.



Clerk

April 2, 2013

Date

- (1) The terms, conditions, requirements, limitations, and restrictions set forth in this section are general permit conditions and are binding upon the permittee for all noticed general permits in this chapter. These conditions are enforceable under Part IV of Chapter 373, F.S.
- (2) The general permit is valid only for the specific activity indicated. Any deviation from the specified activity and the conditions for undertaking that activity shall constitute a violation of the permit. A violation of the permit is a violation of Part IV of Chapter 373, F.S., and may result in suspension or revocation of the permittee's right to conduct such activity under the general permit. The Department also may begin legal proceedings seeking penalties or other remedies as provided by law for any violation of these conditions.
- (3) This general permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any construction, alteration, operation, maintenance, removal or abandonment authorized by this permit.
- (4) This general permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the general permit.
- (5) The general permit does not relieve the permittee from liability and penalties when the permitted activity causes harm or injury to: human health or welfare; animal, plant or aquatic life; or property. It does not allow the permittee to cause pollution in contravention of Florida Statutes and Department rules.
- (6) The permittee is hereby advised that Section 253.77, F.S., states that a person may not commence any excavation, construction, or other activity involving the use of sovereign or other lands of the state, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required lease, license, easement, or other form of consent authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on sovereignty lands or other state-owned lands.
- (7) The authorization to conduct activities pursuant to a general permit may be modified, suspended or revoked in accordance with Chapter 120 and Section 373.429, F.S.
- (8) This permit shall not be transferred to a third party except pursuant to Rule 62-343.130, F.A.C., or, for activities within the geographical area of the Northwest Florida Water Management District, Rule 62-346.130, F.A.C. The permittee transferring the general permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to sale, conveyance, or other transfer of ownership or control of the permitted system or the real property at which the permitted system is located.

(9) Upon reasonable notice to the permittee, Department staff with proper identification shall have permission to enter, inspect, sample and test the permitted system to insure conformity with the plans and specifications approved by the permit.

(10) The permittee shall maintain any permitted system in accordance with the plans submitted to the Department and authorized in this general permit.

(11) A permittee's right to conduct a specific noticed activity under this noticed general permit is authorized for a duration of five years.

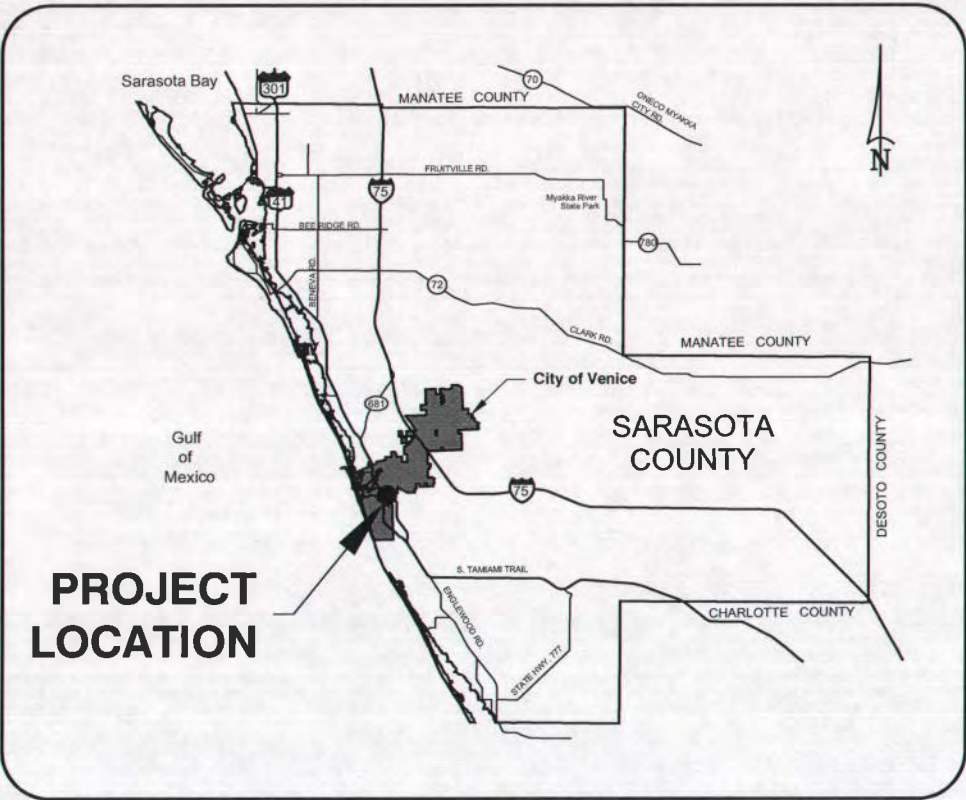
(12) Construction, alteration, operation, maintenance, removal and abandonment approved by this general permit shall be conducted in a manner which does not cause violations of state water quality standards, including any anti-degradation provisions of Sections 62-4.242(1)(a) and (b), Sections 62-4.242(2) and (3) and Rule 62-302.300, F.A.C., and any special standards for Outstanding Florida Waters and Outstanding National Resource Waters. The permittee shall implement best management practices for erosion, turbidity, and other pollution control to prevent violation of state water quality standards. Temporary erosion control measures such as sodding, mulching, and seeding shall be implemented and shall be maintained on all erodible ground areas prior to and during construction. Permanent erosion control measures such as sodding and planting of wetland species shall be completed within seven days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into wetlands and other surface waters exists due to the permitted activity. Turbidity barriers shall remain in place and shall be maintained in a functional condition at all locations until construction is completed and soils are stabilized and vegetation has been established. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

(13) The permittee shall hold and save the Department harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any system authorized by the general permit.

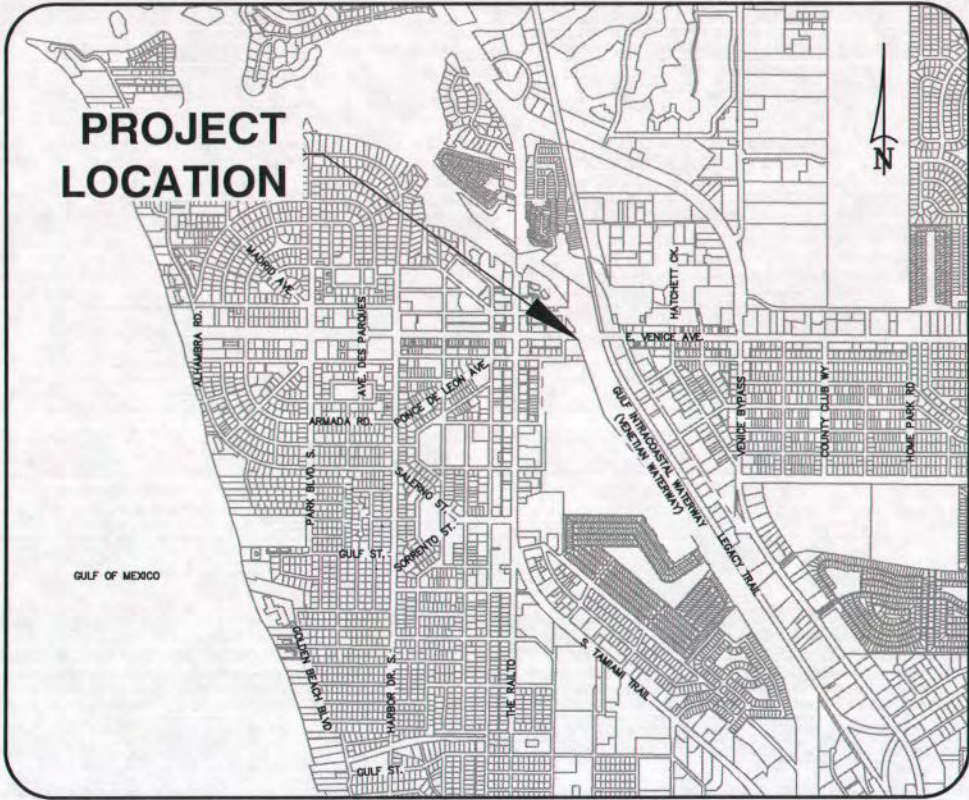
(14) The permittee shall immediately notify the Department in writing of any previously submitted information that is later discovered to be inaccurate. Specific Authority 373.026(7), 373.043, 373.118(1), 373.406(5), 373.414(9), 373.4145, 373.418, 403.805(1) FS. Law Implemented 373.044, 373.406(5), 373.118(1), 373.129, 373.136, 373.413, 373.414(9), 373.4145, 373.416, 373.422, 373.423, 373.429 FS. History-New 10-3-95, Amended 10-1-07

INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT

VENICE, FLORIDA
SEC. 07 - TWP. 39 S - RNG. 19 E
LAT. 27.099682° N
LONG. - 82.440738° W



SARASOTA COUNTY VICINITY MAP



LOCATION MAP

INDEX OF PLANS

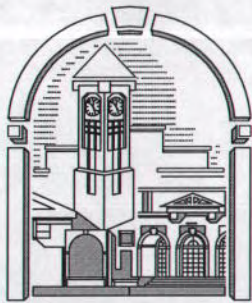
SHEET #	SHEET DESCRIPTION
G0.00	COVER
G1.00	ABBREVIATIONS, LEGENDS, AND CITY STANDARD NOTES
G1.01	GENERAL NOTES
G1.02	SURVEYOR'S REPORT
G1.03	STORM WATER POLLUTION PREVENTION PLAN
C1.00	OVERALL PROJECT SITE PLAN AND KEYMAP
C1.01	OVERALL PROPOSED PLAN
C1.02	AMERICAN LEGION WAY PLAN AND PROFILE STA. 50+00 THROUGH STA. 53+39
C1.03	VENICE AVENUE PLAN STA. 69+21 THROUGH STA. 74+95
C1.04	VENICE AVENUE PROFILE STA. 69+21 THROUGH STA. 74+95
C1.05	VENICE AVENUE PLAN STA. 74+95 THROUGH STA. 80+69
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D1.00	EROSION CONTROL & TREE BARRICADE DETAILS
D1.01	SANITARY FORCE MAIN DETAILS (I)
D1.02	PIPE TRENCHING & PAVEMENT RESTORATION DETAILS

RECEIVED
MAR 04 2013
D.E.P. South District

LOC P. TRUONG, P.E.
ENGINEER OF RECORD, P.E. #65709

PREPARED FOR:

CITY OF VENICE
UTILITIES DEPARTMENT
200 NORTH WARFIELD AVENUE
VENICE, FL 34285



Ph. 941-480-3333
Fax 941-480-3031

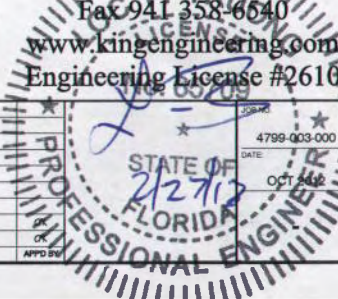


PERMIT SUBMITTAL

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



NO.	DATE	DESCRIPTION	APPROVED BY
C	02/16/2013	PERMIT SUBMITTAL	
B	12/08/2012	30% SUBMITTAL	
A	10/04/2012	UTILITY NOTIFICATION SUBMITTAL	

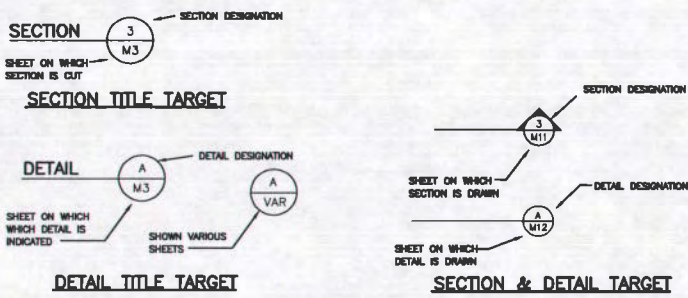
































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ABBREVIATIONS			
AC	ASBESTOS CEMENT	MECH	MECHANICAL
APP	APPARENT	MJ	MECHANICAL JOINT
APPROX	APPROXIMATE	MIN	MINIMUM
ASPH	ASPHALT	MOD	MODIFIED
ASSY	ASSEMBLY	N	NORTH OR NORTING
AVE	AVENUE	NIC	NOT IN CONTRACT
B OR BL	BASELINE	NTS	NOT TO SCALE
BAV	BALL VALVE	NO OR #	NUMBER
BE	BURIED ELECTRIC	O/S	OFFSET
BF	BLIND FLANGE	OD	OUTSIDE DIAMETER
BFD	BACK FLOW PREVENTOR DEVICE	O R BOOK	OFFICIAL RECORD BOOK
BFV	BUTTERFLY VALVE	PWMT	PAVEMENT
BLDG	BUILDING	PL	PLATE OR PLACE OR PROPERTY LINE
BLK	BLOCK	PNT OR PT	POINT
BLVD	BOULEVARD	PC	POINT OF CURVATURE
BM	BENCH MARK	PI	POINT OF INTERSECTION
BOC	BACK OF CURB	PSM	PROFESSIONAL SURVEYOR & MAPPER
BT	BURIED TELEPHONE	PVI	POINT OF VERTICAL INTERSECTION
(C)	CALCULATED	PT	POINT OF TANGENCY
CAT	CATALOG	PVC	POLYVINYL CHLORIDE
CB	CATCH BASIN	LB. OR #	POUND
CF	CUBIC FEET	PSI	POUNDS PER SQUARE INCH
CI	CAST IRON	PP	POWER POLE
CL2	CHLORINE	PROP	PROPOSED
CL OR C L	CENTER LINE	PS	PUMP STATION
CLR	CLEAR OR CLEARANCE	R	RADIUS
CM	CONCRETE MONUMENT	RWM	RAW WATER MAIN
CMP	CORRUGATED METAL PIPE	RCW	RECLAIMED WATER
CMU	CONCRETE MASONRY UNIT	RD	ROAD
CO	CLEANOUT	RP	RADIUS POINT
CONC	CONCRETE	RED	REDUCER
CONN	CONNECTION	REINF	REINFORCE(ING)
CONST	CONSTRUCTION	RCP	REINFORCED CONCRETE PIPE
CONT	CONTINUOUS	REQD	REQUIRED
CORP	CORPORATION	RT	RIGHT
CORR	CORRUGATED	R/W	RIGHT-OF-WAY
COV	CITY OF VENICE	SAN	SANITARY (SEWER)
CPLG	COUPLING	SCH	SCHEDULE
CV	CHECK VALVE	SHT	SHEET
CY	CUBIC YARDS	SIR	SET IRON ROD
DBL	DOUBLE	SIRC	SET IRON ROD AND CAP
DEPT	DEPARTMENT	SMH	SANITARY MAN HOLE
DET	DETAIL	S/W	SIDEWALK
DI	DUCTILE IRON	SPECS	SPECIFICATIONS
DIA	DIAMETER	SS	STAINLESS STEEL OR SHORT SIDE
DIM	DIMENSION	ST	STREET
DIP	DUCTILE IRON PIPE	STD	STANDARD
DWG	DRAWING	STA	STATION
E	EAST OR EASTING	STM	STORM
EA	EACH	SQ	SQUARE
ECC	ECCENTRIC	TEL	TELEPHONE
ELEC	ELECTRIC OR ELECTRICAL	TEMP	TEMPORARY
EL OR ELEV	ELEVATION	THD	THREADED
EOP	EDGE OF PAVEMENT	THK	THICK
EQUIP	EQUIPMENT	TOC	TOP OF CONCRETE
EX OR EXIST	EXISTING	TRV	SURVEY TRAVERSE POINT
EXP	EXPANSION	TS	TRAFFIC SIGN
FDOT	FLORIDA DEPT. OF TRANSPORTATION	TS&V	TAPPING SLEEVE AND VALVE
FHA	FIRE HYDRANT ASSEMBLY	TYP	TYPICAL
FIR	FOUND IRON ROD	UD	UNDERDRAIN
FIRC	FOUND IRON ROD WITH CAP	UG	UNDER GROUND
FLEX	FLEXIBLE	WSC	WATER SERVICE CONNECTION
FLG	FLANGE		
FLR	FLOOR		
FM	FORCE MAIN		
FND, FN&D	FOUND NAIL & DISK		
FOC	FIBER OPTIC CABLE		
FT	FEET		
FTG	FITTING OR FOOTING		
GA	GAUGE OR GAGE		
GAL	GALLON		
GALV	GALVANIZED		
GE	GRATE ELEVATION		
GW	GULF INTRACOASTAL WATERWAY		
GPM	GALLONS PER MINUTE		
GRD	GRADE		
GS	GROUND SHOT		
GSP	GALVANIZED STEEL PIPE		
GV	GATE VALVE		
HDD	HORIZONTAL DIRECTIONAL DRILL		
HDPE	HIGH DENSITY POLYETHYLENE		
HDWL	HEADWALL		
HORIZ	HORIZONTAL		
HWY	HIGHWAY		
ID	INSIDE DIAMETER		
IN	INCH		
INV OR IE	INVERT (ELEVATION)		
IR	IRON ROD		
IV	IRRIGATION VALVE		
JT	JOINT		
LB#	LICENSED BUSINESS NUMBER		
LS	LONG SIDE		
MH	MANHOLE		
MFR	MANUFACTURER		
MAX	MAXIMUM		

LEGEND	
T.U.B. 	= TELEPHONE UTILITY BOX
F.H. 	= EXISTING FIRE HYDRANT
T.S. 	= TRAFFIC SIGN
U.P. 	= UTILITY POLE
L.P. 	= LIGHT POLE
	= ELECTRIC UTILITY BOX
W.V. 	= WATER VALVE
	= GUY WIRE
S.F.M.M. 	= SANITARY FORCE MAIN MARKER
C.A.T.V. 	= BURIED CABLE TV MARKER
B.E.M. 	= BURIED ELECTRIC MARKER
S.V. 	= SANITARY VALVE
	= SANITARY MANHOLE OR VAULT
W.B.O.V. 	= WATER BLOW OFF VALVE
	= WATER METER
S.C.O. 	= SANITARY CLEAN OUT
	= CONCRETE
	= GRATE INLET
	= STORM SEWER CLEAN OUT, PIPE & MANHOLE
F.I.R. 	= FOUND IRON ROD (SIZE AND IDENTIFICATION IF SHOWN)
F.I.R.C. 	= FOUND IRON ROD WITH CAP (SIZE AND IDENTIFICATION IF SHOWN)
F.N.&D. 	= FOUND NAIL & DISK (TYPE AND IDENTIFICATION IF SHOWN)
F.I.P. 	= FOUND IRON PIPE (SIZE AND IDENTIFICATION IF SHOWN)
S.I.R. 	= SET 1/2" IRON ROD & CAP L.B.#2610
H.A. 	= HAND AUGER BORING
G. 	= SPT BORING
---	= RIGHT OF WAY LINE
---	= PROPERTY LINE
---	= EDGE OF UNPAVED ROAD
---	= CONTOUR MAJOR
---	= CONTOUR MINOR
---	= TOP OF BANK
---	= MEAN HIGH WATER LINE
---	= TOE OF SLOPE
---	= CHAIN-LINK FENCE
---	= EDGE OF SIDEWALK
---	= RIGHT OF WAY LINE
---	= CENTERLINE
---	= EDGE OF PAVEMENT
---	= EXISTING WATER MAIN
---	= EXISTING FORCE MAIN
---	= EXISTING SANITARY SEWER
---	= EXISTING STORM SEWER
---	= EXISTING UNDERDRAIN
---	= EXISTING BURIED TELEPHONE
---	= EXISTING BURIED FIBER OPTIC CABLE
---	= EXISTING BURIED ELECTRIC
---	= EXISTING BURIED CABLE TV
---	= EXISTING GAS MAIN
---	= EXISTING OVERHEAD UTILITY LINE
---	= PROPOSED FORCE MAIN




TREE LEGEND		
 = 12" UNKNOWN TYPE TREE	 = 12" PECAN TREE	 = 12" BIRCH
 = 12" CHERRY LAUREL	 = 12" EUCALYPTUS TREE	 = 12" HICKORY
 = 12" WILLOW TREE	 = 12" CAMPHOR TREE	
 = 12" HOLLY TREE	 = 12" SYCAMORE TREE	
 = 12" DEAD TREE	 = 12" PINE TREE	
 = 12" CHINESE TALLOW TREE	 = 12" AUSTRALIAN PINE	
 = 12" CHINABERRY TREE	 = 12" CEDAR TREE	
 = 12" OAK TREE	 = 12" ELM TREE	
 = 12" JACARANDA TREE	 = 12" MAPLE TREE	
 = 12" MULBERRY TREE	 = 12" WAX MYRTLE TREE	
 = 12" PALM TREE	 = 12" PUNK TREE	
 = 12" BAY TREE	 = 12" CYPRESS TREE	
 = 12" MAGNOLIA TREE	 = 12" EAR TREE	
 = 12" CITRUS TREE	 = 12" SWEET GUM TREE	

- CITY OF VENICE STANDARD NOTES**
- ALL CONSTRUCTION WITHIN THE CITY OF VENICE SHALL MEET THE APPLICABLE CITY TESTING REQUIREMENTS.
 - A PRE-CONSTRUCTION CONFERENCE SHALL BE CONDUCTED BY EITHER THE PROJECT ENGINEER OF RECORD (EOR) OR CONSTRUCTION MANAGER AT A TIME AND PLACE ACCEPTABLE TO THE CITY ENGINEER, CITY OF VENICE, FOR THE PURPOSE OF OUTLINING CITY STANDARDS, TESTING AND INSPECTION REQUIREMENTS, AND CITY DEPARTMENT RESPONSIBILITIES, AND OTHER RELATED CONSTRUCTION CONCERNS.
 - THE CITY OF VENICE UTILITIES DEPARTMENT WILL OPERATE ALL WATER VALVES.
 - THE CONTRACTOR SHALL INSTALL, PRESSURE TEST AND PERFORM TAPPING AT ALL TAPPING SLEEVES AND VALVES.

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DESIGNED MAG/CE DRAWN TAD CHECKED LPT DATE	City Of Venice Utility Department 200 North Wierfield Avenue Venice, FL 34286 Phone 941-486-3001 Fax 941-486-3001	2930 University Parkway Sarasota, Florida 34243 Phone 941-558-6500 Fax 941-338-6540 www.kingengineering.com Engineering License #2610
		
INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT		
JOB NO. 4799-003-000		
DATE OCT 2012		
SCALE AS SHOWN		
SHEET NO. G1.00		
PERMIT SUBMITTAL 02/15/2013		

GENERAL NOTES CONTINUED

27. THROUGHOUT CONSTRUCTION THE CONTRACTOR SHALL MAINTAIN ALL WEATHER EMERGENCY ACCESS AT ALL ROAD CROSSINGS. THE ACCESS MUST WITHSTAND THE WEIGHT OF A 32 TON FIRE TRUCK.
28. CONTRACTOR SHALL STORE AND PROVIDE PROTECTION FOR ALL COMBUSTIBLE PRODUCTS AND MATERIALS FROM VEHICULAR DAMAGE AND VANDALISM.
29. GROUNDWATER DEWATERING ACTIVITIES ARE NOT COVERED BY THE PROJECT ENVIRONMENTAL RESOURCE PERMIT. THE CONTRACTOR SHALL APPLY TO THE DDEP FOR COVERAGE UNDER THE GENERIC PERMIT FOR THE DISCHARGE OF PRODUCED GROUNDWATER FROM ALL NON-CONTAMINATED SITE ACTIVITIES PURSUANT TO 62-621.300 (2), F.A.C. CONTRACTOR IS RESPONSIBLE FOR ALL ASSOCIATED SAMPLING AND TESTING. A COPY OF THE APPROVED PERMIT SHALL BE PROVIDED TO THE AUTHORITY, ENGINEER OF RECORD AND CITY OF VENICE.
30. CONTRACTOR SHALL SIGN THE STORM WATER POLLUTION PREVENTION PLAN PROVIDED ON SHEET G1.02 AND SHALL SUBMIT THE REQUIRED NOTICE OF INTENT TO USE GENERIC PERMIT FOR STORM WATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES (FORM 62-621.300(4)(b)) TO THE DDEP ALONG WITH ANY REQUIRED FEE.
31. MHW ELEVATION (1.3 FT NGVD) AND MLW ELEVATION (-0.03 FT NGVD) PER LABINS.

- THE FILTER BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 8 INCHES. AFTER THE BALES ARE STAKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AND COMPACTED AGAINST THE FILTER BARRIER.
11. EACH HAY BALE SHALL BE SECURELY ANCHORED AND HELD IN PLACE BY AT LEAST TWO STAKES OR REBARS DRIVEN THROUGH THE BALES.
12. LOOSE STRAW SHOULD BE WEDGED BETWEEN THE BALES TO PREVENT WATER FROM ENTERING BETWEEN THE BALES.
13. STRAW BALE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAIN EVENTS.
14. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES.
15. NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BALES SHALL BE ACCOMPLISHED PROMPTLY.
16. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE STRAW BALE BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
17. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
18. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC OR BALES SHALL BE REPLACED PROMPTLY.
19. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN THE DEPOSITS REACH APPROXIMATELY ONE-THIRD THE HEIGHT OF THE BARRIER.
20. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH EXISTING GRADE, PREPARED AND SEEDED.
21. EXISTING STORM STRUCTURES SHALL BE INSPECTED AFTER EACH RAIN EVENT, REPAIRS MADE TO THE FILTER BARRIERS, AND SILT / SEDIMENT REMOVED FROM PIPES AND STRUCTURES AS NEEDED TO PROVIDE POSITIVE FLOW.
22. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
23. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS, SPECIFICATIONS AND SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT SPECIFICATIONS AND CRITERIA.
24. FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO: "THE FLORIDA DEVELOPMENT MANUAL - A GUIDE TO SOUND LAND AND WATER MANAGEMENT", FROM THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (F.D.E.P.), CHAPTER 6.
25. EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE PLACED ADJACENT TO ALL WETLAND AREAS WHERE THERE IS A POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION.
26. ALL DISTURBED AREAS SHALL BE GRASSED, FERTILIZED, MULCHED AND MAINTAINED UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED.
27. SOD SHALL BE PLACED IN AREAS WHICH MAY REQUIRE IMMEDIATE EROSION PROTECTION TO ENSURE WATER QUALITY STANDARDS ARE MAINTAINED.
28. ANY DISCHARGE FROM DEWATERING ACTIVITY SHALL BE FILTERED AND CONVEYED TO THE OUTFALL IN A MANNER THAT LIMITS THE DISCHARGE TO 29 NTU ABOVE THE BACKGROUND CONCENTRATION OF THE OUTFALL.
29. DEWATERING PUMPS SHALL NOT EXCEED THE CAPACITY OF THAT WHICH REQUIRES A CONSUMPTIVE USE PERMIT FROM THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT.
30. ALL DISTURBED AREAS TO BE STABILIZED THROUGH COMPACTION, SILT SCREENS, HAY BALES AND GRASSING. ALL FILL SLOPES 3:1 OR STEEPER SHALL RECEIVE STAKED SOD.
31. ALL DEWATERING, EROSION AND SEDIMENT CONTROL DEVICES ARE TO REMAIN IN PLACE AFTER COMPLETION OF CONSTRUCTION AND REMOVED ONLY WHEN AREAS HAVE BEEN STABILIZED.
32. THESE NOTES INDICATE THE MINIMUM EROSION AND SEDIMENT MEASURES REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE RULES, REGULATIONS AND WATER QUALITY GUIDELINES AND MAY NEED TO INSTALL ADDITIONAL CONTROLS.
33. THE CONTRACTOR SHALL BE REQUIRED TO RESPOND TO ALL FDEP OR WATER MANAGEMENT DISTRICT INQUIRIES, RELATIVE TO THE COMPLIANCE FOR EROSION AND SEDIMENTATION CONTROL.
34. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED.
35. THE CONTRACTOR SHALL EXECUTE THE STORM WATER POLLUTION PREVENTION PLAN PROVIDED ON SHEET G1.03 PRIOR TO INITIATING CONSTRUCTION.

PLANS PREPARED IN NATIONAL GEODETIC
VERTICAL DATUM OF 1929 (NGVD 29)

- 
- Permit Number
- 58-0317119-001
- South District
Fort Myers

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INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT

	City Of Venice Utility Department 200 North Warfield Avenue Venice FL 34285 PH 941-486-3333 FAX 941-486-3031		DESIGNED _____
	2930 University Parkway Sarasota, Florida 34243 Phone 941 358-6500 Fax 941 358-6540 www.kingengineering.com Engineering License #6610		TAD _____
		MAJ./ CE _____ DRAWN _____	CHECKED _____
		LPT _____	QC _____

[illegible]OCT 2012 **G1.01**

JOB NO. 4799-003-000	SHEET NO. G1.01
DATE OCT 2012	
SCALE AS SHOWN	
PERMIT SUBMITTAL -02/15/2013	

SURVEYOR'S REPORT
CITY OF VENICE FLORIDA
INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT

1. THIS SURVEYORS REPORT IS BEING PRODUCED FOR A DELIVERABLE ELECTRONIC AUTOCAD FILE. FILE NAME: 4799 VENICE FM TOPO.DWG, FILE DATE 11/15/2012. SIGNED AND SEALED COPIES ARE NOT PREPARED.
2. TYPE OF SURVEY: TOPOGRAPHIC SURVEY. ANY USE OF THIS SURVEY FOR PURPOSES OTHER THAN WHICH IT WAS INTENDED, WITHOUT WRITTEN VERIFICATION, WILL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO THE SURVEYOR. NOTHING HEREIN SHALL BE CONSTRUED TO GIVE ANY RIGHTS OR BENEFITS TO ANYONE OTHER THAN THOSE CERTIFIED TO.
3. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A COMMITMENT FOR TITLE INSURANCE.
4. NO INSTRUMENTS OF RECORD REFLECTING EASEMENTS, RIGHTS-OF-WAY, AND/OR OWNERSHIP WERE FURNISHED TO OR PURSUED BY THE UNDERSIGNED OTHER THAN THOSE SHOWN HEREON. EASEMENTS OR RESTRICTIONS OF RECORD OTHER THAN THOSE SHOWN HEREON MAY EXIST.
5. NO EXCAVATION WAS PERFORMED TO VERIFY THE LOCATION OR EXISTENCE OF ANY UNDERGROUND IMPROVEMENTS, STRUCTURES, OR FOUNDATIONS. UNDERGROUND UTILITIES SHOWN HEREON ARE SHOWN PER ABOVE GROUND EVIDENCE AND/OR RECORD DRAWINGS OR MUNICIPAL ATLAS INFORMATION AND THE LOCATION OF ALL UNDERGROUND UTILITY LINES ARE APPROXIMATE ONLY. THIS DOCUMENT SHOULD NOT BE RELIED UPON FOR EXCAVATION OR CRITICAL DESIGN FUNCTIONS WITHOUT FIELD VERIFICATION OF UNDERGROUND UTILITY LOCATIONS. UTILITIES OTHER THAN THOSE SHOWN HEREON MAY EXIST.
6. THIS SURVEY IS NOT INTENDED TO SHOW THE LOCATION OR EXISTENCE OF ANY JURISDICTIONAL, HAZARDOUS OR ENVIRONMENTALLY SENSITIVE AREAS.
7. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
8. COORDINATE GRID IS BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM, FL83-WF ZONE, NAD 83 (2007 ADJUSTMENT) AND ARE DERIVED BY MULTIPLE REAL-TIME KINEMATIC GPS OBSERVATIONS.
9. SHOWN ANYWHERE ON THIS SURVEY, THE WORD "CERTIFY" IS UNDERSTOOD TO BE AN EXPRESSION OF A PROFESSIONAL OPINION BASED UPON THE SURVEYOR'S BEST KNOWLEDGE, INFORMATION AND BELIEF, AND THAT IT THUS CONSTITUTES NEITHER A GUARANTEE NOR A WARRANTY.
10. ELEVATIONS SHOWN HEREON ARE BASED UPON NATIONAL GEODETIC SURVEY (NGS) CONTROL MONUMENT DESIGNATION "X 38", HAVING A PUBLISHED NGVD ELEVATION OF 7.76, NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29),
12. TREES 5" IN DIAMETER AND LARGER HAVE BEEN LOCATED WITH COMMON NAME AND APPROXIMATE DIAMETER BREST HIGH. SMALLER TREES, NON-

PROTECTED SPECIES (INCLUDING ORNAMENTALS) AND TREES WITHIN JURISDICTIONAL AREAS (IF ANY) HAVE NOT BEEN LOCATED. TREES BY NATURE ARE IRREGULAR IN SIZE AND SHAPE. EVERY EFFORT IS MADE TO ACCURATELY LOCATE TREES. THE TREE LOCATION IS THE CENTER OF THE TREE. THIS LOCATION MAY BE DIFFERENT IF LOCATED FROM A DIFFERENT DIRECTION. ALL TREE LOCATIONS SHOULD BE FIELD CHECKED IF CRITICAL TO DESIGN.

13. THIS SURVEY IS BASED ON U.S. FEET.

14. LAST DATE OF FIELD SURVEY: 11/07/2012

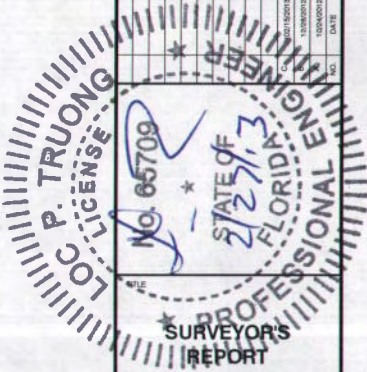
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CERTIFICATE OF AUTHORIZATION No. LB 2610

JOHN D. WEIGLE, P.S.M.
FLORIDA LICENSE - LS #5246

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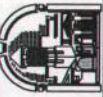
JOB NO.
4799-003-000
DATE
OCT 2012
SCALE
AS SHOWN

SHEET NO.
G1.02


PERMIT SUBMITTAL
02/15/2013

INTRACOASTAL
WATERWAY FORCE
MAIN REPLACEMENT
PROJECT

DATE	DESCRIPTION	CHK	APP'D BY
10/15/2012	PERMIT SUBMITTAL		
10/15/2012	90% SUBMITTAL		
10/15/2012	UTILITY NOTIFICATION SUBMITTAL		



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SITE DESCRIPTION			TIMING OF CONTROL MEASURES		FERTILIZERS:	
PROJECT NAME: CITY OF VENICE - INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT	OWNER OF PROJECT: CITY OF VENICE UTILITY DEPARTMENT	OWNER'S ADDRESS: 200 NORTH WARFIELD AVENUE VENICE, FL 34285	AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, STAKED SILT BARRIERS, STABILIZED CONSTRUCTION ENTRANCES AND SEDIMENT BASINS WILL BE CONSTRUCTED PRIOR TO CLEARING OR GRADING OF ANY OTHER PORTIONS OF THE SITE. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN 21 DAYS WILL BE STABILIZED WITH A TEMPORARY GRASS AND MULCH WITHIN 5 DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTED ACTIVITY CEASES PERMANENTLY IN THAT AREA, THAT AREA WILL BE RESTORED TO PRECONSTRUCTION CONDITIONS AFTER THE ENTIRE SITE IS STABILIZED, THE ACCUMULATED SEDIMENT WILL BE REMOVED FROM THE TRAPS AND THE STAKED SILT BARRIERS WILL BE REMOVED.		FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.	
SITE LOCATION: FROM INTERSECTION OF TAMPA AVENUE E. AND AMERICAN LEGION WAY TO INTERSECTION OF E. VENICE AVENUE AND WARFIELD AVENUE SOUTH	PROJECT COORDINATES: LATITUDE: 27.099662° N LONGITUDE: 82.440738° W		CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS		PAINTS: ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURERS' INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.	
DESCRIPTION OF NATURE OF CONSTRUCTION ACTIVITY CONSTRUCT A 16-INCH REPLACEMENT FORCE MAIN ACROSS THE INTRACOASTAL WATERWAY AND A 4-INCH REPLACEMENT FORCE MAIN ALONG AMERICAN LEGION WAY. SOIL DISTURBING ACTIVITIES INCLUDE: EROSION CONTROL MEASURES, PIPE TRENCH EXCAVATION AND BACKFILL, PAVEMENT REPLACEMENT AND GRADING, AND PREPARATION FOR FINAL, SODDING, SEED & MULCHING AND HYDRO-SEEDING.			THE STORM WATER POLLUTION PREVENTION PLAN REFLECTS THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT'S (SWFWMD) REQUIREMENTS FOR STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL, AS ESTABLISHED BY THE FLORIDA ADMINISTRATIVE CODE, CHAPTER 400-4 AND 400-40. TO ENSURE COMPLIANCE, THIS PLAN WAS PREPARED IN ACCORDANCE WITH SWFWMD'S "BASIS OF REVIEW FOR SURFACE WATER MANAGEMENT PERMIT APPLICATIONS WITHIN THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT." THIS PLAN ALSO REFLECTS THE REQUIREMENTS OF THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR WORK IN BRANCH 6.		CONCRETE TRUCKS: CONTRACTOR SHALL DESIGNATE AN AREA FOR DISCHARGE OF SURPLUS CONCRETE OR DRUM WASH WATER AND SHALL INSTALL A CONTAINMENT BERM AROUND THIS AREA TO PREVENT RUNOFF TO THE REMAINDER OF THE SITE. HARD DEBRIS SHALL BE DISPOSED OF BY CONTRACTOR IN ACCORDANCE WITH LOCAL RULES AND REGULATIONS UPON COMPLETION OF THE PROJECT.	
RUNOFF COEFFICIENT: N/A SITE AREA: N/A			MAINTENANCE INSPECTION PROCEDURES		SPILL CONTROL PRACTICES	
SEQUENCE OF MAJOR ACTIVITIES: 1. INSTALL SILT FENCE AND HAY BALES AS REQUIRED 2. EXCAVATE PIPE TRENCHES OR HDD RECEIVING/EXIT PITS OR SERVICE LATERAL PITS 3. STOCK PILE TOP SOIL IF REQUIRED 4. STABILIZE DENUDE AREAS AND STOCKPILES AS SOON AS PRACTICABLE. 5. INSTALL UTILITIES 6. COMPLETE GRADING AND INSTALL PERMANENT SODDING/SEED & MULCHING/HYDRO-SEEDING 7. COMPLETE FINAL PAVING AND GRADING 8. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED, REMOVE ANY TEMPORARY CONTROLS.			EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES THESE ARE THE INSPECTION AND MAINTENANCE PRACTICES THAT SHALL BE USED TO MAINTAIN EROSION AND SEDIMENT CONTROL. ALL CONTROL MEASURES IN DISTURBED AREAS WILL BE INSPECTED AT LEAST ONCE EACH WEEK AND WITHIN 24 HOURS OF THE END OF ANY STORM EVENT OF 0.25 INCHES OR GREATER BY A CONTRACTORS REPRESENTATIVE. (WHERE SITES HAVE BEEN FINALLY STABILIZED SUCH INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH) ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER; IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT. BUILT UP SEDIMENT WILL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE FENCE. SILT FENCE WILL BE INSPECTED REGULARLY FOR DEPTH OF SEDIMENT, TEARS, TO SEE IF THE FABRIC IS SECURELY ATTACHED TO THE FENCE POSTS, AND TO SEE THAT THE FENCE POSTS ARE FIRMLY IN THE GROUND. THE SEDIMENT BASINS WILL BE INSPECTED FOR DEPTH OF SEDIMENT, AND BUILT UP SEDIMENT WILL BE REMOVED WHEN IT REACHES 10 PERCENT OF THE DESIGN CAPACITY OR AT THE END OF THE JOB. TEMPORARY AND PERMANENT GRASSING, MULCHING AND SODDING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH. A MAINTENANCE INSPECTION REPORT SHALL BE MADE AFTER EACH INSPECTION BY THE CONTRACTOR AND SHALL BE KEPT IN AN ACTIVE LOG READILY AVAILABLE AT THE JOB SITE CONSTRUCTION TRAILER. THE SITE SUPERINTENDENT WILL SELECT INDIVIDUALS WHO WILL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR ACTIVITIES. FILLING OUT THE INSPECTION AND MAINTENANCE REPORT WILL BE BY THE CONTRACTOR. PERSONNEL SELECTED FOR AND MAINTENANCE RESPONSIBILITIES WILL RECEIVE TRAINING FROM THE SITE SUPERINTENDENT. THEY WILL BE TRAINED IN ALL MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ON-SITE IN GOOD WORKING ORDER.		IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP: MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON-SITE. EQUIPMENT AND MATERIALS WILL INCLUDE, BUT NOT BE LIMITED TO, BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS. SPECIFICALLY FOR THIS PURPOSE. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY. THE SPILL AREAS WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED. THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. HE WILL DESIGNATE OTHER SITE PERSONNEL WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ON-SITE.	
NAME OF RECEIVING WATERS: GULF OF MEXICO			NON-STORM WATER DISCHARGES		NOTICE OF TERMINATION	
CONTROLS			IT IS EXPECTED THAT THE FOLLOWING NON-STORM WATER DISCHARGES WILL OCCUR FROM THE SITE DURING THE CONSTRUCTION PERIOD: WATER FROM DEWATERING, WATER LINE FLUSHING, WATER USED TO SPRAY OFF LOOSE SOILS FROM VEHICLES, DUST CONTROL, PAVEMENT WASH WATERS (WHERE NO SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE OCCURRED). ALL NON-STORM WATER DISCHARGES WILL BE DIRECTED TO A SEDIMENT BASIN PRIOR TO DISCHARGE. GROUNDWATER DEWATERING ACTIVITIES ARE NOT COVERED BY THIS PERMIT. THE CONTRACTOR SHALL APPLY FOR COVERAGE UNDER THE GENERIC PERMIT FOR THE DISCHARGE OF PRODUCED GROUNDWATER FROM ANY NON-CONTAMINATED SITE ACTIVITY PURSUANT TO 62-621.300 (2), F.A.C.		A NOTICE OF TERMINATION WILL BE SUBMITTED TO EPA AFTER THE CONSTRUCTION HAS BEEN COMPLETED AND THE SITE HAS UNDERGONE FINAL STABILIZATION.	
EROSION AND SEDIMENT CONTROLS			INVENTORY FOR POLLUTION PREVENTION PLAN		POLLUTION PREVENTION PLAN CERTIFICATION	
STABILIZATION PRACTICES			THE MATERIALS OR SUBSTANCES LISTED BELOW ARE EXPECTED, BUT NOT LIMITED TO, BE PRESENT ON SITE DURING CONSTRUCTION: CONCRETE DETERGENTS PAINTS (ENAMEL AND LATEX) METAL TRENCH BOXES TAR (PAVEMENT) SAND FERTILIZERS PETROLEUM BASED PRODUCTS AND FUELS CLEANING SOLVENTS WOOD STONE		I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS HAVE BEEN READ BY ME OR MY DESIGNATED REPRESENTATIVE AND UNDERSTAND THAT THIS SYSTEM HAS BEEN PREPARED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.	
WIND EROSION STABILIZATION: THE CONTRACTOR SHALL DENUDE ONLY AREAS WHERE IT IS EXPECTED TO BE EXCAVATED OR ALTERED WITHIN A TWO (2) WEEK TIME-FRAME. FINAL GRADES SHALL BE PERFORMED AND TEMPORARY OR PERMANENT SOIL STABILIZATION SHALL BE APPLIED. AREAS WHERE CONSTRUCTION OPERATIONS WILL BE CONTINUOUS, FUGITIVE DUST SHALL BE MANAGED BY APPLYING A WATER SPRAY TO SATURATE THE SURFACE SOILS ON A DAILY BASIS, OR AS NEEDED TO MAINTAIN MINIMAL DUST TRANSPORT. FUGITIVE DUST SHALL BE MONITORED CONTINUOUSLY AND ADDITIONAL MEASURES MAY NEED TO BE TAKEN TO CONTROL OFF-SITE TRANSPORT OF UNACCEPTABLE LEVELS OF DUST.			SPILL PREVENTION		OWNER REPRESENTATIVE	
TEMPORARY STABILIZATION: TOP SOIL STOCK PILES AND DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR AT LEAST 10 DAYS WILL BE STABILIZED WITH TEMPORARY GRASS AND MULCH NO LATER THAN 5 DAYS FROM THE LAST CONSTRUCTION ACTIVITY. GRASS SEED SHALL BE A MIXTURE OF 20 PARTS OF BERMUDA SEED AND 80 PARTS OF PENSACOLA BAHIA. THE SEPARATE TYPES OF SEED USED SHALL BE THOROUGHLY DRY MIXED IMMEDIATELY BEFORE SOWING. SEED WHICH HAS BECOME WET SHALL NOT BE USED. THE MULCH MATERIAL USED SHALL NORMALLY BE DRY MULCH. DRY MULCH SHALL BE STRAW OR HAY, CONSISTING OF OAT, RYE OR WHEAT STRAW, OR OF PANGOLA, PEANUT, COASTAL BERMUDA OR BAHIA GRASS HAY. ONLY UNDETERIORATED MULCH WHICH CAN BE READILY CUT INTO THE SOIL SHALL BE USED. AREAS OF THE SITE WHICH ARE TO BE PAVED WILL BE TEMPORARILY STABILIZED BY APPLYING STABILIZATION AND BASE.			MATERIAL MANAGEMENT PRACTICES		SIGNED: _____ NAME AND TITLE: <u>LEN BRAMBLE, P.E. - DIRECTOR OF UTILITIES</u> COMPANY: <u>CITY OF VENICE UTILITIES DEPARTMENT</u> ADDRESS: <u>201 NORTH WARFIELD AVENUE</u> <u>VENICE, FL 34285</u> DATE: _____	
PERMANENT STABILIZATION: DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED AND RESTORED TO PRECONSTRUCTION CONDITIONS NO LATER THAN 5 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY.			GOOD HOUSEKEEPING:		CONTRACTOR'S CERTIFICATION	
STRUCTURAL PRACTICES			THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF. GOOD HOUSEKEEPING: THE FOLLOWING GOOD HOUSEKEEPING PRACTICES SHALL BE FOLLOWED ON-SITE DURING THE CONSTRUCTION PROJECT. AN EFFORT SHALL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER CONTAINED ENCLOSURE. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL MANUFACTURERS' LABELED CONTAINERS. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER. WHENEVER POSSIBLE, ALL OF A PRODUCT SHALL BE USED UP BEFORE DISPOSING OF THE CONTAINER. MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED. THE SITE SUPERINTENDENT SHALL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ON-SITE. HAZARDOUS PRODUCTS: THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS. PRODUCTS SHALL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHALL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION. IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURERS' OR LOCAL AND STATE RECOMMENDED METHODS OF PROPER DISPOSAL SHALL BE FOLLOWED. THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON-SITE: PETROLEUM PRODUCTS: ALL ON-SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ON-SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.		I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERIC STORM WATER PERMIT ISSUED PURSUANT TO SECTION 403.0885, F.S., THAT AUTHORIZES THE STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CERTIFICATION.	
STORM WATER MANAGEMENT			HAZARDOUS WASTE: ALL HAZARDOUS WASTE MATERIALS, IF ENCOUNTERED, WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED. SANITARY WASTE: ALL SANITARY WASTE WILL BE COLLECTED FROM PORTABLE UNITS A MINIMUM OF THREE TIMES PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR, AS REQUIRED BY LOCAL REGULATION.		SIGNATURE FOR RESPONSIBLE FOR NAME: _____ COMPANY: _____ TITLE: _____ ADDRESS: _____ DATE: _____ PHONE: _____ NAME: _____ COMPANY: _____ TITLE: _____ ADDRESS: _____ DATE: _____ PHONE: _____ NAME: _____ COMPANY: _____ TITLE: _____ ADDRESS: _____ DATE: _____ PHONE: _____	
OTHER CONTROLS			OFFSITE VEHICLE TRACKING		STORM WATER POLLUTION PREVENTION PLAN	
WASTE DISPOSAL			THE PAVED STREETS WILL BE CLEANED AS NEEDED TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM/TO THE SITE. DUMP TRUCKS HAULING MATERIAL FROM OR TO THE SITE WILL BE COVERED WITH A TARPULIN AT ALL TIMES.		THE SIGNATURE OF THE QUALITY CONTROL OFFICER IN THIS SPACE INDICATES THAT ALL REQUIRED PERMITS HAVE BEEN OBTAINED AND THAT CONSTRUCTION IS AUTHORIZED TO COMMENCE	



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Engineering License #2610

INTRACOASTAL
WATERWAY FORCE
MAIN REPLACEMENT
PROJECT

RECEIVED
MAR 04 2013
D.E.P. South District

JOB NO.
4799-003-000
DATE
OCT 2012
SCALE
AS SHOWN

SHEET NO.
G1.03
PERMIT SUBMITTAL
02/15/2019



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INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT

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DESCRIPTION
BY
DATE
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DESCRIPTION
BY

OVERALL PROJECT
SITE PLAN AND
KEYMAP

THE SIGNATURE OF THE QUALITY CONTROL
OFFICER IN THIS SPACE INDICATES THAT ALL
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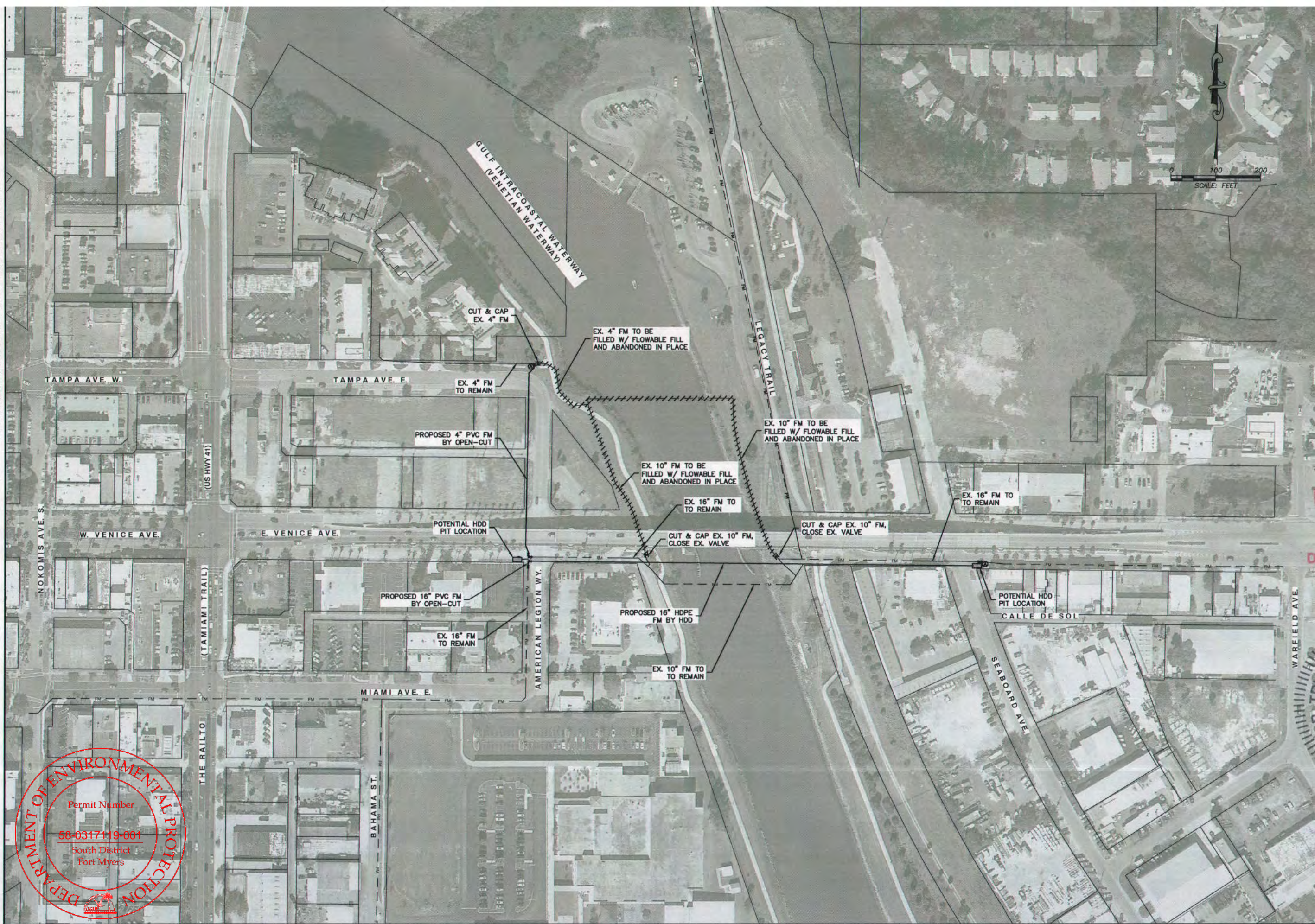
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02/15/2013



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INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT

RECEIVED
MAR 04 2013
D.E.P. South District

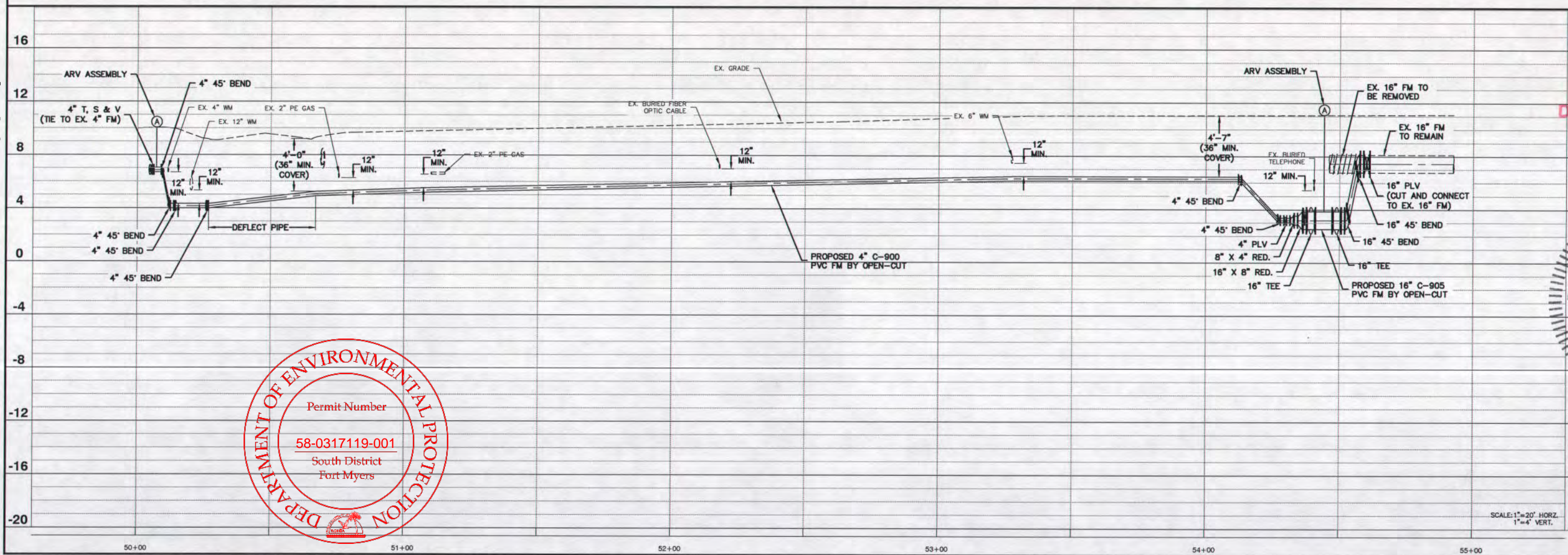
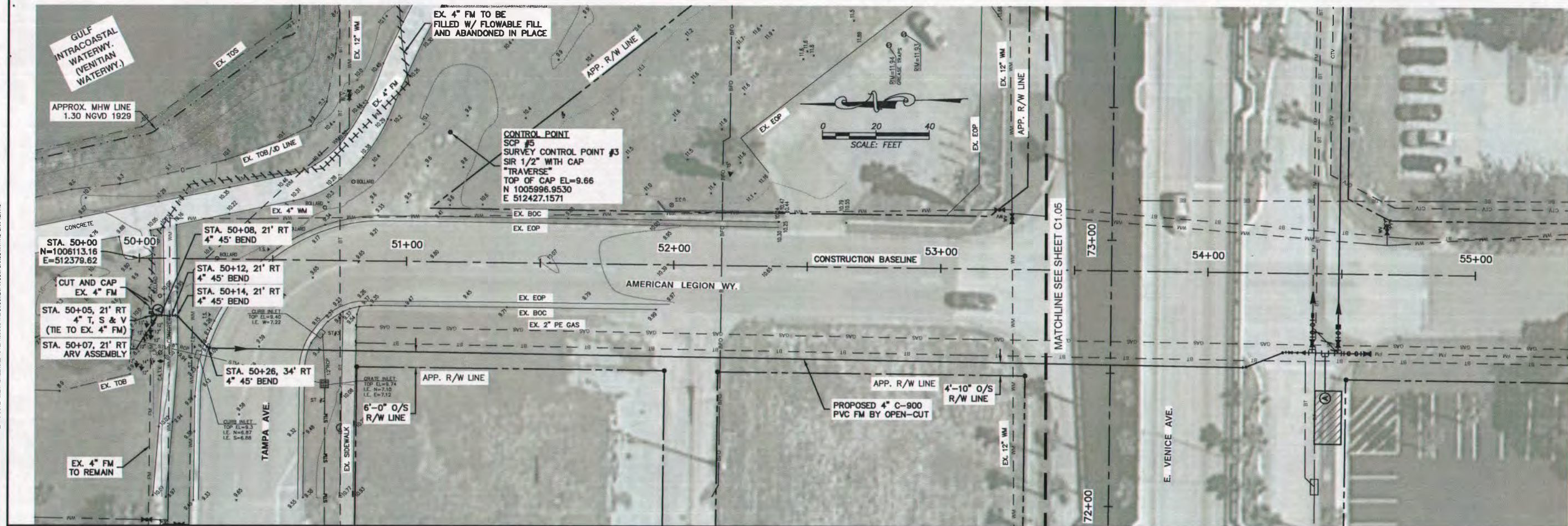
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SHEET: C1.01
JOB NO: 4799-003-000
DATE: OCT 2012
SCALE: AS SHOWN
PERMIT SUBMITTAL
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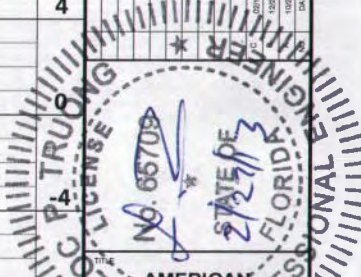
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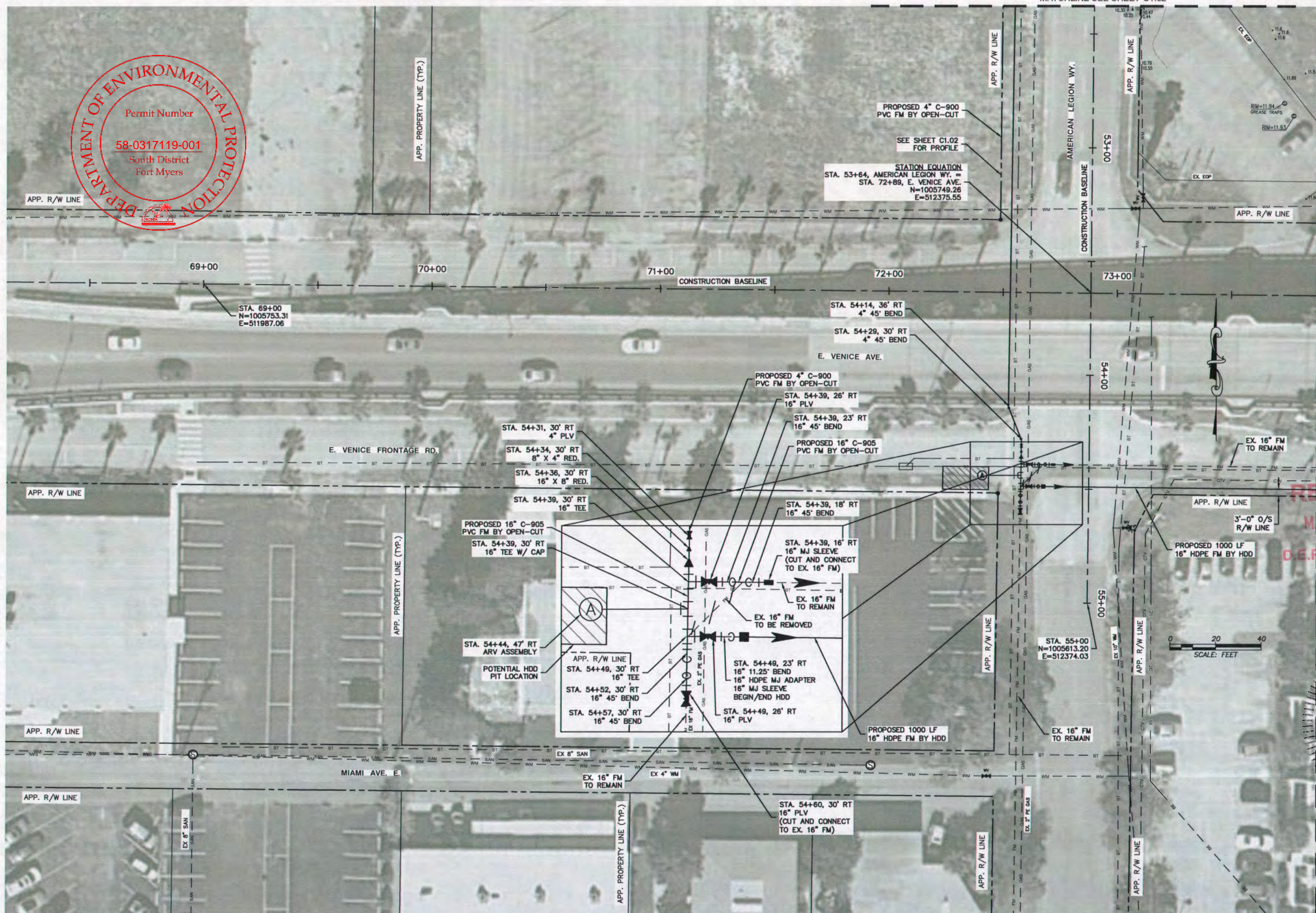
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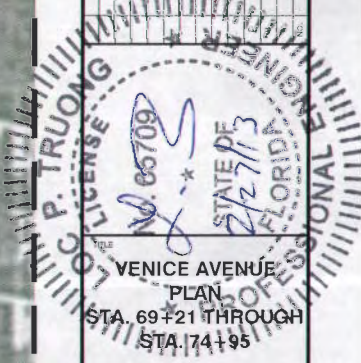
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NO.	DATE	DESCRIPTION	BY	CHK	APP'D BY
1	02/15/2013	UTILITY NOTIFICATION SUBMITTAL			
2	02/15/2013	PERMIT SUBMITTAL			
3	02/15/2013	FINAL SUBMITTAL			

VENICE AVENUE
PLAN
STA. 69+21 THROUGH
STA. 74+95

THE SIGNATURE OF THE QUALITY CONTROL
OFFICER IN THIS SPACE INDICATES THAT ALL
REQUIRED PERMITS HAVE BEEN OBTAINED AND
THAT CONSTRUCTION IS AUTHORIZED TO
COMMENCE.

JOB NO.
4799-003-000

DATE
OCT 2012

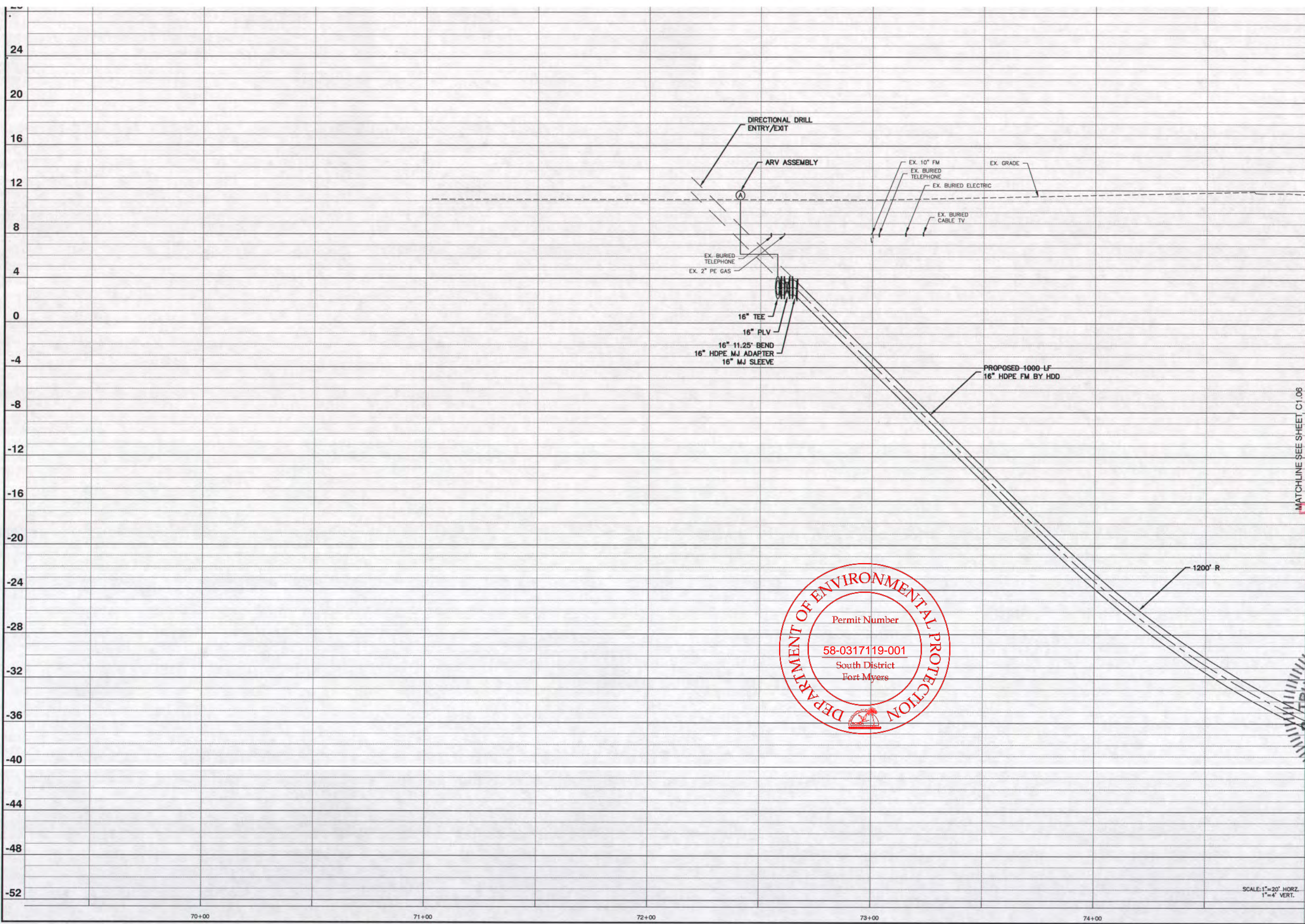
SCALE
AS SHOWN

SHEET NO.
C1.03

PERMIT SUBMITTAL
02/15/2013

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SCALE: 1"=20' HORZ.
1"=4' VERT.

DESIGNED MLG/CB DRAWN	TAD CHECKED	LPT QCE
City Of Venice Utility Department 200 North Wierfield Avenue Venice FL 34285 Ph 941-489-3333 Fax 941-489-3051		
King ENGINEERING ASSOCIATES, INC. 2930 University Parkway Sarasota, Florida 34243 Phone 941 358-6500 Fax 941 358-6540 www.kingengineering.com Engineering License #2610		

**INTRACOASTAL
WATERWAY FORCE
MAIN REPLACEMENT
PROJECT**

MATCHLINE SEE SHEET C1.06

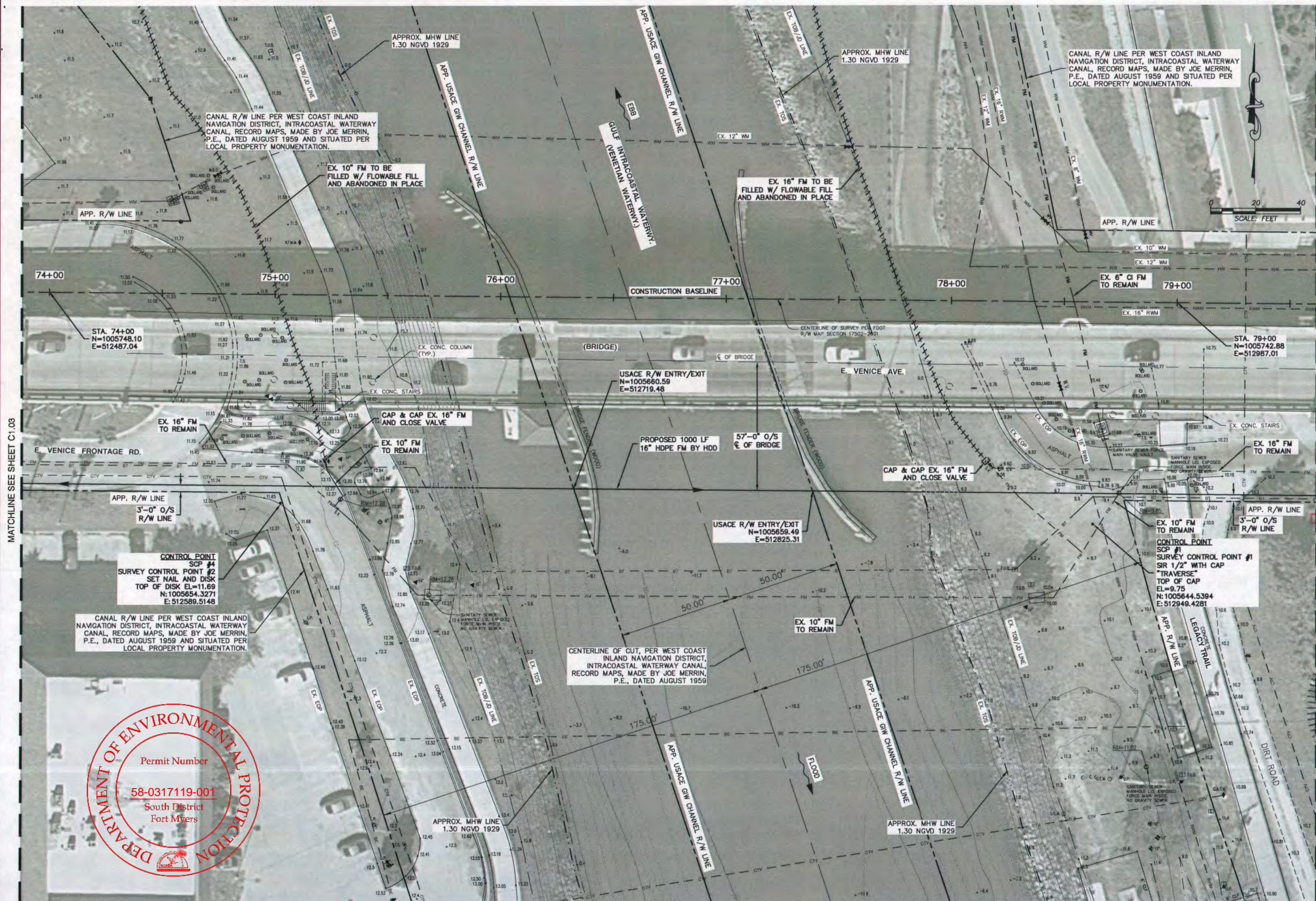
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**VENICE AVENUE
PROFILE
STA. 69+21 THROUGH
STA. 74+95**

THE SIGNATURE OF THE QUALITY CONTROL
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JOB NO. 4799-003-000	SHEET NO. C1.04
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**INTRACOASTAL
WATERWAY FORCE
MAIN REPLACEMENT
PROJECT**

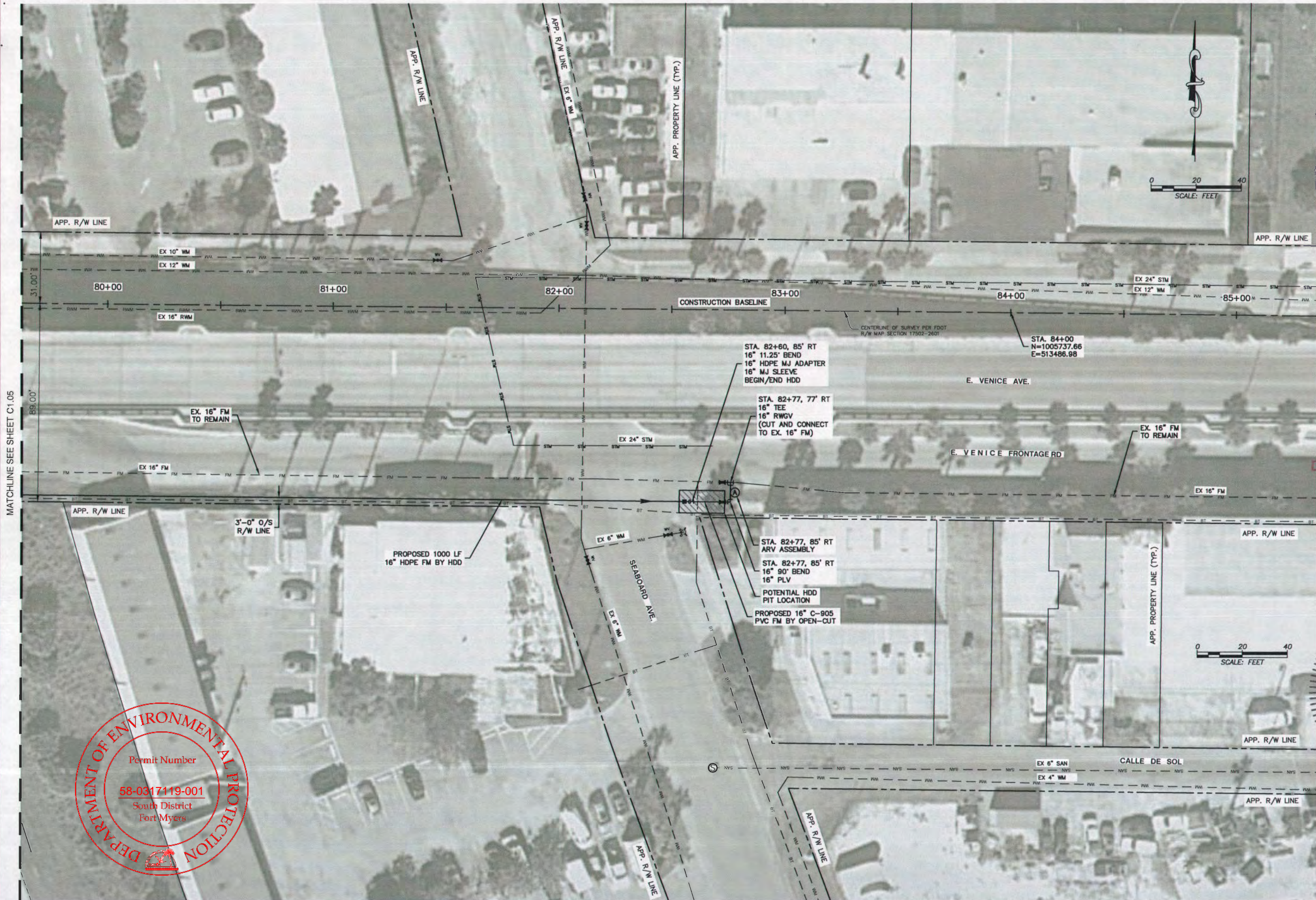
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CONTROL POINT
SCP #1
SURVEY CONTROL POINT #1
SR 1/2" WITH CAP
"TRAVERSE"
TOP OF CAP
EL=9.75
N=1005644.5394
E=512949.4281

VENICE AVENUE
PLAN
STA. 74+95 THROUGH
STA. 80+69

THE SIGNATURE OF THE QUALITY CONTROL
OFFICER IN THIS SPACE INDICATES THAT ALL
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COMMENCE.

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DATE OCT 2012	SCALE AS SHOWN
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DESIGNED
MJS / CBI

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MJS

CHECKED
TAD

LPT
JC

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Utility Department
200 North Warfield Avenue
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NO.	DATE	DESCRIPTION
1	02/15/2013	PERMIT SUBMITTAL
2	02/15/2013	FINAL SUBMITTAL
3	02/15/2013	UTILITY NOTIFICATION SUBMITTAL

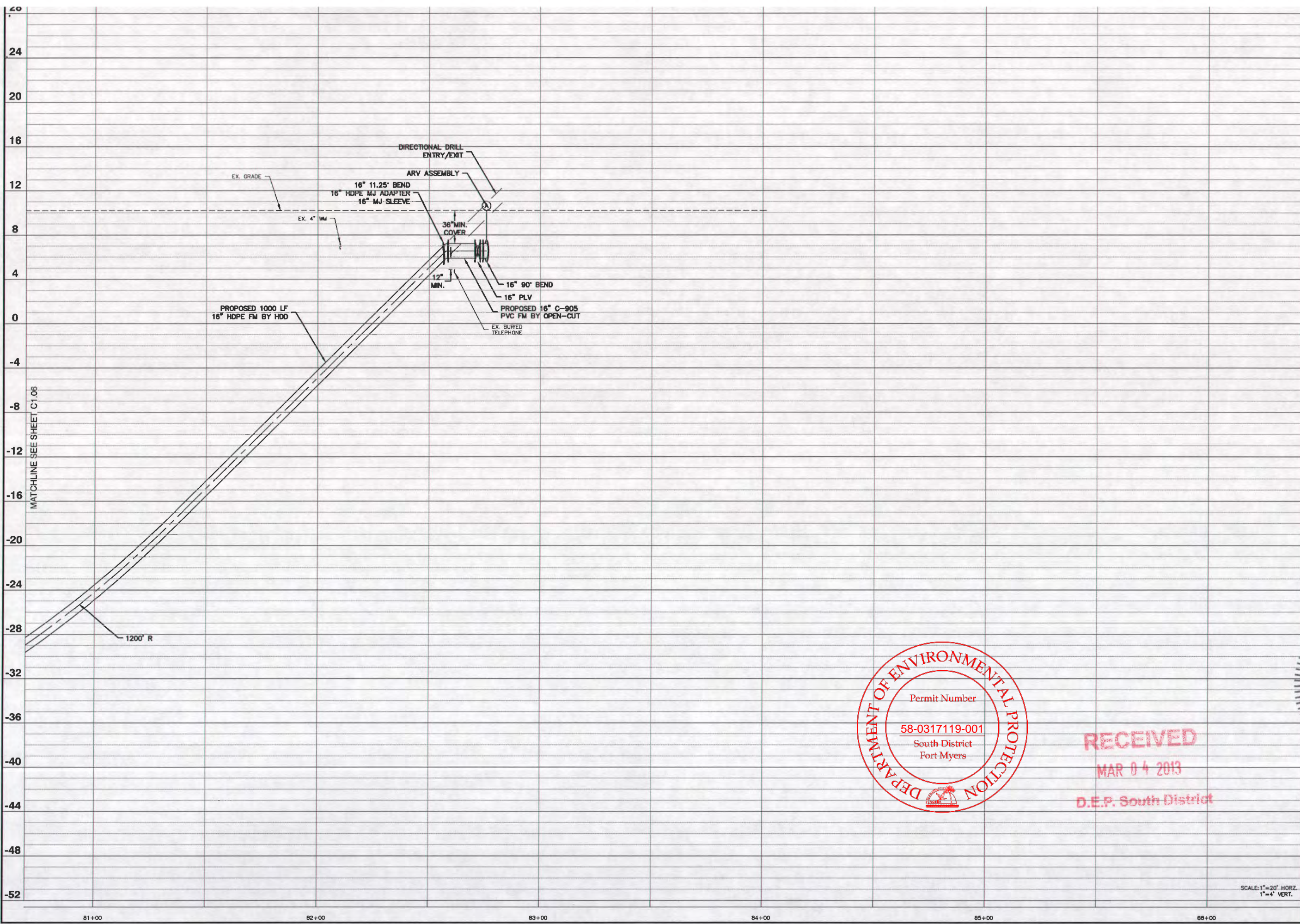


VENICE AVENUE
PLAN
STA. 80+00 THROUGH
STA. 86+43

THE SIGNATURE OF THE QUALITY CONTROL
OFFICER IN THIS SPACE INDICATES THAT ALL
REQUIRED PERMITS HAVE BEEN OBTAINED AND
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COMMENCE.

JOB NO. 4799-003-000	SHEET NO. C1.07
DATE OCT 2012	AS SHOWN
PERMIT SUBMITTAL 02/15/2013	

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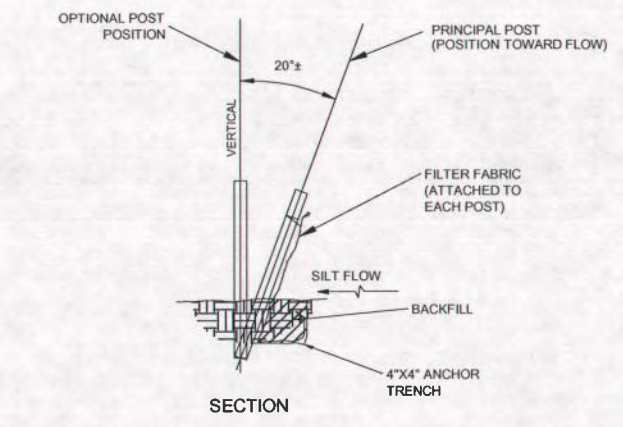
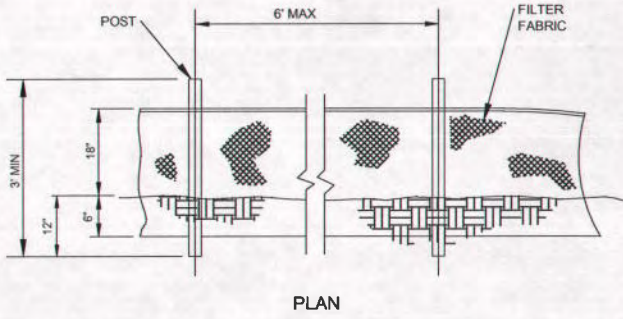


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SCALE: 1"=20' HORIZ.
1"=4' VERT.

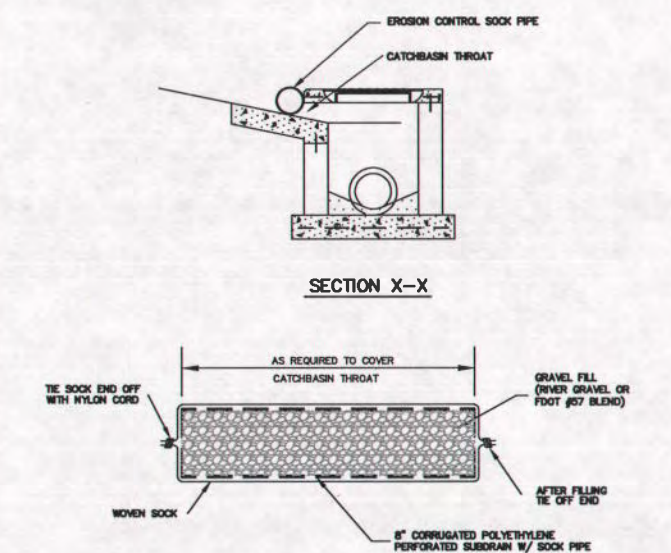
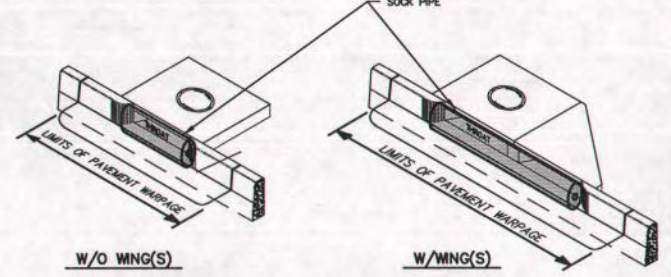
REVISED M.J.G./C.B. DATE	CITY OF VENICE UTILITY DEPARTMENT 200 NORTH WARFIELD AVENUE VENICE, FL 34286 PH: 941-486-3333 FAX: 941-486-3331	TAD CROOKER	LPT U.C.
		King ENGINEERING ASSOCIATES, INC.	
INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT			
PERMIT SUBMITTAL			
VENICE AVENUE PROFILE STA. 80+69 THROUGH STA. 86+43			
THE SIGNATURE OF THE QUALITY CONTROL OFFICER IN THIS SPACE INDICATES THAT ALL REQUIRED PERMITS HAVE BEEN OBTAINED AND THAT CONSTRUCTION IS AUTHORIZED TO COMMENCE.			
JOB NO. 4799-003-000	DATE OCT 2012	SHEET NO. C1.08	
PERMIT SUBMITTAL 02/19/2013			

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STEEL 1.33 LBS/FT MIN.) POST OPTIONS:
WOOD 2"x4" OR 2 1/2" DIA.

7 SILT FENCE
DS-1 (FDOT INDEX No. 102)



CURB INLET FILTER SOCK
SEDIMENTATION CONTROL

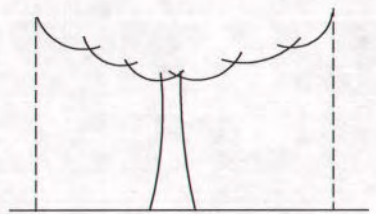


FIGURE A
THE DRIPLINE OF A TREE IS THE IMAGINARY, VERTICAL LINE THAT EXTENDS DOWNWARD FROM THE OUTERMOST TIPS OF THE TREE'S BRANCHES TO THE GROUND (FIG. A)

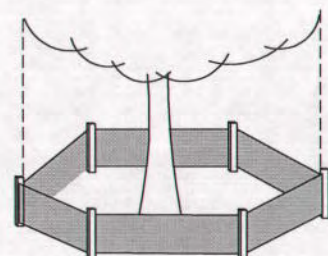
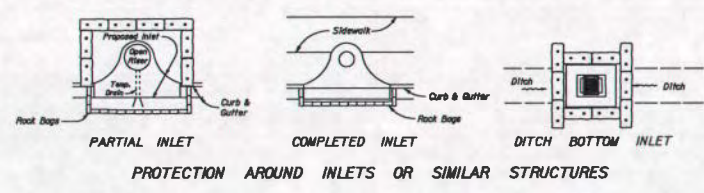


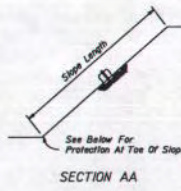
FIGURE B
FOUR CORNER UPRIGHT STAKES OF NO LESS THAN 2"x2" LUMBER CONNECTED BY HORIZONTAL MEMBERS OF NO LESS THAN 1"x4" LUMBER; OR UPRIGHT STAKES SPACED AT 5' INTERVALS OF NO LESS THAN 2"x2" LUMBER CONNECTED BY SILT SCREEN FABRIC OR MATERIAL OF COMPARABLE DURABILITY.

NOTE:
DURING LAND ALTERATION AND CONSTRUCTION ACTIVITIES, IT SHALL BE UNLAWFUL TO REMOVE VEGETATION BY GRUBBING OR TO PLACE SOIL DEPOSITS, DEBRIS, SOLVENTS, CONSTRUCTION MATERIAL, MACHINERY OR OTHER EQUIPMENT OF ANY KIND WITHIN THE DRIPLINE OF A TREE TO REMAIN ON THE SITE.

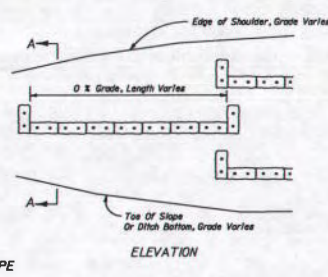
TREE BARRICADE DETAIL



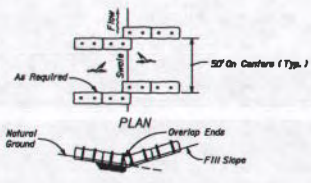
PROTECTION AROUND INLETS OR SIMILAR STRUCTURES



Notes:
Where the slope length exceeds 25 feet, construct one row of bale barriers or OC burlap/grass along the toe of the slope. Construct two rows of bale barriers where the slope length exceeds 50 feet.



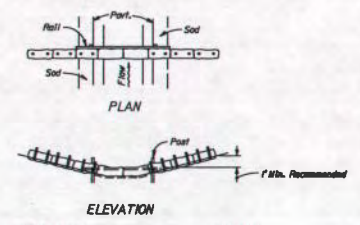
ALONG FILL SLOPE



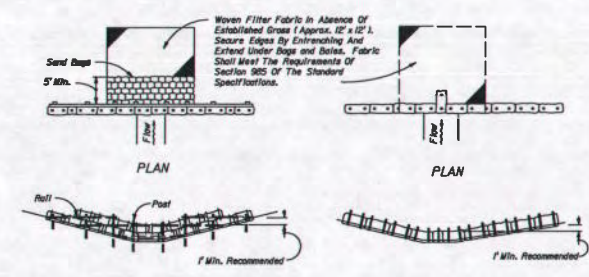
TO BE USED WHERE THE NATURAL GROUND SLOPES TOWARD THE TOE OF SLOPE

AT TOE OF SLOPE

BARRIERS FOR FILL SLOPES



BARRIER FOR PAVED DITCH



BARRIERS FOR UNPAVED DITCHES

NOTES FOR BALED HAY OR STRAW BARRIERS

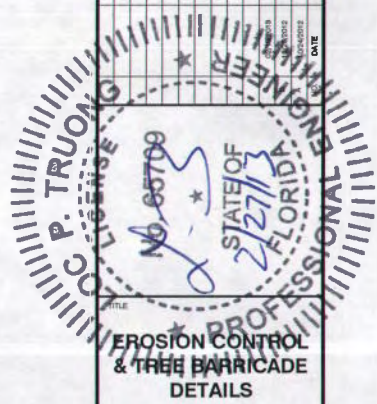
1. Type I and II Barriers should be spaced in accordance with Chart 1, Sheet 1.
2. Hay bales shall be truncated 3" to 4" and anchored with 2" x 4" (or 1" x 6") x 4' wood stakes. Stakes of other material or shape providing equivalent strength may be used if approved by the Engineer. Stakes other than wood shall be removed upon completion of the project.
3. Ribs and posts shall be 2" x 4" wood. Other materials providing equivalent strength may be used if approved by the Engineer.
4. Adjacent bales shall be lashed firmly together. Unavailable gaps shall be plugged with hay or straw to prevent off flow passage.
5. Where used in conjunction with silt fences, hay bales shall be placed on the upstream side of the fences.
6. Bales to be paid for under the contract unit price for Baled Hay or Straw, EA. The unit price shall include the cost of filter fabric for Type I and II barriers. Same bales shall be paid for under the unit price for Sandbags, CY. Peak bales to be paid for under the contract unit price for Peak Bales, EA.

FLORIDA DEPARTMENT OF TRANSPORTATION
TEMPORARY EROSION AND SEDIMENT CONTROL

Sheet No.
102
2 of 3



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EROSION CONTROL & TREE BARRICADE DETAILS

THE SIGNATURE OF THE QUALITY CONTROL OFFICER IN THIS SPACE INDICATES THAT ALL REQUIRED PERMITS HAVE BEEN OBTAINED AND THAT CONSTRUCTION IS AUTHORIZED TO COMMENCE.

JOB NO.
4799-003-000
DATE
OCT 2012
SCALE
AS SHOWN
SHEET NO.
D1.00
PERMIT SUBMITTAL
02/15/2013

DESIGNED
M.G. LEE
DRAWN

CHECKED
TAD

LPT
C.C.

City Of Venice
Utility Department
200 North Warfield Avenue
Venice FL 34285
Ph: 841-486-3339
Fax: 841-486-3331

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Fax 941-358-6540
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**INTRACOASTAL
WATERWAY FORCE
MAIN REPLACEMENT
PROJECT**

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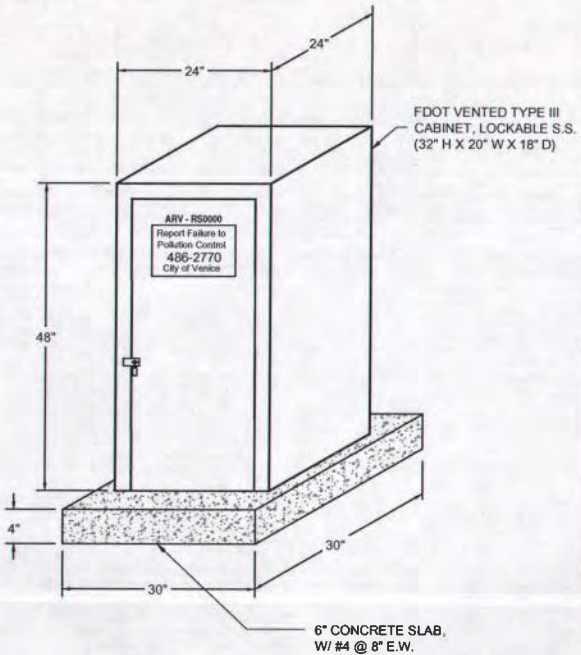
MINIMUM LENGTH (FT) OF FORCE MAIN TO BE RESTRAINED ON EACH SIDE OF FITTING											
FITTING	PIPE SIZE (INCHES)										
	4	6	8	10	12	16	18	20	24		
45 BEND:	H	6	9	12	14	16	21	23	25	29	
	VU	4	6	7	9	10	13	15	16	19	
	VD	12	20	26	32	37	48	53	28	68	
22.5 BEND:	H	3	4	6	7	8	10	11	12	14	
	VU	2	3	4	4	5	6	7	8	9	
	VD	7	10	13	15	18	23	26	28	33	
11.25 BEND:	H	2	2	3	3	4	5	5	6	7	

MINIMUM LENGTH (FT) OF WATER OR REUSE MAIN TO BE RESTRAINED ON EACH SIDE OF FITTING											
FITTING	PIPE SIZE (INCHES)										
	4	6	8	10	12	16	18	20	24		
90 BEND:	H	23	33	43	51	60	76	83	90	104	
	VU	10	14	18	21	25	31	34	37	43	
	VD	22	30	40	48	56	72	80	87	102	
45 BEND:	H	10	14	18	21	25	31	34	37	43	
	VU	6	8	10	12	14	16	20	22	28	
	VD	22	30	40	48	56	72	80	87	102	
22.5 BEND:	H	5	6	8	10	12	15	17	18	21	
	VU	3	4	5	6	7	10	11	12	14	
	VD	10	15	19	23	27	35	38	42	49	
11.25 BEND:	H	2	3	4	5	6	7	8	9	10	
PLUGS:		52	73	96	115	136	174	193	211	246	

ABBREVIATIONS: H=HORIZONTAL, VU=VERTICAL UP, VD=VERTICAL DOWN.

2 PRESSURE MAIN RESTRAINED JOINT TABLES

WSR-3



NOTES:

- 1.) 12" HOLE MUST BE IN CENTER OF PAD.
- 2.) CONTAINMENT BOX MUST BE COMPLETELY CONSTRUCTED OF STAINLESS STEEL.
- 3.) CONTAINMENT BOX MUST BE EQUIPPED WITH A LOCKABLE DOOR.

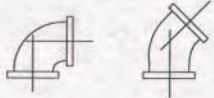
9A ABOVE GROUND ARV CONTAINMENT (SEWER)

WSR-1

SCALE: NONE

NOTES:

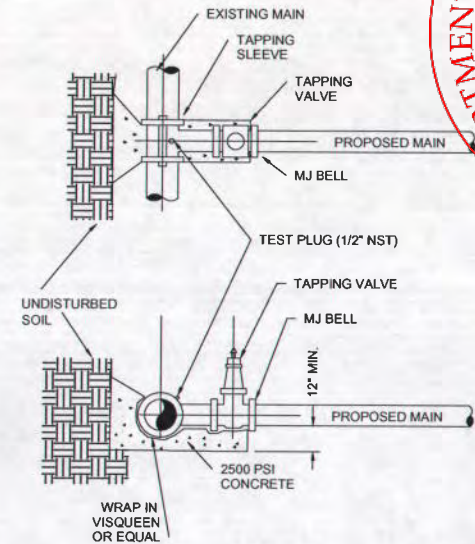
1. FOR TEE OR REDUCER FITTINGS SUBMIT RESTRAINED JOINT LENGTH CALCULATIONS TO CITY ENGINEER FOR REVIEW AND APPROVAL, USING THE ASSUMPTIONS LISTED
2. RESTRAINED JOINT LENGTH FOR WATER AND REUSE MAINS BASED ON TEST PRESSURE OF 150 PSI. RESTRAINED JOINT LENGTH FOR FORCE (SEWER) MAINS BASED ON TEST PRESSURE OF 100 PSI. CALCULATIONS WERE MADE USING EBAA IRON SOFTWARE (AVAILABLE AT WWW.EBAA.COM) AND THE FOLLOWING ASSUMPTIONS: GRANULAR MATERIAL (GM) SOIL TYPE, TRENCH TYPE 3, BURY DEPTH OF 3 FT. AND SAFETY FACTOR OF 2 TO 1. IF FIELD CONDITIONS DIFFER FROM ABOVE ASSUMPTIONS FOR SHALL PROVIDE CALCULATIONS BASED ON ACTUAL CONDITIONS.
3. RESTRAINED JOINT SHALL BE USED ON ALL JOINTS FROM ANY MAIN TEE TO ANY FIRE HYDRANT ASSEMBLY.
4. THRUST BLOCKS WILL NOT BE ACCEPTED, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
5. VALVES SHALL BE RESTRAINED SAME AS PLUGS



- 1.) ALL PIPE FITTINGS SHALL BE COMPACT, DUCTILE IRON.
- 2.) ALL APPLICATIONS (RAW, POTABLE, REUSE, SEWER) SHALL BE FUSION BONDED EPOXY COATED INSIDE AND OUT.
- 3.) ALL FITTINGS SHALL MEET ANSI/AWWA C116/A21.16 STANDARDS.

7 PIPE FITTINGS

WSR-3



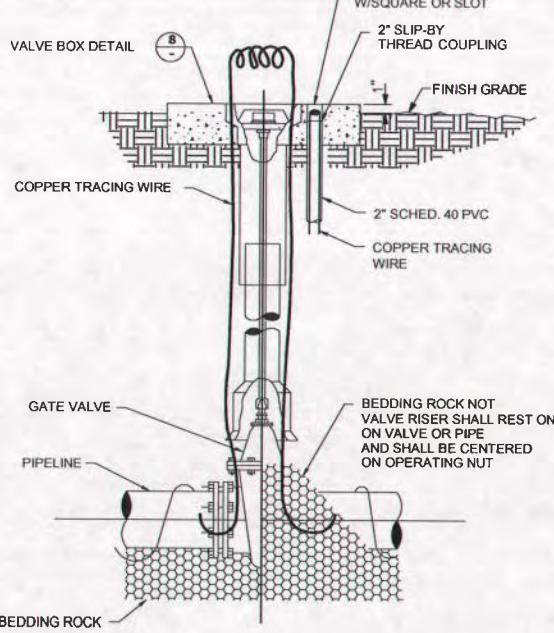
NOTES:

- 1.) EXISTING MAIN SHALL NOT BE TAPPED UNTIL THE ASSEMBLED SLEEVE AND VALVE ARE TESTED IN PLACE AT A MINIMUM OF 150 PSI FOR THIRTY MINUTES.
- 2.) UPON SUCCESSFUL TAPPING SLEEVE PRESSURE TEST (NOTE 1), THE THRUST BLOCK SHALL BE POURED AND HAVE SET FOR 24 HRS PRIOR TO TAPPING. READY-MADE THRUST BLOCKS CAN BE USED WITH CITY APPROVAL.
- 3.) STAINLESS STEEL TAPPING SLEEVE SHALL BE FORD. ALL HARDWARE SHALL BE STAINLESS STEEL. GASKETS SHALL BE VIRGIN SBR COMPOUND FOR WATER SERVICE.
- 4.) GATE VALVES SHALL BE RESILIENT WEDGE-TYPE MANUFACTURED BY MUELLER OR AMERICAN VALVE. ALL GATE VALVES SHALL BE FUSION BONDED EPOXY COATED (INTERIOR AND EXTERIOR) MEET ANSI/AWWA C550, AND BE NSF61 CERTIFIED.

5 TAPPING SLEEVE AND VALVE DETAIL

WSR-1

SCALE: NONE



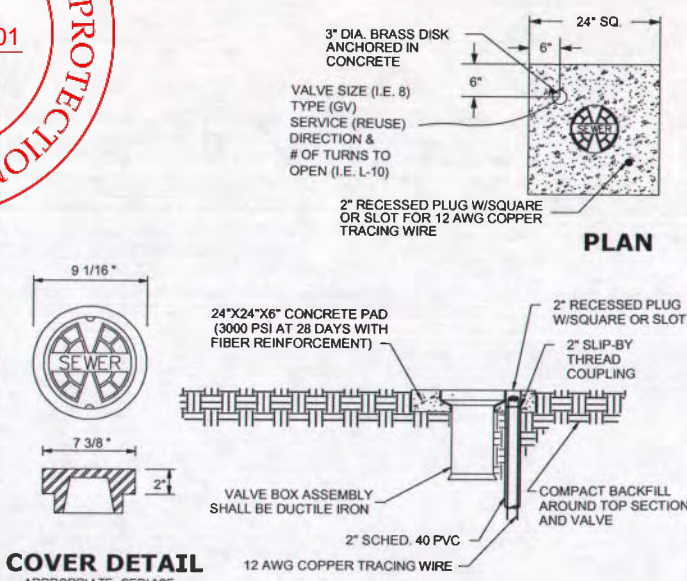
NOTES:

- 1.) GATE VALVES SHALL BE RESILIENT WEDGE-TYPE MANUFACTURED BY MUELLER, AMERICAN VALVE, OR EQUAL. ALL GATE VALVES SHALL BE FUSION BONDED EPOXY COATED (INTERIOR AND EXTERIOR) MEET ANSI/AWWA C550, AND BE NSF61 CERTIFIED.
- 2.) FOR VALVES LARGER THAN 12" IN DIAMETER AN OFFSET GEAR ACTUATED OPERATOR IS REQUIRED.
- 3.) VALVE SHALL BE INSTALLED IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 4.) COPPERHEAD TRACING WIRE PART #1230HS #12 AWG SHALL BE USED. IT SHALL BE COLOR CODED TO REFLECT WHAT THE PIPE CARRIES. (BLUE = WATER, PURPLE = REUSE)

2 GATE VALVE DETAIL

WSR-1

SCALE: NONE (WATER AND REUSE ONLY)



COVER DETAIL

APPROPRIATE SERVICE SHALL BE INDICATED

PROFILE

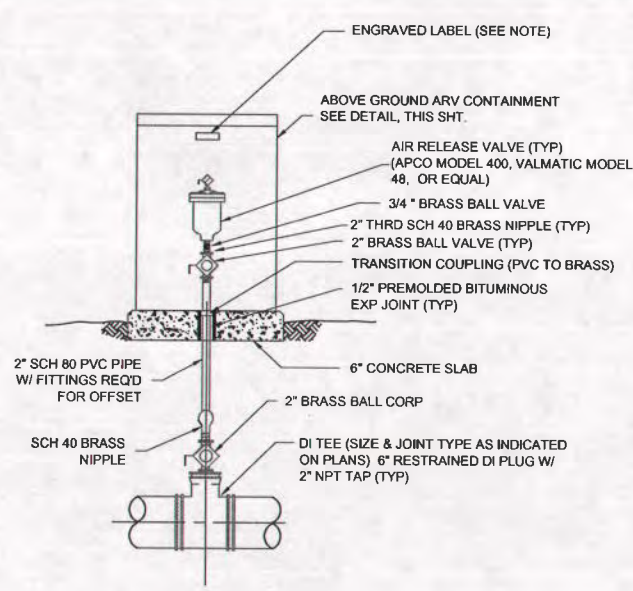
NOTES:

- 1.) PAVED AREAS: SET CONCRETE PAD AND COVER FLUSH WITH FINISHED PAVEMENT SURFACE.
- 2.) UNPAVED AREAS: SET PAD AND COVER 1 INCH ABOVE FINISHED GRADE.
- 3.) VALVES LOCATED IN DITCH AND OVER 4' DEPTH (LINE) MUST USE TRENCH ADAPTER VALVE BOX (AMERICAN FLOW CONTROL).
- 4.) COPPERHEAD TRACING WIRE PART #1230HS #12 AWG SHALL BE USED. IT SHALL BE COLOR CODED TO REFLECT WHAT THE PIPE CARRIES. (BLUE = WATER, GREEN = SEWER, PURPLE = REUSE)
- 5.) PRE-CAST PADS MAY BE USED WITH CITY APPROVAL.

8 VALVE BOX DETAIL

WSR-1

SCALE: NONE



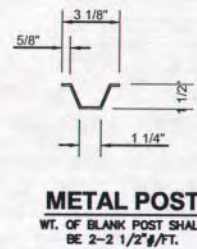
FRONT VIEW (SINGLE)

NOTES:

1. ENGRAVED LABEL W/ 1/4" LETTERS, WHITE ON BLACK, MOUNTED W/ 2 ALUM RIVETS ON INSIDE BACK PANEL ABOVE ARV WITH WORDS "POTABLE WATER"
2. S.S. = STAINLESS STEEL

ABOVE GROUND AUTOMATIC COMBINATION AIR RELEASE VALVE (CAV)

SCALE: NONE



FORCE MAIN CROSSING APPROX. 28 FEET BELOW BOTTOM OF CHANNEL

2" RADII 3/4" BORDER
2" LINE SPACING
2" SERIES C LEGEND
YELLOW BACKGROUND
BLACK LEGEND AND BORDER

NOTES:

- 1.) METAL POST TO BE GALVANIZED. ALL BOLTS, NUTS, WASHERS AND SCREWS MUST BE RUSTPROOF.
- 2.) CONCRETE FOR FOOTING SHALL BE PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 p.s.i.
- 3.) SIGNS WILL BE FABRICATED BY USING REFLECTING COATING IN THE SYMBOL, MESSAGE AND BORDER APPLIED TO A SHEET ALUMINUM BACKING (.080) IN THICKNESS.
- 4.) A SIGN SHALL BE PLACED ON BOTH THE EAST AND WEST BANK OF GIW 3 FEET FROM THE TOP OF BANK.
- 5.) CONTRACTOR SHALL LABEL TEXT ON SIGN EITHER 14" C905 PVC OR 16" HDPE

MISCELLANEOUS SIGN DETAILS

SCALE: NONE

City Of Venice
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INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT

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D.E.P. South District

FLORIDA PROFESSIONAL ENGINEER
No. 65289
2/13/13

SANITARY FORCE MAIN DETAILS (1)

THE SIGNATURE OF THE QUALITY CONTROL OFFICER IN THIS SPACE INDICATES THAT ALL REQUIRED PERMITS HAVE BEEN OBTAINED AND THAT CONSTRUCTION IS AUTHORIZED TO COMMENCE.

JOB NO.
4799-003-000

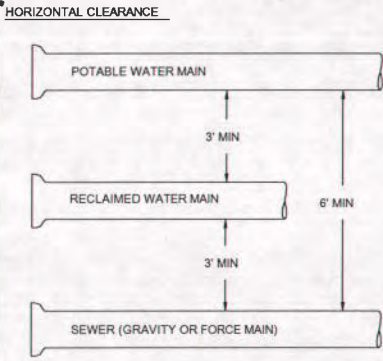
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02/15/2013

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MINIMUM SEPARATION DISTANCES (FT)
(OUTSIDE OF PIPELINE TO OUTSIDE OF PIPELINE)

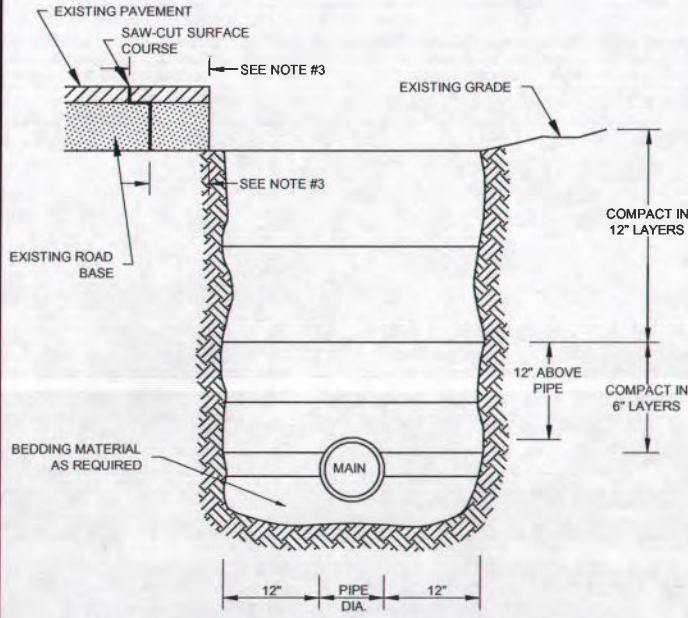
HORIZONTAL						
	WATER MAIN	FORCE MAIN	SANITARY SERVICE	REUSE MAIN	STORM WATER	OTHER UTILITIES (TELEPHONE, CABLE, ETC.)
WATER MAIN	3	6	6	3	3	3
FORCE MAIN	6	3	3	3	3	3
SANITARY SEWER	6	3	3	3	3	3
REUSE MAIN	3	3	3	3	3	3
STORM WATER	3	3	3	3	3	3
OTHER UTILITIES	3	3	3	3	3	3

VERTICAL						
	WATER MAIN	FORCE MAIN	SANITARY SERVICE	REUSE MAIN	STORM WATER	OTHER UTILITIES (TELEPHONE, CABLE, ETC.)
WATER MAIN	6	12	12	12	6	6
FORCE MAIN	12	6	6	6	6	6
SANITARY SEWER	12	6	6	6	6	6
REUSE MAIN	6	6	6	6	6	6
STORM WATER	6	6	6	6	6	6
OTHER UTILITIES	6	6	6	6	6	6

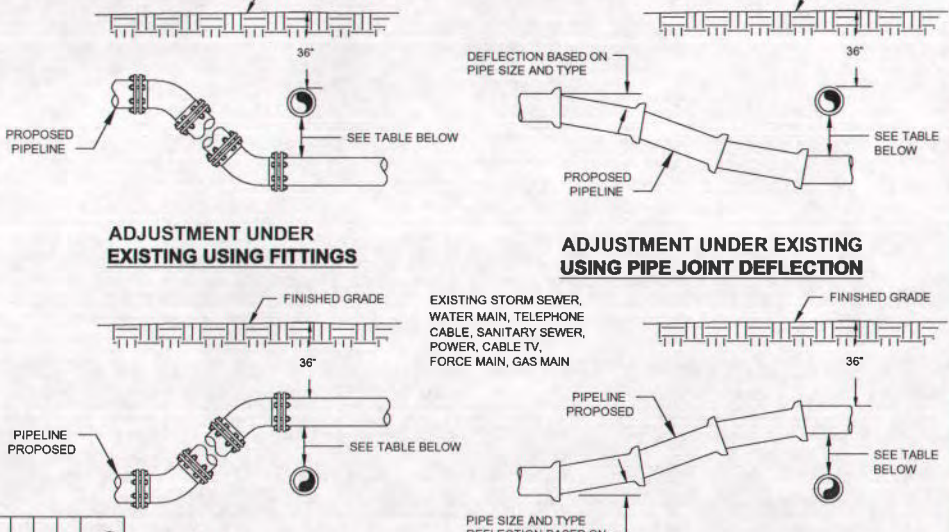
MINIMUM SEPARATION DISTANCES (IN)
(OUTSIDE OF PIPELINE TO OUTSIDE OF PIPELINE)

5 WRS-2 UTILITY CONFLICT DETAILS

- NOTES:
- TRENCHES LOCATED UNDER PAVEMENT OR INSIDE THE 2' HORIZONTAL TO 1' VERTICAL SLOPE, DOWNWARD FROM THE ROADWAY SHOULDER OR THE BACK OF CURB AND, FROM THE SPRING LINE TO THE BOTTOM OF SUB-GRADE OR THE FINISHED SURFACE OF THE EMBANKMENT, AS APPROPRIATE, SHALL BE COMPACTED TO A DENSITY OF 98% AS DETERMINED BY AASHTO T-180.
 - TRENCHES LOCATED OUTSIDE OF THE 2' HORIZONTAL TO 1' VERTICAL SLOPE DOWNWARD FROM THE ROADWAY SHOULDER OR THE BACK OF CURB AND WHERE NO VEHICULAR TRAFFIC WILL PASS OVER THE TRENCHES, BACKFILL SHALL BE COMPACTED TO A DENSITY APPROXIMATELY EQUAL TO THAT SOIL ADJACENT TO THE TRENCH BUT NOT LESS THAN 95% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99 METHOD-C.
 - REMOVAL AND REPLACEMENT OF PAVEMENT AND ROAD BASE SHALL BE MADE IN ACCORDANCE WITH APPLICABLE LOCAL REGULATIONS.

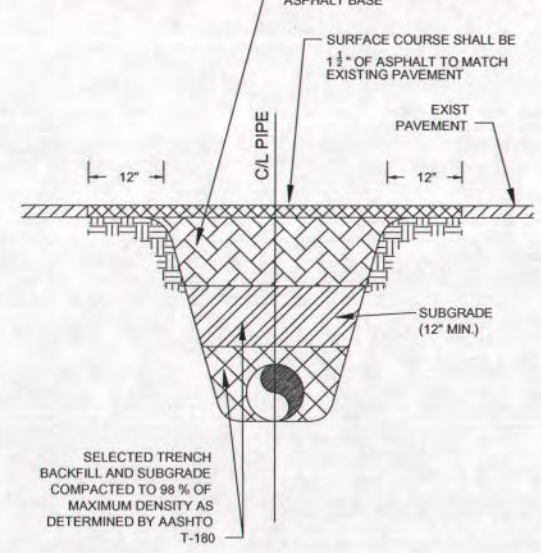


TYPICAL TRENCH BACKFILL DETAIL
SCALE: NONE



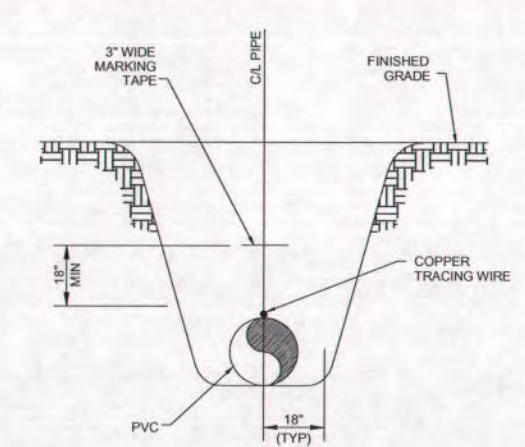
ADJUSTMENT OVER EXISTING USING FITTINGS
ADJUSTMENT UNDER EXISTING USING PIPE JOINT DEFLECTION

- NOTES:
- MAXIMUM JOINT DEFLECTION SHALL BE 90% OF MANUFACTURER'S RECOMMENDATION.
 - WHEREVER POSSIBLE, THE STRATIGRAPHY OF UTILITIES SHALL PLACE SANITARY SEWER AND SEWER FORCE MAINS BELOW RECLAIMED MAINS AND BELOW WATER MAINS, RESPECTIVELY. WHERE WATER MAINS ARE ABOVE GRAVITY SEWERS OR WASTEWATER FORCE MAINS, A VERTICAL CLEARANCE OF 6 INCHES IS ACCEPTABLE.
 - ACCEPTABLE VARIANCES
 - WHERE HORIZONTAL SEPARATION CANNOT BE MAINTAINED, C900 DR14 PVC PIPE SHALL BE USED FOR ONE OF THE PIPELINES.
 - WHERE VERTICAL CLEARANCE CANNOT BE MAINTAINED, ONE FULL LENGTH OF DUCTILE IRON PIPE OR DR14 C900 PIPE SHALL BE INSTALLED CENTERED AT THE POINT OF CROSSING.
 - WHERE 30" MINIMUM DEPTH OF COVER CANNOT BE MAINTAINED, SPECIAL PROTECTION OR PIPE MATERIAL UPGRADE MAY BE REQUIRED, AT THE DISCRETION OF THE CITY ENGINEER.
 - NO WATER PIPE SHALL PASS THROUGH, OR COME IN CONTACT WITH ANY PART OF A SANITARY MANHOLE OR STORMWATER STRUCTURE.



- NOTES:
- ALTERNATIVE BASE COURSE MATERIALS WITH EQUIVALENT STRUCTURAL THICKNESSES WILL BE CONSIDERED. HOWEVER, SHELL IS UNACCEPTABLE. CEMENT TREATED BASE MATERIAL MUST YIELD COMPRESSIVE STRENGTH WITHIN THE RANGE OF 175 TO 275 PSI. CRUSH CONCRETE AGGREGATE MUST HAVE AN LBR ≥ 150 .
 - REQUIREMENTS FOR INSTALLATION OF PIPELINES IS SHOWN IN DETAIL 1, SHEET 5 OF THESE STANDARDS.
 - FLOWABLE FILL CONCRETE MAY BE USED IN LIEU OF BACKFILL AND PAVEMENT SUBCOURSES WITH APPROVAL BY THE CITY ENGINEER. DESIGN AND ACCEPTANCE OF FLOWABLE FILL WILL BE GOVERNED BY APPLICABLE FDOT STANDARDS.

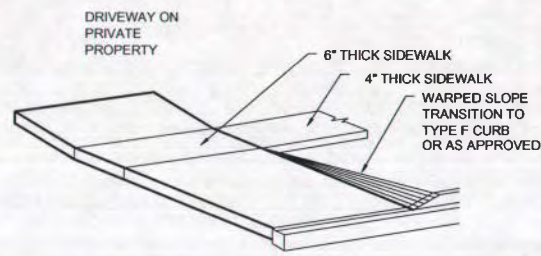
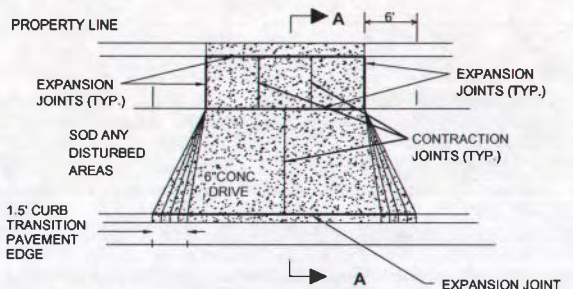
7 PS-1 PAVEMENT RESTORATION FOR UTILITY TRENCHES



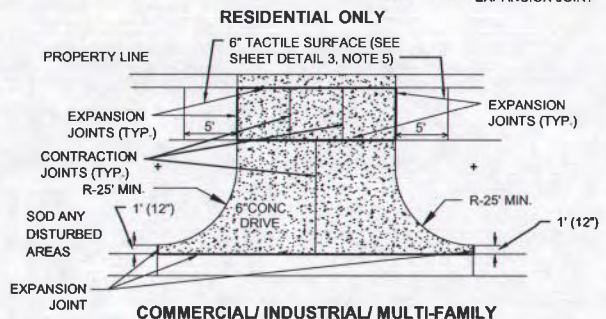
MARKING TAPE AND MESSAGES		
PIPE	TAPE COLOR	MESSAGE
PVC STORM WATER	WHITE	CAUTION STORM WATER OR STORM DRAIN BELOW
POTABLE WATER MAIN	BLUE	CAUTION POTABLE WATER MAIN BELOW
REUSE WATER MAIN	PURPLE	CAUTION REUSE WATER MAIN BELOW
SEWER FORCE MAIN	GREEN	CAUTION SEWER FORCE MAIN BELOW
SEWER & SERVICE LATERALS	GREEN	CAUTION SEWER MAIN BELOW

- NOTES:
- COPPERHEAD TRACING WIRE PART #1230HS #12 AWG SHALL BE ATTACHED TO TOP OF PIPE AT 20' INTERVALS ON ALL RECLAIMED WATER, FORCE, OR POTABLE WATER MAINS. IT SHALL BE COLOR CODED TO REFLECT WHAT THE PIPE CARRIES. (BLUE = WATER, GREEN = SEWER, PURPLE = REUSE)
 - MINIMUM COVER SHALL BE 30" FROM TOP OF PIPE TO FINISHED GRADE. MAXIMUM COVER SHALL BE 42" FROM FINISHED GRADE UNLESS OTHERWISE APPROVED.
 - INSTALLATION OF PIPE SHALL BE IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - PAVEMENT RESTORATION SHALL CONFORM WITH DETAIL 7, SHEET 3 OF THESE CITY STANDARDS.
 - CONFLICTS - UTILIZE 45° BENDS WITH SEPARATION AS PER DETAIL 5, SHEET 6.
 - ALL UTILITIES (PUBLIC & PRIVATE) THAT CROSS A DITCH/SWALE SHALL BE 36" MIN. BELOW THE ACTUAL/DESIGN BOTTOM OF CONVEYANCE.

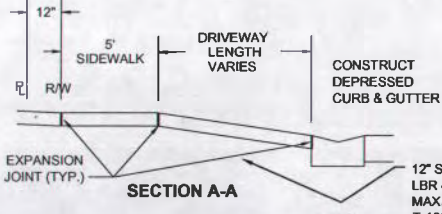
1 WSR-1 PIPE TRENCH SCALE: NONE



6" CONCRETE RESIDENTIAL DRIVEWAY



COMMERCIAL/ INDUSTRIAL/ MULTI-FAMILY PLAN VIEW

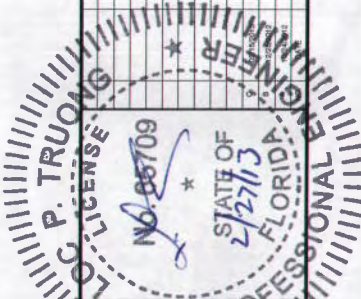


SECTION A-A
12" STABILIZED SUBGRADE LBR 40 COMPACTED TO 98% MAX. DENSITY AS PER AASHTO T-180

5 PS-1 DRIVEWAY AND SIDEWALK DETAILS

- NOTES:
- SIDEWALKS SHALL BE CONSTRUCTED OF 3000 PSI AT 28 DAYS CONCRETE (MAXIMUM 4" SLUMP) WITH FIBER REINFORCEMENT.
 - ALL SIDEWALKS SHALL BE 5' WIDE AND CONSTRUCTED WITH A SLOPE OF 1/4-INCH PER FOOT TOWARD CURB AND GUTTER.
 - CONTRACTION SAW-CUTS SHALL BE CONSTRUCTED EVERY 5' LENGTH OF SIDEWALK. EXPANSION JOINTS SHALL BE CONSTRUCTED AT 50' INTERVALS.
 - 1/2-INCH THICK ASPHALTIC FELT OR "PRESSURE TREATED WOOD" SHALL BE PLACED AT EACH EXPANSION JOINT.
 - EXISTING CURB AND GUTTER SHALL BE REMOVED ONLY AT EXISTING JOINTS.
 - DRIVEWAY WIDTH AND LOCATION SHALL COMPLY WITH ZONING CODES, SECTIONS 122-446, 62-64, 62-65.
 - ALL MATERIALS & METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH LATEST EDITION OF THE FDOT, "STANDARDS FOR ROAD & BRIDGE CONSTRUCTION". IN ADDITION, CONCRETE SHALL BE 3000 PSI AT 28 DAYS WITH A MAXIMUM 4" SLUMP AND FIBER REINFORCEMENT.
 - DRIVEWAY SLOPES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FDOT, "ROADWAY AND TRAFFIC DESIGN STANDARDS", INDEX 515.

RECEIVED
MAR 04 2013
D.E.P. South District



PIPE TRENCHING & PAVEMENT RESTORATION DETAILS

THE SIGNATURE OF THE QUALITY CONTROL OFFICER IN THIS SPACE INDICATES THAT ALL REQUIRED PERMITS HAVE BEEN OBTAINED AND THAT CONSTRUCTION IS AUTHORIZED TO COMMENCE.

JOB NO. 4799-003-000	SHEET NO. D1.02
DATE OCT 2012	SCALE AS SHOWN
PERMIT SUBMITTAL 02/15/2019	



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
10117 PRINCESS PALM AVENUE, SUITE 120
TAMPA, FLORIDA 33610

April 23, 2013

REPLY TO
ATTENTION OF

Regulatory Division
Tampa Permits Section
SAJ-2013-00673(NW-CMW)

City of Venice
Len E. Bramble, Utilities Director
200 N. Warfield Avenue
Venice, FL 34285

Dear Mr. Bramble:

The U.S. Army Corps of Engineers (Corps) assigned your application for a Department of the Army permit, which the Corps received on March 1, 2013, the file number SAJ-2013-00673. A review of the information and drawings provided indicates that the proposed work would result in the construction of a 1,520 linear foot force main, a portion of which goes under the Gulf Intracoastal Waterway, installed via directional drill. The project is located along Venice Avenue, in Section 7, Township 39 South, Range 19 East, Venice, Sarasota County, Florida.

Your project, as depicted on the enclosed drawings, is authorized by Nationwide Permit (NWP) Number 12. In addition, project specific conditions have been enclosed. This verification is valid until March 18, 2017. Please access the U.S. Army Corps of Engineers' (Corps) Jacksonville District's Regulatory Internet page to access Internet links to view the Final Nationwide Permits, Federal Register Vol. 77, dated February 21, 2012, specifically pages 10270 – 10290, the Corrections to the Final Nationwide Permits, Federal Register 77, March 19, 2012, and the List of Regional Conditions. The Internet page address is:

<http://www.saj.usace.army.mil/Missions/Regulatory.aspx>

Please be aware this Internet address is case sensitive and should be entered as it appears above. Once there you will need to click on "Source Book"; and, then click on "Nationwide Permits." These files contain the description of the Nationwide Permit authorization, the Nationwide Permit general conditions, and the regional conditions, which apply specifically to this verification for NWP 12. Enclosed is a list of the six General Conditions, which apply to all Department of the Army authorizations. You must comply with all of the special and general conditions and any project specific condition of this authorization or you may be subject to enforcement action. In the event you have not completed construction of your project within the specified time limit, a separate application or re-verification may be required.

The following special conditions are included with this verification:

1. Within 60 days of completion of the work authorized, the attached *Self-Certification Statement of Compliance* must be completed and submitted to the U.S. Army Corps of Engineers. Mail the completed form to the Regulatory Division, Special Projects and Enforcement Branch, 10117 Princess Palm Avenue, Suite 120, Tampa, Florida 33610.

2. The Permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structures or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the Permittee will be required, upon due notice from the U.S. Army Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

3. Cultural Resources/Historic Properties:

a. No structure or work shall adversely affect impact or disturb properties listed in the *National Register of Historic Places* (NRHP) or those eligible for inclusion in the NRHP.

b. If during the ground disturbing activities and construction work within the permit area, there are archaeological/cultural materials encountered which were not the subject of a previous cultural resources assessment survey (and which shall include, but not be limited to: pottery, modified shell, flora, fauna, human remains, ceramics, stone tools or metal implements, dugout canoes, evidence of structures or any other physical remains that could be associated with Native American cultures or early colonial or American settlement), the Permittee shall immediately stop all work in the vicinity and notify the Corps. The Corps shall then notify the Florida State Historic Preservation Officer (SHPO) and the appropriate Tribal Historic Preservation Officer(s) (THPO(s)) to assess the significance of the discovery and devise appropriate actions.

c. A cultural resources assessment may be required of the permit area, if deemed necessary by the SHPO, THPO(s), or Corps, in accordance with 36 CFR 800 or 33 CFR 325, Appendix C (5). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume on non-federal lands without written authorization from the SHPO and the Corps.

d. In the unlikely event that unmarked human remains are identified on non-federal lands, they will be treated in accordance with Section 872.05 Florida Statutes. All work in the vicinity shall immediately cease and the Permittee shall immediately notify the medical examiner, Corps, and State Archeologist. The Corps shall then notify the appropriate SHPO and THPO(s). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume without written authorization from the State Archeologist, SHPO, and the Corps.

4. Erosion Control: Prior to the initiation of any work authorized by this permit, the Permittee shall install erosion control measures along the perimeter of all work areas to prevent the displacement of fill material outside the work area. Immediately after completion of the final grading of the land surface, all slopes, land surfaces, and filled areas shall be stabilized using sod, degradable mats, barriers, or a combination of similar stabilizing materials to prevent erosion. The erosion control measures shall remain in place and be maintained until all authorized work has been completed and the site has been stabilized.

5. The Permittee shall comply with the "Standard Protection Measures for the Eastern Indigo Snake - 2004", provided as an enclosure in this permit.

This letter of authorization does not give absolute Federal authority to perform the work as specified on your application. The proposed work may be subject to local building restrictions mandated by the National Flood Insurance Program. You should contact your local office that issues building permits to determine if your site is located in a flood-prone area, and if you must comply with the local building requirements mandated by the National Flood Insurance Program.

If you are unable to access the internet or require a hardcopy of any of the conditions, limitations, or expiration date for the above referenced NWP, please contact me by telephone at 813-769-7064.

Thank you for your cooperation with our permit program. The Corps Jacksonville District Regulatory Division is committed to improving service to our customers. We strive to perform our duty in a friendly and timely manner while working to preserve our environment. We invite you to visit <http://per2.nwp.usace.army.mil/survey.html> and complete our automated Customer Service Survey. Your input is appreciated – favorable or otherwise. Again, please be aware this Internet address is case sensitive and should be entered as it appears above.

Sincerely,

Candice Wheelahan
Project Manager

Enclosures:
General Conditions
Statement of Compliance
Permit Transfer Request
Project Plans
2004 Standard Protection Measures for the Eastern Indigo Snake

Copy Furnished:
Peter Bottone, King Engineering and Assoc. via email (w/enc.)

GENERAL CONDITIONS
33 CFR PART 320-330
PUBLISHED FEDERAL REGISTER DATED 13 NOVEMBER 1986

1. The time limit for completing the work authorized ends on **date identified in the letter**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort of if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow a representative from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

DEPARTMENT OF THE ARMY PERMIT TRANSFER REQUEST

PERMIT NUMBER: SAJ-2013-00673(NW-CMW)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. Although the construction period for works authorized by Department of the Army permits is finite, the permit itself, with its limitations, does not expire.

To validate the transfer of this permit and the associated responsibilities associated with compliance with its terms and conditions, have the transferee sign and date below and mail to the U.S. Army Corps of Engineers, Enforcement Section, Post Office Box 4970, Jacksonville, FL 32232-0019.

(TRANSFEREE-SIGNATURE)

(SUBDIVISION)

(DATE)

(LOT)

(BLOCK)

(NAME-PRINTED)

(STREET ADDRESS)

(MAILING ADDRESS)

(CITY, STATE, ZIP CODE)

SELF-CERTIFICATION STATEMENT OF COMPLIANCE

Permit Number: SAJ-2013-00673(NW-CMW)

Permittee's Name & Address (please print or type): _____

Telephone Number: _____

Location of the Work: _____

Date Work Started: _____ Date Work Completed: _____

Description of the Work (e.g. bank stabilization, residential or commercial filling, docks, dredging, etc.):

Acreage or Square Feet of Impacts to Waters of the United States: _____

Describe Mitigation completed (if applicable): _____

Describe any Deviations from the Permit (attach drawing(s) depicting the deviations):

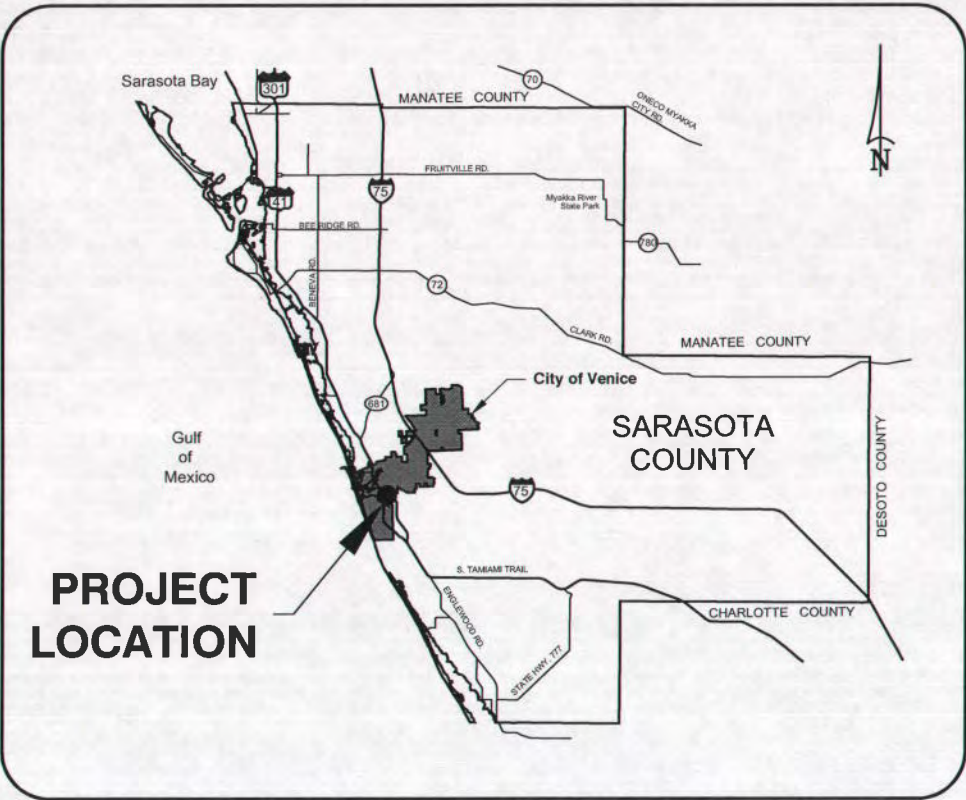
I certify that all work, and mitigation (if applicable), was done in accordance with the limitations and conditions as described in the permit. Any deviations as described above are depicted on the attached drawing(s).

Signature of Permittee

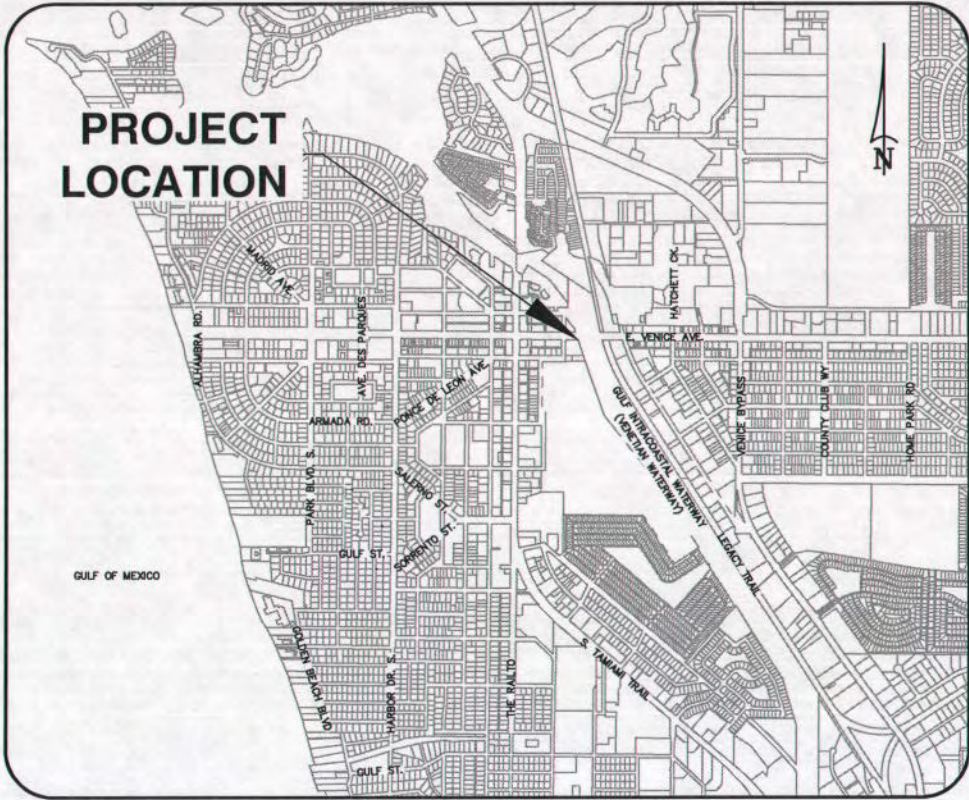
Date

INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT

VENICE, FLORIDA
SEC. 07 - TWP. 39 S - RNG. 19 E
LAT. 27.099682° N
LONG. - 82.440738° W



SARASOTA COUNTY VICINITY MAP



LOCATION MAP

INDEX OF PLANS

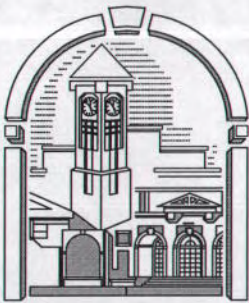
SHEET #	SHEET DESCRIPTION
G0.00	COVER
G1.00	ABBREVIATIONS, LEGENDS, AND CITY STANDARD NOTES
G1.01	GENERAL NOTES
G1.02	SURVEYOR'S REPORT
G1.03	STORM WATER POLLUTION PREVENTION PLAN
C1.00	OVERALL PROJECT SITE PLAN AND KEYMAP
C1.01	OVERALL PROPOSED PLAN
C1.02	AMERICAN LEGION WAY PLAN AND PROFILE STA. 50+00 THROUGH STA. 53+39
C1.03	VENICE AVENUE PLAN STA. 69+21 THROUGH STA. 74+95
C1.04	VENICE AVENUE PROFILE STA. 69+21 THROUGH STA. 74+95
C1.05	VENICE AVENUE PLAN STA. 74+95 THROUGH STA. 80+69
C1.06	VENICE AVENUE PROFILE STA. 74+95 THROUGH STA. 80+69
C1.07	VENICE AVENUE PLAN STA. 80+69 THROUGH STA. 86+43
C1.08	VENICE AVENUE PROFILE STA. 80+69 THROUGH STA. 86+43
D1.00	EROSION CONTROL & TREE BARRICADE DETAILS
D1.01	SANITARY FORCE MAIN DETAILS (I)
D1.02	PIPE TRENCHING & PAVEMENT RESTORATION DETAILS

RECEIVED
MAR 04 2013
D.E.P. South District

LOC P. TRUONG, P.E.
ENGINEER OF RECORD, P.E. #65709

PREPARED FOR:

CITY OF VENICE
UTILITIES DEPARTMENT
200 NORTH WARFIELD AVENUE
VENICE, FL 34285



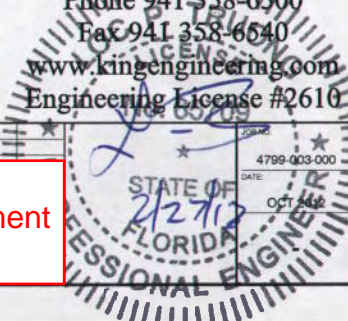
Ph. 941-480-3333
Fax 941-480-3031

PERMIT SUBMITTAL

King
ENGINEERING ASSOCIATES, INC.

2930 University Parkway
Sarasota, Florida 34243
Phone 941-358-6500
Fax 941-358-6540
www.kingengineering.com
Engineering License #2610

SAJ-2013-00673 (NW-CMW)
City of Venice/Intracoastal Force Main Replacement
Project Plans, Page 1 of 17



MECH
MJ
MIN
MOD
N
NIC
NTS
NO OR #
O/S
OD
O R BOOK
PWMT
PL
PNT OR PT
PC
PI
PSM
PW
PT
PVC
LB. OR #
PSI
PP
PROP
PS
R
RWM
RCW
RD
RP
RED
REINF
RCP
REQD
RT
R/W
SAN
SQH
SHT
SIR
SIRC
SMH
S/W
SPECS
SS
ST
STD
STA
STM
SQ
TEL
TEMP
THD
THK
TOC
TRV
TS
TS&V
TYP
UD
UG
WSC

The diagram illustrates the correct use of section and detail callouts in technical drawing. It is divided into two main parts: 'SECTION' and 'DETAIL'.

SECTION: A circular section callout is shown with the number '3' in the top half and 'M3' in the bottom half. An arrow points to the top half with the label 'SECTION DESIGNATION'. Another arrow points to the bottom half with the label 'SHEET ON WHICH SECTION IS CUT'.

DETAIL: Two circular detail callouts are shown. The first has 'A' in the top half and 'M3' in the bottom half, with an arrow pointing to the top half labeled 'DETAIL DESIGNATION' and an arrow pointing to the bottom half labeled 'SHEET ON WHICH WHICH DETAIL IS INDICATED'. The second has 'A' in the top half and 'VAR' in the bottom half, with an arrow pointing to the top half labeled 'DETAIL DESIGNATION' and an arrow pointing to the bottom half labeled 'SHOWN VARIOUS SHEETS'.

SECTION & DETAIL TARGET: A vertical section line is shown. To its right, a diamond-shaped section callout contains '3' in the top half and 'M11' in the bottom half, with an arrow pointing to the top half labeled 'SECTION DESIGNATION'. Below this, a horizontal line is shown. To its right, a circular detail callout contains 'A' in the top half and 'M12' in the bottom half, with an arrow pointing to the top half labeled 'DETAIL DESIGNATION' and an arrow pointing to the bottom half labeled 'SHEET ON WHICH DETAIL IS DRAWN'.

Below the diagrams, the text 'SECTION TITLE TARGET' and 'DETAIL TITLE TARGET' are written. At the bottom, the text 'SECTION & DETAIL TARGET' is written.

12" - TREE HAVING ONE TRUNK AT
BREAST HEIGHT, 12" IN DIA.

12"13" - TREE HAVING MULTIPLE
TRUNKS AT BREAST HEIGHT
12" AND 13" IN DIA.

12" X - REPRESENTS TREES
TO BE REMOVED

12" [] - REPRESENTS TREES
TO BE REMOVED

SAJ-2013-00673 (NW-CMW)
City of Venice/Intracoastal Force Main Replacement
Project Plans, Page 2 of 17

OC P. TRUONG
LICENSE
No. 65709
STATE OF FLORIDA
2/27/13
PROFESSIONAL ENGINEER

1. THE INFORMATION PROVIDED IN THESE PLANS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK. THE CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSIONS REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH THEIR BIDS WILL BE BASED.
2. THE CONTRACTOR SHALL EMPLOY THE SERVICES OF A FLORIDA REGISTERED SURVEYOR AND MAPPER TO ESTABLISH THE PROPOSED PIPELINE, PROPERTY LINES, RIGHT-OF-WAY LINES, EASEMENTS, BASELINES, BENCH MARKS (ELEVATION), CENTER LINES AND STATIONING AS REQUIRED TO CONSTRUCT THIS PROJECT.
3. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES, OTHER FEATURES AND PROPOSED FUTURE WORK ARE SHOWN BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. THERE MAY BE OTHER IMPROVEMENTS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY PRIOR TO BIDDING TO VERIFY THE EXACT LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES (WHETHER OR NOT SHOWN ON THESE PLANS) AFFECTING HIS WORK. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE OR RE-WORK RESULTING FROM FAILURE TO COMPLY WITH THESE INSTRUCTIONS.
4. THE CONTRACTOR SHALL PROVIDE AT LEAST FORTY EIGHT (48) HOURS NOTICE TO ALL EXISTING UTILITY COMPANIES IN ORDER TO ALLOW FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES IN ADVANCE OF CONSTRUCTION. THE CONTRACTOR SHALL CONTACT "SUNSHINE STATE ONE CALL" 48 HOURS PRIOR TO OPERATIONS AT 1-800-432-4770.
5. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY TO REPORT ANY CONFLICTS BETWEEN WHAT IS SHOWN HEREIN AND ACTUAL CONDITIONS DISCOVERED DURING CONSTRUCTION.
6. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO RESOLVE CONFLICTS THAT MAY ARISE IN THE FIELD DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY AND OTHER UTILITIES TO OBTAIN SUPPORT FOR UTILITY POLES WHERE CONSTRUCTION MAY CAUSE THE POLE TO LOSE ITS SUPPORT.
8. FIELD CONDITIONS MAY NECESSITATE ALIGNMENT AND GRADE DEVIATION OF THE PROPOSED UTILITIES TO AVOID OBSTACLES, AS APPROVED BY THE ENGINEER OR THE OWNER'S REPRESENTATIVE.
9. EXISTING UTILITY SERVICE LATERALS ARE NOT SHOWN ON THE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD LOCATE ALL SERVICE LATERALS PRIOR TO CONSTRUCTION. UTILITY SERVICES SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. EXCEPT FOR MINOR SHUT-DOWNS AS AUTHORIZED BY THE CITY.
10. THE CONTRACTOR, WORKING WITH THE ENGINEER AND THE OWNER, SHALL COORDINATE THE SHUTDOWN, STARTUP AND/OR PARTIAL INTERFERENCE WITH ONGOING SYSTEM OPERATIONS. INSTALLATION AND WORK ON THE EXISTING SYSTEMS ARE NOT TO BE MADE DURING TIMES OF PEAK FLOWS. WRITTEN REQUEST SHALL BE PROVIDED 48 HOURS PRIOR TO SHUTTING DOWN ANY FORCE MAIN.
11. CONSTRUCTION OF PORTIONS OF THE PROJECT, AUTHORIZED BY PERMIT OR LICENSE AGREEMENT, ARE SUBJECT TO INSPECTION AND TESTS AS MAY BE NECESSARY BY THE PERMIT GRANTING AUTHORITY. ALL CONTRACTOR SUPERVISORY PERSONNEL SHALL FURNISH INFORMATION TO AND COOPERATE WITH THESE AUTHORITIES IN CONDUCTING THEIR TESTING AND INSPECTION PROGRAM.
12. WORK SHALL BE IN ACCORDANCE WITH THE LATEST APPLICABLE FEDERAL, STATE AND LOCAL AGENCY'S REGULATIONS AND STANDARDS.
13. CONTRACTOR SHALL COMPLY WITH THE "TRENCH SAFETY ACT", CHAPTER 90-96, FLORIDA STATUTES.
14. SIGNS & BARRICADES SHALL BE IN ACCORDANCE WITH LATEST F.D.O.T. MANUAL OF SAFE PRACTICES; REFERENCE F.D.O.T. INDEXES 600 THROUGH 670 AND 17349 PER ROADWAY AND TRAFFIC DESIGN STANDARDS LATEST EDITION.
15. THE CONTRACTOR SHALL NOT ENTER UPON OR IN ANY WAY ALTER ANY WETLAND AREAS THAT MAY BE ENCOUNTERED. ALL WORK IN THE VICINITY OF OPEN WATER AND/OR WETLANDS IS TO BE PERFORMED IN COMPLIANCE WITH THE ENVIRONMENTAL REGULATIONS AND/OR PERMITS FOR THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY FINE RESULTING FROM HIS VIOLATION OF ANY REGULATIONS OR PERMIT CONDITIONS.
16. SPECIAL PIPE FOUNDATIONS, IF REQUIRED, SHALL BE DETERMINED IN THE FIELD AND THE TYPE REQUIRED WILL BE AS DIRECTED BY THE ENGINEER.
17. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED SHEETING AND TRENCH SHORING REQUIRED TO PROTECT EXISTING UTILITIES AND OTHER FACILITIES INTENDED TO REMAIN IN SERVICE.
18. ALL PROPOSED MAINS SHALL HAVE A MINIMUM COVER OF 36".
19. FORCE MAINS SHALL BE INSTALLED AT LEAST 6 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATER MAINS. THE DISTANCE SHALL BE MEASURED FROM FACE TO FACE. VERTICAL SEPARATION BETWEEN FORCE MAINS CROSSING OTHER PIPELINES/UTILITIES SHALL BE A MINIMUM VERTICAL DISTANCE OF 12 INCHES BETWEEN THE OUTSIDE OF THE OTHER PIPELINES/UTILITIES AND THE OUTSIDE OF THE FORCE MAIN. WHERE THE MINIMUM REQUIRED VERTICAL SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SUCH THAT THE JOINTS OF THE PROPOSED MAIN ARE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN 10 FEET BETWEEN ANY TWO JOINTS.
20. ALL VALVES SHALL BE APPROPRIATELY TAGGED OR LABELED. ALL PIPING, PIPELINES, VALVES, AND OUTLETS SHALL BE COLOR-CODED GREEN, OR OTHERWISE MARKED, ALL VALVE BOX COVERS SHALL BE MARKED "SEWER".
21. JOINT RESTRAINT SHALL BE PROVIDED AT ALL FITTINGS UNLESS NOTED OTHERWISE ON PLANS. THE MINIMUM LINEAR FEET RESTRAINED ON BOTH SIDES OF FITTINGS OR VALVES SHALL BE AS SHOWN ON THE DETAILS PROVIDED IN THESE DRAWINGS.
22. THE CONTRACTOR SHALL LOCATE ANY POTENTIAL UTILITY CONFLICTS AND PROVIDE FITTINGS AND RESTRAINTS AS NECESSARY AHEAD OF PIPE LAYING OPERATIONS.
23. CONTRACTOR SHALL USE TRENCH BOXES, SHEETING AND OTHER MEANS TO LIMIT THE WIDTH OF THE TRENCH AND AVOID ENCROACHMENT ONTO ADJACENT PROPERTY AND TO MINIMIZE WETLAND IMPACTS.
24. CONTRACTOR SHALL PROVIDE THE CITY OF VENICE WITH 24 HOUR NOTICE PRIOR TO COMMENCING WORK WITHIN THE CITY LIMITS AND 48 HOUR NOTICE PRIOR TO PERFORMING ANY WET TAP TO THE CITY'S SANITARY SEWER COLLECTION SYSTEM.
25. ANY DIGGING AND/OR DISTURBANCE TO THE ROADSIDE SVALES WITHIN THE RIGHT-OF-WAY OF THE CITY OF VENICE SHALL BE PROPERLY GRADED, SODDED AND RESTORED. CONTACT THE CITY OF VENICE PUBLIC WORKS DEPARTMENT.
26. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING SARASOTA COUNTY & CITY OF VENICE AGENCIES A MINIMUM OF 2 WEEKS IN ADVANCE IN WRITING, OF ANY ROAD CLOSURES, DETOURS AND CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION. THE NOTICE SHALL BE ACCOMPANIED WITH A SCHEDULE OF ROAD CLOSURES AND ANTICIPATED INTERRUPTIONS IN TRAFFIC.

SCHOOL BOARD OF SARASOTA COUNTY
ATTN: MICKI RYAN, PLANNING ANALYST
LONG RANGE PLANNING DEPARTMENT
BLUE AWNING BUILDING - ROOM 106
1960 LANDINGS BOULEVARD
SARASOTA, FLORIDA 34231
PHONE: 941-927-9000
E-MAIL: MICKI_RYAN@SARASOTA.K12.FL.US

CITY OF VENICE FIRE DEPARTMENT
ATTN: JOE SILVA
BATTALION CHIEF
200 GROVE STREET NORTH
VENICE, FLORIDA 34285
PHONE: 941-480-3030
E-MAIL: JSILVA@CITYOFVENICE.FL.US

UNITED STATE POST OFFICE CITY OF VENICE
ATTN: PHILIP FLEENER
DELIVERY SUPERVISOR
350 W. VENICE AVE
VENICE, FLORIDA 34285-0001
PHONE: 941-483-4195
E-MAIL: PHILIP.FLEENER@USPS.GOV

CITY OF VENICE SOLID WASTE
ATTN: BOB BORONI
ACTING SOLID WASTE SUPERINTENDENT
221 SEABOARD AVENUE
VENICE, FLORIDA 34285
PHONE: 941-486-2422
E-MAIL: BORONI@VENICEGOV.COM

CITY OF VENICE PUBLIC INFORMATION OFFICER
ATTN: PAM JOHNSON
VENICE CITY HALL
401 W. VENICE AVE
VENICE, FLORIDA 34285
PHONE: 941-486-2626 EXT. 24005
E-MAIL: PJOHNSON@VENICEGOV.COM

CITY OF VENICE POLICE DEPARTMENT
ATTN: CHIEF'S OFFICE
VENICE POLICE STATION
1350 E. RIDGEWOOD AVENUE
VENICE, FLORIDA 34292
PHONE: 941-480-3027
E-MAIL: TMCNULTY@VENICEGOV.COM

27. THROUGHOUT CONSTRUCTION THE CONTRACTOR SHALL MAINTAIN ALL WEATHER EMERGENCY ACCESS AT ALL ROAD CROSSINGS. THE ACCESS MUST WITHSTAND THE WEIGHT OF A 32 TON FIRE TRUCK.
28. CONTRACTOR SHALL STORE AND PROVIDE PROTECTION FOR ALL COMBUSTIBLE PRODUCTS AND MATERIALS FROM VEHICULAR DAMAGE AND VANDALISM.
29. GROUNDWATER DEWATERING ACTIVITIES ARE NOT COVERED BY THE PROJECT ENVIRONMENTAL RESOURCE PERMIT. THE CONTRACTOR SHALL APPLY TO THE FDEP FOR COVERAGE UNDER THE GENERIC PERMIT FOR THE DISCHARGE OF PRODUCED GROUNDWATER FROM ANY NON-CONTAMINATED SITE ACTIVITY PURSUANT TO 62-621.300 (2), F.A.C. CONTRACTOR IS RESPONSIBLE FOR ALL ASSOCIATED SAMPLING AND TESTING. A COPY OF THE APPROVED PERMIT SHALL BE PROVIDED TO THE AUTHORITY, ENGINEER OF RECORD AND CITY OF VENICE.
30. CONTRACTOR SHALL SIGN THE STORM WATER POLLUTION PREVENTION PLAN PROVIDED ON SHEET G1.02 AND SHALL SUBMIT THE REQUIRED NOTICE OF INTENT TO USE GENERIC PERMIT FOR STORM WATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES (FORM 62-621.300(4)(b)) TO THE FDEP ALONG WITH ANY REQUIRED FEE
31. MHW ELEVATION (1.3 FT NGVD) AND MLW ELEVATION (-0.03 FT NGVD) PER LABINS.

FRAC-OUT / BENTONITE MANAGEMENT AND EMERGENCY SPILL PLAN FOR HDD AT INTERCOASTAL FORCE MAIN CROSSING NOTES

1. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A FRAC-OUT/BENTONITE MANAGEMENT AND EMERGENCY SPILL PLAN THAT INCLUDES THE FOLLOWING AS A MINIMUM.
2. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL EMPLOY THE SERVICES OF AN ENVIRONMENTAL SCIENTIST/BIOLOGIST WITH AT LEAST FIVE (5) YEARS OF EXPERIENCE IN WATER QUALITY MONITORING AND HABITAT PROTECTION TO CONDUCT VISUAL INSPECTIONS DURING DRILLING OPERATIONS FOR ALL SUBAQUEOUS CROSSINGS FOR ANY SIGNS OF FRAC-OUT. THE MONITORING SHALL COVER THE AREA OF 10 FEET ON EITHER SIDE FROM THE CENTERLINE OF THE HDD ROUTE FOR THE ENTIRE LENGTH OF THE ROUTE.
3. RAPID RESPONSE PROCEDURES - DIRECTIONAL DRILLING SHALL BE PERFORMED BY A CONTRACTOR WHO HAS THE EXPERTISE REQUIRED TO PERFORM THE RELATED WORK. THE CONTRACTOR SHALL DESIGNATE QUALIFIED PERSONNEL AND EQUIPMENT ON THE SITE DURING DIRECTIONAL DRILLING OPERATIONS RESPONSIBLE FOR WATCHING SURFACE CONDITIONS FOR VISUAL SIGNS OF FRAC-OUT AND FOR MONITORING DRILLING FLUID PRESSURE; AND OTHER INDICATORS OF POTENTIAL FRAC-OUT. THE CONTRACTOR SHALL PROVIDE IMMEDIATE RESPONSE AND INITIATE CONTAINMENT PROCEDURES IN THE EVENT OF AN OCCURRENCE OF A BENTONITE SPILL. IN THE EVENT OF A BENTONITE SPILL OR FRAC-OUT ALL DRILLING ACTIVITIES SHALL BE STOPPED IMMEDIATELY. DRILL STEM SHALL BE REMOVED FROM THE BORE AND THE HOLE ABANDONED. THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) SHALL BE NOTIFIED IMMEDIATELY (WITHIN 2 HOURS) OF THE FRAC-OUT BY TELEPHONE.
4. CONTAINMENT PROCEDURES - SEDIMENT CONTROL SYSTEMS SUCH AS, SILT FENCE OR EARTH BERMS ON UPLANDS, AND FLOATING SILT BARRIERS OR OTHER AQUATIC BARRIERS IN WATER, AND OTHER MEANS NECESSARY TO PREVENT THE SPREAD OF THE BENTONITE SPILL SHALL BE INSTALLED. IF RETURN DRILLING MUD/FLUID IS LESS THAN THE PROJECTED AMOUNT TO BE RECOVERED, SEARCH FOR THE MISSING MATERIAL SHALL BEGIN IMMEDIATELY. ONCE THE FRAC-OUT IS LOCATED, THEN THE DRILLING MUD CONTAINMENT PLAN SHALL BE IMMEDIATELY IMPLEMENTED. ANY ESCAPED DRILLING LUBRICANT SHALL BE PUMPED INTO FILTER BAGS OR DIRECTLY INTO A VACTOR TRUCK.
5. TIMELY CLEANUP CAPABILITY - REMEDIATION OF THE LOST DRILLING MUD/FLUID SHALL BEGIN IMMEDIATELY. CLEAN-UP WITH A VACUUM SYSTEM SHALL COMMENCE WITHIN 12 HOURS OF A CONFIRMED FRAC-OUT AND/OR BREACH OF CONTAINMENT. CLEANUP SHALL INCLUDE REMOVAL OF THE MATERIAL FROM THE SITE AND DISPOSAL OF THE MATERIAL TO AN APPROVED UPLAND DISPOSAL LOCATION. ALL ADJACENT WETLANDS AFFECTED BY THE SPILL SHALL BE RESTORED TO PRE-DRILLING CONDITION OF GRADE AND VEGETATION.
6. REPORTS - SHOULD A RELEASE OCCUR, A DETAILED WRITTEN REPORT SHALL BE SUBMITTED TO THE FDEP WITHIN TEN (10) BUSINESS DAYS, AFTER CONTAINMENT/RECOVERY OF THE DRILLING MATERIAL/RESOURCES, INDICATING THE LOCATION OF THE FRAC-OUT, AMOUNT OF DRILLING MATERIAL DISCHARGED AND THE AMOUNT OF DRILLING MUD RECOVERED, THE PROCESS IN WHICH THE DRILLING MUD WAS RECOVERED, AND THE AREA THAT WAS AFFECTED BY THE DRILLING DISCHARGE.
7. TO PROVIDE AN ADDITIONAL LEVEL OF RESOURCE PROTECTION, THE FOLLOWING MEASURES SHALL BE INCLUDED IN THE PLAN TO MONITOR ANY POTENTIAL RELEASE OF DRILLING FLUID:
8. AT ALL TIMES, ADEQUATE PROTECTION SHALL BE TAKEN TO AVOID IMPACTS TO AQUATIC PRESERVE/OUTSTANDING FLORIDA WATERS AND /OR CONTIGUOUS WETLANDS. THIS SHALL INCLUDE, BUT IS NOT LIMITED TO IMPLEMENTATION OF BMPs AND/OR ULTIMATELY STOPPING CONSTRUCTION/DRILLING ACTIVITIES.
9. PHOTOGRAPHS AND/OR VIDEO OF THE DRILLING SITE SHALL BE TAKEN OF PRE AND POST-RECOVERY CONDITIONS INCLUDING LAT/LONG COORDINATES OF RELEASE LOCATIONS.
10. A VACTOR TRUCK(OR EQUAL) SHALL BE AVAILABLE AT ALL TIMES. CLEAN-UP SHALL IMMEDIATELY COMMENCE UPON DETECTION OF A FRAC-OUT. THE ENVIRONMENTAL SCIENTIST/BIOLOGISTS AND DIVERS SHALL GUIDE THE SUCTION HOSE OF THE VACUUM SYSTEM TO MINIMIZE THE REMOVAL OF UNAFFECTED NATURAL BOTTOM MATERIALS AND THE DISTURBANCE OF ANY EXISTING VEGETATION. ANY ESCAPED DRILL FLUIDS SHALL BE PUMPED INTO FILTER BAGS OR DIRECTLY INTO A VACTOR TRUCK. ONCE THE SPILL IS CONTAINED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSING OF THE DRILLING FLUID IN AN APPROVED UPLAND DISPOSAL SITE.
11. A SPILL KIT (I.E., ABSORBENT PADS/BOOM, GOGGLES, GLOVES, ETC) SHALL BE AVAILABLE AT ALL TIMES.
12. ADDITIONALLY, CONNECTIONS BETWEEN THE PUMP AND DRILL PIPE SHALL BE LEAK-FREE. USED DRILLING FLUID AND DRILLING FLUID SPILLED DURING DRILLING OPERATIONS SHALL BE CONTAINED AND PROPERLY DISPOSED OF. THE CONTRACTOR SHALL INSTALL AND MAINTAIN A CONTAINMENT AREA AROUND DRILL RIGS, DRILLING FLUID MIXING SYSTEMS, ENTRY AND EXIT PITS AND DRILLING FLUID RECYCLING SYSTEMS, ETC. TO PREVENT SPILLS INTO THE SURROUNDING ENVIRONMENT. PUMPS OF SUFFICIENT SIZE SHALL BE IN PLACE TO CONVEY EXCESS DRILLING FLUID FROM CONTAINMENT AREAS TO STORAGE AND FACILITIES.

EROSION AND SEDIMENTATION CONTROL NOTES

1. ALL PRACTICABLE EFFORT SHALL BE TAKEN DURING CONSTRUCTION TO CONTROL AND PREVENT EROSION AND TRANSPORT OF SEDIMENT MATERIALS TO INLETS, SURFACE DRAINS, WETLANDS AND LAKE AREAS, PER FDEP/SFWMD "BEST MANAGEMENT PRACTICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATION EFFORTS THAT MAY BE REQUIRED.
2. THE CONTRACTOR IS TO CONTROL ALL FUGITIVE DUST ORIGINATING FROM THE PROJECT BY WATERING OR OTHER METHODS AS REQUIRED.
3. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM THE SITE IF NOT REUSABLE ON-SITE AND ASSUMING PLAN ALIGNMENT AND GRADE IN ALL DITCHES AND SVALES AT COMPLETION OF CONSTRUCTION.
4. ADDITIONAL PROTECTION - ON-SITE PROTECTION IN ADDITION TO THE ABOVE MUST BE PROVIDED THAT WILL NOT PERMIT SILT TO LEAVE THE PROJECT CONFINES DUE TO UNFORESEEN CONDITIONS OR ACCIDENTS.
5. THE CONTRACTOR SHALL INSURE THAT ALL EXISTING DRAINAGE STRUCTURES, PIPES, ETC., ARE CLEANED OUT AND WORKING PROPERLY AT THE TIME OF PROJECT COMPLETION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING DIRT AND SEDIMENT FROM ALL CONSTRUCTION EQUIPMENT AND VEHICLES PRIOR TO ENTERING PUBLIC ROADWAYS.
7. THE CONTRACTOR SHALL CLEAN ALL ROADWAYS WITHIN OR ADJACENT TO THE PROJECT LIMITS ON A DAILY BASIS OR AS NEEDED TO PREVENT TRANSFER OF SEDIMENTATION.
8. HAY BALES SHALL BE EITHER WIRE-BOUND OR STRING-TIED WITH THE BINDINGS ORIENTED AROUND THE SIDES RATHER THAN OVER AND UNDER THE BALES.
9. HAY BALES SHALL BE PLACED LENGTHWISE IN A SINGLE ROW SURROUNDING THE INLET, WITH THE ENDS OF ADJACENT BALES

10. THE FILTER BARRIER SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 8 INCHES. AFTER THE BALES ARE STAKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AND COMPACTED AGAINST THE FILTER BARRIER.
11. EACH HAY BALE SHALL BE SECURELY ANCHORED AND HELD IN PLACE BY AT LEAST TWO STAKES OR REBARS DRIVEN THROUGH THE BALES.
12. LOOSE STRAW SHOULD BE WEDGED BETWEEN THE BALES TO PREVENT WATER FROM ENTERING BETWEEN THE BALES.
13. STRAW BALE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAIN EVENTS.
14. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES.
15. NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BALES SHALL BE ACCOMPLISHED PROMPTLY.
16. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE STRAW BALE BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
17. SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
18. SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC OR BALES SHALL BE REPLACED PROMPTLY.
19. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN THE DEPOSITS REACH APPROXIMATELY ONE-THIRD THE HEIGHT OF THE BARRIER.
20. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH EXISTING GRADE, PREPARED AND SEEDED.
21. EXISTING STORM STRUCTURES SHALL BE INSPECTED AFTER EACH RAIN EVENT, REPAIRS MADE TO THE FILTER BARRIERS, AND SILT / SEDIMENT REMOVED FROM PIPES AND STRUCTURES AS NEEDED TO PROVIDE POSITIVE FLOW.
22. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO IT'S ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
23. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS, SPECIFICATIONS AND SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT SPECIFICATIONS AND CRITERIA.
24. FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO: "THE FLORIDA DEVELOPMENT MANUAL - A GUIDE TO SOUND LAND AND WATER MANAGEMENT", FROM THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (F.D.E.P), CHAPTER 6.
25. EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE PLACED ADJACENT TO ALL WETLAND AREAS WHERE THERE IS A POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION.
26. ALL DISTURBED AREAS SHALL BE GRASSED, FERTILIZED, MULCHED AND MAINTAINED UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED.
27. SOD SHALL BE PLACED IN AREAS WHICH MAY REQUIRE IMMEDIATE EROSION PROTECTION TO ENSURE WATER QUALITY STANDARDS ARE MAINTAINED.
28. ANY DISCHARGE FROM DEWATERING ACTIVITY SHALL BE FILTERED AND CONVEYED TO THE OUTFALL IN A MANNER THAT LIMITS THE DISCHARGE TO 29 NTU ABOVE THE BACKGROUND CONCENTRATION OF THE OUTFALL.
29. DEWATERING PUMPS SHALL NOT EXCEED THE CAPACITY OF THAT WHICH REQUIRES A CONSUMPTIVE USE PERMIT FROM THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT.
30. ALL DISTURBED AREAS TO BE STABILIZED THROUGH COMPACTION, SILT SCREENS, HAY BALES AND GRASSING. ALL FILL SLOPES 3:1 OR STEEPER SHALL RECEIVE STAKED SOLID SOD.
31. ALL DEWATERING, EROSION AND SEDIMENT CONTROL DEVICES ARE TO REMAIN IN PLACE AFTER COMPLETION OF CONSTRUCTION AND REMOVED ONLY WHEN AREAS HAVE BEEN STABILIZED.
32. THESE NOTES INDICATE THE MINIMUM EROSION AND SEDIMENT MEASURES REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE RULES, REGULATIONS AND WATER QUALITY GUIDELINES AND MAY NEED TO INSTALL ADDITIONAL CONTROLS.
33. THE CONTRACTOR SHALL BE REQUIRED TO RESPOND TO ALL FDEP OR WATER MANAGEMENT DISTRICT INQUIRIES, RELATIVE TO THE COMPLIANCE FOR EROSION AND SEDIMENTATION CONTROL.
34. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED.
35. THE CONTRACTOR SHALL EXECUTE THE STORM WATER POLLUTION PREVENTION PLAN PROVIDED ON SHEET G1.03 PRIOR TO INITIATING CONSTRUCTION.

PLANS PREPARED IN NATIONAL GEODETIC
VERTICAL DATUM OF 1929 (NGVD 29)

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SAJ-2013-00673 (NW-CMW)
City of Venice/Intracoastal Force Main Replacement
Project Plans, Page 3 of 17

DESIGNED MAG/CFE	DATE 2/27/13	PROJECT INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT	SCALE AS SHOWN
CHECKED TAD	DATE 2/27/13	PROJECT INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT	SCALE AS SHOWN
CITY OF VENICE UTILITY DEPARTMENT 200 North Warfield Avenue Venice, FL 34285 PH: 941-486-3331 FAX: 941-480-3031	2930 University Parkway Sarasota, Florida 34243 Phone 941-558-6500 Fax 941-338-6540 www.kingengineering.com ENGINEERING ASSOCIATES, INC.	PERMIT SUBMITTAL 02/15/2013	

12. TREES 5" IN DIAMETER AND LARGER HAVE BEEN LOCATED WITH COMMON NAME AND APPROXIMATE DIAMETER BREAST HIGH. SMALLER TREES, NON-

JOHN D. WEIGLE, P.S.M.
FLORIDA LICENSE - LS #5246

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MAR 04 2013
D.E.P. South District



STATE OF FLORIDA
PROFESSIONAL ENGINEER
License No. 65709
L.P. TRUONG

SURVEYOR'S REPORT

THE SIGNATURE OF THE QUALITY CONTROL OFFICER IN THIS SPACE INDICATES THAT ALL REQUIRED PERMITS HAVE BEEN OBTAINED AND THAT CONSTRUCTION IS AUTHORIZED TO COMMENCE.

JOB NO. 4799-003-000	SHEET NO.
DATE: OCT 2012	G1.02
SCALE: AS SHOWN	

PERMIT SUBMITTAL
02/15/13

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SITE DESCRIPTION			TIMING OF CONTROL MEASURES		FERTILIZERS:	
PROJECT NAME: CITY OF VENICE - INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT	OWNER OF PROJECT: CITY OF VENICE UTILITY DEPARTMENT	OWNER'S ADDRESS: 200 NORTH WARFIELD AVENUE VENICE, FL 34285	AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, STAKED SILT BARRIERS, STABILIZED CONSTRUCTION ENTRANCES AND SEDIMENT BASINS WILL BE CONSTRUCTED PRIOR TO CLEARING OR GRADING OF ANY OTHER PORTIONS OF THE SITE. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN 21 DAYS WILL BE STABILIZED WITH A TEMPORARY GRASS AND MULCH WITHIN 5 DAYS OF THE LAST DISTURBANCE. ONCE CONSTRUCTED ACTIVITY CEASES PERMANENTLY IN THAT AREA, THAT AREA WILL BE RESTORED TO PRECONSTRUCTION CONDITIONS AFTER THE ENTIRE SITE IS STABILIZED, THE ACCUMULATED SEDIMENT WILL BE REMOVED FROM THE TRAPS AND THE STAKED SILT BARRIERS WILL BE REMOVED.		FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.	
SITE LOCATION: FROM INTERSECTION OF TAMPA AVENUE E. AND AMERICAN LEGION WAY TO INTERSECTION OF E. VENICE AVENUE AND WARFIELD AVENUE SOUTH	PROJECT COORDINATES: LATITUDE: 27.099662° N LONGITUDE: 82.440738° W		CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS		PAINTS: ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURERS' INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.	
DESCRIPTION OF NATURE OF CONSTRUCTION ACTIVITY CONSTRUCT A 16-INCH REPLACEMENT FORCE MAIN ACROSS THE INTRACOASTAL WATERWAY AND A 4-INCH REPLACEMENT FORCE MAIN ALONG AMERICAN LEGION WAY. SOIL DISTURBING ACTIVITIES INCLUDE: EROSION CONTROL MEASURES, PIPE TRENCH EXCAVATION AND BACKFILL, PAVEMENT REPLACEMENT AND GRADING, AND PREPARATION FOR FINAL, SODDING, SEED & MULCHING AND HYDRO-SEEDING.			THE STORM WATER POLLUTION PREVENTION PLAN REFLECTS THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT'S (SWFWMD) REQUIREMENTS FOR STORM WATER MANAGEMENT AND EROSION AND SEDIMENT CONTROL, AS ESTABLISHED BY THE FLORIDA ADMINISTRATIVE CODE, CHAPTER 40D-4 AND 40D-40. TO ENSURE COMPLIANCE, THIS PLAN WAS PREPARED IN ACCORDANCE WITH SWFWMD'S "BASIS OF REVIEW FOR SURFACE WATER MANAGEMENT PERMIT APPLICATIONS WITHIN THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT." THIS PLAN ALSO REFLECTS THE REQUIREMENTS OF THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION FOR WORK IN BRANCH 6.		CONCRETE TRUCKS: CONTRACTOR SHALL DESIGNATE AN AREA FOR DISCHARGE OF SURPLUS CONCRETE OR DRUM WASH WATER AND SHALL INSTALL A CONTAINMENT BERM AROUND THIS AREA TO PREVENT RUNOFF TO THE REMAINDER OF THE SITE. HARD DEBRIS SHALL BE DISPOSED OF BY CONTRACTOR IN ACCORDANCE WITH LOCAL RULES AND REGULATIONS UPON COMPLETION OF THE PROJECT.	
RUNOFF COEFFICIENT: N/A SITE AREA: N/A			MAINTENANCE INSPECTION PROCEDURES		SPILL CONTROL PRACTICES	
SEQUENCE OF MAJOR ACTIVITIES: 1. INSTALL SILT FENCE AND HAY BALES AS REQUIRED 2. EXCAVATE PIPE TRENCHES OR HDD RECEIVING/EXIT PITS OR SERVICE LATERAL PITS 3. STOCK PILE TOP SOIL IF REQUIRED 4. STABILIZE DENUDE AREAS AND STOCKPILES AS SOON AS PRACTICABLE. 5. INSTALL UTILITIES 6. COMPLETE GRADING AND INSTALL PERMANENT SODDING/SEED & MULCHING/HYDRO-SEEDING 7. COMPLETE FINAL PAVING AND GRADING 8. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED, REMOVE ANY TEMPORARY CONTROLS.			EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES THESE ARE THE INSPECTION AND MAINTENANCE PRACTICES THAT SHALL BE USED TO MAINTAIN EROSION AND SEDIMENT CONTROL. ALL CONTROL MEASURES IN DISTURBED AREAS WILL BE INSPECTED AT LEAST ONCE EACH WEEK AND WITHIN 24 HOURS OF THE END OF ANY STORM EVENT OF 0.25 INCHES OR GREATER BY A CONTRACTORS REPRESENTATIVE. (WHERE SITES HAVE BEEN FINALLY STABILIZED SUCH INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH.) ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER; IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT. BUILT UP SEDIMENT WILL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE FENCE. SILT FENCE WILL BE INSPECTED REGULARLY FOR DEPTH OF SEDIMENT, TEARS, TO SEE IF THE FABRIC IS SECURELY ATTACHED TO THE FENCE POSTS, AND TO SEE THAT THE FENCE POSTS ARE FIRMLY IN THE GROUND. THE SEDIMENT BASINS WILL BE INSPECTED FOR DEPTH OF SEDIMENT, AND BUILT UP SEDIMENT WILL BE REMOVED WHEN IT REACHES 10 PERCENT OF THE DESIGN CAPACITY OR AT THE END OF THE JOB. TEMPORARY AND PERMANENT GRASSING, MULCHING AND SODDING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH. A MAINTENANCE INSPECTION REPORT SHALL BE MADE AFTER EACH INSPECTION BY THE CONTRACTOR AND SHALL BE KEPT IN AN ACTIVE LOG READILY AVAILABLE AT THE JOB SITE CONSTRUCTION TRAILER. THE SITE SUPERINTENDENT WILL SELECT INDIVIDUALS WHO WILL BE RESPONSIBLE FOR MAINTENANCE AND REPAIR ACTIVITIES. FILLING OUT THE INSPECTION AND MAINTENANCE REPORT WILL BE BY THE CONTRACTOR. PERSONNEL SELECTED FOR AND MAINTENANCE RESPONSIBILITIES WILL RECEIVE TRAINING FROM THE SITE SUPERINTENDENT. THEY WILL BE TRAINED IN ALL MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ON-SITE IN GOOD WORKING ORDER.		IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP: MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON-SITE. EQUIPMENT AND MATERIALS WILL INCLUDE, BUT NOT BE LIMITED TO, BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS. SPECIFICALLY FOR THIS PURPOSE. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY. THE SPILL AREAS WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED. THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. HE WILL DESIGNATE OTHER SITE PERSONNEL WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ON-SITE.	
NAME OF RECEIVING WATERS: GULF OF MEXICO			NON-STORM WATER DISCHARGES		NOTICE OF TERMINATION	
CONTROLS			IT IS EXPECTED THAT THE FOLLOWING NON-STORM WATER DISCHARGES WILL OCCUR FROM THE SITE DURING THE CONSTRUCTION PERIOD: WATER FROM DEWATERING, WATER LINE FLUSHING, WATER USED TO SPRAY OFF LOOSE SOILS FROM VEHICLES, DUST CONTROL, PAVEMENT WASH WATERS (WHERE NO SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE OCCURRED). ALL NON-STORM WATER DISCHARGES WILL BE DIRECTED TO A SEDIMENT BASIN PRIOR TO DISCHARGE. GROUNDWATER DEWATERING ACTIVITIES ARE NOT COVERED BY THIS PERMIT. THE CONTRACTOR SHALL APPLY FOR COVERAGE UNDER THE GENERIC PERMIT FOR THE DISCHARGE OF PRODUCED GROUNDWATER FROM ANY NON-CONTAMINATED SITE ACTIVITY PURSUANT TO 62-621.300 (2), F.A.C.		A NOTICE OF TERMINATION WILL BE SUBMITTED TO EPA AFTER THE CONSTRUCTION HAS BEEN COMPLETED AND THE SITE HAS UNDERGONE FINAL STABILIZATION.	
EROSION AND SEDIMENT CONTROLS			INVENTORY FOR POLLUTION PREVENTION PLAN		POLLUTION PREVENTION PLAN CERTIFICATION	
STABILIZATION PRACTICES			THE MATERIALS OR SUBSTANCES LISTED BELOW ARE EXPECTED, BUT NOT LIMITED TO, BE PRESENT ON SITE DURING CONSTRUCTION: CONCRETE DETERGENTS PAINTS (ENAMEL AND LATEX) METAL TRENCH BOXES TAR (PAVEMENT) SAND FERTILIZERS PETROLEUM BASED PRODUCTS AND FUELS CLEANING SOLVENTS WOOD STONE		I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS HAVE BEEN READ BY ME OR MY DESIGNATED REPRESENTATIVE AND UNDERSTAND THAT THIS SYSTEM HAS BEEN PREPARED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.	
WIND EROSION STABILIZATION: THE CONTRACTOR SHALL DENUDE ONLY AREAS WHERE IT IS EXPECTED TO BE EXCAVATED OR ALTERED WITHIN A TWO (2) WEEK TIME-FRAME. FINAL GRADES SHALL BE PERFORMED AND TEMPORARY OR PERMANENT SOIL STABILIZATION SHALL BE APPLIED. AREAS WHERE CONSTRUCTION OPERATIONS WILL BE CONTINUOUS, FUGITIVE DUST SHALL BE MANAGED BY APPLYING A WATER SPRAY TO SATURATE THE SURFACE SOILS ON A DAILY BASIS, OR AS NEEDED TO MAINTAIN MINIMAL DUST TRANSPORT. FUGITIVE DUST SHALL BE MONITORED CONTINUOUSLY AND ADDITIONAL MEASURES MAY NEED TO BE TAKEN TO CONTROL OFF-SITE TRANSPORT OF UNACCEPTABLE LEVELS OF DUST.			SPILL PREVENTION		OWNER REPRESENTATIVE	
TEMPORARY STABILIZATION: TOP SOIL STOCK PILES AND DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR AT LEAST 10 DAYS WILL BE STABILIZED WITH TEMPORARY GRASS AND MULCH NO LATER THAN 5 DAYS FROM THE LAST CONSTRUCTION ACTIVITY. GRASS SEED SHALL BE A MIXTURE OF 20 PARTS OF BERMUDA SEED AND 80 PARTS OF PENSACOLA BAHIA. THE SEPARATE TYPES OF SEED USED SHALL BE THOROUGHLY DRY MIXED IMMEDIATELY BEFORE SOWING. SEED WHICH HAS BECOME WET SHALL NOT BE USED. THE MULCH MATERIAL USED SHALL NORMALLY BE DRY MULCH. DRY MULCH SHALL BE STRAW OR HAY, CONSISTING OF OAT, RYE OR WHEAT STRAW, OR OF PANGOLA, PEANUT, COASTAL BERMUDA OR BAHIA GRASS HAY. ONLY UNDETERIORATED MULCH WHICH CAN BE READILY CUT INTO THE SOIL SHALL BE USED. AREAS OF THE SITE WHICH ARE TO BE PAVED WILL BE TEMPORARILY STABILIZED BY APPLYING STABILIZATION AND BASE.			MATERIAL MANAGEMENT PRACTICES		CONTRACTOR'S CERTIFICATION	
PERMANENT STABILIZATION: DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED AND RESTORED TO PRECONSTRUCTION CONDITIONS NO LATER THAN 5 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY.			THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF. GOOD HOUSEKEEPING: THE FOLLOWING GOOD HOUSEKEEPING PRACTICES SHALL BE FOLLOWED ON-SITE DURING THE CONSTRUCTION PROJECT. AN EFFORT SHALL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER CONTAINED ENCLOSURE. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL MANUFACTURER'S LABELED CONTAINERS. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER. WHENEVER POSSIBLE, ALL OF A PRODUCT SHALL BE USED UP BEFORE DISPOSING OF THE CONTAINER. MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED. THE SITE SUPERINTENDENT SHALL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ON-SITE. HAZARDOUS PRODUCTS: THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS. PRODUCTS SHALL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHALL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION. IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURERS' OR LOCAL AND STATE RECOMMENDED METHODS OF PROPER DISPOSAL SHALL BE FOLLOWED. THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON-SITE: PETROLEUM PRODUCTS: ALL ON-SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ON-SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.		I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERIC STORM WATER PERMIT ISSUED PURSUANT TO SECTION 403.0885, F.S., THAT AUTHORIZES THE STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CERTIFICATION.	
STRUCTURAL PRACTICES			STORM WATER MANAGEMENT		SIGNATURE	
STAKED SILT FENCES: THE STAKED SILT FENCES WILL BE CONSTRUCTED ALONG THE PERIMETER AS PREVIOUSLY EXPLAINED. THESE DEVICES WILL FILTER RUNOFF AND/OR DIVERT RUNOFF TO THE SEDIMENT BASINS (IF NEEDED).			STORM WATER DRAINAGE WILL BE PROVIDED BY SWALE, TEMPORARY AND SEDIMENT BASINS, AS NEEDED. SWALES TO BE SODDED AND INCLUDE CHECK DAMS, RIP RAP, HAY BALES OR OTHER CONTROLS TO CONTROL RUNOFF VELOCITY AND TRANSPORT OF SEDIMENT. WHEN CONSTRUCTION IS COMPLETE THE IMPROVED PORTION OF THE SITE WILL DRAIN AS IT DID PRIOR TO THE UTILITY INSTALLATION.		FOR	
SEDIMENT BASINS: IF NEEDED, SEDIMENT BASINS WILL BE CONSTRUCTED TO A MINIMUM OF 2' BELOW EXISTING GROUND AT THE CONTRACTORS DISCRETION TO ALLOW SILTS TO BE COLLECTED AND REMOVED. EACH BASIN SHALL HAVE SIDE SLOPES NO STEEPER THAN 4:1 AND BE STABILIZED PRIOR TO USE.			OTHER CONTROLS		RESPONSIBLE FOR	
WASTE DISPOSAL			WASTE DISPOSAL		GENERAL CONTRACTOR	
WASTE MATERIALS: ALL WASTE MATERIAL WILL BE COLLECTED AND STORED IN DUMPSTERS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTERS. THE DUMPSTERS WILL BE EMPTIED A MINIMUM OF ONCE A WEEK OR MORE OFTEN IF NECESSARY, AND THE TRASH WILL BE HAULED TO A REGISTERED LANDFILL FOR DISPOSAL. NO EXCESS CONSTRUCTION MATERIALS WILL BE BURIED ON-SITE. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. NOTICES STATING THESE PRACTICES WILL BE POSTED IN THE ON-SITE OFFICE TRAILER AND THE CONSTRUCTION MANGER RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.			HAZARDOUS WASTE: ALL HAZARDOUS WASTE MATERIALS, IF ENCOUNTERED, WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.		TBD	
SANITARY WASTE: ALL SANITARY WASTE WILL BE COLLECTED FROM PORTABLE UNITS A MINIMUM OF THREE TIMES PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR, AS REQUIRED BY LOCAL REGULATION.			OFFSITE VEHICLE TRACKING		TEMPORARY AND PERMANENT STABILIZATION	
THE PAVED STREETS WILL BE CLEANED AS NEEDED TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM/TO THE SITE. DUMP TRUCKS HAULING MATERIAL FROM OR TO THE SITE WILL BE COVERED WITH A TARPULIN AT ALL TIMES.					STABILIZED CONSTRUCTION ENTRANCE, EARTH DIKES, SEDIMENT BASIN	

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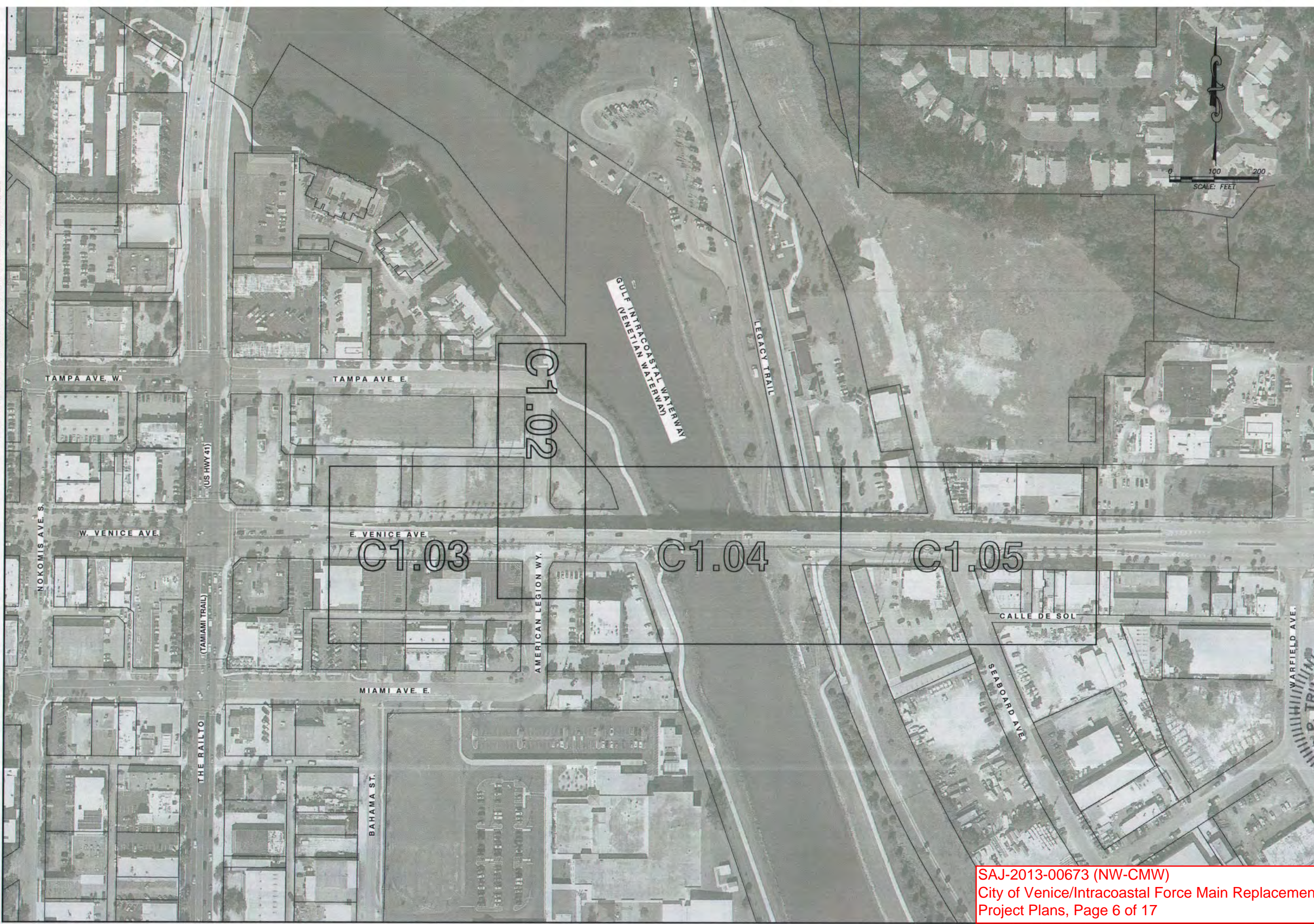


STORM WATER
POLLUTION
PREVENTION PLAN

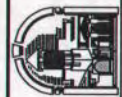
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OVERALL PROJECT
SITE PLAN AND
KEYMAP

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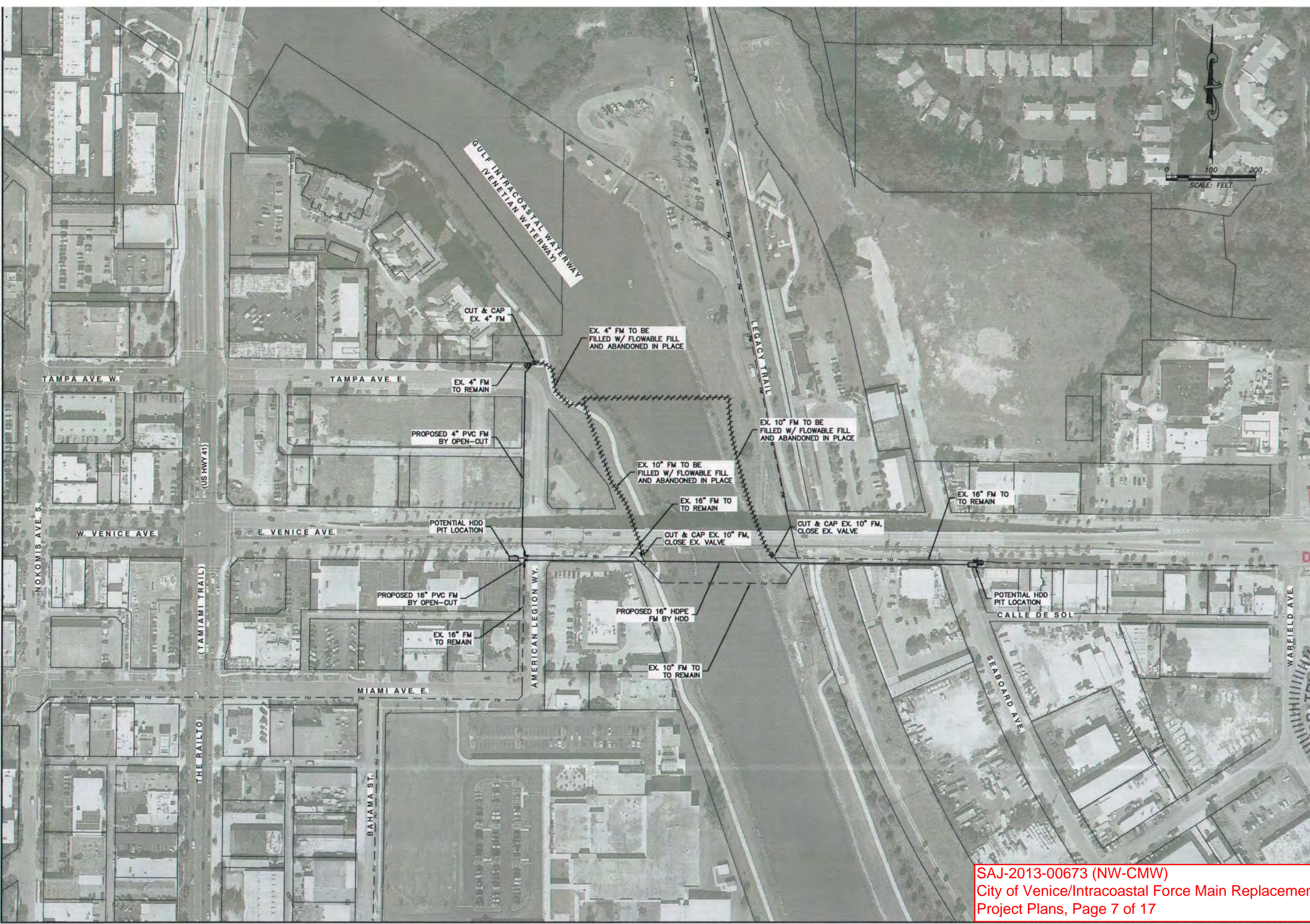
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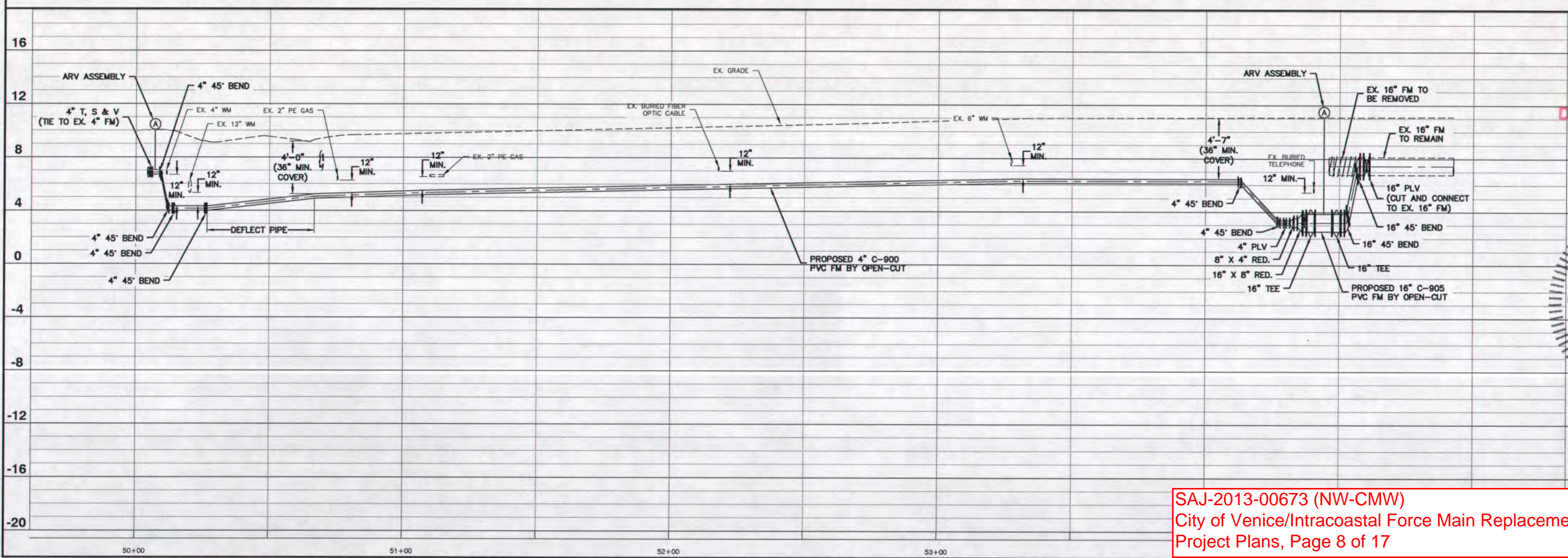
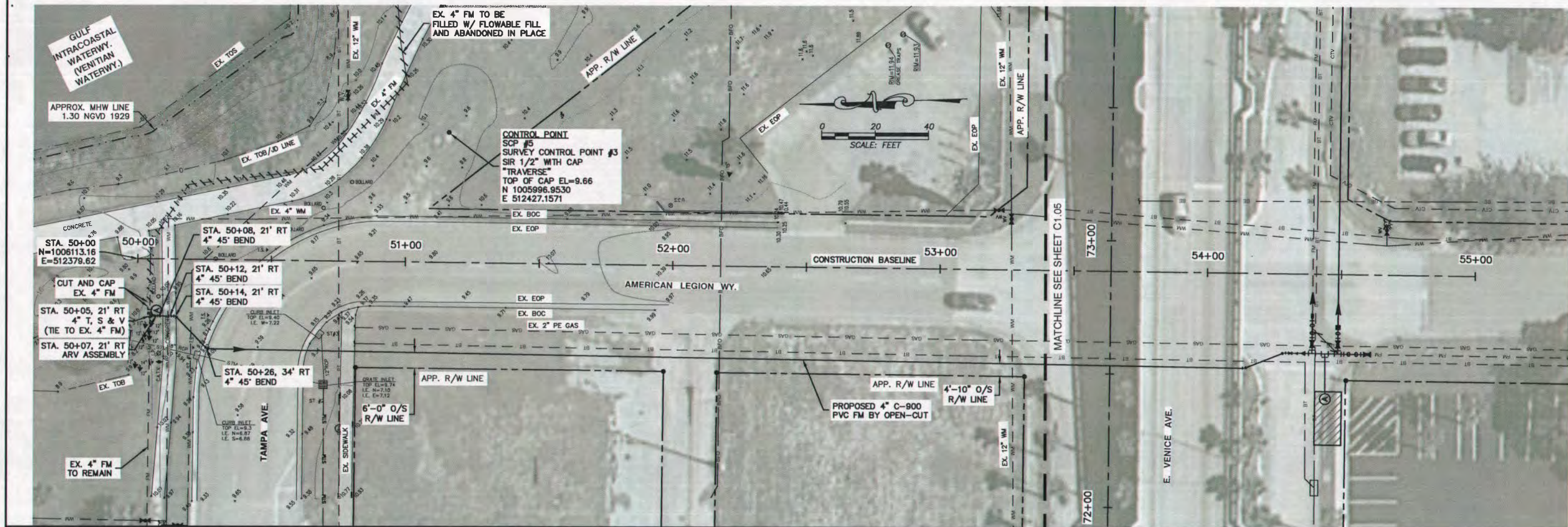
OVERALL
PROPOSED PLAN

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**AMERICAN
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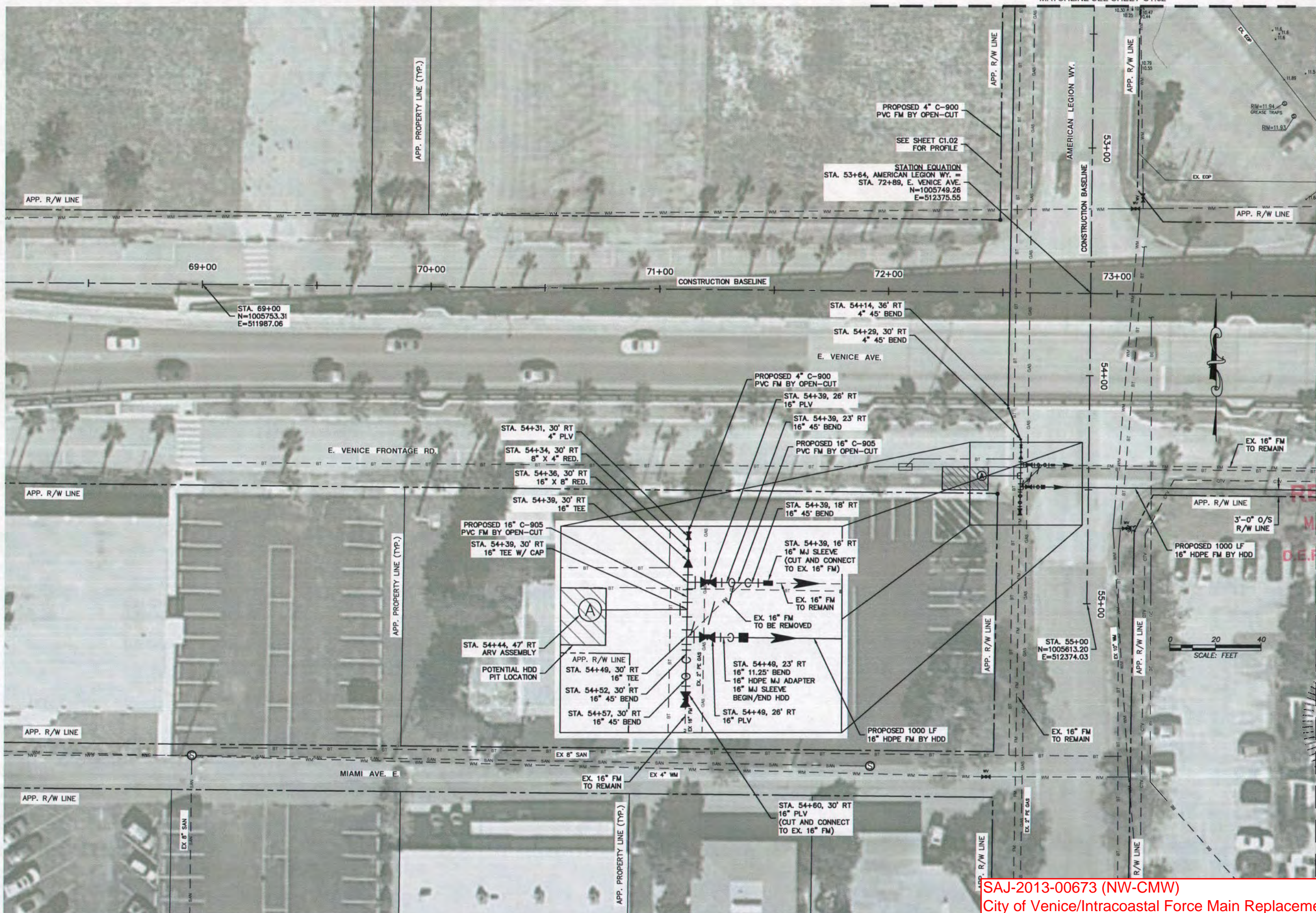
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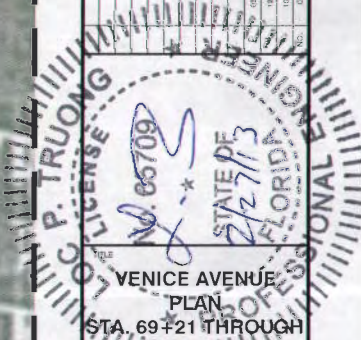


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VENICE AVENUE
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STA. 69+21 THROUGH
STA. 74+95

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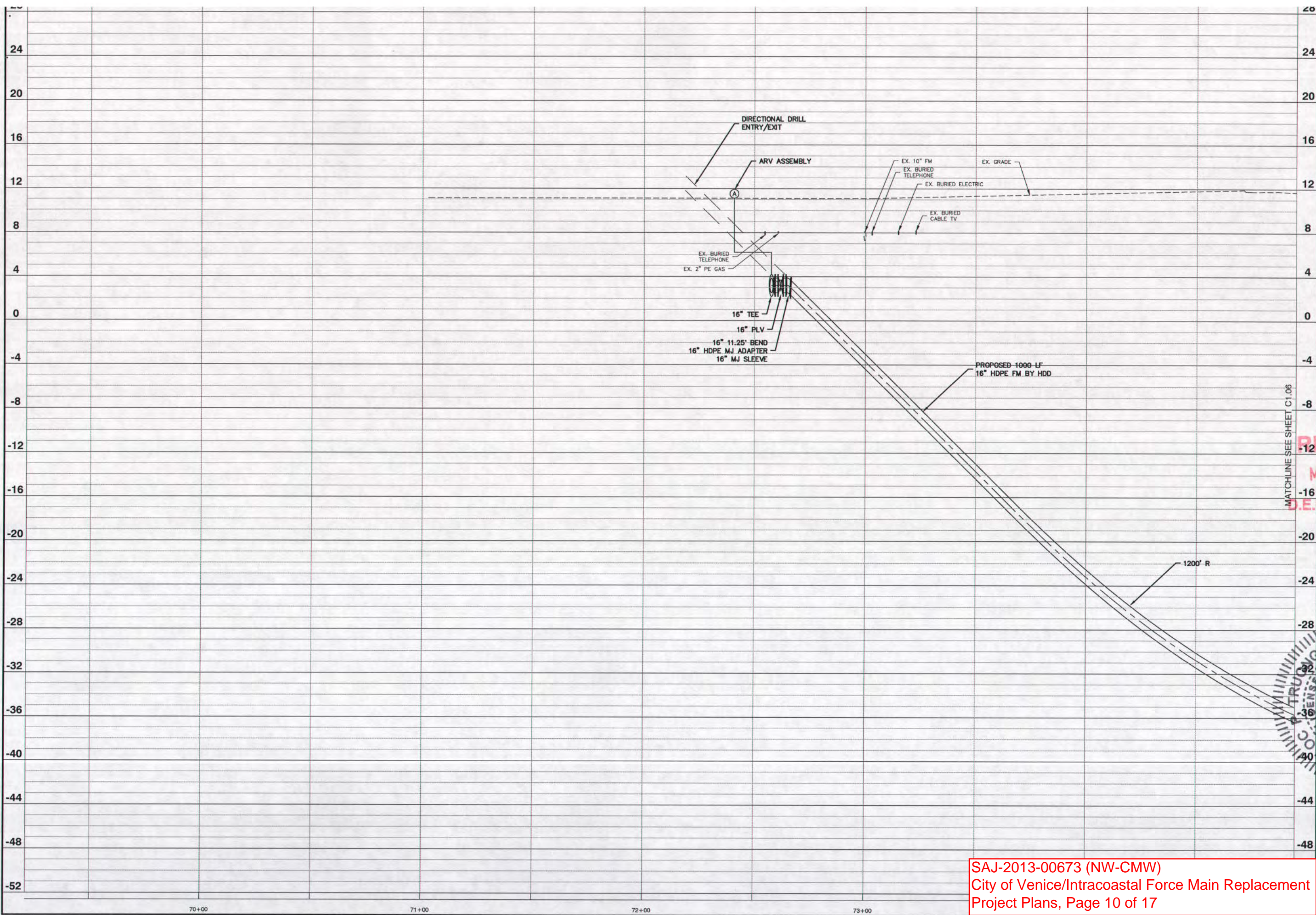
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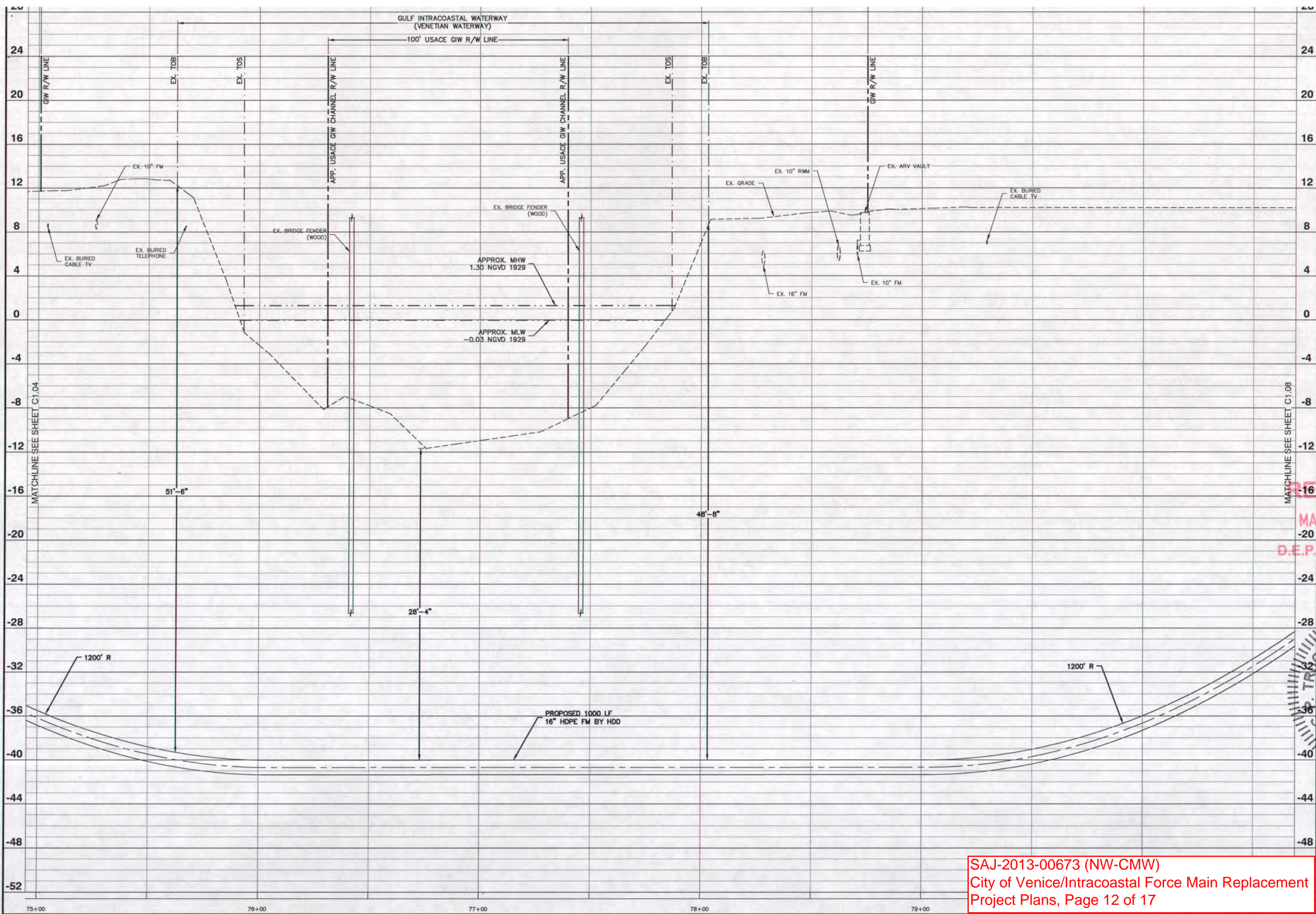
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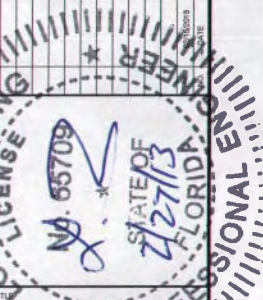
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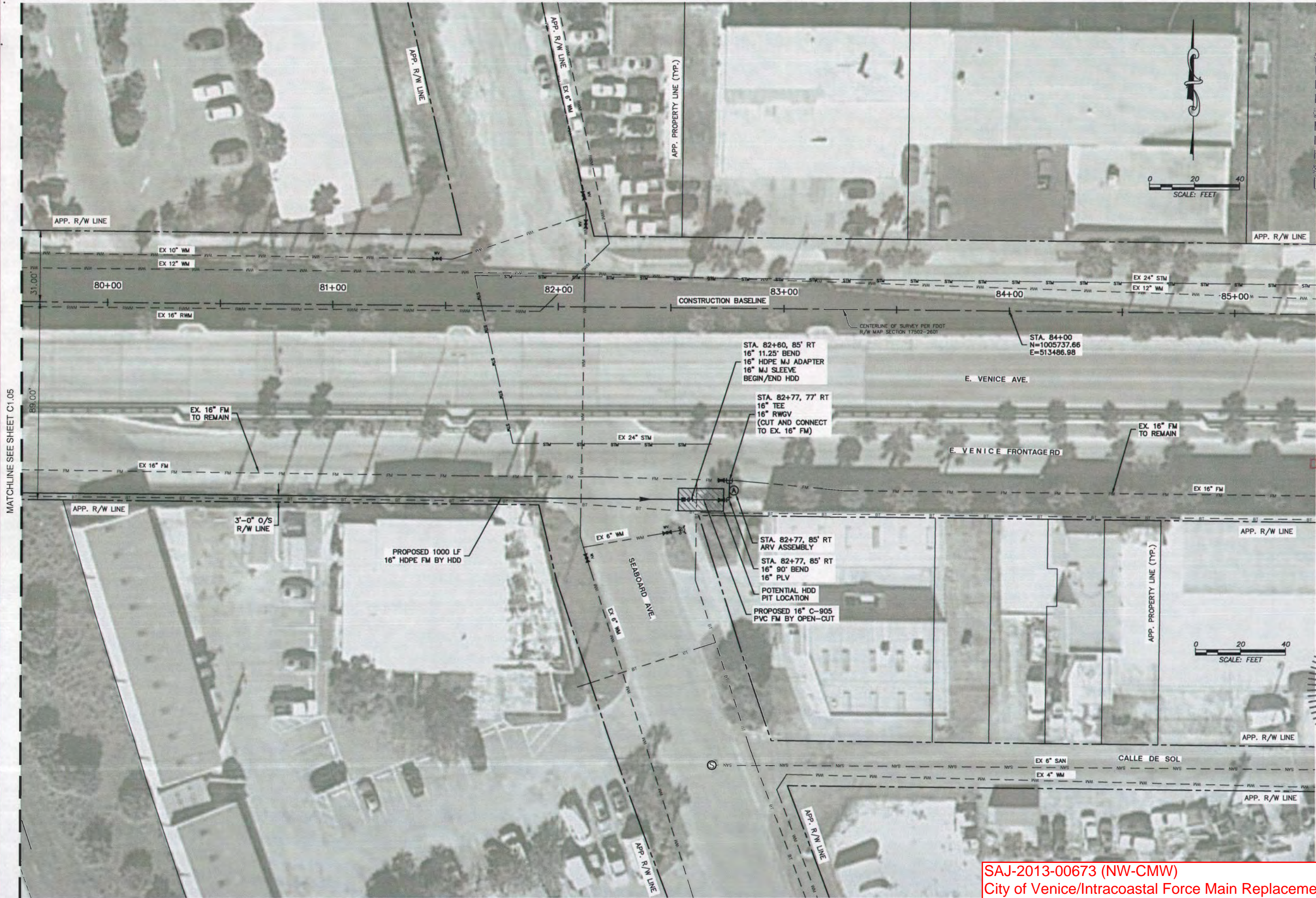
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SAJ-2013-00673 (NW-CMW)
City of Venice/Intracoastal Force Main Replacement
Project Plans, Page 12 of 17

 City Of Venice Utility Department 200 North Warfield Avenue Venice, FL 34285 Ph: 941-486-5333 Fax: 941-480-5031		 2930 University Parkway Sarasota, Florida 34243 Phone 941-358-6500 Fax 941-358-6540 www.kingengineering.com Engineering License #2510	
INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT			
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 VENICE AVENUE PROFILE STA. 74+95 THROUGH STA. 80+69		THE SIGNATURE OF THE QUALITY CONTROL OFFICER IN THIS SPACE INDICATES THAT ALL REQUIRED PERMITS HAVE BEEN OBTAINED AND THAT CONSTRUCTION IS AUTHORIZED TO COMMENCE.	
JOB NO. 4799-003-000		SHEET NO. C1.06	
DATE OCT 2012		SCALE AS SHOWN	
PERMIT SUBMITTAL 02/15/2013			

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City of Venice/Intracoastal Force Main Replacement
Project Plans, Page 13 of 17

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MJS

CHECKED
TAD

LPT
JC

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200 North Warfield Avenue
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INTRACOASTAL
WATERWAY FORCE
MAIN REPLACEMENT
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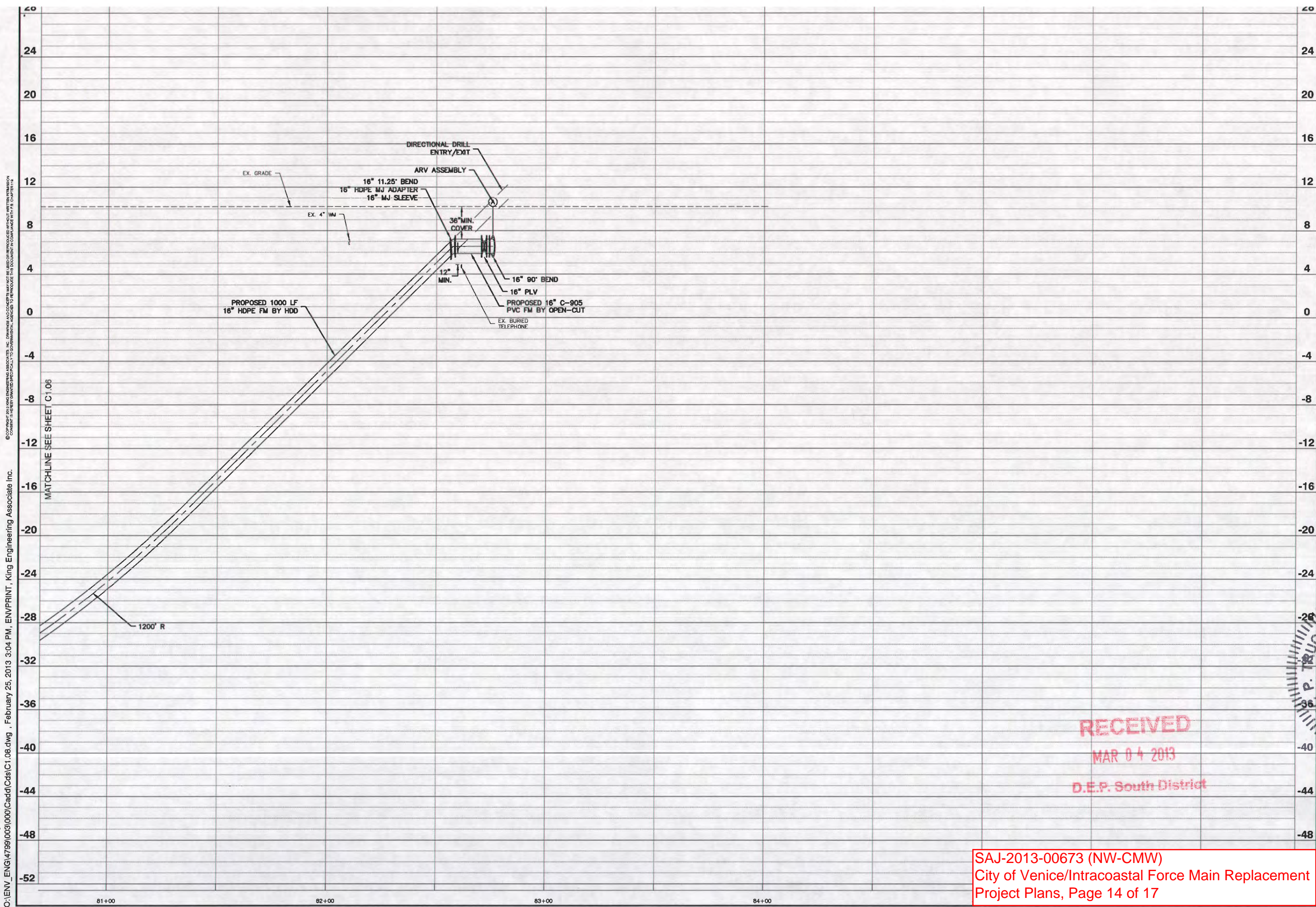


VENICE AVENUE
PLAN
STA. 80+69 THROUGH
STA. 86+43

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OFFICER IN THIS SPACE INDICATES THAT ALL
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JOB NO. 4799-003-000	SHEET NO. C1.07
DATE OCT 2012	AS SHOWN
SCALE AS SHOWN	PERMIT SUBMITTAL 02/15/2013

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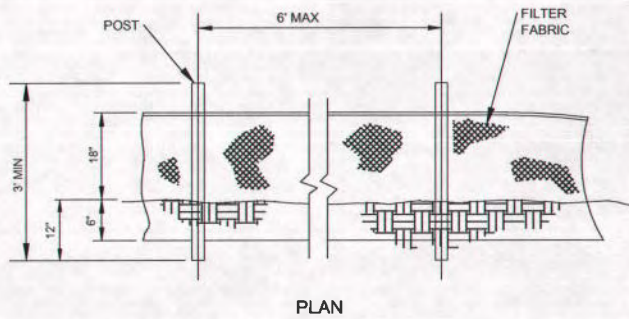
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City of Venice/Intracoastal Force Main Replacement
Project Plans, Page 14 of 17

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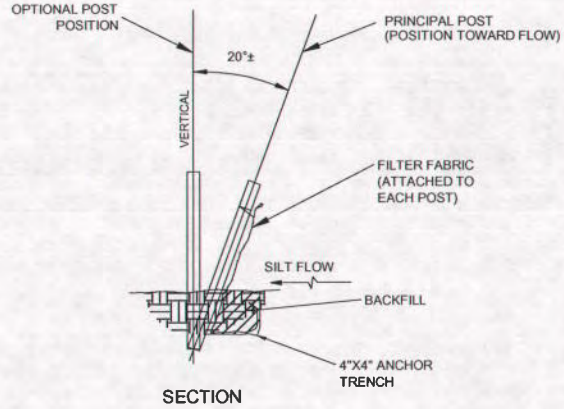
City Of Venice Utility Department 200 North Warfield Avenue Venice, FL 34286 Ph: 941-486-3333 Fax: 941-486-3331	City Of Venice Utility Department 200 North Warfield Avenue Venice, FL 34286 Ph: 941-486-3333 Fax: 941-486-3331
King ENGINEERING ASSOCIATES, INC.	
INTRACOASTAL WATERWAY FORCE MAIN REPLACEMENT PROJECT	
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VENICE AVENUE PROFILE STA. 80+69 THROUGH STA. 86+43	
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JOB NO. 4799-003-000	SHEET NO. C1.08
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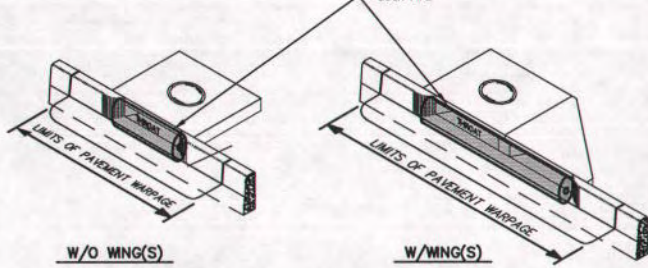
PLAN



SECTION

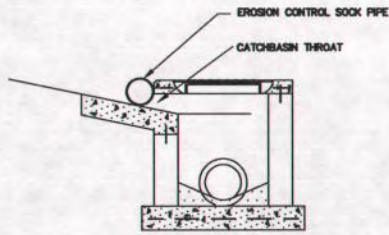
STEEL 1.33 LBS/FT MIN.) POST OPTIONS:
WOOD 2"x4" OR 2 1/2" DIA.

7 SILT FENCE
DS-1 (FDOT INDEX No. 102)

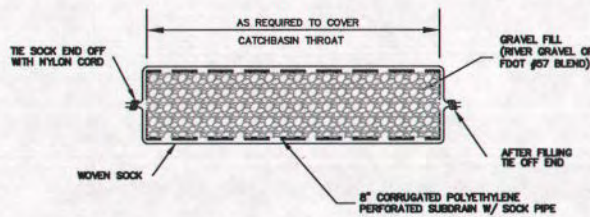


W/O WING(S)

W/WING(S)



SECTION X-X



CURB INLET FILTER SOCK
SEDIMENTATION CONTROL

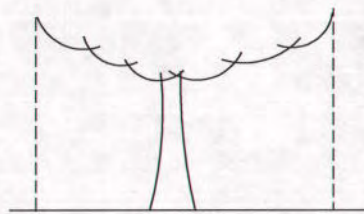


FIGURE A

THE DRIPLINE OF A TREE IS THE IMAGINARY, VERTICAL LINE THAT EXTENDS DOWNWARD FROM THE OUTERMOST TIPS OF THE TREE'S BRANCHES TO THE GROUND (FIG. A)

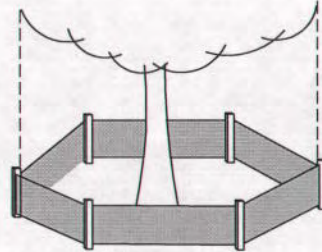
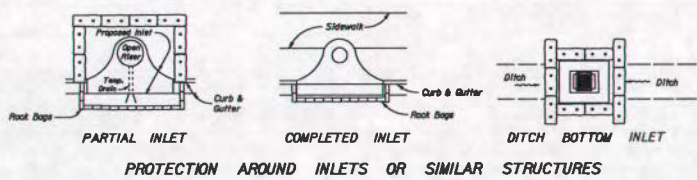


FIGURE B

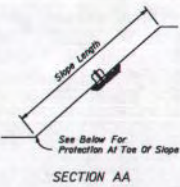
FOUR CORNER UPRIGHT STAKES OF NO LESS THAN 2"x2" LUMBER CONNECTED BY HORIZONTAL MEMBERS OF NO LESS THAN 1"x4" LUMBER; OR UPRIGHT STAKES SPACED AT 5' INTERVALS OF NO LESS THAN 2"x2" LUMBER CONNECTED BY SILT SCREEN FABRIC OR MATERIAL OF COMPARABLE DURABILITY.

NOTE:
DURING LAND ALTERATION AND CONSTRUCTION ACTIVITIES, IT SHALL BE UNLAWFUL TO REMOVE VEGETATION BY GRUBBING OR TO PLACE SOIL DEPOSITS, DEBRIS, SOLVENTS, CONSTRUCTION MATERIAL, MACHINERY OR OTHER EQUIPMENT OF ANY KIND WITHIN THE DRIPLINE OF A TREE TO REMAIN ON THE SITE.

TREE BARRICADE DETAIL



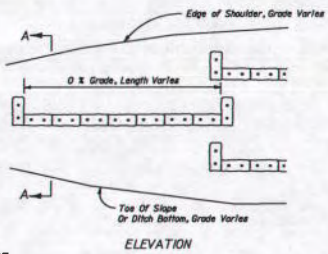
PROTECTION AROUND INLETS OR SIMILAR STRUCTURES



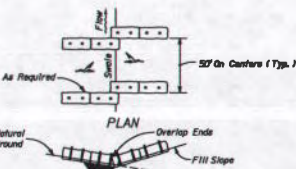
SECTION AA

Note:
Where the slope length exceeds 25 feet, construct one row of bale barriers or OC burlap/straw geotextile along the slope. Construct two rows of bale barriers where the slope length exceeds 50 feet.

ALONG FILL SLOPE



ELEVATION

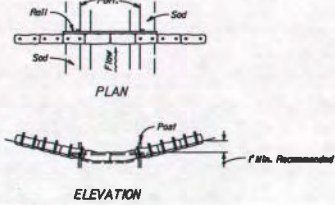


ELEVATION

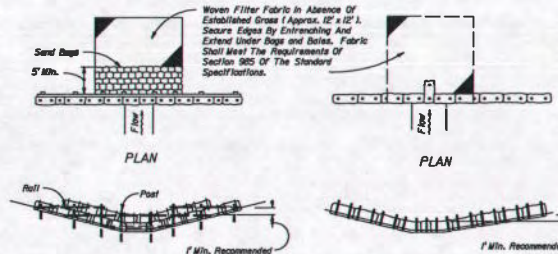
TO BE USED WHERE THE NATURAL GROUND SLOPES TOWARD THE TOE OF SLOPE

AT TOE OF SLOPE

BARRIERS FOR FILL SLOPES



BARRIER FOR PAVED DITCH



Anchor Top Bales To Lower Bales With 2 Stakes Per Bale.

ELEVATION

TYPE II

BARRIERS FOR UNPAVED DITCHES

ELEVATION

TYPE I

NOTES FOR BALED HAY OR STRAW BARRIERS

1. Type I and II Barriers should be spaced in accordance with Chart 1, Sheet 1.
2. Hay bales shall be truncated 3" to 4" and anchored with 2 - 1" x 4" (or 1" dia.) x 4' wood stakes. Stakes of other material or shape providing equivalent strength may be used if approved by the Engineer. Stakes other than wood shall be removed upon completion of the project.
3. Ropes and posts shall be 1" x 4" wood. Other materials providing equivalent strength may be used if approved by the Engineer.
4. Adjacent bales shall be lashed firmly together. Unavailable gaps shall be plugged with hay or straw to prevent soil from passing.
5. Where used in conjunction with silt fences, hay bales shall be placed on the upstream side of the fences.
6. Bales to be paid for under the contract unit price for Baled Hay or Straw, EA. The unit price shall include the cost of filter fabric for Type I and II barriers. Same bales shall be paid for under the unit price for Sandbags, CY. Peak bales to be paid for under the contract unit price for Peak Bags, EA.

FLORIDA DEPARTMENT OF TRANSPORTATION
TEMPORARY EROSION AND SEDIMENT CONTROL

Sheet No.
2 of 3
102

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SAJ-2013-00673 (NW-CMW) City of Venice/Intracoastal Force Main Replacement Project Plans, Page 15 of 17	
PERMIT SUBMITTAL 02/15/2013	
DATE OCT 2012	SHEET NO. D1.00
SCALE AS SHOWN	
THE SIGNATURE OF THE QUALITY CONTROL OFFICER IN THIS SPACE INDICATES THAT ALL REQUIRED PERMITS HAVE BEEN OBTAINED AND THAT CONSTRUCTION IS AUTHORIZED TO COMMENCE.	
DATE 2/27/13	
STATE OF FLORIDA PROFESSIONAL ENGINEER LOU B. TRUONG LICENSE NO. 65708	
EROSION CONTROL & TREE BARRICADE DETAILS	

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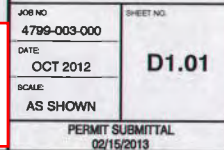
ABBREVIATIONS: H=HORIZONTAL, VU=VERTICAL UP, VD=VERTICAL DOWN.

VSR-3

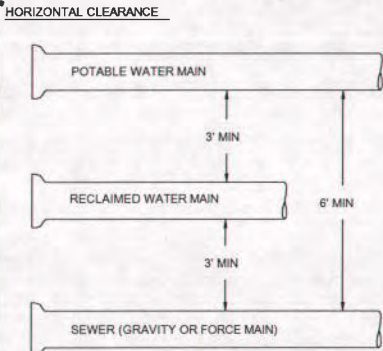


- WSR-

WSR-3



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MINIMUM SEPARATION DISTANCES (FT)
(OUTSIDE OF PIPELINE TO OUTSIDE OF PIPELINE)

HORIZONTAL						
	WATER MAIN	FORCE MAIN	SANITARY SERVICE	REUSE MAIN	STORM WATER	OTHER UTILITIES (TELEPHONE, CABLE, ETC.)
WATER MAIN	3	6	6	3	3	3
FORCE MAIN	6	3	3	3	3	3
SANITARY SEWER	6	3	3	3	3	3
REUSE MAIN	3	3	3	3	3	3
STORM WATER	3	3	3	3	3	3
OTHER UTILITIES	3	3	3	3	3	3

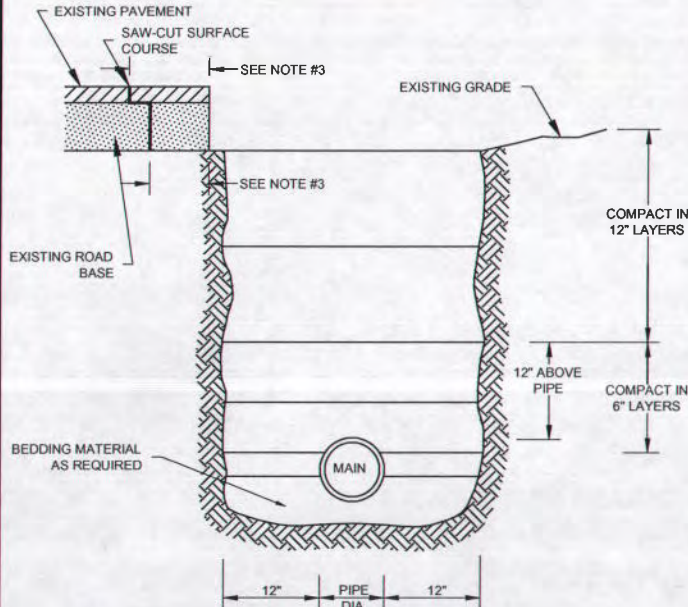
VERTICAL						
	WATER MAIN	FORCE MAIN	SANITARY SERVICE	REUSE MAIN	STORM WATER	OTHER UTILITIES (TELEPHONE, CABLE, ETC.)
WATER MAIN	6	12	12	12	6	6
FORCE MAIN	12	6	6	6	6	6
SANITARY SEWER	12	6	6	6	6	6
REUSE MAIN	6	6	6	6	6	6
STORM WATER	6	6	6	6	6	6
OTHER UTILITIES	6	6	6	6	6	6

MINIMUM SEPARATION DISTANCES (IN)
(OUTSIDE OF PIPELINE TO OUTSIDE OF PIPELINE)

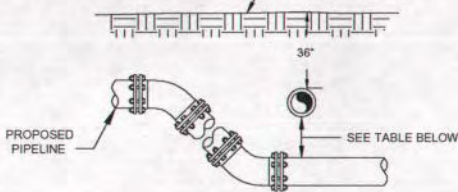
5
WSR-2

UTILITY CONFLICT DETAILS

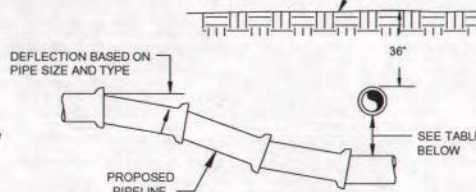
- NOTES:
- TRENCHES LOCATED UNDER PAVEMENT OR INSIDE THE 2' HORIZONTAL TO 1' VERTICAL SLOPE, DOWNWARD FROM THE ROADWAY SHOULDER OR THE BACK OF CURB AND, FROM THE SPRING LINE TO THE BOTTOM OF SUB-GRADE OR THE FINISHED SURFACE OF THE EMBANKMENT, AS APPROPRIATE, SHALL BE COMPACTED TO A DENSITY OF 98% AS DETERMINED BY AASHTO T-180.
 - TRENCHES LOCATED OUTSIDE OF THE 2' HORIZONTAL TO 1' VERTICAL SLOPE DOWNWARD FROM THE ROADWAY SHOULDER OR THE BACK OF CURB AND WHERE NO VEHICULAR TRAFFIC WILL PASS OVER THE TRENCHES, BACKFILL SHALL BE COMPACTED TO A DENSITY APPROXIMATELY EQUAL TO THAT SOIL ADJACENT TO THE TRENCH BUT NOT LESS THAN 95% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99 METHOD-C.
 - REMOVAL AND REPLACEMENT OF PAVEMENT AND ROAD BASE SHALL BE MADE IN ACCORDANCE WITH APPLICABLE LOCAL REGULATIONS.



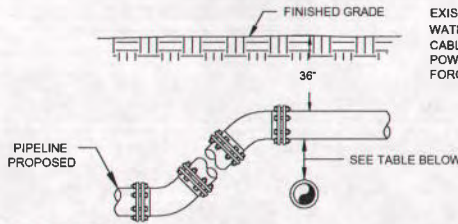
TYPICAL TRENCH BACKFILL DETAIL
SCALE: NONE



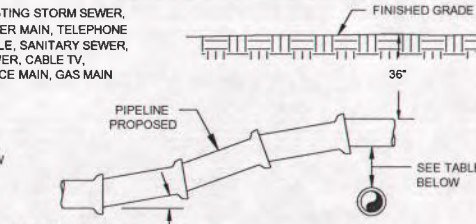
ADJUSTMENT UNDER EXISTING USING FITTINGS



ADJUSTMENT UNDER EXISTING USING PIPE JOINT DEFLECTION

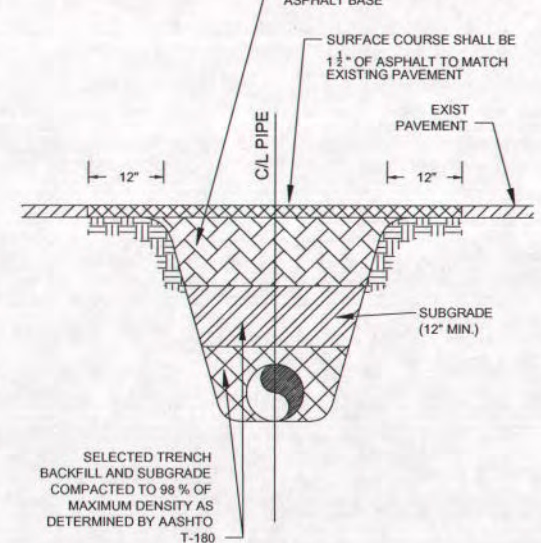


ADJUSTMENT OVER EXISTING USING FITTINGS



ADJUSTMENT UNDER EXISTING USING PIPE JOINT DEFLECTION

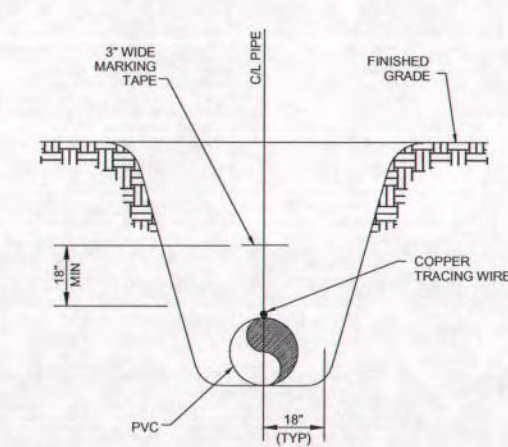
- NOTES:
- MAXIMUM JOINT DEFLECTION SHALL BE 90% OF MANUFACTURER'S RECOMMENDATION.
 - WHEREVER POSSIBLE, THE STRATIGRAPHY OF UTILITIES SHALL PLACE SANITARY SEWER AND SEWER FORCE MAINS BELOW RECLAIMED MAINS AND BELOW WATER MAINS, RESPECTIVELY. WHERE WATER MAINS ARE ABOVE GRAVITY SEWERS OR WASTEWATER FORCE MAINS, A VERTICAL CLEARANCE OF 6 INCHES IS ACCEPTABLE.
 - ACCEPTABLE VARIANCES
 - WHERE HORIZONTAL SEPARATION CANNOT BE MAINTAINED, C900 DR14 PVC PIPE SHALL BE USED FOR ONE OF THE PIPELINES.
 - WHERE VERTICAL CLEARANCE CANNOT BE MAINTAINED, ONE FULL LENGTH OF DUCTILE IRON PIPE OR DR14 C900 PIPE SHALL BE INSTALLED CENTERED AT THE POINT OF CROSSING.
 - WHERE 30" MINIMUM DEPTH OF COVER CANNOT BE MAINTAINED, SPECIAL PROTECTION OR PIPE MATERIAL UPGRADE MAY BE REQUIRED, AT THE DISCRETION OF THE CITY ENGINEER.
 - NO WATER PIPE SHALL PASS THROUGH, OR COME IN CONTACT WITH ANY PART OF A SANITARY MANHOLE OR STORMWATER STRUCTURE.



- NOTES:
- ALTERNATIVE BASE COURSE MATERIALS WITH EQUIVALENT STRUCTURAL THICKNESSES WILL BE CONSIDERED. HOWEVER, SHELL IS UNACCEPTABLE. CEMENT TREATED BASE MATERIAL MUST YIELD COMPRESSIVE STRENGTH WITHIN THE RANGE OF 175 TO 275 PSI. CRUSH CONCRETE AGGREGATE MUST HAVE AN LBR ≥ 150 .
 - REQUIREMENTS FOR INSTALLATION OF PIPELINES IS SHOWN IN DETAIL 1, SHEET 5 OF THESE STANDARDS.
 - FLOWABLE FILL CONCRETE MAY BE USED IN LIEU OF BACKFILL AND PAVEMENT SUBCOURSES WITH APPROVAL BY THE CITY ENGINEER. DESIGN AND ACCEPTANCE OF FLOWABLE FILL WILL BE GOVERNED BY APPLICABLE FDOT STANDARDS.

7
PS-1

PAVEMENT RESTORATION FOR UTILITY TRENCHES

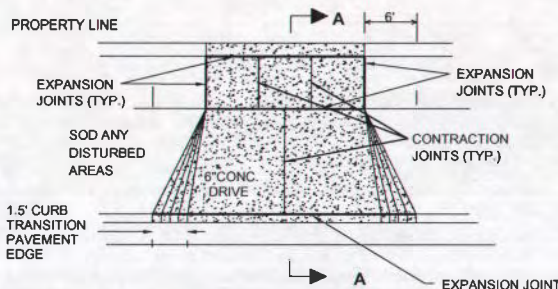


MARKING TAPE AND MESSAGES		
PIPE	TAPE COLOR	MESSAGE
PVC STORM WATER	WHITE	CAUTION STORM WATER OR STORM DRAIN BELOW
POTABLE WATER MAIN	BLUE	CAUTION POTABLE WATER MAIN BELOW
REUSE WATER MAIN	PURPLE	CAUTION REUSE WATER MAIN BELOW
SEWER FORCE MAIN	GREEN	CAUTION SEWER FORCE MAIN BELOW
SEWER & SERVICE LATERALS	GREEN	CAUTION SEWER MAIN BELOW

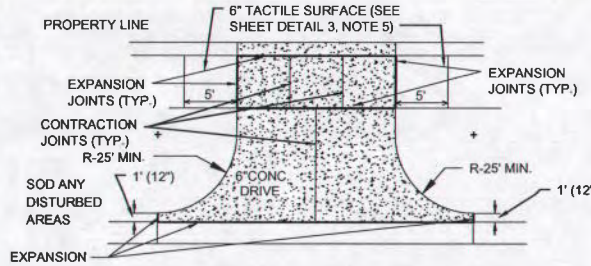
- NOTES:
- COPPERHEAD TRACING WIRE PART #1230HS #12 AWG SHALL BE ATTACHED TO TOP OF PIPE AT 20' INTERVALS ON ALL RECLAIMED WATER, FORCE, OR POTABLE WATER MAINS. IT SHALL BE COLOR CODED TO REFLECT WHAT THE PIPE CARRIES. (BLUE = WATER, GREEN = SEWER, PURPLE = REUSE)
 - MINIMUM COVER SHALL BE 30" FROM TOP OF PIPE TO FINISHED GRADE. MAXIMUM COVER SHALL BE 42" FROM FINISHED GRADE UNLESS OTHERWISE APPROVED.
 - INSTALLATION OF PIPE SHALL BE IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - PAVEMENT RESTORATION SHALL CONFORM WITH DETAIL 7, SHEET 3 OF THESE CITY STANDARDS.
 - CONFLICTS - UTILIZE 45° BENDS WITH SEPARATION AS PER DETAIL 5, SHEET 6.
 - ALL UTILITIES (PUBLIC & PRIVATE) THAT CROSS A DITCH/SWALE SHALL BE 36" MIN. BELOW THE ACTUAL/DESIGN BOTTOM OF CONVEYANCE.

1
WSR-1

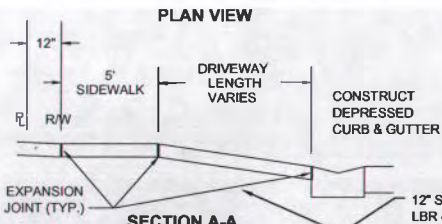
PIPE TRENCH SCALE: NONE



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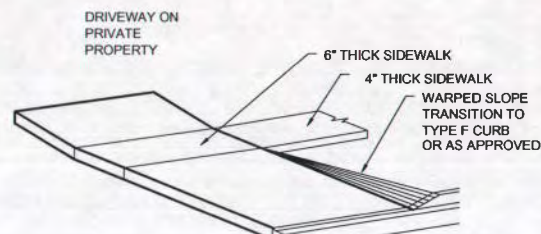


COMMERCIAL/ INDUSTRIAL/ MULTI-FAMILY



5
PS-1

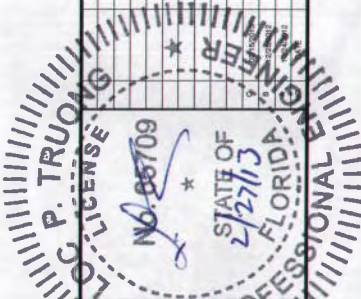
DRIVEWAY AND SIDEWALK DETAILS



6" CONCRETE RESIDENTIAL DRIVEWAY

- NOTES:
- SIDEWALKS SHALL BE CONSTRUCTED OF 3000 PSI AT 28 DAYS CONCRETE (MAXIMUM 4" SLUMP) WITH FIBER REINFORCEMENT.
 - ALL SIDEWALKS SHALL BE 5' WIDE AND CONSTRUCTED WITH A SLOPE OF 1/4-INCH PER FOOT TOWARD CURB AND GUTTER.
 - CONTRACTION SAW-CUTS SHALL BE CONSTRUCTED EVERY 5' LENGTH OF SIDEWALK. EXPANSION JOINTS SHALL BE CONSTRUCTED AT 50' INTERVALS.
 - 1/2-INCH THICK ASPHALTIC FELT OR "PRESSURE TREATED WOOD" SHALL BE PLACED AT EACH EXPANSION JOINT.
 - EXISTING CURB AND GUTTER SHALL BE REMOVED ONLY AT EXISTING JOINTS.
 - DRIVEWAY WIDTH AND LOCATION SHALL COMPLY WITH ZONING CODES, SECTIONS 122-446, 62-64, 62-65.
 - ALL MATERIALS & METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH LATEST EDITION OF THE FDOT, "STANDARDS FOR ROAD & BRIDGE CONSTRUCTION". IN ADDITION, CONCRETE SHALL BE 3000 PSI AT 28 DAYS WITH A MAXIMUM 4" SLUMP AND FIBER REINFORCEMENT.
 - DRIVEWAY SLOPES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FDOT, "ROADWAY AND TRAFFIC DESIGN STANDARDS", INDEX 515.

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PIPE TRENCHING & PAVEMENT RESTORATION DETAILS

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JOB NO. 4799-003-000	SHEET NO. D1.02
DATE OCT 2012	SCALE AS SHOWN
PERMIT SUBMITTAL 02/15/2019	

SAJ-2013-00673 (NW-CMW)
City of Venice/Intracoastal Force Main Replacement
Project Plans, Page 17 of 17

STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE

1. An eastern indigo snake protection/education plan shall be developed by the applicant or requestor for all construction personnel to follow. The plan shall be provided to the Service for review and approval at least 30 days prior to any clearing activities. The educational materials for the plan may consist of a combination of posters, videos, pamphlets, and lectures (*e.g.*, an observer trained to identify eastern indigo snakes could use the protection/education plan to instruct construction personnel before any clearing activities occur). Informational signs should be posted throughout the construction site and along any proposed access road to contain the following information:
 - a. a description of the eastern indigo snake, its habits, and protection under Federal Law;
 - b. instructions not to injure, harm, harass or kill this species;
 - c. directions to cease clearing activities and allow the eastern indigo snake sufficient time to move away from the site on its own before resuming clearing; and,
 - d. telephone numbers of pertinent agencies to be contacted if a dead eastern indigo snake is encountered. The dead specimen should be thoroughly soaked in water and then frozen.
2. If not currently authorized through an Incidental Take Statement in association with a Biological Opinion, only individuals who have been either authorized by a section 10(a)(1)(A) permit issued by the Service, or by the State of Florida through the Florida Fish Wildlife Conservation Commission (FWC) for such activities, are permitted to come in contact with an eastern indigo snake.
3. An eastern indigo snake monitoring report must be submitted to the appropriate Florida Field Office within 60 days of the conclusion of clearing phases. The report should be submitted whether or not eastern indigo snakes are observed. The report should contain the following information:
 - a. any sightings of eastern indigo snakes and
 - b. other obligations required by the Florida Fish and Wildlife Conservation Commission, as stipulated in the permit.

Revised February 12, 2004