


# CITY OF VENICE, FLORIDA

**Purchasing Department**

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

# Invitation to Bid

## ITB Number 3073-17

## Date of Issue: November 15, 2017

## Submission Deadline: December 20, 2017 at 2:00 PM

Title and Purpose of ITB:

## Water Main Replacement Program – Phase 5 Re-Bid

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**CITY OF VENICE**
**WATER MAIN REPLACEMENT PROGRAM – PHASE 5 RE-BID**

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**CITY OF VENICE**
**VENICE, FLORIDA**
**WATER MAIN REPLACEMENT PROGRAM – PHASE 5 RE-BID**

# SEALS AND CERTIFICATIONS PAGE

**ENGINEER:**
King Engineering Associates, Inc.
4921 Memorial Highway
One Memorial Center, Suite 300
Tampa, Florida 33634

| | |
|---|---|
| For: General, Civil, Mechanical:<br><br>Christopher F. Kuzler<br>License No. 45532 | |
| | |

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# 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.:** **3073-17**
**Bid Title:** **Water Main Replacement Program – Phase 5 Re-Bid**

**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 bound by Miami Avenue to the north, San Marco Drive to the south, Golf Drive to the east and Harbor Drive South to the west.

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

**BID SUBMITTAL DEADLINE and BID OPENING DATE & TIME:** December 20, 2017 at 2:00 PM

**PRE-BID MEETING: YES DATE & TIME:** November 29, 2017 at 2:00 PM

**LOCATION:** City of Venice Eastside Water Reclamation Facility
3510 East Laurel Road, Nokomis FL 34275

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) 882-7422** at no charge.

A non-mandatory pre-bid meeting/site visit will be held on November 29, 2017 at 2:00 p.m., City of Venice Eastside Water Reclamation Facility, 3510 East Laurel Road, Nokomis, FL 34275. 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. Peter Boers, Procurement- Finance Department, for the City of Venice, Room 204, 401 West Venice Avenue, Venice, FL 34285 or e-mail at pboers@venicegov.com Mr. Boers 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.Boers. 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 December 8, 2017 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 # 3073-17: "Water Main Replacement Program – Phase 5 Re-Bid"** and mailed or delivered to the City of Venice- Purchasing 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.

No bid will be received after the specified time for acceptance and no bidder may withdraw his bid within a period of ninety (90) 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

Publish: November 15, 2017
November 18, 2017

City of Venice Utilities Department
City of Venice, Florida

**Water Main Replacement Program – Phase 5 Re-Bid**

INSTRUCTIONS TO BIDDERS

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ARTICLE 1 – DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof.

A. Issuing Office: The office from which the Bidding Documents are to be issued and here the bidding procedures are to be administered.

ARTICLE 2 – BIDS RECEIVED

2.01 Refer to the Invitation To Bid for information on receipt of Bids.

ARTICLE 3 – LOCATION AND DESCRIPTION OF PROJECT

3.01 Refer to Section 01014, Summary of Work, in the General Requirements for the location and description of the Project.

ARTICLE 4 – COPIES OF BIDDING DOCUMENTS

4.01 Refer to the Invitation To Bid for information on location where Bidders may examine and obtain the Bidding Documents.

4.02 (Not Used)

4.03 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

4.04 Owner and Engineer in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not grant permission for any other use.

4.05 Bidders who obtain solicitation documents from sources other than the Owner 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 Bidder may cause your submittal to be rejected as non-responsive if you have submitted a response without acknowledgment of issued addenda. The Owner is not responsible for the accuracy of bid documents and information obtained from any source other than http://www.demandstar.com/.

## ARTICLE 5 – QUALIFICATIONS OF BIDDERS

5.01 Bidders shall be experienced in the kind of Work to be performed, shall have the necessary equipment therefor, and shall possess sufficient capital to properly execute the Work within the time allowed. Bids received from Bidders who have previously failed to complete work within the time required, or who have previously performed similar work in an unsatisfactory manner, may be rejected. A Bid may be rejected if Bidder cannot show that Bidder has the necessary ability, plant, and equipment to commence the Work at the time prescribed and thereafter to prosecute and complete the Work at the rate or within the times specified. A Bid may be rejected if Bidder is already obligated for the performance of other work which would delay the commencement, prosecution or completion of the Work.

5.02 To demonstrate qualifications to perform the Work, Bidder shall submit within 5 days after Bid opening, upon Owner's request, a separate Bidder Qualifications Statement that will be furnished by OWNER. An example of the Bidder Qualifications Statement is bound in the Project Manual.

5.03 Bidders shall be qualified to do business in the state where the Project is located or covenant to obtain such qualification prior to signing the Agreement.

5.04 Bids will be received only from contractors licensed or registered by the State of Florida.

## ARTICLE 6 – EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

6.01 Subsurface and Physical Conditions

A. The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that have been utilized by Engineer in preparation of the Bidding Documents.

2. Those drawings of physical conditions relating to existing surface or subsurface structures (except Underground Facilities) which are at or contiguous to the Site, that have been utilized by Engineer in preparation of the Bidding Documents.

B. Electronic copies of the reports and drawings referenced in Paragraph 6.01.A above will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in Paragraph 4.02 of the General Conditions, has been identified and established in Paragraph SC-4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion drawn from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

6.02 Underground Facilities - Physical Conditions

A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

6.03 Hazardous Environmental Condition

A. Owner has no actual knowledge of a Hazardous Environmental Condition at the Site.

6.04 Provisions concerning responsibilities for the adequacy of data, furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unforeseen subsurface or physical conditions appear in Paragraphs 4.02, 4.03 and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in Paragraph 4.06 of the General Conditions.

6.05 Other Related Data (Not Used)

6.06 On request, Owner will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a Bid. Bidder shall fill all holes and clean up and restore the Site to its original conditions upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all Laws and Regulations relative to such explorations, investigations, tests, and studies.

6.07 A single Site visit has been scheduled following the pre-bid conference. No other Site visits will be allowed without Owner's approval.

6.08 (Not Used)

6.09 (Not Used)

6.10 It is the responsibility of Bidder, before submitting a Bid to:

A. examine and carefully study the Bidding Documents, the other related data identified in the Bidding Documents and Addenda (if any);

B. visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;

C. become familiar with and satisfy Bidder as to the Laws and Regulations that may affect cost, progress and performance of the Work;

D. carefully study all:

1. reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities), if any, that have been identified in the Supplementary Conditions in Paragraph SC-4.02 as containing reliable "technical data", and

2. reports and drawings of Hazardous Environmental Condition identified at the Site, if any, that have been identified in the Supplementary Conditions in Paragraph SC-4.06 as containing reliable "technical data";

E. consider the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in Bidding Documents with respect to the effect of such information, observation, and documents on

1. the cost, progress and performance of the Work;

2. the means, methods, techniques, sequences and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences and procedures of construction expressly required by the Bidding Documents; and

3. Bidder's safety precautions and programs;

F. agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for the performance of the Work at the price(s) bid and within the times required and in accordance with the other terms and conditions of the Bidding Documents;

G. become aware of the general nature of work (if any) to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;

H. promptly give Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and

I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

6.11 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 6, that without exception the Bid is premised upon performing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, or procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing the Work.

## ARTICLE 7 – PRE-BID MEETING

7.01 A non-mandatory Pre-Bid Meeting will be held at the date and time indicated in the Invitation To Bid. Representatives of the Owner and Engineer will be present to discuss the Project. Owner will transmit to all prospective Bidders of record such Addenda as Owner considers necessary in response to questions raised at the pre-Bid conference. Oral statements may not be relied upon and will not be binding or legally effective.

## ARTICLE 8 – SITE AND OTHER AREAS

8.01 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment, to be incorporated into the Work are to be obtained and paid for by Contractor.

## ARTICLE 9 – INTERPRETATIONS AND ADDENDA

9.01 All questions about the meaning or intent of the Bidding Documents shall be submitted to Owner in writing. To receive consideration, questions must be received by Owner by the date indicated in the Invitation To Bid. Interpretations or clarifications considered necessary by Owner in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Owner as having received the Bidding Documents for receipt not later than three days prior to the date for the opening of Bids. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

9.02 Addenda may also be issued to clarify, correct or change the Bidding Documents as deemed advisable by Owner or Engineer. Such Addenda, if any, will be issued in the manner and within the time period stated in Paragraph 9.01 of these Instructions to Bidders.

ARTICLE 10 – BID SECURITY

10.01 A Bid shall be accompanied by Bid security made payable to Owner in the amount of 5% of Bidder's maximum Bid price and in the form of Bid bond.

10.02 Bid bond shall be on the form bound in the Project Manual. Bid bond shall be issued by a surety complying with the requirements of Paragraphs 5.01 and 5.02 of the General Conditions.

10.03 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security, and complied with the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to sign and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may annul the Notice of Award and may retain from the Bid security an amount equal to the damages which Owner may suffer by reason of such failure. Said damages shall be the difference between that Bidder's Bid and the Bid of the next lowest, responsible and responsive Bidder, but such amount shall not exceed the Bid security amount, and, if there is no such next lowest, responsible and responsive Bidder, then the Bid security amount of that Bidder will be forfeited to the Owner as liquidated damages for such failure.

10.04 The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of the seventh day after the Effective Date of the Agreement or the ninety-first day after the Bid opening whereupon the Bid security furnished by such Bidders will be returned. The Bid security of Bidders whom Owner believes do not have a reasonable chance of receiving an award will be returned within seven days of the Bid opening.

ARTICLE 11 – CONTRACT TIMES

11.01 The number of days within which Work is to be completed and ready for final payment (the Contract Times) are set forth in the Agreement.

ARTICLE 12 – LIQUIDATED AND SPECIAL DAMAGES

12.01 Provisions for liquidated and special damages, if any, are set forth in the Agreement.

ARTICLE 13 – SUBSTITUTE AND "OR EQUAL" ITEMS

13.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Whenever it is specified or described in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used by Contractor if accepted by Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Agreement. The procedure for submittal

of any such application by Contractor and consideration by Engineer is set forth in the General Conditions which may be supplemented in the General Requirements.

13.02 Refer to Section 01600, Material and Equipment, of the General Requirements for the period of time after the Effective Date of the Agreement during which the Engineer will accept applications for substitute items of material or equipment.

ARTICLE 14 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

14.01 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening submit to Owner a list of all such Subcontractors, Suppliers, other individuals, and entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualifications for each such Subcontractor, Supplier, individual, and entity if requested by Owner. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request the apparent Successful Bidder to submit an acceptable substitute without an increase in the Bid price.

14.02 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers and other individuals or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.06 of the General Conditions.

14.03 (Not Used)

14.04 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

ARTICLE 15 – PREPARATION OF BID

15.01 A Bid shall be made on the Bid Form bound in the Project Manual. The Bid Form shall not be separated from the Project Manual nor shall the Bid Form be altered in any way.

15.02 All blanks in the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each Bid item listed therein. In the case of optional alternatives the words “No Bid”, “No Change”, or “Not Applicable” may be entered. Ditto marks shall not be used.

15.03 A Bid shall be executed as stated below.

A. A Bid by an individual shall indicate the Bidder's name and official address.

B. A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title shall appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be indicated.

C. A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be indicated.

D. A Bid by a corporation shall be executed in the corporate name by an officer of the corporation and shall be accompanied by a certified copy of a resolution of the board of directors authorizing the person signing the Bid to do so on behalf of the corporation. The corporate seal shall be affixed and attested by the secretary or an assistant secretary of the corporation. The state of incorporation and the official corporate address shall be indicated.

E. A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be indicated below the signature.

F. All names shall be printed in ink below the signature.

G. If applicable, the Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located.

H. Contractor's license or registration number, if any, shall be entered in the space provided on the Bid Form.

15.04 The Bid shall contain an acknowledgment of the receipt of all Addenda, the numbers of which shall be filled in at the space provided on the Bid Form.

15.05 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be indicated.

15.06 In addition to the Bid Form, the forms listed in the Required Forms List, which are bound in the Project Manual, shall be submitted with the Bid. Each document shall be executed in the manner described in Paragraph 15.03 unless another manner is indicated.

ARTICLE 16 – BASIS OF BIDS; COMPARISON OF BIDS

16.01 Base Bid with Alternatives

A. Bidder shall submit its Bid on the basis of a lump sum for the Base Bid and shall provide a separate Bid price for each additive alternative described in the Bidding Documents and as provided for on the Bid Form.

B. For determination of the apparent low Bidder, Bids will be compared on the basis of the aggregate amount of the Base Bid, plus the additive alternative Bid prices providing the most features of the Work within the funds determined by the Owner to be available before Bids are opened. If the addition of another alternative Bid price in the listed order of priority would make the aggregate amount exceed such available funds for all Bidders, it will be skipped and the next subsequent alternative Bid price in a lower amount will be added if award thereon can be made within such funds.

C. After the determination of the apparent low Bidder as stated, award in the best interest of the Owner may be made to said Bidder on its Base Bid and any combination of its additive alternative Bids for which Owner determines funds will be available at the time of award, provided that the award on any such combination of Base Bid and additive alternative Bids does not exceed the amount offered by any other Bidder for the same combination.

16.02 (Not Used)

16.03 Discrepancies between words and numerals will be resolved in favor of words. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

16.04 (Not Used)

ARTICLE 17 – SUBMITTAL OF BID

17.01 A Bid shall be received no later than the date and time prescribed and at the place indicated in the Invitation To Bid.

17.02 Bid shall be enclosed in an opaque sealed envelope plainly marked on the outside with the Project title, solicitation number, the name and address of the Bidder, and its license or registration number, if applicable. Bid shall be accompanied by Bid security and other required documents.

17.03 If the Bid is sent by mail or other delivery method, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation **"Invitation to Bid # 3073-17: "Water Main Replacement Program – Phase 5 Re-Bid"**. A mailed Bid shall be addressed to:

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

ARTICLE 18 – MODIFICATION OR WITHDRAWAL OF BID

18.01 Withdrawal Prior to Bid Opening:

A. A Bid may be withdrawn by an appropriate document duly executed, in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time fixed for the opening of Bids. Upon receipt of such written notice, the unopened Bid will be returned to the Bidder.

18.02 Modification Prior to Bid Opening:

A. If a Bidder wishes to modify its Bid, Bidder must withdraw its initial Bid in the manner specified in Paragraph 18.01.A of these Instructions to Bidders and submit a new Bid.

18.03 Withdrawal After Bid Opening

A. After expiration of the period for receiving Bids, no Bid may be withdrawn or modified.

ARTICLE 19 – OPENING OF BIDS

19.01 Bids will be opened at the time and place where Bids are to be submitted and, unless obviously non-responsive, read aloud publicly. An abstract of the Bids will be made available to Bidders after the opening.

19.02 Bids received by mail or otherwise after the date and time specified for the opening of Bids will not be accepted. It will be the Bidder's responsibility to make arrangements for the return of their submittal at their expense.

ARTICLE 20 – DISQUALIFICATION OF BIDDERS

20.01 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

ARTICLE 21 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

21.01 All Bids shall remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of that period.

ARTICLE 22 – EVALUATION OF BIDS AND AWARD OF CONTRACT

22.01 Owner reserves the right to reject any or all Bids, including without limitation the right to reject any or all nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable

inquiry and evaluation, to be not responsible. Owner also reserves the right to waive any informality not involving price, time or changes in the Work.

22.02 Owner reserves the right to reject any Bid not accompanied by specified documentation and Bid security.

22.03 Owner reserves the right to reject any Bid that, in its sole discretion, is considered to be unbalanced or unreasonable as to the amount bid for any lump sum or unit price item.

22.04 In evaluating Bidders, Owner will consider the qualifications of Bidders, whether or not their Bids comply with the prescribed requirements, the alternatives, if any, the lump sum and unit prices, and other data as may be requested in the Bid Form or prior to the Notice of Award.

22.05 Owner may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.

22.06 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of the Bidders to perform the Work in accordance with the Contract Documents. Owner reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to Owner's satisfaction.

22.07 If a Contract is to be awarded, Owner will award the Contract to the lowest responsive and responsible Bidder who has neither been disqualified nor rejected pursuant to Article 20 of the Instructions to Bidders or this Article 22.

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

ARTICLE 23 – CONTRACT SECURITIES

23.01 Performance Bond shall be in the form "Construction Performance Bond". Payment Bond shall be in the form "Construction Payment Bond". The amounts of and other requirements for Performance and Payment Bonds are stated in Paragraph 5.01 of the General Conditions. The requirements for delivery of Bonds are stated in Paragraph 2.01 of the General Conditions. Additional requirements may be stated in the Supplementary Conditions.

23.02 (Not Used)

ARTICLE 24 – CONTRACTOR'S INSURANCE

24.01 The requirements for Contractor's insurance are stated in Article 5 of the General Conditions and in the Supplementary Conditions. The requirements for delivery of certificates of insurance and other evidence of insurance are stated in Paragraph 2.01.B of the General Conditions.

24.02 Successful Bidder shall within 15 days from the date of the Notice of Award deliver to Owner, for review and approval, the required policies of insurance. Upon approval, the policies will be returned to the Bidder and Bidder shall submit certificates of insurance and other evidence of insurance to the Owner as stated in the General Conditions.

ARTICLE 25 – SIGNING OF AGREEMENT

25.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement along with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner will deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

ARTICLE 26 – NOTICE TO PROCEED

26.01 Issuance of the Notice to Proceed shall be as stated in Article 2 of the General Conditions.

ARTICLE 27 – PARTNERING (Not Used)

ARTICLE 28 – SALES AND USE TAXES

28.01 Refer to the Paragraph SC-6.10 of the Supplementary Conditions for information on Owner's exemption from sales and use taxes on materials and equipment to be incorporated into the Work. Do not include said taxes in Bid.

~~ARTICLE 29 – LOCAL PREFERENCE~~ **N/A**

~~29.01 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.~~

~~29.02 "Local business" means the vendor has paid a local business tax to either Sarasota, Manatee, DeSoto or Charlotte County, whichever county the Bidder is located, if applicable prior to bid submission that authorizes the Bidder 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 Bidder operates or performs business, and at which at least one full time employee is located.~~

~~29.03 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.In the event the local office is not the primary location of the vendor, at least ten percent of the vendor's full-time employees must be based at the local office location, and at least one corporate officer, managing partner or principal owner of the vendor must reside in Sarasota, Manatee, DeSoto or Charlotte County.~~

~~29.04 Bidders wishing to be given preference as a local business must submit with their Bid, all of the Local Preference documentation identified in the "Required Forms Section" of the solicitation.~~

~~29.05 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.~~

~~29.06 Information regarding Sarasota County's Local Business Tax can be found at www.sarasotataxcollector.governmax.com.~~

~~29.07 In case of a Bid submitted by more than one entity, any one of those entities can qualify the Bid for the local preference. Sub-contractors or sub-consultants cannot qualify a Bid for local preference.~~

ARTICLE 30 – PUBLIC RECORDS/TABULATION

30.01 Bids 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 thirty (30) days after the bid 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 the Internet Website at http://www.demandstar.com/.

ARTICLE 31 – INDEMNIFICATION/HOLD HARMLESS

31.01 The Bidder shall defend, indemnify and hold the Owner, the Owner'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 Bidder, 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.

ARTICLE 32 - PUBLIC ENTITY CRIMES/NON-COLLUSIVE AFFIDAVIT

32.01 Each Bidder shall complete the Non-Collusive Affidavit and the Public Entity Crimes Form and shall submit the forms with the submittal. Owner considers the failure of the Bidder to submit these documents to be a major irregularity and may be cause for rejection of their submittal.

32.02 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 Bidder, supplier, Sub-Bidder, 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.

32.03 Termination for Cause: Any Agreement with the Owner obtained in violation of this Section shall be subject to termination for cause. A Sub-Bidder who obtains a subcontract in violation of this Section shall be removed from the Project and promptly replaced by a Sub-Bidder acceptable to the City.

ARTICLE 33 – GRATUITIES AND KICKBACKS

33.01 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.

33.02 Kickbacks: It shall be unethical for any payment, gratuity, or offer of employment to be made by or on behalf of a Sub-Bidder under a Contract to Bidder or higher tier Sub-Bidder any person associated therewith, as an inducement of the award of a subcontract or order.

33.03 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.

ARTICLE 34 – EQUAL EMPLOYMENT OPPORTUNITY

34.01 Bidder 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.

ARTICLE 35 – CONFLICT OF INTEREST

35.01 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

ARTICLE 36 – DRUG FREE WORKPLACE

36.01 The Owner has adopted a policy in observation 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 Owner's workplace. The Owner requests the attached Drug Free Workplace Affidavit to accompany your response. This form has been adopted by the Owner in accordance with the Drug Free Workplace Act. The Owner 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.

ARTICLE 37 – APPLICABLE LAWS

37.01 Interested parties are advised that all Owner 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 Bidder and the Owner for any terms and conditions not specifically stated within the context of this contract.

ARTICLE 38 – DISCLOSURE – PUBLIC OFFICER, PUBLIC EMPLOYEE OR ADVISORY BOARD MEMBER OF OWNER

38.01 Sections 112.313(3) and 112.313(7), Florida Statutes, prohibit any public officer, employee, or advisory board member of the Owner from holding any employment or contractual relationship with any business entity doing business with the Owner. 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.

38.02 Bid is awarded under a sealed, competitive Bid to lowest or best Bidder system. Advisory board member is required to, prior to or at the time of the submission of the Bid, 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 Owner's Procurement- Finance Department.

38.03 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 Owner or any of its personnel to enter into such a contract other than by the mere submission of the Bid.

38.04 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 Bidder.

ARTICLE 39 – BID PROTESTS

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

A. File a written notice to the city manager of the bidder's intention to protest within one 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.

B. Within five 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 finance department.

C. 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 of the lowest acceptable bid or $5,000.00 whichever is less. 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.

39.02 Upon timely receipt of the formal written protest and protest bond:

A. The bid protest officer shall issue formal findings of fact and a written decision with regard to the validity or nonvalidity of the formal written protest within ten business days of the city's receipt of the protest.

B. Within two 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.

39.03 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.

ARTICLE 40 – SCRUTINIZED COMPANIES

40.01 Pursuant to Section 287.135, F.S., a company that, at the time of bidding or submitting a proposal for a new contract or renewal of an existing contract, is on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to Section 215.473, F.S., is ineligible for, and may not bid on, submit a proposal for, or enter into or renew a contract with an agency or local governmental entity for goods or services of $1 million or more. Any contract with an agency or local governmental entity for goods or services of $1 million or more entered into or renewed on or after July 1, 2011, must contain a provision that allows for the termination of such contract at the option of the awarding body if the company is found to have submitted a false certification as provided under Subsection 287.135(5), F.S., or has been placed on either of the aforementioned lists. The Owner agrees to comply with the requirements of Section 287.135, F.S. in connection with the implementation of the Project.

Engineer: King Engineering Associates, Inc.
4921 Memorial Highway
One Memorial Center, Suite 300
Tampa, Florida 33634

+ + END OF INSTRUCTIONS TO BIDDERS + +

# BID FORM

CITY OF VENICE
WATER MAIN REPLACEMENT PROGRAM – PHASE 5 RE-BID

## TABLE OF ARTICLES


1. Bid Recipient
2. Bidder's Acknowledgements
3. Bidder's Representations
4. Bidder's Certifications
5. Basis of Bid
6. Time of Completion
7. Attachments to this Bid
8. Defined Terms
9. Bid Submittal
10. Required Forms


## ARTICLE 1 - BID RECIPIENT

1.01 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an AGREEMENT with OWNER in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the price(s) and within the times indicated in this Bid and in accordance with the Bidding Documents.

## ARTICLE 2 - BIDDER'S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of OWNER. Bidder will sign the AGREEMENT and will furnish the required contract security, and other required documents within the time periods set forth in the Bidding Documents.

## ARTICLE 3 - BIDDER'S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, if any, and the following Addenda, receipt of all of which is hereby acknowledged.

| Addendum No. | Date Received | Addendum No. | Date Received |
|---|---|---|---|
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in Paragraph 4.02 of the General Conditions, and (2) reports and drawings of Hazardous Environmental Conditions identified at the Site, if any, which that have been identified in the Supplementary Conditions as provided in Paragraph 4.06 of the General Conditions.

E. Bidder has obtained and carefully studied (or accepts the consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.

G. Bidder is aware of the general nature of work (if any) to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents.

H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies and data with the Bidding Documents.

I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.

J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

3.02 Bidder further represents that:

A. this Bid is genuine and is not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding;

C. Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER; and

D. No person or persons acting in any official capacity for the OWNER are directly or indirectly interested in this Bid, or in any portion of the profit thereof.

## ARTICLE 4 – BIDDER'S CERTIFICATIONS

4.01 Bidder certifies that:

A. this Bid is genuine and is not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation;

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid

C. Bidder; has not solicited or induced any individual or entity to refrain from bidding; and

D. Bidder has not engaged in corrupt, fraudulent, collusive or coercive practices in competing for the Contract. For the purposes of the Paragraph 4.01.D;

1. Corrupt practice" means the offering, giving, or soliciting of anything of value likely to influence the action of a public official in the bidding process

2. "Fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.

3. "Collusive practice" means to scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.

4. "Coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 - BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

**BID ITEMS: WATER MAIN REPLACEMENT PROGRAM – PHASE 5**

| BID ITEMS: WATER MAIN REPLACEMENT PROGRAM – PHASE 5 | | | | | |
|---|---|---|---|---|---|
| Item No. | Estimated Quantity | Unit | Description (Print or Type in Words) | Unit Bid Price (In Numbers) | Total Amount (In Numbers) |
| | | | **BASE BID ITEMS** | | |
| 1 | 410 | LF | 4” Water Main Installed by HDD | | |
| 2 | 1,840 | LF | 6” Water Main Installed by Open Cut Method | | |
| 3 | 5,600 | LF | 6” FPVC Water Main Installed by HDD Method | | |
| 4 | 2 | TN | Ductile Iron Fittings | | |
| 5 | 21 | EA | 6” Resilient Wedge Gate Valves with Box | | |
| 6 | 2 | EA | 8” Tapping Sleeves and Valves | | |
| 7 | 3 | EA | 12” Tapping Sleeves and Valves | | |
| 8 | 1 | EA | 4” Insta-Valve Plus with Box | | |
| 9 | 5 | EA | Fire Hydrant Assemblies | | |
| 10 | 42 | EA | Water Services From New Water Mains With New Meter Box (Near Side Single) | | |
| 11 | 12 | EA | Water Services From New Water Mains With New Meter Box (Near Side Tandem) | | |
| 12 | 48 | EA | Water Services From New Water Mains With New Meter Box (Far Side Single) | | |
| 13 | 12 | EA | Water Services From New Water Mains With New Meter Box (Far Side Tandem) | | |
| 14 | 1 | EA | Water Services From New Water Mains With New Meter Boxes (Far Side Multi) | | |
| 15 | 56 | EA | Relocate Water Meter | | |
| 16 | 49 | EA | Relocate Water Meter and Dual Check Valve Assemblies | | |
| 17 | 43 | EA | Relocate Water Meter and Reduced Pressure Principle Assemblies | | |
| 18 | 2 | EA | Relocate 1" Fire Service | | |
| 19 | 2 | EA | Relocate 2" Fire Service | | |
| 20 | 1 | EA | Relocate 2-1/2" Fire Service | | |
| 21 | 13,425 | LF | New 1” Water Service Connections from Meter Assemblies to Water Service Connections and/or Irrigation System | | |
| 22 | 120 | LF | New 1 ½ ” Water Service Connections from Meter Assemblies to Water Service Connections | | |
| 23 | 875 | LF | New 2” Water Service Connections from Meter Assemblies to Water Service Connections | | |
| 24 | 6,400 | LF | Private Property Restoration - Sod | | |
| 25 | 700 | LF | Private Property Restoration – Concrete/Brick Pavers | | |

| | | | | | |
|---|---|---|---|---|---|
| 26 | 1,800 | LF | Private Property Restoration – Asphalt Driveway | | |
| 27 | 400 | LF | Private Property Restoration - Concrete Driveway/Walkway | | |
| 28 | 2,300 | LF | Private Property Restoration - Loose Stone/Gravel | | |
| 29 | 2,500 | LF | Private Property Restoration - Landscaping | | |
| 30 | 5 | EA | Private Property Restoration - Unavoidable Obstructions (e.g. wall, wood deck) | | |
| 31 | 148 | EA | Contractor/Property Owner Coordination | | |
| 32 | 1 | LS | Abandonment of Existing Water Mains | | |
| 33 | 1 | EA | Abandon Existing Main at Asbestos Cement Pipe | | |
| 34 | 2 | EA | Tie New Water Main into Asbestos Cement Main | | |
| 35 | 3,300 | SY | Asphalt Restoration | | |
| | | | **BASE BID SUBTOTAL** | | |
| 36 | 1 | LS | Maintenance of Traffic and Traffic Control | | |
| 37 | 1 | LS | General Conditions (Max 5% of Base Bid Subtotal) | | |
| 38 | 1 | LS | Mobilization and Demobilization | | |
| 39 | 1 | LS | Indemnification | $10.00 | $10.00 |
| 40 | 1 | LS | Owner's Allowance | $100,000 | $100,000 |
| 41 | 1 | LS | Permit Fee Allowance | $15,000 | $15,000 |
| | | | **BASE BID TOTAL** | | |

| **TOTAL BASE BID PRICE written in words:** |
|---|
| |

| Name and address of bidding firm: |
|---|
| |
| Signature and title of authorized individual signing bid: |

**NAME OF BIDDER:**_____

**BIDDER'S SIGNATURE:**_____

**CURRENT LICENSE NUMBER:**_____

**DATE:**_____

5.04 Unit prices have been computed in accordance with Paragraph 11.03.B of the General Conditions.

5.05 Bidder acknowledges that estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids, and final payment for all Unit Price items will be based on actual quantities of Unit Price Work determined as provided in the Contract Documents.

5.06 All specified cash allowances are included in the price(s) set forth above and have been completed in accordance with Paragraph 11.02 of the General Conditions.

## ARTICLE 6 - TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete within 270 calendar days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and will be completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions within 300 calendar days after the date when the Contract Times commence to run, which days will be entered by OWNER into the AGREEMENT as the Contract Times.

6.02 Bidder accepts the provisions of the AGREEMENT as to liquidated and special damages, if any, in the event of failure to complete the Work within the Contract Times.

## ARTICLE 7 - ATTACHMENTS TO THIS BID

7.01 The following documents are attached to and made a condition of this Bid:

A. Required Bid security.

B. Required Bidder Qualifications Statement with supporting data.

C. Miscellaneous Bid Forms

## ARTICLE 8 - DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders and the General Conditions and Supplementary Conditions.

ARTICLE 9 - BID SUBMITTAL

9.01 This Bid submitted on _____, 20___ by:

If Bidder is:

Individual

Name (Typed or Printed): _____

By_____
(Individual's Signature)

Doing business as_____

License or Registration Number:_____

Business Address:_____

_____

Phone No.:_____Facsimile:_____

A Partnership

Partnership Name: _____

By:_____
(Signature of General Partner - Attach evidence of authority to sign)

(Name (Typed or Printed): _____

License or Registration Number:_____

Business Address:_____

_____

Phone No.:_____Facsimile:_____

A Corporation

Corporation Name: _____

_____
(State of Incorporation)

By_____
(Signature - Attach evidence of authority to sign)

Name and Title (Typed or Printed): _____

(CORPORATE SEAL)

Attest:_____
(Secretary)

License or Registration Number:_____

Business Address:_____

_____

Phone No.:_____Facsimile:_____

Limited Liability Company

By:_____
(Firm Name)

_____
(State of Formation)

By:_____
(Signature of Member/Authorized to Sign)

_____
(Printed or Typed Name and Title of Member Authorized to Sign)
(Attach evidence of authority to sign.)

License or Registration Number:_____

Business Address:_____

_____

Phone No.:_____Facsimile:_____

A Joint Venture

Name of Joint Venture:_____

First Joint Venturer Name: _____

By:_____
(Signature of First Joint Venturer - Attach evidence of authority to sign)

Name (Typed or Printed): _____ _____
(Title)

Title:_____

Second Joint Venturer Name: _____

By:_____
(Signature of Second Joint Venturer - Attach evidence of authority to sign)

Name (Typed or Printed): _____ _____
(Title)

(Each joint venturer must sign. The manner of signing for each individual, partnership, corporation or limited liability company that is a party to the joint venture shall be in the manner indicated above).

Business Address: _____

Phone and FAX number and address for receipt of communications to joint venture:

Phone: _____ Facsimile:_____

## ARTICLE 10 – REQUIRED FORMS

Required Forms Check List: ITB# 3073-17: Water Main Replacement Program – Phase 5 Re-Bid

- 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.**

**Mark N/A if not applicable to your firm**

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# 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 _____, 20___.

_____ _____

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.

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# "LOCAL PREFERENCE" DETERMINATION

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 and 6, 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. Has your company paid a local business tax either to Sarasota, DeSoto or Charlotte County (Manatee County does not currently 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 from which your company operates or performs business?

   **YES ____** If "yes", proceed to question 3.
   **NO ____ If "no", STOP, local preference does not apply.**

3. Does your company's 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's 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 – 6**

5. Is your company's 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 AND does at least one corporate officer, managing partner or principal owner of your 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 _____, 20___, 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, STATE OF _____

NOTARY PUBLIC
SEAL OF OFFICE:

_____

(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: _____

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# 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? ☐ Yes ☐ 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

***THIS PAGE MUST BE COMPLETED & SUBMITTED WITH OFFER***

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## 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-Offerors 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.

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,

_____, 20___.

_____
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.

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# 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: _____

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

NAME OF CONTRACTOR: _____

BUSINESS ADDRESS: _____

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:_____

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# 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 of 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 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

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# 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 _____, 20___, 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, STATE OF _____

NOTARY PUBLIC
SEAL OF OFFICE:

_____
(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

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## 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#: _____

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# 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 out 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: **December 20, 2017 at 2:00 PM**

Bid Number: **3073-17**

Description: The project will relocate existing water mains from the backyard easements to within the ROW and re-establish the service connections to the residences. The project will include the installation of approximately 7,850 LF of new water main; abandonment of approximately 9,200 LF of rear lot water mains and the relocation of approximately 148 water services.

Contact: Peter Boers, Procurement- Finance Department

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. _____

++ END OF BID FORM ++

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# SAMPLE CONTRACT

THIS CONTRACT, pursuant to City Council approval granted on _____, is made and entered into this_____ day of _____, 20__, by and between the City of Venice, Florida, hereinafter referred to as the City, and _____, 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, Performance and Payment Bonds attached hereto as composite Attachment A and, the City's Invitation to Bid (ITB) # **3073-17 Water Main Replacement Program – Phase 5 Re-Bid**, including: standard general conditions, supplemental conditions, special conditions, technical specifications, drawings, Contractor's bid proposal for ITB 3073-17, all of which are incorporated herein by reference. All of the Contract Documents are made a part of this Contract.

(2) The Contractor shall perform all the work required by the Contract Documents and shall include installation of the listed items per the bid specifications.

(3) The work to be performed under this Contract shall be completed within three hundred (300) 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, in accordance with Exhibit B, subject to the terms and conditions of the Contract Documents and any written change orders, the Contract sum not to exceed:_____ **& __/100s ($_____).**

(5) Time is of the essence in this Contract. In the event that the work is not completed within the required time as specified in Section 3 herein, 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) per day** for each calendar day that the work remains incomplete 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) Contractor must secure and maintain any and all permits and licenses required to complete the work under this Contract, unless the Contract Documents provide otherwise.

(8) Throughout the term of this Contract the Contractor must maintain insurance in at least the amounts and coverage required as shown in Exhibit C. The Contractor must provide a Certificate of Insurance to the City evidencing such coverage prior to issuance of the Notice to Proceed by the City.

(9) Contractor agrees to comply with Florida's public records law by keeping and maintaining public records that ordinarily and necessarily would be required by the public agency in order to perform the Engineering Services; upon the request of the City's Custodian of Public Records, by providing the City with copies of or access to public records on the same terms and conditions that City would provide the records and at a cost that does not exceed the cost provided by Florida law; by ensuring that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed excepts as authorized by law for the duration of the term of the Contract and following completion of the Contract if the Contractor does not transfer the records to the City; and upon completion of the Contract by transferring, at no cost, to City all public records in possession of Contractor or by keeping and maintaining all public records required by the City to perform the Engineering Services. If the Contractor transfers all public records to the City upon completion of the Contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of the Contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology systems of the City.

**IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CITY'S CUSTODIAN OF PUBLIC RECORDS LORI STELZER, MMC, CITY CLERK, AT 401 W. VENICE AVENUE, VENICE, FLORIDA 34285, (941) 882-7390, LSTELZER@VENICEGOV.COM.**

(10) Contractor shall indemnify, pay the cost of defense, including attorneys' fees, and hold harmless the City from all suits, actions, or claims of any kind brought on account of any injuries or damages received or sustained b any person or property by or from the Contractor or in consequence of any neglect in safeguarding the work; or by the use of any unacceptable materials related to the work; or on account of any act or omission, neglect or misconduct of the Contractor; or on account of any claim or amounts received under the "Workers' Compensation Law" or any other laws or ordinances, except only such injury or damage as shall have been caused by the negligence of the City. The first ten dollars ($10.00) of compensation received by the Contractor represents specific consideration for this indemnification obligation.

(11) Contractor shall be responsible for compliance with the requirements under Chapter 556, Florida Statutes, the "Underground Facility Damage Prevention and Safety Act." Contractor's obligations to defend, indemnify, and hold harmless the City, as provided for under Section 10 of

this Contract, shall specifically apply to any violations alleged against the City under the Underground Facility Damage Prevention and Safety Act related to the performance of the work under this Contract. Contractor acknowledges that included in the various items of the proposal and in the total bid price, are costs for complying with the Florida Trench Safety Act (90-96 Laws of Florida) effective October 1, 1990.

(12) Termination. This Contract may be terminated by the City without cause, by giving thirty (30) days prior written notice to contractor of the intention to cancel. or with cause at any time contractor fails to fulfill or abide by any of the terms or conditions specified. Failure of contractor to comply with any of the provisions of this agreement shall be considered a material breach of contract and shall be cause for immediate termination of the agreement at the discretion of the city. This Contract may be terminated by the Contractor only by mutual consent of both parties. If this Contract is terminated before performance is completed, the Contractor shall be paid only for that work satisfactorily performed for which costs can be substantiated.

(13) The laws of the State of Florida shall govern all provisions of this Contract. Venue for any dispute shall be Sarasota County, Florida. If any court proceeding or other action occurs between the parties as a result of this Contract or any other document or act required by this Contract, the prevailing party shall be entitled to recover attorney's fees and all court costs, including attorney's fees and court costs incurred in any pre-trial, trial, appellate, and/or bankruptcy proceedings, as well as, attorney's fees and costs incurred in determining entitlement to and reasonableness of fees and costs.

(14) 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:_____
MAYOR JOHN HOLIC

ATTEST:

_____

_____

BY:_____

_____
Signed by (typed or printed)

_____
Signed by (typed or printed)

Approved as to Form and Correctness

_____
David Persson, City Attorney

# EXHIBIT A

## 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."

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**PUBLIC WORKS PAYMENT BOND**

KNOW ALL MEN BY THESE PRESENTS:

THAT _____., as Principal, hereinafter called Contractor; and_____ _____, a corporation of the State of Florida, 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 ($_____) _____ __ /100's, 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 _____, 20__, entered into a Contract with the City for the following described project: **ITB# 3073-17 Water Main Replacement Program – Phase 5 Re-Bid** 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 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 anywise 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 by Section 255.05, Florida Statutes, their heirs, executors, administrators, successors or assigns.

SIGNED AND SEALED this_____day of_____,A.D., 20___.

IN THE PRESENCE OF: CONTRACTOR

_____ BY:_____

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 Florida, 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 ($ _____) & _____/100's, 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 _____, 20___, entered into a Contract with the City of Venice for the following described project: **ITB# 3073-17 Water Main Replacement Program – Phase 5 Re-Bid** 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 the Contractor shall promptly and faithfully perform the 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 is 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 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_____, AD., 20___.

IN THE PRESENCE OF: CONTRACTOR

_____ BY: _____

INSURANCE COMPANY

BY: _____
Agent and Attorney-in-Fact

**EXHIBIT B**

(Bid Form to be Supplied)

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**EXHIBIT C**

Before performing any work, the Contractor 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.

1. The City of Venice is to be specifically included as an ***ADDITIONAL INSURED*** for **Commercial General Liability** and **Business Auto Policy**.
2. The City of Venice shall be named as Certificate Holder. ***Please Note that the Certificate Holder should read as follows:***

   *The City of Venice*
   *401 W. Venice Avenue*
   *Venice, FL 34285*

   No City Division, Department, or individual name should appear on the certificate. ***NO OTHER FORMAT WILL BE ACCEPTABLE.***
3. The "Acord" certification of insurance form shall be used.
4. Required Coverage

   a) **Commercial General Liability:** including but not limited to bodily injury, property damage, contractual liability, 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. Include broad form property damage (provide insurance for damage to property under the care custody and control of the contractor)

   b) **Business Auto Policy:** including bodily injury and property damage for all vehicles owned, leased, hired and non-owned vehicles with limits of not less than $1,000,000 combined single limit covering all work performed under this Contract.

   c) **Workers Compensation:** Contractor 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.

   d) **Installation Floater/Installation Builders' Risk–Property Coverage:** Policy to cover direct physical loss or damage to materials, supplies, machinery, and equipment being installed, constructed or rigged by the contractor in conjunction with its installation or construction. All items involved in the project including drainage/water sewer pipes, etc. (as included in description of project) need to be insured for the total completed replacement value. Coverage should include perils of fire, theft, vandalism, windstorm/hail, collapse and transit, sewer backup, testing, equipment breakdown,

waterborne property. Coverage shall start when the items to be installed are transported to City premises and remain in place until the interest of the contractors ceases or the City accepts possession whichever comes first Coverage should apply to owned property and non-owned property in the contractor's care, custody and control. The installation coverage forms shall provide coverage for building materials and supplies at the construction site, in transit to the site and similar property intended for the construction project at other locations as necessary or because of lack of storage space at the construction site. Coverage should apply on a Primary basis and should include a Waiver of Subrogation. Contractor should be responsible for any deductibles.

**5.** 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, and Employees.

b) Insurance requirements itemized in this Contract, and required of the Contractor, shall be provided on behalf of all subcontractors to cover their operations performed under this Contract. The Contractor 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's Director of Administrative Services.

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 Contractor's liability nor to fulfill the indemnification provisions and requirements of this Contract.

f) The Contractor 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 contractor until such time the contractor shall furnish additional security covering such claims as may be determined by 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 Contractor agrees to purchase the extended reporting period on cancellation or termination unless a new policy is affected 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 Director of Administrative Services, 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 Contractor's insurance company and the City's Director of Administrative Services, as soon as practicable after notice to the insured.

j) All property losses shall be payable to, and adjusted with, the City.

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# 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 # 3073-17, located in the City of Venice, County of Sarasota, Florida, under contract with the City of Venice, dated the _____ day of_____, 20__, 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 _____, 20__,
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., 20__.

_____
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 _____, 20__.

_____
Notary Public
My Commission Expires:

**CERTIFICATE OF SUBSTANTIAL COMPLETION**

PROJECT NO.
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)

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# BIDDER QUALIFICATION STATEMENT

(Completion of this statement is required in advance of consideration for award of Contract.)

SUBMITTED TO:

City of Venice
401 West Venice Avenue
Venice, FL 34285

SUBMITTED FOR:

Water Main Replacement Program – Phase 5 Re-Bid

SUBMITTED BY:

Name of Organization: _____
(Print or Type Name of Bidder)

Name of Individual: _____

Title: _____

Business Address: _____

_____

Telephone No.: _____

Fax No.: _____

E-mail Address: _____

Bidder's Website: _____

If address and phone number given above is for a branch office, provide address and phone number of principal home office:

Principal Home Office Address: _____

_____

Principal Home Office Telephone No.: _____

Gentlemen:

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

(Note: Attach additional sheets as required.)

1.0 Bidder's General Business Information

1.1 Check if:

☐ Corporation ☐ Partnership ☐ Joint Venture ☐ Other

☐ Limited Liability Company ☐ Sole Proprietorship

If Corporation:

A. Date and State of Incorporation:

_____
_____

B. List of Executive Officers:

Name Title Address

_____
_____
_____
_____

If Partnership:

A. Date and State of Organization:

_____
_____

B. Current General Partners (name and address for each):

_____
_____

C. Type of Partnership

☐ General ☐ Publicly Traded ☐ Limited

☐ Limited Liability ☐ Other (describe): _____

If Joint Venture:

A. Date and State of Organization:

_____
_____

B. Name, Address, Form of Organization, and State of Organization of Each Joint Venture Partner: (Indicate with an asterisk (*) the managing or controlling Joint Venturer if applicable):

_____
_____
_____
_____
_____

If Limited Liability Company:

A. Date and State of Organization:

_____
_____

B. Members:

Name Address

_____
_____
_____
_____

If Sole Proprietorship:

A. Date and State of Organization:

_____
_____

B. Name and Address of Owner or Owners:

_____
_____
_____
_____

If Other Type of Organization:

A. Type of Organization: _____

B. Date and State of Organization:

_____
_____

C. Name and Address of Each Owner or Principal:

_____
_____
_____
_____

1.2 Certifications: In addition to the above categories of business entities, indicate whether Bidder's organization is a:

- ☐ Disadvantaged Business Enterprise, certified by _____
- ☐ Minority Business Enterprise, certified by _____
- ☐ Women's Business Enterprise, certified by _____
- ☐ Historically Underutilized Business Zone Small Business Concern, certified by _____

2.0 How many years has your organization been in business as a general contractor? _____

3.0 If your organizational structure has changed within the past five years, provide data as listed above in Item 1.0 for your previous organization.

4.0 Do you plan to subcontract any part of this project? _____ If so, give details.

5.0 Has any construction contract to which you have been a party been terminated by the owner; have you ever terminated work on a project prior to its completion for any reason; has any surety which issued a performance bond on your behalf ever completed the work in its own name or financed such completion on your behalf; has any surety expended any monies in connection with a contract for which they furnished a bond on your behalf? If the answer to any portion of this question is "yes", furnish details of all such occurrences including name of owner, architect or engineer, and surety, and name and date of project.

6.0 Has any officer or partner of your organization ever been an officer or partner of another organization that had any construction contract terminated by the owner; terminated work on a project prior to its completion for any reason; had any surety which issued a performance bond complete the work in its own name or financed such completion; or had any surety expend any monies in connection with a contract for which they furnished a bond? If the answer to any portion of this question is "yes", furnish details of all such occurrences including name of owner, architect or engineer, and surety, and name and date of project.

7.0 In the last five years, has your organization, or any predecessor organization, failed to substantially complete a project in a timely manner? If the answer to this question is “yes”, furnish details of all such occurrences including name of owner, architect or engineer, and surety, and name and date of project.

8.0 On Schedule A, attached, list name, location and description of project, owner, architect or engineer, contract price, percent complete and scheduled completion of the major construction projects your organization has in progress on this date. Provide name, address and telephone number of a reference for each project listed.

9.0 On Schedule B, attached, list name, location and description of project, owner, architect or engineer, contract price, date of completion and percent of work with your own forces of major projects of the same general nature as this project which your organization has completed in the past five years. Provide name, address and telephone number of a reference for each project listed.

10.0 On Schedule C, attached, list name and construction experience of the principal individuals of your organization directly involved in construction operations.

11.0 Licenses and Registrations:

11.1 Indicate the jurisdictions in which your firm is legally qualified to practice. Indicate license or registration number for each jurisdiction, if applicable, and type of license or registration. Attach separate sheet as required.

| Jurisdiction | License/Registration No. | Type |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

11.2 In the past five years, has Bidder had any business or professional license suspended or revoked?

☐ No ☐ Yes

If yes, describe on a separate attachment the circumstances, including the jurisdiction and bases for suspension or revocation.

12.0 Provide the following information for your surety:

12.1 Surety Company: _____

12.2 Agent: _____

A. Address: _____

B. Telephone No.: _____

13.0 Provide the following with respect to an accredited banking institution familiar with your organization.

13.1 Name of Bank: _____

13.2 Address: _____

13.3 Account Manager: _____

13.4 Telephone No.: _____

14.0 Provide the name, address and telephone number of an individual who represents a major equipment/material supplier whom the Owner may contact for a financial reference:

15.0 Industry Affiliations, Memberships, Awards, and Honors

15.1 List below the industry organizations with which your organization is affiliated or which your organization is a member:

15.2 List below the industry awards or honors received by your organization and the date for each. Attach supporting documentation as necessary.

16.0 Statement of Potential Conflicts of Interest: List below business associations, financial interests, or other circumstances that may create a conflict of interest with the Owner or other entity involved in the Project. Attach additional documentation as required.

17.0 Dated at _____, this _____ day of _____, 20___.

Bidder: _____
(Print or Type Name of Bidder)

By:_____

_____

Title:_____

Attachments A, B and C

(Seal, if corporation)

----------(Affidavit for Individual)----------

_____ being duly sworn, deposes and says that:
a) the financial statement, taken from his/her books, is a true and accurate statement of his/her financial condition as of the date thereof; and b) all of the foregoing qualification information is true, complete, and accurate.

----------(Affidavit for Partnership)----------

_____ being duly sworn, deposes and says that:
a) he/she is a member of the partnership of _____;
b) he/she is familiar with the books of said partnership showing its financial condition; c) the financial statement, taken from the books of said partnership, is a true and accurate statement of the financial condition of the partnership as of the date thereof; and d) all of the foregoing qualification information is true, complete, and accurate.

----------(Affidavit for Corporation)----------

_____ being duly sworn, deposes and says that: a) he/she is _____ of _____;
(Full name of Corporation)
b) he/she is familiar with the books of said corporation showing its financial condition; c) the financial statement, taken from the books of said corporation, is a true and accurate statement of the financial condition of said corporation as of the date thereof; and d) that all of the foregoing qualification information is true, complete, and accurate.

----------(Affidavit for Limited Liability Company (LLC))----------

_____ being duly sworn, deposes and says that: a) he/she is _____ of _____;
(Full name of LLC)
b) he/she is familiar with the books of said company showing its financial condition; c) the financial statement, taken from the books of said company, is a true and accurate statement of the financial condition of said company as of the date thereof; and d) that all of the foregoing qualification information is true, complete, and accurate.

----------(Affidavit for Joint Venture)----------

Each joint venturer shall complete the affidavit appropriate for the joint venturer's type of organization and attach said affidavit to the Bidder Qualifications Statement. Submit separate acknowledgement for each joint venturer's affidavit.

---------- (Acknowledgment) ----------

_____ being duly sworn, deposes and says
that he/she is _____ of _____;
(Name of Bidder)
that he/she is duly authorized to make the foregoing affidavit and that he/she makes it on behalf of
( ) himself/herself; ( ) said partnership; ( ) said corporation;
( ) said joint venture; ( ) said limited liability company
Sworn to before me this _____ day of _____, 20___, in the County of _____, State of _____.

_____
__
(Notary Public)

My commission expires _____

(Seal)

+ + END OF BIDDER QUALIFICATIONS STATEMENT + +

**ATTACHMENT A**

**SCHEDULE A**
**PROJECTS IN PROGRESS**

| Name, Location and Description of Project | Owner | Architect or Engineer | Contract Price | Percent Complete | Scheduled Completion | Reference/Contract Include Address and Phone |
|---|---|---|---|---|---|---|
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**ATTACHMENT B**

**SCHEDULE B**
**PROJECTS COMPLETED**

| Name, Location and Description of Project | Owner | Architect or Engineer | Date Completed | Contract Price | Percent with Own Forces | Reference/Contract Include Address and Phone |
|---|---|---|---|---|---|---|
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**ATTACHMENT C**

**SCHEDULE C**
**PERSONNEL**

| Name | Position | Date Started With This Organization | Date Started In Construction | Prior Positions and Experience In Construction |
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# GENERAL CONDITIONS
# OF THE CONSTRUCTION CONTRACT

Adapted from EJCDC C-700, Standard General Conditions
of the Construction Contract (2007 Edition)

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# GENERAL CONDITIONS

## ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda* – Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement* – The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment* – The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos* – Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid* – The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder* – The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents* – The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements* – The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

9. *Change Order* – A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

10. *Claim* – A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract* – The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents* – Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price* – The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times* – The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor* or *CONTRACTOR* – The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work* – See Paragraph 11.01.A for definition.

17. *Drawings* – That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

18. *Effective Date of the Agreement* – The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.

19. *Engineer* or *ENGINEER* – The individual or entity named as such in the Agreement.

20. *Field Order* – A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

21. *General Requirements* – Sections of Division 01 of the Specifications.

22. *Hazardous Environmental Condition* – The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.

23. *Hazardous Waste* – The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

24. *Laws and Regulations; Laws or Regulations* – Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. *Liens* – Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. *Milestone* – A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award* – The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. *Notice to Proceed* – A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

29. *Owner* or *OWNER* – The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs* – Polychlorinated biphenyls.

31. *Petroleum* – Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

32. *Progress Schedule* – A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

33. *Project* – The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. *Project Manual* – The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

35. *Radioactive Material* – Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

36. *Resident Project Representative* – The authorized representative of Engineer who may be assigned to the Site or any part thereof.

37. *Samples* – Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

38. *Schedule of Submittals* – A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

39. *Schedule of Values* – A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

40. *Shop Drawings* – All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

41. *Site* – Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

42. *Specifications* – That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

43. *Subcontractor* – An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

44. *Substantial Completion* – The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and

"substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

45. *Successful Bidder* – The Bidder submitting a responsive Bid to whom Owner makes an award.

46. *Supplementary Conditions* – That part of the Contract Documents which amends or supplements these General Conditions.

47. *Supplier* – A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.

48. *Underground Facilities* – All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

49. *Unit Price Work* – Work to be paid for on the basis of unit prices.

50. *Work* – The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

51. *Work Change Directive* – A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 T*erminology*

A. The words and terms referenced in this Paragraph 1.02 are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives*

1. The Contract Documents include the terms "as allowed", "as approved", "as ordered", "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day*

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective*

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

   a. does not conform to the Contract Documents, or

   b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents, or

   c. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide*

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, "provide" is implied.

F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times

commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference; Designation of Authorized Representative*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

B. At this conference Owner and Contractor each shall designate in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract and otherwise act on behalf of each respective party.

2.07 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve

Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

## ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

### 3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

### 3.02 *Reference Standards*

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants or subcontractors any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the

provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. Reporting Discrepancies

1. *Contractor's Review of Contract Documents Before Starting Work*: Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers or has actual knowledge of and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work*: If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and

a) any applicable Law or Regulation,

b) any standard, specification, manual or code, or,

c) any instruction of any Supplier

then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

a. the provisions of any standard, specification, manual, code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or

b. the provisions of any Laws or Regulations applicable to the performance of the

Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. a Field Order;

2. Engineer's approval of a Shop Drawing or Sample; (subject to the provisions of Paragraph 6.17.D.3); or

3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's consultants, including electronic media editions; or

2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor or by Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

## ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

### 4.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

B. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

### 4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site; that Engineer has used in preparing the Contract Documents; and

2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely on the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical

data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

2. is of such a nature as to require a change in the Contract Documents; or

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review*: After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. *Possible Price and Times Adjustments*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the

extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

   a. reviewing and checking all such information and data,

   b. locating all Underground Facilities shown or indicated in the Contract Documents,

   c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and

   d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the

Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.,

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall

promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice:: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's sole negligence.

H. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

## ARTICLE 5 – BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all

of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.

C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

C. Failure of Owner to demand such certificates or other evidence of Contractor's full

compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.

E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Liability Insurance*

A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

   a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

   b. by any other person for any other reason;

5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

6. include completed operations insurance;

    a. such insurance shall remain in effect for at least two years after final payment, and

    b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 (Not Used)

5.07 (Not Used)

5.08 (Not Used)

5.09 (Not Used)

5.10 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

## ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances. Unless the Owner shall otherwise agree in writing, the superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or

received from the superintendent shall be binding on Contractor.

6.02 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract

Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. "*Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics; and

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and

3) it has a proven record of performance and availability of responsive service; and

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times; and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items*

a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements and as Engineer may decide is appropriate under the circumstances.

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

    1) shall certify that the proposed substitute item will:

        a) perform adequately the functions and achieve the results called for by the general design,

        b) be similar in substance to that specified, and

        c) be suited to the same use as that specified;

    2) will state:

        a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,

        b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

        c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

    3) will identify:

        a) all variations of the proposed substitute item from that specified, and

b) available engineering, sales, maintenance, repair, and replacement services; and

4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.

B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

E. *Engineer's Cost Reimbursement*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

F. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other

individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor

2. shall anything in the Contract Documents create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to

an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of Owner or Engineer its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute

resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work, Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons and property in the performance of their work nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

C. Contractor shall comply with the applicable requirements of Owner's safety programs that are applicable to the Work.

D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety programs with which Owner's and Engineer's employees and representatives must comply while at the Site.

E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site

whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. *Shop Drawings*

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples*

a. Submit number of Samples specified in the Specifications.

b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Submittal Procedures*

1. Before submitting each Shop Drawing or Sample, Contractor shall have:

   a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.;
   b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

   c. determined and verified the suitability of all materials offered with respect to indicated use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

   d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. *Engineer's Review*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques,

sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. *Resubmittal Procedures*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective for a minimum period of one (1) year. Engineer and its officers, directors, members, partners, employees, agents, consultants and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the

Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;

2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. use or occupancy of the Work or any part thereof by Owner;

5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

6. any inspection, test, or approval by others; or

7. any correction of defective Work by Owner.

6.20 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

1. is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of real or personal property (other than the Work itself), including the loss of use resulting therefrom; and

2. is caused by any act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws or Regulations.

B. In any and all claims against Owner or Engineer or any of their , officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor,

any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not be limited in any way by the amount or types of insurance provided by Contractor under Article 5 of the General Conditions.

D. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the sole negligence or willful misconduct of Owner or Engineer or of the officers, directors, members, partners, employees, agents, and consultants and subcontractors of each and any of them.

6.21 *Delegation of Professional Design Services*

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

## ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and

2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, Contractor may cut or alter the work of others with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Legal Relationships*

A. Paragraph 7.01.A is not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.

C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

## ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.03 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.04 *Lands and Easements; Reports and Tests*

A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at or contiguous to the Site.

8.05 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.06 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.07 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.08 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.09 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.10 *Evidence of Financial Arrangements*

A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

8.11 *Compliance With Safety Programs*

A. While on the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.B.

## ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents and will not be changed without written consent of Owner and Engineer.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, or have control over Contractor's Work, nor shall Engineer have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected by Contractor, for safety precautions and programs incident to Contractor's Work in progress, nor for any failure of Contractor to comply with Laws and Regulations applicable to Contractor's furnishing and performing the Work.

9.03 *Project Representative*

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both,

and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, if any,

1. as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21;

2. as to Change Orders, see Articles 10, 11, and 12; and

3. as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Programs*

A. While on the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of the Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.C.

## ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

10.03 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are:

a) ordered by Owner pursuant to Paragraph 10.01.A,

b) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or

c) agreed to by the parties;

2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

A. *Engineer's Decision Required*: All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

C. *Engineer's Action*: Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any,

take one of the following actions in writing:

1. deny the Claim in whole or in part,

2. approve the Claim, or

3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

## ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and

holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to Engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:

    a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

    b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

    c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

    d. Sales, consumer, use, and other similar taxes related to the Work, and for which

Contractor is liable, imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

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

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

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.

C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances*

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. *Contingency Allowance*

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

2. there is no corresponding adjustment with respect to any other item of Work; and

3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

## ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment

in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

   a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;

   b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

   c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

   d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

   e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

C. If Owner, Engineer, or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

D. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of other contractors or utility owners, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.D.

E. Owner and Engineer and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

## ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;

2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and

3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other

representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall if requested by Engineer, uncover such Work for observation.

F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or

extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or

2. correct such defective Work; or

3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and

4. satisfactorily correct or repair or remove and replace any damage to other Work,

to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

## ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Contract.

B. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents

(subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

   b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

   a. to supervise, direct, or control the Work, or

   b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

   c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

   d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

   e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in

Engineer's opinion to protect Owner from loss because:

a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;

b. the Contract Price has been reduced by Change Orders;

c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or

d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. *Reduction in Payment*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;

b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;

c. there are other items entitling Owner to a set-off against the amount recommended; or

d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.

3. Upon a subsequent determination that Owner's refusal of payment was not

justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Owner notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.

2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

   a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;

   b. consent of the surety, if any, to final payment;

   c. a list of all Claims against Owner that Contractor believes are unsettled; and

   d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that:

   a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and

   b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. *Engineer's Review of Application and Acceptance*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations

under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due*

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

## ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

3. Contractor's disregard of the authority of Engineer; or

4. Contractor's repeated violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

15.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated

contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

## ARTICLE 16 – DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of Paragraph 10.05, Owner and Contractor may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

## ARTICLE 17 – MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or

2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

+ + END OF GENERAL CONDITIONS ++

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# SUPPLEMENTARY CONDITIONS

## SCOPE

These Supplementary Conditions amend or supplement the General Conditions of the Construction Contract. All provisions of the General Conditions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions which are defined in the General Conditions have the meanings assigned to them in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to the singular and plural thereof.

The address system used in these Supplementary Conditions conforms to the address system used in the General Conditions, with the prefix "SC" added thereto.

SC-1.01.A.36 Change the definition of *Resident Project Representative* to read as follows:

SC-1.01.A.36 *Resident Project Representative:* The Owner's representative who will provide day to day inspection services of construction activities.

SC-1.01.A.51 Change the last sentence in the definition of *Work Change Directive* to read as follows:

"A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued IFCA or Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times."

SC-1.01.A.52 Add the following definition:

1.01.A.52 *Interim Field Change Agreement (IFCA)* - A document signed by the Engineer, Contractor, Owner and Owner's Representative documenting a change to the Work, which does not result in the total contract price exceeding the amount specified in the contract. An IFCA will authorize re-distribution of existing contract amounts or use of Owner's Allowance funds.

SC-4.03, A. Change the last paragraph to read as follows:

"then Contractor shall, within seven (7) days after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in

connection therewith (except as aforesaid) until receipt of written order to do so.

SC-4.06 Delete Paragraphs 4.06.A and 4.06.B in their entirety and insert the following:

SC-4.06.A. In the preparation of the Drawings and Specifications, Engineer has not utilized any report or drawing related to a Hazardous Environmental Condition identified at the Site.

SC-4.06.B (Not Used)

SC- Article 5 Replace the entire article with the following:

Before performing any work, the Contractor 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 Owner 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.

1. The City of Venice is to be specifically included as an ***ADDITIONAL INSURED***.
2. The City of Venice shall be named as Certificate Holder. ***Please Note that the Certificate Holder should read as follows:***

The City of Venice 401
W. Venice Avenue
Venice, FL 34285

No City Division, Department, or individual name should appear on the certificate. ***NO OTHER FORMAT WILL BE ACCEPTABLE.***

3. The "Acord" certification of insurance form shall be used.
4. Required Coverage

a) **Commercial General Liability:** including but not limited to bodily injury, property damage, contractual liability, 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. Include broad form property damage (provide insurance for damage to property under the care custody and control of the contractor)

b) **Business Auto Policy:** including bodily injury and property damage for all vehicles owned, leased, hired and non-owned vehicles with limits of not less than $1,000,000 combined single limit covering all work performed under this Contract.

c) **Workers Compensation:** Contractor 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.

d) **Installation Floater/Installation Builders' Risk–Property Coverage:** Policy to cover direct physical loss or damage to materials, supplies, machinery, and equipment being installed, constructed or rigged by the contractor in conjunction with its installation or construction. All items involved in the project including drainage/water sewer pipes, etc. (as included in description of project) need to be insured for the total completed replacement value. Coverage should include perils of fire, theft, vandalism, windstorm/hail, collapse and transit, sewer backup, testing, equipment breakdown, waterborne property. Coverage shall start when the items to be installed are transported to Owner premises and remain in place until the interest of the contractors ceases or the Owner accepts possession whichever comes first. Coverage should apply to owned property and non-owned property in the contractor's care, custody and control. The installation coverage forms shall provide coverage for building materials and supplies at the construction site, in transit to the site and similar property intended for the construction project at other locations as necessary or because of lack of storage space at the construction site. Coverage should apply on a Primary basis and should include a Waiver of Subrogation. Contractor should be responsible for any deductibles.

5. Policy Form:

a) All policies required by this Contract, with the exception of Workers Compensation, or unless specific approval is given by the Owner, 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, and Employees.

b) Insurance requirements itemized in this Contract, and required of the Contractor, shall be provided on behalf of all subcontractors to cover their operations performed under this Contract. The Contractor 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's Director of Administrative Services.

d) The Owner 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 Contractor's liability nor to fulfill the indemnification provisions and requirements of this Contract.

f) The Contractor 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 Owner 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 Contractor until such time the contractor shall furnish additional security covering such claims as may be determined by the Owner.

g) Claims Made Policies will be accepted for professional and hazardous materials and such other risks as are authorized by the Owner. 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 Contractor agrees to purchase the extended reporting period on cancellation or termination unless a new policy is affected 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 Owner's Bid Number and description of work, are to be furnished to the City's Director of Administrative Services, 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 Contractor's insurance company and the City's Director of Administrative Services, as soon as practicable after notice to the insured.

j) All property losses shall be payable to, and adjusted with, the City.

SC-6.02.B Add new paragraphs immediately after Paragraph 6.02.B that are to read as follows:

SC-6.02.B.1 If it shall become absolutely necessary to perform Work at night or on Saturdays, Sundays, or legal holidays, written notice shall be submitted to Owner and Engineer at least 5 days in advance of the need for such Work. Owner will only consider the performance of such Work as can be performed satisfactorily under the conditions. Good lighting and all other necessary facilities for carrying out and observing the Work shall be provided and maintained where such Work is being performed at night.

SC-6.02.B.2 If Owner authorizes Work during other than regular working hours, Contractor shall reimburse Owner for all Owner's additional costs associated with such Work, including, but not necessarily limited to, the overtime costs for Owner's, Engineer's, and Resident Project Representative's personnel on the Site and other additional costs assessed against or incurred by the Owner. At Owner's option, such additional costs may either be deducted from Contractor's progress payments or deducted from the retained amount prior to release following Substantial Completion.

SC-6.07.B Change the first sentence of Paragraph 6.07.B by replacing the term "Owner and Engineer" with the term "Owner, Engineer, and Resident Project Representative".

SC-6.11.A.3. Change the first sentence of Paragraph 6.11.A.3. by replacing the term "Owner and Engineer" with the term "Owner, Engineer, and Resident Project Representative".

SC-6.12 Add a new paragraph immediately after Paragraph 6.12.A, that is to read as follows:

SC-6.12.B Contractor will be required to review with Engineer the status of record documents in connection with the Engineer's review of an Application for Payment. Failure to maintain record documents current may be just cause for Engineer to recommend withholding of payments for Work performed.

SC-6.15 Add a new paragraph immediately after Paragraph 6.15.A that is to read as follows:

SC-6.15.B Contractor shall be responsible for coordinating exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with all Laws and Regulations. Contractor shall provide a centralized location for the maintenance of the material safety data sheets or other hazard communication information required to be made available by any

employer on the Site. Location of the material safety data sheets or other hazard communication information shall be readily accessible to the employees of employers on the Site.

SC-6.17 Add the following new paragraphs immediately after Paragraph 6.17.E that are to read as follows:

SC-6.17.F Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval or acceptance of submittal with no more than two (2) submittals (initial submittal plus one re-submittal). Engineer will record Engineer's time for reviewing subsequent submittals of Shop Drawings, Samples, or other submittals or items requiring approval or acceptance, and Contractor shall reimburse Owner for Engineer's charges for such time.

SC-6.19.A Supplement Paragraph 6.19.A by adding, after the term, "Engineer" in the second sentence, the term "and Resident Project Representative".

SC-6.19.C.1. Supplement Paragraph 6.19.C.1. by adding, after the term, "Engineer" the term "or Resident Project Representative".

SC-6.20.A. Change the first sentence of Paragraph 6.20.A by replacing the term "Owner and Engineer" in the first sentence, with the term ", Owner, Engineer, and Resident Project Representative".

SC-6.20.B Change the first sentence of Paragraph 6.20.B by replacing the term "Owner or Engineer" with the term "Owner, Engineer or Resident Project Representative".

SC-7.03 Add a new paragraph immediately after Paragraph 7.02 that is to read as follows:

SC-7.03 *Separate Contractor Claims*

A. Should Contractor cause damage to the work or property of another contractor at the Site, or should any claim arising out of Contractor's performance of the Work at the Site be made by any other contractor against Contractor, Owner or Engineer or Resident Project Representative, Contractor, without involving any other party, shall either:

1. remedy the damage,

2. agree to compensate the other contractor for remedy of the damage, or

3. remedy the damage and attempt to settle with such other contractor by agreement, or otherwise resolve the dispute by arbitration or at law.

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner, Engineer, Resident Project Representative, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to, all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising directly, indirectly, or consequentially out of or relating to any claim or action, legal or equitable, brought by any other contractor against Owner or Engineer or Resident Project Representative to the extent said claim is based upon Contractor's performance of the Work.

C. Should another contractor cause damage to the Work or property of Contractor at the Site or should the performance of work by any other contractor at the Site give rise to any other claim, Contractor shall not institute any action, legal or equitable, against Owner or Engineer or Resident Project Representative, or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from Owner or Engineer or Resident Project Representative on account of any such damage or claim.

D. If Contractor is delayed at any time in performing or furnishing Work by any act or neglect of another contractor and Owner and Contractor are unable to agree as to the extent of any adjustment in Contract Times attributable thereto, Contractor may make a Claim therefore in accordance with Article 12. An extension of the Contract Times shall be Contractor's exclusive remedy with respect to Owner or Engineer or Resident Project Representative for any delay, disruption, interference, or hindrance caused by any other contractor.

SC-8.01.A. Amend paragraph 8.01.A. by adding after the term "Engineer" to words "or Resident Project Representative".

SC-9.03 Add a new paragraph immediately after Paragraph 9.03.A that is to read as follows:

SC-9.03.B Resident Project Representative (RPR) will be Owner's employee or agent at the Site, will act as directed by and under the supervision of the Owner, and will confer with the Owner and Engineer regarding RPR's actions. RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor keeping Owner advised as necessary. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner with the knowledge of the Engineer.

1. Duties and Responsibilities of RPR:
    a. Schedules: Review the Progress Schedule, Schedule of Submittals, and Schedule of Values prepared by Contractor and consult with Owner and Engineer concerning acceptability.
    b. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.
    c. Liaison:
        1) Serve as Owner's and Engineer's liaison with Contractor, working principally through Contractor's superintendent, and assist in providing understanding of the intent of the Contract Documents as directed by the Engineer.
        2) Assist in obtaining from Owner or Engineer additional details or information, when required for proper execution of the Work.
    d. Shop Drawings and Samples:
        1) Record date of receipt of Shop Drawings and Samples, that are received at the Site.
        2) Receive Samples that are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
        3) Advise Engineer and Contractor of the commencement of any Work requiring a Shop Drawing or Sample if the submittal has not been approved by Engineer.
    e. Review of Work, Rejection of Defective Work, Inspections and Tests:
        1) Conduct observations of the Work in progress on the Site to assist Engineer in determining if the Work is, in general, proceeding in accordance with the Contract Documents.
        2) Report to Engineer when RPR believes that any Work is unsatisfactory, faulty, or defective or does not conform generally to the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test, or approval required to be made; and advise Engineer of Work that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection, or approval.
        3) Verify that tests, equipment, and systems startups, and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof; and observe, record, and report to Engineer appropriate details relative to the test procedures and startups.
        4) Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections and report to Engineer.

f. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.

g. Modifications: Consider and evaluate Contractor's suggestions for modifications to Drawings or Specifications and report with RPR's recommendations to Engineer. Transmit to Contractor decisions issued by Engineer.

h. Records:
   1) Maintain at the Site orderly files for correspondence, reports of job conferences, Shop Drawings and Samples, and reproductions of original Contract Documents including all Addenda, Change Orders, Work Change Directives, Field Orders, additional Drawings issued subsequent to the execution of the Agreement, Engineer's clarifications and interpretations of the Contract Documents, progress reports, and other Project-related documents.
   2) Keep a record recording Contractor's hours, personnel and equipment on the Site, weather conditions, data relative to questions on Change Orders or changed conditions, list of visitors to the Site, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.
   3) Record names, addresses, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.

i. Reports:
   1) Furnish Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and Schedule of Submittals.
   2) Consult with Engineer in advance of scheduled major tests, inspections, or start of important phases of the Work.
   3) Report immediately to Engineer and Owner upon the occurrence of any Site accident, any Hazardous Environmental Condition, emergencies or acts of God endangering the Work, or property damage by fire or other cause.

j. Payment Requests: Review Applications for Payment with Contractor for compliance with the established procedure for their submission, and submit recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

k. Certificates, Maintenance and Operation Manuals: During the course of the Work, verify that certificates, maintenance and operation manuals, and other data required by the Specifications to be assembled and furnished by Contractor are applicable to the items actually

installed and in accordance with the Contract Documents, and have this material delivered to Engineer for review and forwarding to Owner prior to final payment for the Work.

l. Completion:
   1) Before Engineer issues a certificate of Substantial Completion, submit to Contractor a list of observed items requiring completion or correction.
   2) Observe whether Contractor has arranged for inspections required by Laws and Regulations, including but not limited to those to be performed by public authorities having jurisdiction over the Work.
   3) Conduct final inspection in the company of Engineer, Owner, and Contractor, and prepare a final list of items to be completed or corrected.
   4) Observe that all items on final list have been completed or corrected and make recommendations to Engineer concerning acceptance of the Work.

2. The RPR shall not:
   a. Authorize any deviation from the Contract Documents or substitution of materials or equipment, including "or equal" items.
   b. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
   c. Undertake any of the responsibilities of Contractor, Subcontractors, or Contractor's superintendent.
   d. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction, unless such advice or directions are specifically required by the Contract Documents.
   e. Advise on, issue directions regarding, or assume control over safety precautions and programs in connection with the Work.
   f. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
   g. Authorize Owner to occupy the Project in whole or in part.
   h. Participate in specialized field or laboratory tests or inspections conducted by others except as specifically authorized by Engineer.

SC-9.08.A Change "30 days" in the last sentence to read "10 days".

SC-10.05.B Delete paragraph B in its entirety and replace with the following:.

Notice: Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 10 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 30 days after

the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

SC-12.01.C Delete the semicolon at the end of GC 12.01.C.2.c, and add the following:

provided, however, that on any subcontracted work the total maximum fee to be paid by Owner to Contractor under this Paragraph shall be no greater than 27 percent of the costs incurred by the Subcontractor who actually performs the work;

SC-12.03.C. Change the first sentence of Paragraph 12.03.C by replacing the term "Owner and Engineer" in the first sentence, with the term "Owner, Engineer, and Resident Project Representative".

SC-12.03.E. Change the first sentence of Paragraph 12.03.E by replacing the term "Owner and Engineer" in the first sentence, with the term "Owner, Engineer, and Resident Project Representative".

SC-13.01.A. Change the first sentence of Paragraph 13.01.A. by replacing the term "Owner or Engineer" with the term "Owner, Engineer, or Resident Project Representative".

SC-13.03.A. Change the first sentence of Paragraph 13.03.A. by replacing the term "Engineer" with the term "Engineer and Resident Project Representative".

SC-13.03.B. Delete Paragraph 13.03.B. and subparagraphs in their entirety and replace with the following:

B. Contractor shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents.

SC-13.04.A. Delete Paragraph 13.04.A. in its entirety and replace with the following:

A. If any Work is covered contrary to the written request of Engineer or Resident Project Representative, it must, if requested by Engineer or Resident Project Representative, be uncovered for Engineer's or Resident Project Representative's observation and replaced at Contractor's expense.

SC-13.04.D. Change the words “If, the uncovered work is not found to be defective,” to read “Unless the Contractor was provided with prior written request not to cover the work, if the uncovered work is not found to be defective,”.

SC-14.02.A Add new paragraphs immediately after Paragraph 14.02.A.3 that are to read as follows:

SC-14.02.A.4. Owner shall make monthly progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment as recommended by Engineer. Contractor's Applications for Payment will be due within 7 days after the last day of each month during performance of the Work. All progress payments will be on the basis of the progress of the Work measured by the Schedule of Values provided for in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work, based on the number of units completed) or, in the event there is no Schedule of Values, as provided in the General Requirements. A progress payment will not be made whenever the value of the Work completed since the last previous progress payment is less than $5,000.

1. Prior to Substantial Completion

    a. Progress payments will be made in the amount of up to 90 percent of the Work completed, (with the balance being retainage), less the aggregate of payments previously made and less such amounts as Engineer shall determine, or Owner may withhold, in accordance with Paragraph 14.02 of the General Conditions; and

    b. 90 percent of the cost of materials and equipment not incorporated in the Work but suitably stored (with the balance being retainage).

2. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of the General Conditions and less 200 percent of Engineer’s estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

SC-14.02.C. Replace the existing paragraph with the following:

All payments to Contractor shall be made in accordance with Florida’s Local Government Prompt Payment Act.

SC-14.04.B. Change the terms “Owner, Contractor and Engineer” to read “Owner, Contractor, Engineer and Resident Project Representative”.

SC-14.07.C. Replace the existing paragraph with the following:

All payments to Contractor shall be made in accordance with Florida's Local Government Prompt Payment Act.

SC-16.01 Add new paragraphs immediately after Paragraph 16.01.A that are to read as follows:

SC-16.01.B Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

SC-16.01.C Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

SC-16.01.D If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor,

1. elects in writing to demand arbitration of the Claim, pursuant to Paragraph SC-16.02, or

2. agrees with the other party to submit the Claim to another dispute resolution process.

SC-16.02 Add a new paragraph immediately after Paragraph 16.01 that is to read as follows:

SC-16.02 *Arbitration*

A. All Claims or counter claims, disputes, or other matters in question between Owner and Contractor arising out of or relating to the Contract Documents or the breach thereof (except for Claims that have been waived by the making or acceptance of final payment as provided by Paragraph 14.09), including but not limited to those not resolved under the provisions of Paragraph SC-16.01.B and SC-16.01.C will be decided by arbitration in accordance with Construction Industry Arbitration Rules of the American Arbitration Association, subject to the conditions and limitations

of this Paragraph SC-16.02. This agreement to arbitrate and any other agreement or consent to arbitrate entered into will be specifically enforceable under the prevailing law of any court having jurisdiction.

B. The demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitrator or arbitration provider, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the 30-day period specified in Paragraph SC-16.01.D. and in all other cases within a reasonable time after the Claim or counter claim, dispute, or other matter in question has arisen, and in no event shall any such demand be made after the date when institution of legal or equitable proceedings based on such Claim or counter claim, dispute, or other matter in question would be barred by the applicable statute of limitations.

C. No arbitration arising out of or relating to the Contract Documents shall include by consolidation, joinder, or in any other manner any individual or entity (including Engineer, Resident Project Representative, and the officers, directors, partners, employees, agents, or consultants of each and any of them) who is not party to this Contract unless:

1. the inclusion of such other individual or entity is necessary if complete relief is to be afforded among those who are already parties to the arbitration; and

2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration and which will arise in such proceedings, and

D. The award rendered by the arbitrator(s) shall be:

1. consistent with the agreement between the parties, and

2. in writing, and shall include:

a. a concise breakdown of the award, and

b. a written explanation of the award specifically citing the Contract Document provisions deemed applicable and relied on in making the award.

E. Subject to provisions of the Controlling Law relating to vacating or modifying an arbitration award, the award will be final. Judgment may be entered upon it in any court having jurisdiction thereof and it will not be subject to modification or appeal.

F. The fees and expenses of the arbitrator(s) and any arbitration service shall be shared equally by Owner and Contractor.

SC-17.07 Add a new paragraph immediately after Paragraph 17.06 that is to read as follows:

SC-17.07 *Confidential Information*

A. All Drawings, Specifications, technical data, and other information furnished to Contractor either by Owner or Engineer or developed by Contractor or others in connection with the Work are, and will remain, the property of Owner or Engineer, and shall not be copied or otherwise reproduced or used in any way except in connection with the Work, or disclosed to third parties or used in any manner detrimental to the interests of Owner or Engineer.

B. The following information is not subject to the above confidentiality requirements:

1. information in the public domain through no action of Contractor in breach of the Contract Documents; or

2. information lawfully possessed by Contractor before receipt from Owner or Engineer; or

3. information required to be disclosed by Laws or Regulations, or by a court or agency of competent jurisdiction. However, in the event Contractor shall be so required to disclose such information, Contractor shall, prior to disclosure, provide reasonable notice to Owner and Engineer, who shall have the right to interpose all objections Owner may have to the disclosure of such information.

SC-18 Add new Article immediately after Article 17, which is to read as follows:

ARTICLE SC-18 – STATUTORY REQUIREMENTS

SC-18.01 This Article contains portions of certain Laws or Regulations which, by provision of Laws or Regulations, are required to be included in the Contract Documents. The material included in this Article may not be complete or current. Contractor's obligation to comply with all Laws and Regulations applicable to the Work is set forth in Paragraph 6.09 of the General Conditions.

+ + END OF SPECIAL CONDITIONS + +

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**SUPPLEMENTARY CONDITIONS (CONSTRUCTION)**

Florida Department of Environmental Protection

State Revolving Fund Program

Supplementary Conditions

for

Formally Advertised

Construction Procurement

Revised April 2017

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# FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
# SUPPLEMENTARY CONDITIONS

The intent of the Florida Department of Environmental Protection (FDEP) Supplementary Conditions is to complement and supplement other provisions of the Bidding Documents. However, if there is any conflict between the FDEP Supplementary Conditions and other provisions of the Bidding Documents, the FDEP Supplementary Conditions shall take precedence over the other provisions except when the other provisions are similar to, but more stringent than, the FDEP Supplementary Conditions. When other provisions of the Bidding Documents are similar to, but more stringent than, the FDEP Supplementary Conditions, the more stringent provisions shall apply.

## ARTICLE 1 - DEFINITIONS

Wherever used in these Supplementary Conditions (except in the appendices to these Supplementary Conditions), the following terms have the meanings indicated, which are applicable to both the singular and plural thereof.

1.1 Addendum -A written or graphic instrument that is issued prior to the opening of bids and that clarifies, corrects, or changes the Bidding Documents.

1.2 Agreement or Contract - The written agreement between the Owner and the Contractor covering the Work to be performed and furnished; these Supplementary Conditions and other Contract Documents are attached to the Agreement/Contract and made a part thereof as provided therein.

1.3 Bid - The offer or proposal of a bidder submitted on the prescribed form and setting forth the price(s) for the Work to be performed and furnished.

1.4 Bidder - Any person, firm, or corporation that submits a bid directly to the Owner.

1.5 Bidding Documents - The Advertisement for Bids or the Invitation to Bid, the Instructions to Bidders or the Information for Bidders, the Bid Form, the proposed Contract Documents, and all addenda.

1.6 Bond - An instrument of security.

1.7 Change Order - A document that is recommended by the Engineer and signed by the Contractor and the Owner; that authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Time; and that is issued on or after the Effective Date of the Agreement/Contract.

1.8 Contract Documents - The Agreement/Contract; the Contractor's Bid when attached as an exhibit to the Agreement/Contract; the Performance and Payment Bond(s); the General Conditions; the Supplementary Conditions (including these Supplementary Conditions); the Specifications (written technical descriptions of material, equipment, construction systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto); the Drawings (drawings that show the character and scope of the Work to be performed and furnished); all addenda that pertain to the Contract Documents; and all change orders.

1.9 Contract Time - The number of days or the date stated in the Contract Documents for completion of the Work.

1.10 Contractor - The person, firm, or corporation with whom or which the Owner enters into the Agreement/Contract.

1.11 Effective Date of the Agreement/Contract - The date indicated in the Agreement/Contract on which the Agreement/Contract becomes effective, or if no such date is indicated in the Agreement/Contract, the date on which the Agreement/Contract is signed and delivered by the last of the two parties to sign and deliver the Agreement/Contract.

1.12 Engineer - The person, firm, or corporation named as such in the Contract Documents.

1.13 Minority Business Enterprise (MBE) - A historically Black college or university or a business that is (a) certified as socially and economically disadvantaged by the Small Business Administration, (b) certified as an MBE by a state or federal agency, or (c) an independent business concern which is at least 51-percent owned and controlled by minority group members. (A minority group member is an individual who is a citizen of the United States and one of the following: [i] Black American; [ii] Hispanic American [with origins from Puerto Rico, Mexico, Cuba, or South or Central America]; [iii] Native American [American Indian, Eskimo, Aleut, or native Hawaiian]; or [iv] Asian-Pacific American

[with origins from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the U.S. Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, Taiwan, or the Indian Subcontinent].)

1.14 Notice to Proceed -The written notice given by the Owner to the Contractor fixing the date on which the Contract Time will commence to run and on which the Contractor shall start to perform its obligations under the Contract Documents.

1.15 Owner - The local government (municipality, county, district, or authority; or any agency thereof; or a combination of two or more of the foregoing acting jointly) with which the Florida Department of Environmental Protection (FDEP) may execute, or has executed, a State Revolving Fund loan agreement and for which the Work is to be provided.

1.16 Project - The total construction or facilities described in a State Revolving Fund loan agreement between the FDEP and the Owner, of which the Work to be provided under the Contract Documents may be the whole or a part.

1.17 Sponsor – The recipient of the State Revolving Fund loan agreement that provides funds for the project.

1.18 Subcontract - A direct contract between a subcontractor and the Contractor, or any other subcontractor at any tier, for the furnishing of goods (material and equipment) or the performance of services (including construction) necessary to complete the Work.

1.19 Subcontractor - A person, firm, or corporation having a direct contract with the Contractor, or any other subcontractor at any tier, for the furnishing of goods (material and equipment) or the performance of services (including construction) necessary to complete the Work.

1.20 Successful Bidder - The lowest responsive, responsible bidder to whom or which the Owner intends to award the Agreement/Contract.

1.21 Women's Business Enterprise (WBE) - A business that is (a) certified as a WBE by a state or federal agency or (b) an independent business concern which is at least 51-percent owned and controlled/operated by women. (Determination of whether a business is at least 51-percent owned by women shall be made without regard to community property laws [e.g., an otherwise qualified WBE that is 51-percent owned by a married woman in a community property state will not be disqualified because the married woman's husband has a 50-percent interest in the married woman's share of the business; similarly, a business that is 51-percent owned by a married man and 49-percent owned by women will not become a qualified WBE by virtue of the married man's wife having a 50-percent interest in the married man's share of the business].)

1.22 Work - The entire completed construction or the various separately identifiable parts thereof required to be performed and furnished under the Contract Documents; Work is the result of performing services, furnishing labor, furnishing material and equipment, and incorporating material and equipment into the construction as required by the Contract Documents.

## ARTICLE 2 - PRIVITY OF AGREEMENT/CONTRACT

2.1. The Owner expects to finance this Agreement/Contract with assistance from the FDEP, which administers a State Revolving Fund loan program supported in part with funds directly made available by grants from the United States Environmental Protection Agency (USEPA). Neither the State of Florida nor the United States (nor any of their departments, agencies, or employees) will be a party to this Agreement/Contract or any lower-tier subcontract.

## ARTICLE 3 - PROCUREMENT REQUIREMENTS

3.1. This Agreement/Contract and the Owner's solicitation and award of this Agreement/Contract are subject to requirements contained in Chapter 62-503 (Revolving Loan Program) and/or Chapter 62-552, Florida Administrative Code as applicable.

## ARTICLE 4 - RESOLUTION OF PROTESTS AND CLAIMS/DISPUTES

**Resolution of Protests Concerning the Owner's Solicitation and/or Award of this Agreement/Contract:**

4.1. Protests concerning the Owner's solicitation and/or award of this Agreement/Contract must be filed in writing with the Owner to be considered.

4.2. All timely written protests concerning the Owner's solicitation and/or award of this Agreement/Contract are to be resolved in accordance with the Owner's dispute resolution process. A copy of the ordinance(s), resolution(s), or written policy (policies) that set forth the Owner's dispute resolution process is included elsewhere in the Bidding Documents or is to be made available by the Owner upon request.

4.3. Neither the (FDEP) nor the USEPA will become a party to, or have any role in resolving, protests concerning the Owner's solicitation and/or award of this Agreement/Contract. Protest decisions made by the Owner cannot be appealed to the FDEP or the USEPA.

**Resolution of Claims and Disputes Between the Owner and the Contractor:**

4.4. Unless otherwise provided in the Contract Documents, all claims and disputes between the Owner and the Contractor arising out of, or relating to, the Contract Documents or the breach thereof are to be decided by arbitration (if the Owner and the Contractor mutually agree) or in a court of competent jurisdiction within the State of Florida.

4.5. Neither the FDEP nor the USEPA will become a party to, or have any role in resolving, claims and disputes between the Owner and the Contractor.

## ARTICLE 5 - CHANGES TO THE BIDDING AND CONTRACT DOCUMENTS

5.1. All changes to the Bidding Documents made subsequent to the FDEP's acceptance of the Bidding Documents and prior to the opening of bids are to be documented via addendum (addenda) to the Bidding Documents; all changes to the Contract Documents made after the opening of bids are to be documented by change order(s) to the Contract Documents. The Owner shall submit all addenda and change orders to the FDEP.

## ARTICLE 6 - BONDS AND INSURANCE

**Bid Guarantees:**

6.1. Each bidder's bid is to be accompanied by a bid guarantee made payable to the Owner in an amount at least equal to five percent of the bidder's maximum bid price and in the form of a certified check or bid bond.

**Performance and Payment Bond(s):**

6.2. The Contractor shall furnish a combined performance and payment bond in an amount at least equal to 100 percent of the Contract Price (or, if required elsewhere in the Contract Documents, the Contractor shall furnish separate performance and payment bonds, each in an amount at least equal to 100 percent of the Contract Price) as security for the faithful performance and payment of all the Contractor's obligations under the Contract Documents. This(these) bond(s) are to be delivered to the Owner by the Contractor along with the executed Agreement/Contract. The Owner shall forward a copy of this (these) bond(s) to the FDEP.

**Insurance:**

6.3. The Owner and/or the Contractor (as required elsewhere in the Contract Documents) shall purchase and maintain, during the period of construction, such liability insurance as is appropriate for the Work being performed and furnished and as will provide protection from claims that may arise out of, or result from, the Contractor's performance and furnishing of the Work (whether the Work is to be performed or furnished by the Contractor or any subcontractor at the Work site) and the Contractor's other obligations under the Contract Documents. This insurance is to include workers' compensation insurance, comprehensive general liability insurance, comprehensive automobile liability insurance, and contractual liability insurance applicable to the Contractor's indemnification obligations and is to be written for not less than the limits of liability and coverages determined by the Owner or required by law, whichever is greater.

6.4. The Owner and/or the Contractor (as required elsewhere in the Contract Documents) shall purchase and maintain, during the period of construction, property insurance upon the Work at the Work site in an amount equal to the full replacement cost of the Work or the full insurable value of the Work. This insurance is to include the interests of the Owner, the Contractor, and all subcontractors at the Work site (all of whom are to be listed as insured or additional insured parties); is to insure against the perils of fire and extended coverage; and is to include "all-risk" insurance for physical loss or damage due to theft, vandalism and malicious mischief, collapse, water damage, and/or all other risks against which coverage is obtainable.

6.5. Before any Work at the Work site is started, the Contractor shall deliver to the Owner certificates of insurance that the Contractor is required to purchase and maintain in accordance with Paragraphs 6.3 and 6.4 of this Article and other provisions of the Contract Documents, and the Owner shall deliver to the Contractor certificates of insurance that the Owner is required to purchase and maintain in accordance with Paragraphs 6.3 and 6.4 of this Article and other provisions of the Contract Documents.

ARTICLE 7 - AWARD OF AGREEMENT/CONTRACT

7.1. If this Agreement/Contract is awarded, it is to be awarded to the lowest responsive, responsible bidder. A fixed price (lump sum or unit price or both) agreement/contract is to be used. A clear explanation of the method of evaluating bids and the basis for awarding this Agreement/Contract are included elsewhere in the Bidding Documents. All bids may be rejected when in the best interest of the Owner. After the contract has been awarded, the Owner shall give the Contractor a notice to proceed fixing the date on which the Contract Time will commence to run. The Owner shall forward a copy of this notice to proceed to the FDEP.

ARTICLE 8 - ITEMIZED CONSTRUCTION COST BREAKDOWN; CONSTRUCTION AND PAYMENT SCHEDULES

8.1. The Contractor shall submit to the Owner, within ten calendar days after the Effective Date of this Agreement/Contract, an itemized construction cost breakdown and construction and payment schedules.

8.1.1. The itemized construction cost breakdown, or schedule of values, is to include quantities and prices of items aggregating the Contract Price and is to subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices are to include an appropriate amount of overhead and profit applicable to each item of Work.

8.1.2. The construction, or progress, schedule is to indicate the Contractor's estimated starting and completion dates for the various stages of the Work and is to show both the projected cost of Work completed and the projected percentage of Work completed versus Contract Time.

8.1.3. The payment schedule is to show the Contractor's projected payments cumulatively by month.

ARTICLE 9 – FDEP/USEPA ACCESS TO RECORDS AND PROJECT SITE

9.1. Authorized representatives of the Owner, the FDEP, and the USEPA shall have access to, for the purpose of inspection, the Work site(s), any books, documents, papers, and records of the Contractor that are pertinent to this Agreement/Contract at any reasonable time. The Contractor shall retain all books, documents, papers, and records pertinent to this Agreement/Contract for a period of five years after receiving and accepting final payment under this Agreement/Contract.

**NOTE: ARTICLE 10 ONLY APPLIES TO FEDERAL CAP GRANT PROJECTS**

ARTICLE 10 - DISADVANTAGED BUSINESS ENTERPRISES

10.1 A goal of five percent of the Contract Price is established for Minority Business Enterprise (MBE) participation in the Work, and a goal of five percent of the Contract Price is established for Women's Business Enterprise (WBE) participation in the Work. If bidders or prospective contractors (including the Contractor) intend to let any lower-tier goods

or services (including construction) subcontracts for any portion of the Work, they shall physically include these percentage goals for MBE and WBE participation in all solicitations for subcontracts and shall take good faith efforts to assure that MBEs and WBEs are utilized, when possible, as sources of goods and services. Good faith efforts are to include the following:

10.1.1. Require Disadvantaged Business Enterprises (DBEs) are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local and Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.

10.1.2. Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.

10.1.3. Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.

10.1.4. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.

10.1.5. Use the services and assistance of the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

10.1.6. If the prime contractor awards subcontracts, require the prime contractor to take the steps in paragraphs 10.1.1 through 10.1.5 of this section.

10.2. Within ten calendar days after being notified of being the apparent Successful Bidder, the apparent Successful Bidder shall submit to the Owner documentation of the affirmative steps it has taken to utilize Minority and Women's Business Enterprises (MBEs and WBEs) in the Work and documentation of its intended use of MBEs and WBEs in the Work. The Owner shall keep this documentation on file and shall forward to the FDEP a copy of the apparent Successful Bidder's documentation concerning its intended use of MBEs and WBEs in the Work.

## ARTICLE 11 - DEBARMENT AND SUSPENSION (EXECUTIVE ORDER 12549)

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions**

11.1. The bidder certifies, by submission of this proposal, that neither the bidder nor its principals, nor the bidder's subcontractors nor their principals, are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.

11.2. Where the bidder is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

11.3. The bidder also certifies that it and its principals and the bidder's subcontractors and their principals:

11.3.1. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state or local) transaction or contract under a public transaction; violation of federal or state anti-trust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

11.3.2. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state or local) with commission of any of the offenses enumerated in paragraph 11.3.1 of this certification; and

11.3.3. Have not within a three-year period preceding this proposal had one or more public transactions (federal, state or local) terminated for cause or default. Where the bidder is unable to certify to any of the above, such owner shall attach an explanation to this proposal.

11.3.4. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the federal government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

11.3.5. The bidder shall incorporate the foregoing requirements 11.1 through 11.3 in all subcontracts.

ARTICLE 12 - EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

12.1. **Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246).** (Applicable to contracts/subcontracts exceeding $10,000)

12.1.1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

12.1.2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in Florida, are as follows:

Goal for female participation: 6.9 percent statewide

Goal for minority participation: (See Appendix B at FDEP-14 for goals for each county)

These goals are applicable to all the Contractor's construction work (whether or not it is federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

12.1.3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

12.1.4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is the State of Florida.

12.1.5. Contractors shall incorporate the foregoing requirements in all subcontracts.

12.2. **Equal Opportunity Clause** (Applicable to contracts/subcontracts exceeding $10,000)

During the performance of this contract, the contractor agrees as follows:

12.2.1. The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor shall take affirmative action to ensure that applicants for employment are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. 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.

12.2.2. The Contractor shall post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause. The notice can be obtained online at http://www.eeoc.gov/employers/upload/eeoc_self_print_poster.pdf. The Contractor shall state that all qualified applicants be considered without regard to race, color, religion, sex or national origin.

12.2.3. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

12.2.4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

12.2.5. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

12.2.6. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

12.2.7. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

12.2.8. The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs 12.2.1 through 12.2.8 in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

12.3. **The Standard Federal Equal Employment Opportunity Construction Contract Specifications** (Executive Order 11246)

12.3.1. As used in these specifications:

a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

d. "Minority" includes:

(i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
(ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
(iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

12.3.2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

12.3.3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

12.3.4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction Contractors performing construction work in geographical areas where they do not have a federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the FEDERAL REGISTER in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

12.3.5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

12.3.6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

12.3.7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 12.3.7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

12.3.8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (12.3.7a through 12.3.7p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

12.3.9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

12.3.10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

12.3.11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12.3.12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

12.3.13. The Contractor, in fulfilling its obligation under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

12.3.14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

12.3.15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

12.4. Pursuant to 41 CFR 60-1.7, if the price of this bid exceeds $10,000, the bidder, by signing and submitting this proposal, certifies the following:

12.4.1. Affirmative action programs pursuant to 41 CFR 60-2 have been developed and are on file;

12.4.2. Documentation of a previous contract or subcontract subject to the equal opportunity clause is available;

12.4.3. All reports due under the applicable filing requirements have been filed with the Joint Reporting Committee, the Deputy Assistant Secretary or the Equal Employment Opportunity Commission; and

12.4.4. Each prospective construction subcontractor that may be awarded a lower-tier construction subcontract with a price exceeding $10,000 shall meet the above requirements 12.4.1 through 12.4.3.

12.5. Pursuant to 41 CFR 60-1.8, if the price of this bid exceeds $10,000, the bidder, by signing and submitting this proposal, certifies the following:

12.5.1. That he/she does not maintain or provide for his/her employees any segregated facility at any of his/her establishments;

12.5.2. That he/she does not permit employees to perform their services at any location, under his/her control, where segregated facilities are maintained;

12.5.3. That he/she will not maintain or provide for employees any segregated facilities at any of his/her establishments;

12.5.4. That he/she will not permit employees to perform their services at any location under his/her control where segregated facilities are maintained;

12.5.5. That a breach of this certification is violation of the Equal Opportunity Clause of this contract; and

12.5.6. That he/she will obtain identical certifications from proposed Subcontractors prior to the award of Subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such certifications in his/her files.

As used in this certification, the term “segregated facilities” means any waiting rooms, work eating areas, time clocks, locker rooms, and other storage or dressing areas, transportation and housing facilities provided for employees which are in fact segregated on the basis of race, color, religion, or otherwise.

12.6. If the price of this Agreement/Contract exceeds $10,000, the Owner shall give written notice to the Director of the Office of Federal Contract Compliance Programs within ten working days of award of this Agreement/Contract. The notice is to include the name, address, and telephone number of the Contractor; the employer identification number of the Contractor; the dollar amount of this Agreement/Contract; the estimated starting and completion dates of this Agreement/Contract; the number of this Agreement/Contract; and the geographical area in which the Work is to be performed.

12.7. If the price of this Agreement/Contract equals or exceeds $50,000 and if the Contractor has 50 or more employees, the Contractor shall electronically file Standard Form 100 (EEO-1) online at https://egov.eeoc.gov/eeo1/eeo1.jsp within 30 calendar days after the award of this Agreement/Contract , unless the Contractor has submitted such a report within 12 months preceding the date of award of this Agreement/Contract. In addition, the Contractor shall ensure that each construction subcontractor having 50 or more employees and a lower-tier construction subcontract with a price equaling or exceeding $50,000 also electronically files this form within 30 calendar days after the award to it of the lower-tier construction subcontract, unless the construction subcontractor has submitted such a report within 12 months preceding the date of award of the lower-tier construction subcontract.

ARTICLE 13 - IMMIGRATION REFORM AND CONTROL ACT OF 1986 (STATE OF FLORIDA EXECUTIVE ORDER 11-116)

The Immigration Reform and Control Act of 1986 prohibits employers from knowingly hiring illegal workers. The Contractor shall only employ individuals who may legally work in the United States – either U.S. citizens or foreign citizens who are authorized to work in the U.S. The Contractor shall use the U.S. Department of Homeland Security's E-Verify Employment Eligibility Verification system (http://www.uscis.gov/portal/site/uscis) to verify the employment eligibility of:

- all new employees, during the term of this Agreement, to perform employment duties within Florida; and,
- all new employees (including subcontractors and subrecipients) assigned by the Contractor to perform work pursuant to this Agreement.

The Contractor shall include this provision in all subcontracts/subgrants it enters into for the performance of work under this Agreement.

ARTICLE 14 – ENVIRONMENTAL COMPLIANCE

The Contractor, and all subcontractors at any tier, shall comply with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act (42 U.S.C. 1857[h]), Section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738 (Administration of the Clean Air Act and the Federal Water Pollution Control Act with Respect to Federal Contracts, Grants, or Loans), and 40 CFR Part 15.

ARTICLE 15 – FEDERAL LABOR STANDARDS PROVISION

Contracts being constructed with assistance from the State Revolving Fund Program are currently required to comply with the Federal Labor Standards Provisions as provided in Appendix C. Signing Appendix A certifies compliance with these provisions.

ARTICLE 16 – AMERICAN IRON AND STEEL PROVISION

Contracts being constructed with assistance from the State Revolving Fund Program are currently required to comply with The American Iron and Steel Provision as provided in Appendix D. Signing Appendix A certifies compliance with these provisions.

ARTICLE 17 - PROHIBITED LOCAL GOVERNMENT CONSTRUCTION PREFERENCES

A. Pursuant to Section 255.0991, F.S., for a competitive solicitation for construction services in which 50 percent or more of the cost will be paid from state-appropriated funds which have been appropriated at the time of the competitive solicitation, a state, college, county, municipality, school district, or other political subdivision of the state may not use a local ordinance or regulation that provides a preference based upon:

   1. The contractor's maintaining an office or place of business within a particular local jurisdiction;
   2. The contractor's hiring employees or subcontractors from within a particular local jurisdiction; or
   3. The contractor's prior payment of local taxes, assessments, or duties within a particular local jurisdiction.

B. For any competitive solicitation that meets the criteria in Paragraph A., a state college, county, municipality, school district, or other political subdivision of the state shall disclose in the solicitation document that any applicable local ordinance or regulation does not include any preference that is prohibited by Paragraph A.

**APPENDIX A TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS**

CERTIFICATION OF COMPLIANCE WITH THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS

This certification relates to a construction contract proposed by _____,
(insert the name of the Owner)
which expects to finance the proposed construction contract with assistance from the Florida Department of Environmental Protection (which administers a State Revolving Fund loan program supported in part with funds directly made available by grants from the United States Environmental Protection Agency). I am the undersigned prospective construction contractor or subcontractor.

I certify that I have read the Florida Department of Environmental Supplementary Conditions and agree to incorporate the following articles into the bid and/or contract:

| | |
|---|---|
| ARTICLE 11 | DEBARMENT AND SUSPENSION - EXECUTIVE ORDER 12549 |
| ARTICLE 12 | EQUAL EMPLOYMENT OPPORTUNITY - EXECUTIVE ORDER 11246 |
| ARTICLE 13 | IMMIGRATION REFORM AND CONTROL ACT OF 1986 AND STATE OF FLORIDA EXECUTIVE ORDER 11-116 |
| ARTICLE 14 | ENVIRONMENTAL COMPLIANCE |
| ARTICLE 15 | FEDERAL LABOR STANDARDS PROVISION |
| ARTICLE 16 | AMERICAN IRON AND STEEL PROVISION |

I agree that I will obtain identical certifications from prospective lower-tier construction subcontractors prior to the award of any lower-tier construction subcontracts with a price exceeding $2,000. I also agree that I will retain such certifications in my files.

_____
(Name of Prospective Construction Contractor or Subcontractor [Print or Type])

_____
(Street Address)

_____ _____ _____
(City) (State) (Zip Code)

_____ _____
Phone number (Employer Identification Number)

_____
(Name and Title of Authorized Official [Print or Type])

_____ _____
(Signature of Authorized Official) (Date)

## APPENDIX B TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS

### GOALS AND TIMETABLES FOR MINORITIES AND FEMALES

[Note: These goals and timetables are the goals and timetables referred to in Paragraph 2 of the "Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)"; these goals and timetables are to be included in all FDEP assisted construction contracts and subcontracts with a price exceeding $10,000 and in all solicitations for such contracts and subcontracts.]

The following goals and timetables for female utilization shall be included in all federal and federally assisted construction contracts and subcontracts in excess of $10,000. The goals are applicable to the contractor's aggregate on-site construction workforce whether or not part of that workforce is performing work on a federal or federally assisted construction contract or subcontract.

Area covered: Goals for Women apply nationwide.

Goals and Timetables

| Timetable | Goals (percent) |
|---|---|
| Indefinite | 6.9 |

Goals for minority utilization can be found in the Department of Labor's Technical Assistance Guide for Federal Construction Contractors, available at https://www.dol.gov/ofccp/taguides/TAC_FedContractors_JRF_QA_508c.pdf. These goals shall be included for each craft and trade in all federal or federally assisted construction contracts and subcontracts in excess of $10,000 to be performed in the respective geographical areas. The goals are applicable to each nonexempt contractor's total onsite construction workforce, regardless of whether or not part of that workforce is performing work on a federal, federally assisted or non-federally related project, contract or subcontract.

Construction contractors which are participating in an approved Hometown Plan (see 41 CFR 60-4.5) are required to comply with the goals of the Hometown Plan with regard to construction work they perform in the area covered by the Hometown Plan. With regard to all their other covered construction work, such contractors are required to comply with the applicable SMSA or EA goal contained in this Appendix.

# APPENDIX C
# TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS

## Davis-Bacon Requirements

**FEDERAL LABOR STANDARDS PROVISIONS**
**(Davis-Bacon Act, Copeland Act, and Contract Works Hours & Safety Standards Act)**

The Project to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such federal assistance.

**1 Minimum Wages**.

(i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act, 29 CFR Part 3, the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR Part 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii) (a) The sponsor, on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The FDEP shall approve a request for an additional classification and wage rate and fringe benefits; therefore, only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the sponsor(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the sponsor to the FDEP. The FDEP will transmit the request to the Administrator of the Wage and Hour Division, employment Standards Administration, U. S. Department of Labor. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional

classification action within 30 days of receipt and so advise the FDEP or will notify FEDP within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event that the Contractor, the laborers or mechanics to be employed in the Classification or their representatives, and the sponsor do not agree on the proposed classification and wage rate (including the amount designed for fringe benefits, where appropriate), the FDEP shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of FDEP, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account, assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

**2. Withholding**.

The sponsor shall, upon written request of the EPA or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, EPA may, after written notice to the contractor, sponsor, applicant, or owners, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

**3. Payrolls and Basic Records**.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017).

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed, a copy of all payrolls to the sponsor. Such documentation shall be available upon request by FDEP. As to each payroll copy received, the sponsor shall provide a certification that the project is in compliance with the requirements of 29 CFR 5.5(a)(1) with each disbursement request. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR Part 5.5(a)(3)(I), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead, the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site http://www.dol.gov/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current addresses of each covered worker, and shall provide them upon request to the sponsor for transmission to the FDEP or EPA if requested by EPA, the FDEP, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsor. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149).

(b) Each payroll submitted shall be accompanied by a Statement of Compliance, signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR Part 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR Part 5.5 (a)(3)(I), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Option Form WH-347 shall satisfy the requirement for submission of the Statement of Compliance required by paragraph A. 3(ii)(b) of this section.

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph A.3(I) of this section available for inspection, copying, or transcription by authorized representatives of the FDEP or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FDEP may, after written notice to the contractor, or sponsor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request to make such records available may be grounds for debarment action pursuant to 29 CFR Part 5.12.

**4. Apprentices and Trainees**.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U. S. Department of Labor, the Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio

of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program, shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with the determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U. S. Department of Labor, the Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program the contract will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal Employment Opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

**5. Compliance with Copeland Act Requirements**.

The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract.

**6. Subcontracts**.

The contractor or subcontractor will insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as EPA determines may be appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5.

**7. Contract Termination, Debarment**.

A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

**8. Compliance with Davis-Bacon and Related Act Requirements**.

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3 and 5 are herein incorporated by referenced in this contract.

**9. Disputes Concerning Labor Standards.**

Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6 and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the sponsor, FDEP, EPA, the U. S. Department of Labor, or the employees or their representatives.

**10. Certification of Eligibility**.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded EPA contracts or participate in EPA programs pursuant to Executive Order 12549.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded EPA contracts or participate in EPA programs pursuant to Executive Order 12549.

(iii) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U. S. C. 1001. Additionally, U. S. Criminal Code, Section 1010, Title 18, U. S. C., Federal Housing Administration transactions, provides in part "Whoever, for the purpose of . . . influencing in any way the action of such Administration . . . makes, utters or publishes any statement, knowing the same to be false . . . shall be fined not more than $5,000 or imprisoned not more than two years, or both".

**11. Complaints, Proceedings, or Testimony by Employees**.

**A.** No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this contract are applicable shall be discharged or in any other manner discriminated against by the contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this contract to his employer.

**B. Contract Work Hours and Safety Standards Act**. The sponsor shall insert the following clauses set forth in paragraphs B.(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by item 3 above or 29 CFR 4.6. As used in the paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) Withholding for unpaid wages and liquidated damages. The sponsor, upon written request of the FDEP or an authorized representative of the Department of Labor, may withhold or cause to be withheld, from any moneys payable on

account of work performed by the contractor or subcontractor under any such contract or any other federal contract with the same prime contract, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

**C. Health and Safety**

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 (formerly part 1518) and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54.83 State 96).

(3) The contractor shall include the provisions of this Article in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontract as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

**12. Guidance to Contractor for Compliance with Labor Standards Provisions**

a) Contracts with Two Wage Decisions

If the contract includes two wage decisions, the contractor, and each subcontractor who works on the site, must submit either two separate payrolls (one for each wage decision) or one payroll which identifies each worker twice and the hours worked under each wage decision. One single payroll, reflecting each worker once, may be submitted provided the Contractor uses the higher rate in the wage decisions for each identical job classification. However, where a job classification is not listed in a wage decision and is needed for that portion of the work, the classification **must** be added to the wage decision. A worker may not be paid at the rate for a classification using the hourly rate for that same classification in another wage decision. After the additional classification is approved, the contractor may pay the higher of the two rates and submit one payroll, if desired.

b) Complying with Minimum Hourly Amounts

1) The minimum hourly amount due to a worker in each classification is the total of the amounts in the Rates and Fringe Benefits (if any) columns of the applicable wage decision.

2) The contractor may satisfy this minimum hourly amount by any combination of cash and bona fide fringe benefits, regardless of the individual amounts reflected in the Rates and Fringe Benefits columns.

3) A contractor payment for a worker which is required by law is not a fringe benefit in meeting the minimum hourly amount due under the applicable wage decision. For example, contractor payments for FICA or unemployment insurance are not a fringe benefit; however, contractor payments for health insurance or retirement are a fringe benefit. Generally, a fringe benefit is bona fide if (a) it is available to most workers and (b) involves payments to a third party.

4) The hourly value of the fringe benefit is calculated by dividing the contractor's annual cost (excluding any amount contributed by the worker) for the fringe benefit by 2080. Therefore, for workers with overtime, an additional payment may be required to meet the minimum hourly wages since generally fringe benefits have no value for any time worked over 40 hours weekly. (If a worker is paid more than the minimum rates required by the wage decision, this should not be a problem. As long as the total wages received by a worker for straight time equals the hours worked times the minimum hourly rate in the wage decision, the requirement of the Davis-Bacon and Related Acts has been satisfied.)

c) Overtime

For any project work over 40 hours weekly, a worker generally must be paid 150% of the actual hourly cash rate received, not the minimum required by the wage decision. (The Davis-Bacon and Related Acts only establishes minimum rates and does not address overtime. The Contract Work Hours Act contains the overtime requirement and uses basic rate of pay as the base for calculation, not the minimum rates established by the Davis-Bacon and Related Acts.)

d) Deductions

Workers who have deductions, not required by law, from their pay must authorize these deductions in writing. The authorization must identify the purpose of each deduction and the amount, which may be a specific dollar amount or a percentage. A copy of the authorization must be submitted with the first payroll containing the deduction. If deducted amounts increase, another authorization must be submitted. If deducted amounts decrease, no revision to the original authorization is needed. Court-ordered deductions, such as child support, may be identified by the responsible payroll person in a separate document. This document should identify the worker, the amount deducted and the purpose. A copy of the court order should be submitted.

e) Classifications Not Included in the Wage Decision

If a classification not in the wage decision is required, please advise the owner's representative in writing and identify the job classification(s) required. In some instances, the state agency may allow the use of a similar classification in the wage decision.

Otherwise, the contractor and affected workers must agree on a minimum rate, which cannot be lower than the lowest rate for any trade in the wage decision. Laborers (including any subcategory of the laborer classification) and truck drivers are not considered a trade for this purpose. If the classification involves a power equipment operator, the minimum cannot be lower than the lowest rate for any power equipment operator in the wage decision. The owner will provide forms to document agreement on the minimum rate by the affected workers and contractor.

The U.S. Department of Labor (USDOL) must approve the proposed classification and rate. The contractor may pay the proposed rate until the USDOL makes a determination. Should the USDOL require a higher rate, the contractor must make wage restitution to the affected worker(s) for all hours worked under the proposed rate.

f) Supervisory Personnel

Foremen and other supervisory personnel who spend at least 80% of their time supervising workers are not covered by the Davis-Bacon and Related Acts. Therefore, a wage decision will not include such supervisory classifications and their wages are not subject to any minimums under the Davis-Bacon and Related Act or overtime payments under the Contract Work Hours and Safety Standards Act. However, foremen and other supervisory personnel who spend less than 80% of their time engaged in supervisory activities are considered workers/mechanics for the time spent engaged in manual labor and must be paid at least the minimum in the wage decision for the appropriate classification(s) based on the work performed.

g) Sole Proprietorships / Independent Contractors / Leased Workers

The nature of the relationship between a prime contractor and a worker does not affect the requirement to comply with the labor standards provisions of this contract. The applicability of the labor standards provisions is based on the nature of the work performed.

If the work performed is primarily manual in nature, the worker is subject to the labor standards provisions in this contract. For example, if John Smith is the owner of ABC Plumbing and performs all plumbing work himself, then Mr. Smith is subject to the labor standards provisions, including minimum wages and overtime. His status as owner is irrelevant for labor standards purposes.

If a worker meets the IRS standards for being an independent contractor, and is employed as such, this means that the worker must submit a separate payroll as a subcontractor rather than be included on some other payroll. The worker is still subject to the labor standards provisions in this contract, including minimum wages and overtime.

If a contractor or subcontractor leases its workers, they are subject to the labor standards provisions in this contract, including minimum wages and overtime. The leasing firm must submit payrolls and these payrolls must reflect information required to determine compliance with the labor standards provisions of this contract, including a classification for each worker based on the nature of the work performed, number of regular hours worked, and number of overtime hours worked.

h) Apprentices / Helpers

A worker may be classified as an apprentice **only if participating in a federal or state program**. Documentation of participation must be submitted. Generally, the apprentice program specifies that the apprentice will be compensated at a percentage of journeyman rate. For Davis-Bacon Act purposes, the hourly rate cannot be lower than the percentage of the hourly rate for the classification in the applicable wage decision.

If the worker does not participate in a federal or state apprentice program, then the worker must be classified according to duties performed. This procedure may require classification in the trade depending on tools used, or as a laborer if specialized tools of the trade are not used. The contractor may want to consult with the Wage and Hour Division of the U.S. Department of Labor located in most large cities regarding the appropriate classification.

Presently, no worker may be classified as a helper. As with apprentices not participating in a formal apprentice program, the worker must be classified according to duties performed and tools used.

# APPENDIX D TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS

## American Iron and Steel Requirement

The Contractor acknowledges to and for the benefit of _____ ("Owner") and the State of Florida (the "State") that it understands that iron and steel products to be installed as a part of this contract must be in compliance with the Federal American Iron Steel (AIS) requirements. For Clean Water SRF funded projects, the AIS requirements can be found in Section 608 of the Federal Water Pollution Control Act (Clean Water Act). Section 608 of the Clean Water Act (33 U.S.C. 1388) includes the following language:

(a) In general
Funds made available from a State water pollution control revolving fund established under this title may not be used for a project for the construction, alteration, maintenance, or repair of treatment works unless all of the iron and steel products used in the project are produced in the United States.
(b) Definition of iron and steel products
In this section, the term "iron and steel products" means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.
(c) Application
Subsection (a) shall not apply in any case or category of cases in which the Administrator finds that—
(1) applying subsection (a) would be inconsistent with the public interest;
(2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or
(3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.
(d) Waiver
If the Administrator receives a request for a waiver under this section, the Administrator shall make available to the public, on an informal basis, a copy of the request and information available to the Administrator concerning the request, and shall allow for informal public input on the request for at least 15 days prior to making a finding based on the request. The Administrator shall make the request and accompanying information available by electronic means, including on the official public Internet site of the Environmental Protection Agency.
(e) International agreements
This section shall be applied in a manner consistent with United States obligations under international agreements.

For Drinking Water SRF funded projects, the AIS requirements are in Public Law 113-76 and continue in force under continuing resolutions that use similar language, including Section 424 of the "Consolidated Appropriations Act, 2016."

Notwithstanding any other provision of this Agreement, any failure to comply with AIS requirements by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

For waivers to these requirements based on (c) above, contact the State Revolving Fund Program at (850) 245-2835 or SRF_Reporting@dep.state.fl.us.

General Decision Number: FL170230 01/06/2017  FL230

Superseded General Decision Number: FL20160230

State: Florida

Construction Type: Highway

County: Sarasota County in Florida.

HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.20 for calendar year 2017 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2017. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

| Modification Number | Publication Date |
|---|---|
| 0 | 01/06/2017 |

*  SUFL2013-048 08/19/2013

| | Rates | Fringes |
|---|---|---|
| CARPENTER, Includes Form Work | $ 8.00 | 0.00 |
| CEMENT MASON/CONCRETE FINISHER | $ 13.37 | 0.00 |
| ELECTRICIAN | $ 21.80 | 0.00 |
| HIGHWAY/PARKING LOT STRIPING: Operator (Striping Machine) | $ 16.79 | 0.00 |
| HIGHWAY/PARKING LOT STRIPING: Painter | $ 12.13 | 0.00 |
| INSTALLER - GUARDRAIL | $ 11.94 | 0.28 |
| IRONWORKER, ORNAMENTAL | $ 13.48 | 0.00 |
| IRONWORKER, REINFORCING | $ 16.39 | 0.00 |
| IRONWORKER, STRUCTURAL | $ 16.42 | 0.00 |
| LABORER (Traffic Control Specialist) | $ 12.77 | 2.23 |
| LABORER: Asphalt, Includes Raker, Shoveler, Spreader and Distributor | $ 13.89 | 0.00 |
| LABORER: Common or General | $ 11.03 | 0.29 |
| LABORER: Concrete Saw (Hand Held/Walk Behind) | $ 11.71 | 0.00 |

| | | |
|---|---|---|
| LABORER: Flagger | $ 11.77 | 0.00 |
| LABORER: Grade Checker | $ 14.56 | 0.00 |
| LABORER: Mason Tender - Cement/Concrete | $ 12.93 | 0.00 |
| LABORER: Pipelayer | $ 13.32 | 0.29 |
| OPERATOR: Backhoe/Excavator/Trackhoe | $ 15.89 | 0.36 |
| OPERATOR: Bobcat/Skid Steer/Skid Loader | $ 12.88 | 0.00 |
| OPERATOR: Broom/Sweeper | $ 13.69 | 0.00 |
| OPERATOR: Bulldozer | $ 16.79 | 0.00 |
| OPERATOR: Concrete Finishing Machine | $ 15.44 | 0.00 |
| OPERATOR: Crane | $ 21.69 | 0.00 |
| OPERATOR: Curb Machine | $ 19.67 | 0.00 |
| OPERATOR: Drill | $ 14.78 | 0.00 |
| OPERATOR: Forklift | $ 12.58 | 0.00 |
| OPERATOR: Gradall | $ 14.71 | 0.00 |
| OPERATOR: Grader/Blade | $ 18.28 | 0.00 |
| OPERATOR: Loader | $ 14.95 | 0.00 |
| OPERATOR: Mechanic | $ 19.49 | 0.00 |
| OPERATOR: Milling Machine | $ 16.09 | 0.00 |
| OPERATOR: Oiler | $ 17.31 | 0.00 |
| OPERATOR: Paver (Asphalt, Aggregate, and Concrete) | $ 18.01 | 0.00 |
| OPERATOR: Piledriver | $ 17.23 | 0.00 |
| OPERATOR: Post Driver (Guardrail/Fences) | $ 19.35 | 0.00 |
| OPERATOR: Roller | $ 14.59 | 0.00 |
| OPERATOR: Scraper | $ 11.74 | 0.00 |
| OPERATOR: Screed | $ 17.05 | 0.00 |
| OPERATOR: Tractor | $ 13.77 | 0.00 |
| OPERATOR: Trencher | $ 16.07 | 0.66 |
| PAINTER: Spray | $ 16.38 | 0.00 |
| TRUCK DRIVER: Dump Truck | $ 12.85 | 0.00 |
| TRUCK DRIVER: Flatbed Truck | $ 14.13 | 0.00 |

TRUCK DRIVER: Lowboy Truck.....$ 18.29 0.00

TRUCK DRIVER: Slurry Truck.....$ 11.96 0.00

TRUCK DRIVER: Water Truck.....$ 14.88 0.00

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate

changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

General Decision Number: FL170176 10/13/2017  FL176

Superseded General Decision Number: FL20160176

State: Florida

Construction Type: Heavy

County: Sarasota County in Florida.

HEAVY CONSTRUCTION PROJECTS (Including Sewer and Water Lines)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.20 for calendar year 2017 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.20 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2017. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

| Modification Number | Publication Date |
|---|---|
| 0 | 01/06/2017 |
| 1 | 08/04/2017 |
| 2 | 09/08/2017 |
| 3 | 10/13/2017 |

ELEC0915-003 12/05/2016

| | Rates | Fringes |
|---|---|---|
| ELECTRICIAN | $ 27.46 | 37.2% |

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ENGI0925-010 06/01/2013

| | Rates | Fringes |
|---|---|---|
| POWER EQUIPMENT OPERATOR: | | |
| Crawler Cranes; Truck Cranes; Pile Driver Cranes; Rough Terrain Cranes; and Any Crane not otherwise described below | $ 29.61 | 11.50 |
| Drill | $ 29.61 | 11.50 |
| Hydraulic Cranes Rated 100 Tons or Above but Less Than 250 Tons; and Lattice Boom Cranes Less Than 150 Tons if not described below. | $ 30.61 | 11.50 |
| Lattice Boom Cranes Rated at 150 Tons or Above; Friction Cranes of Any Size; Mobile Tower Cranes or Luffing Boom Cranes of Any Size; Electric Tower Cranes; Hydraulic Cranes Rated at 250 Tons or Above; and Any Crane Equipped with 300 Foot or More of Any Boom | | |

| | | |
|---|---|---|
| Combination | $ 31.61 | 11.50 |
| Oiler | $ 22.91 | 11.50 |

IRON0397-006 07/01/2017

| | Rates | Fringes |
|---|---|---|
| IRONWORKER, STRUCTURAL | $ 29.85 | 15.83 |

LABO0517-002 05/01/2017

| | Rates | Fringes |
|---|---|---|
| LABORER: Grade Checker | $ 19.20 | 7.85 |

* PAIN0088-008 07/01/2017

| | Rates | Fringes |
|---|---|---|
| PAINTER: Brush, Roller and Spray | $ 20.21 | 10.18 |

SUFL2009-172 06/24/2009

| | Rates | Fringes |
|---|---|---|
| CARPENTER | $ 14.95 | 2.92 |
| CEMENT MASON/CONCRETE FINISHER | $ 14.77 | 3.50 |
| LABORER: Common or General | $ 9.50 | 1.69 |
| LABORER: Landscape | $ 7.25 | 0.00 |
| LABORER: Pipelayer | $ 13.75 | 2.06 |
| LABORER: Power Tool Operator (Hand Held Drills/Saws, Jackhammer and Power Saws Only) | $ 10.63 | 2.20 |
| OPERATOR: Asphalt Paver | $ 11.59 | 0.00 |
| OPERATOR: Backhoe Loader Combo | $ 16.10 | 2.44 |
| OPERATOR: Backhoe/Excavator | $ 15.00 | 0.52 |
| OPERATOR: Bulldozer | $ 17.00 | 0.00 |
| OPERATOR: Grader/Blade | $ 16.00 | 2.84 |
| OPERATOR: Loader | $ 14.75 | 0.00 |
| OPERATOR: Mechanic | $ 14.32 | 0.00 |
| OPERATOR: Roller | $ 10.76 | 0.00 |
| OPERATOR: Scraper | $ 11.00 | 1.74 |
| OPERATOR: Trackhoe | $ 20.92 | 5.50 |
| OPERATOR: Tractor | $ 10.54 | 0.00 |
| TRUCK DRIVER, Includes Dump Truck | $ 11.00 | 0.00 |

TRUCK DRIVER: Lowboy Truck.....$ 12.73 0.00

TRUCK DRIVER: Off the Road
Truck.....$ 12.21 1.97
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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing

this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

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# WATER MAIN REPLACEMENT PROGRAM – PHASE 5

## Technical Specifications
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2. City of Venice Boil Water Notice Forms

3. FDEP Noticed General Permit

**SECTION 01005**

**GENERAL REQUIREMENTS**

## PART 1 – GENERAL

### 1.01 DEFINITIONS

A. "Owner's Representative" – Throughout these technical specifications, the term "Owner's Representative" shall mean "Resident Project Representative" as defined in the General Conditions.

### 1.02 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 Owner's Representative, 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 Owner's Representative. 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.

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's 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 within three (3) days.

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.

## 1.03 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 verse, 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.

## 1.04 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’s 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.

## 1.05 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.

## 1.06 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.

## 1.07 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.

## 1.08 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 or Owner's Representative shall have the right to inspect the facilities at any time if they have reason to suspect they are not being properly maintained.

## 1.09 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.

## 1.10 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 oft he 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 noted, 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 and Owner's Representative 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 Owner's Representative. Trimming shall be performed in accordance with the National Arborist Association (NAA) Pruning Standards and in accordance with instructions provided by the Owner's 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.

5. 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 or better 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.

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 Owner's Representative.

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 Owner's Representative. 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 Owner's Representative.

Landscaping within right-of-way, easements, or Owner property shall be protected as described by the drawings or as directed by the Owner's Representative. 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 Owner's Representative 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 Owner's Representative, these landscape areas may be restored by fine grading the area in preparation of replanting by others.

## 1.11 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 Owner shall be obtained before starting such items of the work.

D. Access to Public Services

Neither the materials excavated nor the materials or equipment 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

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

1. All employees on the Work and other persons who may be affected by it.
2. All the Work and all materials or equipment to be incorporated, whether in storage on or off the Site. The Contractor shall assume all risk of loss for stored equipment or materials, irrespective of whether the Contractor has transferred the title of the stored equipment or materials to the Owner.
3. Other property at the Site or adjacent to it, including trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

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 Engineer for review, two (2) weeks 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.)

## 1.12 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.

## 1.13 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 Owner's Representative, 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.

## 1.14 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 Owner's Representative 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.

H. 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.

## 1.15 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, irrigation systems, traffic control devices and any other existing facility not specifically named herein, shall be repaired, restored or replaced by the Contractor, unless otherwise specified, at no additional cost to the Owner.

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. Damage that represents a potential safety issue or loss of service shall be repaired immediately. Permanent repairs will be accomplished in a professional workmanship-like manner in accordance with Specifications contained herein, or contract documents, if addressed.

D. Owner Retribution

In the event that the Contractor fails to make the permanent repairs within the time specified in Paragraph C 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.

E. In all areas disturbed by the work, the Contractor shall grade and restore the site to a condition as good 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's 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)**

**END OF SECTION**

**SECTION 01014**

**SUMMARY OF WORK**

## PART 1 – GENERAL

### 1.01 LOCATION OF WORK

A. The project area is bound by Valencia Road and Turin Street to the north, Golf Drive on the east, Pine Grove and San Marco Drives to the south and Harbor Drive to the west.

### 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 6-inch water main on Salerno Street, between Harbor Drive and Venezia Parkway, along with new service connections to adjacent lots;
2. A new 6-inch water main on Venezia Parkway, between Salerno Street and Sorrento Street, along with new service connections to adjacent lots;
3. A new 6-inch water main on Sorrento Street, between Harbor Drive and Nassau Street, along with new service connections to adjacent lots;
4. A new 6-inch water main on Nassau Street, between Sorrento Street and Serata Street, along with new service connections to adjacent lots;
5. A new 6-inch water main on Serata Street, south of Nassau Street, along with new service connections to adjacent lots;
6. A new 6-inch water main on Nokomis Avenue, between Turin Street and Sorvano Road, along with new service connections to adjacent lots;
7. A new 6-inch water main on S. Tamiami Trail, between Sorvano Road and San Marco Drive, along with new service connections to adjacent lots;
8. A new 6-inch water main on Guild Drive, between Golf Drive and San Marco Drive, along with new service connections to adjacent lots;
9. A new 6-inch water main on Fairway Boulevard, between Guild Drive and Golf Drive;

10. New service connections as shown on the Drawings from the existing mains on Pensacola Road, Serata Street, San Marco Drive, Riviera Street, Nokomis Avenue, Palermo Place, South Tamiami Trail, Guild Drive and Golf Drive;

11. Abandonment of rear lot water mains within the project area as shown on the Drawings.

**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 if 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, and to clean debris tracked onto roadways, 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 and sidewalk damage that may have occurred between the project site and staging area because of construction equipment operation between the two sites shall be repaired, and the roadways and sidewalks shall be cleaned, to the satisfaction of the Owner's Representative and Owner. 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, disinfect, and wait for clearance from the Health Department or FDEP for the new water main prior to transferring services over to the new main and taking the existing water main out of service. The maximum duration that the water 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 City Utilities staff. Pressure testing shall take place in the presence of the Owner's Representative. A minimum of 24 hours notice shall be given to schedule tapping and testing.

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. It shall be noted that existing water mains can be shut down for a maximum of 3 hours.

## 1.04 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.

## 1.05 WARRANTIES

A. The Contractor and the materials manufacturers shall warranty all workmanship and materials for a minimum period of twelve (12) months. Warranty period shall commence on the date of Final Acceptance by the Owner.

B. 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 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 site disturbed in fulfilling any such guarantee.

C. 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.

D. 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.

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

**1.06 CONSTRUCTION CONDITIONS**

A. The Contractor shall strictly adhere to the specific 2010 Florida Plumbing Code requirements of the governmental unit(s) or agency(ies) having jurisdiction over the work. Wherever there is a difference in the requirements of the 2010 Florida Plumbing Code and these Specifications, the more stringent shall apply.

**1.07 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.

**1.08 HAZARDOUS LOCATIONS**

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

**1.09 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.

**1.10 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 Owner's Representative 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.

**1.11 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 the Owner's Representative or Engineer shall direct; the Contractor shall carefully protect the Work and materials against damage or injury from the weather. If, in the opinion of Owner's Representative or 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.

## 1.12 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.

## 1.13 PERMITS

A. 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. This includes a City Building Permit for all work to be performed on private property. No work shall commence until all applicable permits have been obtained and copies delivered to the Owner. The costs for obtaining all permits shall be borne by the Contractor.

B. 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.

C. The Owner has obtained, or is actively in the process of obtaining, the following permits for the Work:

1. Florida Department of Environmental Protection/Sarasota County Health Department Public Water System Construction Permit.
2. Florida Department of Transportation Utility Permit.
3. Sarasota County Right-of-Way Permit.

## 1.14 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 Owner's Representative; 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.

## 1.15 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 10 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.

## 1.16 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, irrigation systems 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 Owner's Representative and 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.

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.

## 1.17 JOB SITE SECURITY

A. 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.

B. 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.

## 1.18 NEW SERVICE CONNECTIONS

A. The Work requires that new services be installed to the lots shown on the drawings. In most cases, this shall include a new service from the new water main to the new meter box, installing a new, Owner-supplied meter in the new meter box and a new service line from the meter box to the building on the lot.

B. In some cases, as shown on the Drawings, the existing meter box and meter, and the line from the meter box to the building will remain. In such cases, the Work involves only running a new service line from the new water main or replacement water main to the existing meter box and connecting into the existing meter with a new curb stop.

C. The Contractor's pricing for installing the new service lines on private property shall allow for installation by either open cut or by horizontal directional drill based on direction from the Owner and feedback from the property owner. In either case, all disturbed areas shall be fully restored.

D. The City has instituted a new Cross Connection Control Program (CCCP). A copy of this Program is available from the City's Utilities Web Page. Residents have been notified by the City that they are responsible for hiring a licensed plumber to install all backflow prevention and thermal expansion devices required by the CCCP. They will do so prior to or during construction of this project.

1. If installation is to take place during construction, the Contractor shall coordinate activation of the new water service, and installation of the new backflow and thermal expansion devices, with the homeowner and the homeowner's plumber. The homeowner may also contract with the Contractor's licensed plumber for installation of the backflow and thermal expansion devices, separate and independent from the Contractor's contract with the Owner.

2. If installation took place prior to construction of this project, the Contractor's licensed plumber shall relocate the existing backflow prevention device to the new water service. All relocated RPZ assemblies shall be tested after installation and certified by a contractor hired licensed backflow testing professional prior to activating the new service. Dual check valve assemblies do not need to be tested.

A flowchart illustrating the required approach to backflow prevention devices is provided at the end of this specification.

E. After the new water main and street services are tested, disinfected and cleared by the Health Department/FDEP, the Contractor shall transfer each affected lot's service to the new water main. Unless the Drawings call for connecting to an existing meter, this shall include:

1. Furnishing and installing a new meter box and a new service from the meter box to the existing water service connection on the building being served. New service laterals shall be Schedule 40 PVC and shall match the nominal size of the new street lateral. All above ground pipe shall be Type L hard drawn copper or Schedule 40 brass.

2. Installing a new, Owner provided, meter in the new meter box. Piping in the meter box shall include all accessories necessary to connect the meter, including reducing fittings if required to match the service line diameter.

3. The meter shall be the same size as the service line except where the Drawings specifically require relocation of a ¾" backflow prevention device and meter on a commercial service. In this case, the service lines shall be 1" with reducing fittings on the inlet and outlet of the backflow device and meter.

4. Temporarily discontinuing water service to the affected lot and concurrently relocating the existing backflow device (where applicable), connecting the new service laterals to

the meter and to the building. The trench for the new service from the meter to the building shall not be backfilled until the Owner's Plumbing Inspector inspects the line visually for leaks and passes the line.

5. Restoring water service to the affected building by placing the new service line in to service.

6. If not connecting to an existing meter, removing the existing meter box and backfilling and restoring the remaining hole.

7. If not connecting to an existing meter, cutting and capping the old service line at the building, a minimum of 6 inches below ground.

F. All work conducted downstream of the meter and on private property shall be completed by a licensed plumber hired by the Contractor and properly registered to do work in the City. Work on private property shall not be completed by the Contractor's personnel.

F. Commercial Fire Services:

1. Commercial fire services shall be relocated as shown on the Drawings. The existing backflow prevention device and meter, if any, shall be relocated to the new service. The new fire service shall be the same size as the existing fire service.

2. All piping and accessories on the relocated fire service shall meet the requirements of and be installed and tested in accordance with NFPA 24.

3. All fire service lines less than 4" diameter shall be Type L hard drawn seamless copper. Fire service lines 4" diameter and greater shall be C-900 PVC or ductile iron pipe with a pressure rating no less than 200 psi. Above ground piping shall be copper or ductile iron as described above. Pipe shall be installed with a 3 feet minimum depth of cover. Fittings on pipe 4" and greater shall be ductile iron. All joints shall be restrained.

4. If there is an existing post indicator valve, the new service shall be tied into the existing service upstream of the valve.

5. All fire service piping shall be flushed and pressure tested by the licensed installing contractor at 200 psi in accordance with NFPA 24. Pressure testing shall take place with all pipe joints exposed and in the presence of the City's Fire Inspector. All necessary reporting shall be provided in accordance with the City Fire Marshall's requirements.

6. Fire service piping shall be installed by a licensed contractor or plumber with a minimum Class 5 license from the State Fire Marshall.

G. Installation of the new water services on private property may commence while the new water mains are being installed so that the services are ready to be connected once the new water mains are cleared, provided that water service to the property is not interrupted other than to make the final connection.

H. Following connection of the lot to the new water service, the Contractor's plumber shall enter the building, remove aerators on individual faucets, and flush the internal plumbing system. Timing of this work shall be coordinated with the building/home owner and Owner's Representative. Completion of this effort will not be required if it is not desired by the building/home owner.

I. Some irrigation meters and services may not be shown on the drawings. If there is an existing irrigation meter, a new irrigation water service will be required and the contractor's plumber will be responsible for connecting the new irrigation water service to the existing irrigation system. The approach for backflow prevention devices shall be the same as that for domestic water services. Payment for the new irrigation service and meter will be made at the contract unit price for the same size water service.

J. The Owner has obtained written Agreements from property owners for the work to be completed on private property. Copies will be provided to the Contractor. These Agreements include the

location of the new meter and building service connection agreed to with the property owner. In some cases, the meter and building connection locations may not agree with what is shown on the Drawings. Prior to installing the service saddle on the water main and setting the new meter box, the Contractor shall coordinate with the property owner and Owner's Representative and confirm the agreed upon location for the new water service and the associated route of the service pipe.

K. Property owners and/or residents shall be notified at least 72 hours in advance of work being conducted on their property and turning off water service. Once the work begins on a private lot, work shall continue and be completed within 5 working days. Trenches or holes shall not remain open overnight or over the weekend. If necessary to allow for Building Department inspection, the trench for the new water service may remain open overnight for one night but shall be covered with plywood. The Contractor shall restore or repair property per the Owner's standard details and to equal or better than original condition.

L. All pipe, fittings and accessories shall be lead-free.

## 1.19 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.

C. When necessary, Boil/Rescind notices will be provided by the Owner for distribution by the Contractor. The Contractor shall distribute boil water notices a minimum of 24 hours before shutdowns and rescind notices immediately following clearance of the affected mains.

## 1.20 RESTORATION

A. The Contractor shall restore disturbed areas progressively as the work continues. No more than 1,200 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 Owner's Representative. 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 Owner's Representative. 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 Owner or Owner's Representative, the Owner will 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.

E. 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.

## 1.21 GEOTECHNICAL INVESTIGATION

A. A report entitled "Report for the Geotechnical Investigation, City of Venice Water Main, Venice, Florida" for the project completed by Driggers Engineering Services Inc. and dated September 30, 2015, is provided as Attachment No. 1 to these technical specifications to assist Contractors with preparation of their bids.

B. Contractors may perform additional geotechnical investigations at the site that they deem necessary for preparing their bids.

## 1.22 SHUTDOWN OF EXISTING WATER MAINS

A. Sheet C1.02 provides an Abandonment and Tie-In Shut Down Plan for abandoning existing water mains and for cutting new water mains into the existing water system. Using this drawing sheet as a base, the Contractor shall submit a colorized (highlighted) plan showing:

1. Sections of water mains to be abandoned;
2. Valves that will need to be closed in order to abandon the mains or make a tie-in;
3. All water mains that will be out of service as a result of closing the valves and the properties whose water service will be temporarily shut down;
4. Locations of grout injection and discharge points.

The plan may be submitted individually for each planned shut-down. Each plan shall be submitted a minimum of 2 weeks in advance of each shut down.

B. When the Contractor shuts down and depressurizes an existing water main with live service connections as part of his construction efforts, he shall be responsible for notifying residents a minimum of 48 hours in advance of the shutdown.

C. Samples for bacterial analysis shall be taken from the depressurized existing water main by a certified sampler from the Contractor's independent laboratory and submitted for analysis to said laboratory. Two (2) consecutive day approved samples shall be required in order to place the depressurized main back into service. The period between such series of samples shall be a minimum of 24 hours. Prior to placing the water main back into service, the City will develop Boil Water Notices and the Contractor shall distribute the notices to the affected properties. Notices to commercial properties shall be hand delivered to a representative inside the affected building. A copy of the required City of Venice Boil Water Notice forms is provided as Attachment No. 2 to these technical specifications.

D. City crews are not normally available for shutdowns before 8:00 AM or after 3:00 PM.

## 1.23 ABANDONING EXISTING WATER MAINS

A. All abandoned water mains 3" and greater shall be pumped full of 100 psi excavatable flowable fill in accordance with FDOT Standard Specifications section 121. A pumpable grout product with strength equivalent to the flowable fill will also be considered acceptable.

B. Abandonment of existing mains, including removal and/or manipulation of existing valves in lines to be abandoned, shall not commence until all lots connected to the existing main are actively being served by their new service lines.

## 1.24 STORMWATER POLLUTION PREVENTION PLAN AND NOTICE OF INTENT

A. Prior to the start of construction, the Contractor shall sign the Stormwater Pollution Prevention Plan provided on sheet G1.02 and file the Notice of Intent to Discharge Stormwater from

Construction Activities with the FDEP along with the associated fee. Compensation for the fee will be paid for from the contract's permitting allowance.

## 1.25 COORDINATION WITH THE CITY BUILDING DEPARTMENT

A. The City Building Department will issue a master Plumbing Permit for all involved private properties, and an $80.00 fee must be paid for each property. A Permit Fee Allowance of $15,000 is included in the contract in order to reimburse the Contractor for these fees.

B. It is anticipated that the inspection and approval process with the Building Department will be as follows:

1. The Contractor will fill in the required Minor Work Plumbing Permit and a Fire Service Permit (if applicable) application and pay the $80 fee for each property. The Building Department will help the Contractor in doing duplicate permit applications.

2. After installing the new service lines between the meter and the building, call in for an inspection prior to backfilling the trench. The plumber shall provide the Building Department a minimum of 24-hours' notice for inspections. If the service is found to be acceptable by the Building Department inspector, the trench may be backfilled and the new service line may be activated. If the inspector finds deficiencies in the service line, the plumber shall correct the deficiencies and then call for a re-inspection.

3. The plumber shall notify the Building Department once the work on each private property is completed for final plumbing inspection. This inspection will include observing the new service line visually for leaks. The service line trench shall therefore not be backfilled until the inspection is completed.

4. When work on all lots is completed, the plumber shall file the appropriate closeout paperwork with the Building Department.

## 1.26 NOISE ORDINANCE

A. Contractors shall note that Section 34-35(6) of the City of Venice Code of Ordinances prohibits operating or causing the operation of any tools used in construction, drilling, repair, alteration or demolition work between the hours of 9:00 p.m. and 6:00 a.m. on weekdays, or between 9:00 p.m. and 9:00 a.m. on weekends or holidays, in or within 50 yards of any residential area or noise-sensitive zone, except for emergency work by public service utilities or by other variance approved by a board or commission of the city council empowered to grant variances.

B. Maximum allowable sound levels shall be per Section 34-36 of the City of Venice Code of Ordinances.

## 1.27 CLEARANCE OF NEW MAINS

A. It is the intent of these documents that the new water mains on each street be cleared and placed into service as they are completed. To that effect, ±eight (8) separate partial clearances are anticipated. See specification 02640, Potable Water Mains, for clearance requirements.

## 1.28 CONTRACTOR'S AS-BUILT REQUIREMENTS

A. The Contractor shall note the special GIS As-Built requirements described in specification 01050, Field Engineering and Survey.

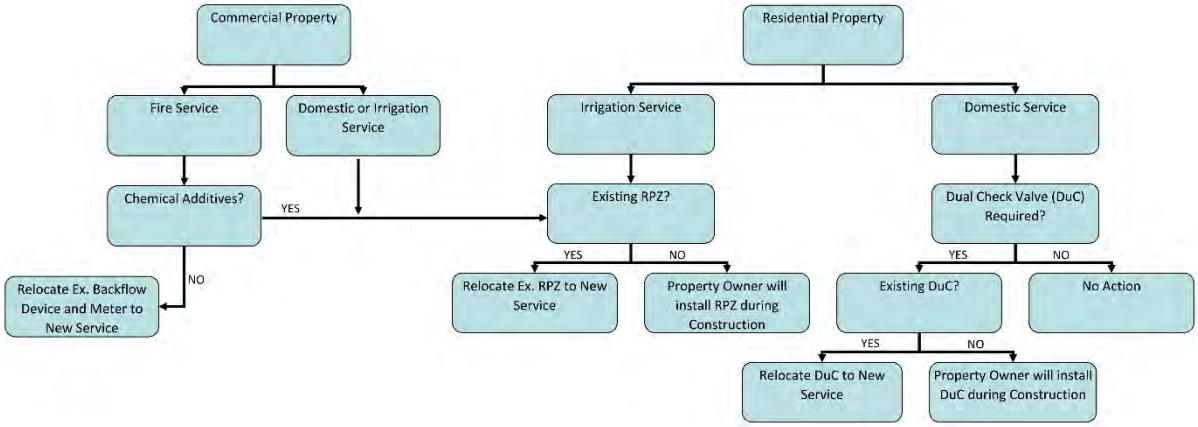
## 1.29 HORIZONTAL DIRECTIONAL DRILL PIPE LAYOUT

A. The Drawings show potential directional drill pit locations. The Contractor is free to locate the drill and receiving pits as necessary to facilitate the work. However, blocking roadways and driveways shall be minimized, especially when stringing out and fusing the pipe. No roadway or driveway shall be blocked without alternative access around the blockage being provided. The Contractor shall provide Maintenance of Traffic, including detour signs and Maintenance of Pedestrian Traffic, as required to maintain access around all blocked roads and driveways.

**PART 2 – PRODUCTS (Not Used)**

**PART 3 – EXECUTION (Not Used)**

**City of Venice Water Main Replacement Program**
**Contractor's Backflow Prevention Device Action Flowchart**




**END OF SECTION**

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**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 of new mains 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 for open cut and and no greater than 25 feet for HDD (provide bore profile);

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. At locations where a top-of-pipe elevation is required for pipeline, a top-of-ground or top-of pavement elevation shall also be measured and noted on the drawings.
5. Top elevations and GPS coordinates of all fittings, valves (top of nut and center of lid), and hydrants (center of 5" Storz);
6. Three (3) swing ties from permanent features to the center of each valve box;
7. GPS coordinates of all ARV enclosures, hydrants and above-grade appurtenances;
8. GPS coordinates of all service saddles and meters (center of meter or meter box);
9. 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. The Contractor shall provide electronic GIS data at the end of the project that will be in AutoCAD Civil 3D 2010 or later with attributes or the ESRI Geodatabase format, version 10.x or higher. Data shall be projected in State Plane Florida West HARN, NAD1983 datum, and vertically corrected to NAVD 1988, linear units in feet. All valves, hydrants, fittings, blow-offs, air release valves, service connections, meter boxes, along with the top of the new water mains at 100 foot intervals, shall be GPS located to sub-foot (survey) accuracy by the Contractor and provided to the Engineer. Coordinate data shall be field collected with autonomous GPS readings and subsequently differentially corrected via real time corrections. Additional documentation data collected and provided in the database shall include:

1. Pipe: Facility ID number, diameter, material, manufacturer;
2. Fittings: Facility ID number, type (i.e. tee, 90° bend, etc.) diameter, material, manufacturer;
3. Valves: Facility ID number, diameter, type, manufacturer, function, swing tie 1, swing tie 2, swing tie 3, turns to close;
4. Hydrants: Facility ID number, manufacturer;
5. Services Saddles: Facility ID number; size, manufacturer.

GIS data shall conform to the City of Venice, Standard Details, General Notes, and Testing Requirements (GIS Standards), latest addition, available online at: http://www.venicegov.com/Files/Forms/Engineering/STANDARD_DETAILS.pdf

F. GPS coordinates shall be survey accuracy and shall conform to the requirements of Chapter 5J-17-6, FAC, pursuant to Chapter 472.

## 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. Submit attributes to Engineer in advance of data collection.

C. On request of the Engineer, submit documentation to verify accuracy of field engineering work.

D. Submit three (3) full sized 24"x36" of the as-built survey, signed and seal by the Registered Land Surveyor.

E. Submit two (2) CDS of the as-built survey in AUTOCAD 2010 or later format.

F. Submit two (2) CDS of the GIS data.

**PART 2 – PRODUCTS (Not Used)**

**PART 3 – EXECUTION (Not Used)**

**END OF SECTION**

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

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

**PART 2 - PRODUCTS (Not Used)**

**PART 3 – EXECUTION (Not Used)**

**END OF SECTION**

**SECTION 01150**

**MEASUREMENT AND PAYMENT**

## PART 1 – GENERAL

### 1.1 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 or Owner's Representative;
5. Backfill;
6. Grading;
7. Replacement or restoration of paved or unpaved roadways, grass and shrubbery plots outside of established pay limits;
8. Replacement or restoration of curbing, gutter, sidewalk, and site restoration of any areas damaged during construction activities;
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 of irrigation systems damaged during construction;
18. Repair and/or cleaning of storm sewers, inlets & catch basins damaged or filled with sediment during construction;
19. Color audio-video construction record;

20. Providing the services of an Independent Testing Laboratory for materials and compaction testing;
21. 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;
22. Cost to reproduce drawings, specifications, shop drawings, and reports for the Contractor's use and for submissions to the Owner;
23. Temporary fencing;
24. Dust Control;
25. Noise suppression measures;
26. Removing, relocating, resetting existing street signage to facilitate construction;
27. Removing, relocating, resetting mailboxes to facilitate construction;
28. Utility notification and location and exploratory pits; and
29. 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, and during the entire warranty period, the Contractor shall maintain the surface of the unpaved trenches, shrubbery, trees, fences, sod, and other disturbed surfaces. 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.

### 1.2 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 Owner, 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.

### 1.3 Payment

The Contractor will be paid monthly, by the Owner, 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

### 3.1 Bid Items: Water Main Replacement Program – Phase 5

A. WATER MAIN INSTALLED BY HORIZONTAL DIRECTIONAL DRILL METHOD (Bid Items #1 and #3)

The Contractor shall provide all labor, equipment and materials to furnish and install Fusible PVC 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 or Owner's Representative;
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. Backfilling and compaction of pits;
11. Hydrostatic pressure testing 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 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. WATER MAIN INSTALLED BY OPEN CUT METHOD (Bid Item #2)

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 or Owner's Representative;
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. Furnishing and installing leak detector assemblies where called for on the drawings;
9. Furnish and install joint restraints complete with all tie rods and hardware;
10. Furnishing and installing pipe;
11. Furnishing and installing polyethylene encasement on ductile iron pipe;
12. Backfilling and compacting the trench including regrading the terrain;
13. Hydrostatic pressure testing, pigging, and cleaning the pipe;
14. Cleaning up and restoring the job site which shall include removing excess materials and debris and re-grading the terrain;
15. Driveway, sidewalk, asphalt and other restoration;
16. Disinfecting the potable or raw water main pipe;

17. Connecting piping to existing piping and/or structures;
18. Furnishing and installing any lateral pipe and making any connection needed; and
19. 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 pipe by the open cut method shall be based on the 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 all miscellaneous fittings. The installation of these 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 or Owner's Representative;
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 polyethylene encasement;
5. Furnishing and installing glands, hardware and restrained joints on the fittings;
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.

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. RESILIENT WEDGE GATE VALVES WITH BOX (Bid Item #5)

The Contractor shall provide all labor, equipment and certain materials to completely furnish and install all resilient wedge gate valves. The resilient wedge gate 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 or Owner's Representative;
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, valve boxes, and tapping sleeves;
5. Furnishing and installing mechanical joint restraints;
6. Furnishing and installing valve extension rods where necessary;
7. Furnishing and installing the concrete pad and brass 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 resilient wedge gate valves.

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

Payment shall be made for the number of each resilient wedge gate 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. City personnel can insert a valve key through the valve box and completely open and close the valve.

E. TAPPING SLEEVES AND VALVES (Bid Items #6 and #7)

The Contractor shall provide all labor, equipment and certain materials to completely install and test all tapping sleeves and valves. The tapping sleeve and 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 or Owner's Representative;
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, valve boxes, adapter fittings and tapping sleeves;
5. Pressure testing the tapping sleeve;
6. Furnishing and installing mechanical joint restraints;
7. Furnishing and installing valve extension rods where necessary;
8. Furnishing and installing the concrete pad and brass valve identification tag;
9. Backfilling and compacting the trench/pit;
10. Furnishing paint and painting valve cover; and
11. All other ancillary materials, equipment, labor, and power required for the complete installation of valves and appurtenances.

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

Payment shall be made based on the size and for each tapping sleeve and valve 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. City personnel can insert a valve key through the valve box and completely open and close the valve.

F. INSTA-VALVE PLUS WITH BOX (Bid Item #8)

The Contractor shall provide all labor, equipment and certain materials to completely install and test all insta-valves. The insta-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 or Owner's Representative;
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, valve boxes, and adapter fittings;
5. Pressure testing the Insta-Valve sleeve;
6. Furnishing and installing mechanical joint restraints;

7. Furnishing and installing valve extension rods where necessary;
8. Furnishing and installing the concrete pad and brass valve identification tag;
9. Backfilling and compacting the trench/pit;
10. Furnishing paint and painting valve cover; and
11. All other ancillary materials, equipment, labor, and power required for the complete installation of valves and appurtenances.

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

Payment shall be made for each insta-valve 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. City personnel can insert a valve key through the valve box and completely open and close the valve.

G. FIRE HYDRANT ASSEMBLIES (Bid Item #9)

The Contractor shall provide all labor, equipment and certain materials to completely install fire hydrants and fire hydrant assemblies. The fire hydrant 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 or Owner's Representative;
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 fire hydrant assemblies as shown on the detail drawings including the hydrant valve as specified;
5. Taking measurements before ordering, and furnishing and installing hydrant risers as necessary to provide proper nozzle height above proposed grade;
6. Furnishing and installing brass valve identification tag;
7. Backfilling and compacting the trench/pit;
8. Furnishing paint and painting valve cover; and
9. All other ancillary materials, equipment, labor, and power required for the complete installation of fire hydrant assemblies.
10. The main line tee shall not be included in this bid item.

All work shall be in accordance with the Technical Specifications and Plans. Payment for the tee shall be made under the Ductile Iron Fittings pay item.

Payment shall be made for the number of each fire hydrant or fire hydrant assembly installed and incorporated into the piping system complete, working, and operating to the satisfaction of the Engineer.

H. WATER SERVICES WITH NEW METER BOX (Bid Items #10, #11, #12, #13, 14)

The Contractor shall provide all labor, equipment and materials to completely install water services and meter assemblies for each residential lot. The water service and meter assembly installation shall include, but may not be limited to:

1. Excavating the trench/pit;
2. Maintaining the trench/pits, which shall include dewatering, barricading, sheeting, shoring, containment, berming and disposal of drill fluid as required or as directed by the Engineer or Owner's Representative;

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 the far-side PVC or HDPE casings;
5. Performing all evaluations and calculations necessary for the proper implementation of the HDD;
6. Preparing and implementing the HDD work plan, bentonite management and emergency spill plan;
7. Excavating the launch, recovery, intermediate mud and exploratory pits;
8. Furnishing and installing the locator wires on the casing pipe;
9. Backfilling and compaction of trench/pits;
10. Furnishing and installing the service saddle, corporation stop, carrier piping, service lateral and curb stop;
11. Furnishing and installing the new meter box;
12. Backfilling and compacting the trench/pit; and
13. All other ancillary materials, equipment, labor, and power required for the complete installation of water services and meter assemblies.

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

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

I. RELOCATE WATER METER (Bid Item #15)

The Contractor shall provide all labor, equipment, and materials to completely remove, relocate, and reinstall existing meters where necessary. This item describes water services that do not require a backflow preventer as identified by the Owner/Engineer. The relocation shall include, but may not be limited to:

1. Removing the meter from the existing service;
2. Removing the existing backflow preventer;
2. Installing the meter as shown on the Drawings including piping, isolation valves, fittings and concrete stepping stone;
3. Repairing leaks; and
5. Miscellaneous fittings, piping and accessories necessary for a complete installation.

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

Payment shall be made for the number of each meter relocated and incorporated into the piping system complete, working, and operating to the satisfaction of the Engineer.

J. RELOCATE METER AND DUAL CHECK VALVE/RPZ ASSEMBLIES (Bid Item #16, #17)

The Contractor shall provide all labor, equipment, and materials to completely remove, relocate and reinstall existing meter and/or backflow assemblies where necessary. This pay item does not include backflow preventers serving private fire protection systems. The relocation shall include, but may not be limited to:

1. Removing the meter and backflow assembly from the existing service;
2. Installing the meter and backflow assembly as shown on the Drawings including piping, isolation valves, fittings and concrete stepping stone;
3. Permitting through the City of Venice Building Department (not including permit fees);
4. Repairing leaks;

5. Coordination with the property owner regarding Thermal Expansion protection (tank or relief valve) installation by a licensed plumber contracted to perform this work by the property owner.
6. Testing and Certification of the relocated assemblies, and;
7. Miscellaneous fittings, piping and accessories necessary for a complete installation.

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

Payment shall be made for the number of each backflow device with meter relocated and incorporated into the piping system complete, working, and operating to the satisfaction of the Engineer.

K. RELOCATED FIRE SERVICE (Bid Items #18, #19, #20)

The Contractor shall provide all labor, equipment and materials to completely remove, relocate and reinstall existing fire service and backflow assembly from the water main to the existing building. This pay item does not include restoration on private property. The fire service relocation shall include, but may not be limited to:

1. Excavating the trench/pit;
2. Maintaining the trench/pits, which shall include dewatering, barricading, sheeting, shoring, containment, berming and disposal of drill fluid as required or as directed by the Engineer or Owner's Representative;
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. Backfilling and compaction of trench/pits;
5. Furnishing and installing the service saddle, corporation stop, carrier piping, fire service piping and valves;
6. Backfilling and compacting the trench/pit;
7. Coordinating with the property owner to determine the service route and backflow assembly location;
8. Permitting through the City of Venice Building Department;
9. Removing the backflow assembly from the existing service;
10. Installing the above-ground backflow assembly as shown on the Drawings including piping, isolation valves, and concrete stepping stone;
11. Furnishing, installing, testing and connecting the new service line by open cut;
12. Testing and Certification of the fire service;
13. Miscellaneous fittings, piping and accessories necessary for a complete installation; and
14. All other ancillary materials, equipment, labor, and power required for the complete installation of fire services and backflow assemblies.

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

Payment shall be made for the number of each fire services relocated and incorporated into the piping system complete, working, and operating to the satisfaction of the Engineer.

L. NEW WATER SERVICE CONNECTIONS ON PRIVATE PROPERTY (Bid Items #21, #22, #23)

The Contractor's plumber shall provide all labor, equipment and certain materials to completely install new water services from the new meter assemblies to each existing building or, in the case of irrigation meters, to the connection point on the lot's irrigation system. The new water service shall include, but may not be limited to:

1. Excavation;

2. Maintaining the trench/pit, which shall include dewatering and bracing and sheeting where required or as directed by the Engineer or Owner's Representative;
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, testing and connecting the new service line by either open cut or by horizontal directional drill;
5. Installing the water meter and switching service to the new connection;
6. Testing and inspection of the service as required for Building/Plumbing permits;
7. Backfilling and compacting the trench/pit; and
8. All other ancillary materials, equipment, labor, and power required for the complete installation of water services and meter assemblies.

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

Payment shall be based on the horizontal distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the Engineer.

M. PRIVATE PROPERTY RESTORATION (Bid Items #24, #25, #26, #27, #28, #29)

The Contractor shall provide all labor, equipment, and materials to restore private property that was cut, removed or damaged during the course of the water service installation on private property. These pay items are only applicable to restoration on private property, outside of the right-of-way. Private property restoration shall include, but may not be limited to:

1. St. Augustine, Bermuda, or other sod to match existing;
2. Landscaping including replacement shrubbery, trees, mulch, fences, and other disturbed surfaces;
3. Brick or Concrete Pavers;
4. Asphalt restoration including driveways or walkways;
5. Concrete restoration including driveways or walkways;
6. Loose Stone or Gravel including river rock, limerock, pea gravel, or shell;
7. Excavation and removal of landscaping and/or surface;
8. Placing, grading, and compacting sub-base and/or base;
9. Earth bed preparation including rolling, tamping, and compaction;
10. Furnishing and placing or replacing the landscaping and/or surface;
11. Grading and leveling, so as to provide a uniform longitudinal profile and cross-section with existing surface;
12. Mowing sod; and,
13. Disposal of all surplus existing materials.

Private property restoration shall be in as good or better condition as prior to construction. Payment for private property restoration shall be based on the horizontal distance in linear feet of restoration on private property measured along the top centerline of the installed and connected pipe, in place, complete and acceptable to the Engineer. Unless approved by the Owner and/or Engineer limits of payment for restoration shall be 18 inches over the water service pipe route.

N. PRIVATE PROPERTY RESTORATION – UNAVOIDABLE OBSTRUCTIONS (Bid Item #30)

The Contractor shall provide all labor, equipment and certain materials to work around unavoidable obstructions encountered during the installation of the water service pipe. Examples of these unavoidable obstructions include walls, above-ground wood decks and patios and structures.

Payment shall be made for the number of unavoidable obstructions encountered during the installation of the water service pipe. Private property restoration shall be in as good or better condition as prior to construction.

O. CONTRACTOR/PROPERTY OWNER COORDINATION (Bid Item #31)

The Contractor shall coordinate with the property owner for every water service connection on private property. Contractor/Property Owner coordination shall include, but not be limited to:

1. Meeting with the Property Owner and the Contractor's Plumber and City Representative to coordinate the location of the water service connection and preferred service route on private property;
2. Discussions with the property owner regarding any changes to the property since the execution of Agreement or the issuance of bid documents, unanticipated obstructions in the service route, and other items relevant to the installation;
3. Contacting the Property Owner to schedule installation and coordinate property access; and
4. Meeting with the property owner after construction to ensure that there are no pending issues or concerns.

Payment shall be made for the number of property owners that the Contractor has provided coordination services. Contractor shall maintain a log book that will record the coordination hours. Log book shall include the date, address, time/duration, description of coordination efforts for each event. Contractor shall allow for an average of thirty (30) minutes of coordination per affected property.

P. ABANDONMENT OF EXISTING WATER MAINS (Bid Item #32)

The Contractor shall provide all labor, equipment and materials to abandon the existing water mains as shown on the drawings. The water main abandonment shall include, but may not be limited to:

1. Cutting the abandoned line and, except when the line is connected to an existing asbestos cement main remaining in service, capping/plugging its connection to the remaining, in service water main;
2. Removal and disposal of all potable water in the abandoned line;
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. Materials, equipment, labor, and power required to furnish and install flowable fill on mains 3" or greater;
5. Capping/plugging the abandoned main;
6. Removing or opening valves to be abandoned and removing the valve box;
7. Removing Automatic Blow-Off Assemblies and appurtenances and returning to the Owner;
8. Pipe clamps, rebar, concrete, equipment, labor, and power required to furnish and install the reverse dead man or thrust block;
9. Restraining the stub on the water main remaining in service; and
10. All other ancillary materials, equipment, labor, water, and power required for the complete abandonment of the line.

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

Payment shall be made and shall be based on percent complete of the Lump Sum price according to the schedule of values.

Q. ABANDON EXISTING MAIN AT ASBESTOS CEMENT PIPE (Bid Item #33)

The Contractor shall provide all labor, equipment and materials to completely remove tees on existing asbestos cement mains remaining in service, as part of abandonment of existing mains, in

accordance with the "Water Main Abandonment at AC Pipe" detail provided in the Drawings. The removal of the tees 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 or Owner's Representative;
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. Cutting, removing and disposing of the removed asbestos cement pipe and tee;
5. Draining the existing main;
6. Disinfecting the new spool piece and fittings by swabbing with sodium hypochlorite;
7. Furnishing and installing couplings, hardware, PVC spool, tie rods and pipe restraints;
8. Notifying customers of service interruptions and distributing Boil Water Notices;
9. Backfilling and compacting the trench/pit; and
10. All other ancillary materials, equipment, labor, and power required for the complete removal of the tee.

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

Payment shall for each tee removed, based on the Contract unit price.

R. TIE NEW WATER MAIN INTO ASBESTOS CEMENT MAIN (Bid Item #34)

The Contractor shall provide all labor, equipment and materials to tie new water mains into existing asbestos cement mains in accordance with the "AC Pipe Tie-In" detail provided in the Drawings. Connecting to existing AC mains 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 or Owner's Representative;
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. Cutting, removing and disposing of the removed asbestos cement pipe and tee;
5. Draining the existing main;
6. Disinfecting the new spool pieces, tee and appurtenances by swabbing with sodium hypochlorite;
7. Furnishing and installing couplings, hardware, PVC spools, tie rods and pipe restraints;
8. Notifying customers of service interruptions and distributing Boil Water Notices;
9. Backfilling and compacting the trench/pit; and
10. All other ancillary materials, equipment, labor, and power required for the complete tie-in.

Payment for the ductile iron tee and resilient wedge gate valve shall be made under the fitting and valve pay items.

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

Payment shall be for each tie-in completed and accepted, based on the Contract unit price.

S. ASPHALT RESTORATION (Bid Item #35)

The Contractor shall provide all labor, equipment, and materials to restore asphalt roadway in the right-of-way that was cut, removed or damaged during the course of the pipeline construction and milling and paving of full lane widths as shown on the drawings. The asphalt restoration shall include sawcutting, removing and replacing the entire asphalt layer to the milling limits shown on the drawings or:

1. Placing, grading, and compacting sub-base, base, and approved asphaltic pavement over excavated area as specified in the Contract Documents;
2. Returning 30-days later to mill the full lane width of all damaged lanes and designated intersection areas indicated in the Approved Construction Plans so as to provide a uniform longitudinal profile and cross-section;
3. Sweeping of the milled surface;
4. Disposal of all surplus existing materials resulting from milling operations;
5. Restoring, placing, grading, and compacting approved asphaltic pavement at the thickness specified in the Contract Documents;
6. Maintenance of Traffic;
7. Temporary and final striping.

Payment shall be made on a square yard basis, in place complete and acceptable to the Engineer.

T. MAINTENANCE OF TRAFFIC AND TRAFFIC CONTROL (Bid Item #36)

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 Owner's 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.

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 |

U. GENERAL CONDITIONS, MOBILIZATION AND DEMOBILIZATION (Bid Items #37, #38)

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.

Payment for mobilization 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 |
|---|---|
| 5 | 15 |
| 10 | 25 |
| 25 | 50 |
| 50 | 75 |
| 75 | 85 |
| 100 | 100 |

V. INDEMNIFICATION (Bid Item #39)

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 at the time of the first invoice.

W. OWNER'S ALLOWANCE (Bid Item #40)

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 Owner 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.

X. PERMIT FEE ALLOWANCE (Bid Item #41)

Payment will be made to the Contractor based on actual invoiced amounts paid by the Contractor to obtain required Building Permits and inspections and for the FDEP Notice of Intent to Discharge Stormwater from Construction Activities.

Payment will not be made for:

a. Contractor premiums or markups.
b. Fees incurred due to Contractor's negligence.
c. Permits required for items for the Contractor's convenience but not required by the Contract Documents or the Engineer.
d. Fees and costs associated with utility services to temporary construction trailers and electricity required by the Contractor during construction.

**END OF SECTION**

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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.

1.

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.

## 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, 2016 to June 30, 2016.

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's Representative to review and verify all installed quantities and/or stored material. Only when the Owner's 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 PRELIMINARY PROCEDURES

A. Owner and Engineer may initiate changes by submitting a Work Change Directive 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.

### 1.03 CONSTRUCTION CHANGE AUTHORIZATION

A. Work Change Directive will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change and will designate the method of determining any change in the Contract Sum and any change in Contract Time.

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

## 1.04 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.

## 1.05 PREPARATION OF IFCAs, CHANGE ORDERS AND FIELD ORDERS

A. Engineer will prepare each Change Order and Field Order.

B. Contractor shall prepare draft IFCA for review by the Engineer and Owner. IFCA shall describe changes in the Work, both additions and deletions, and effects on existing pay items. Contractor shall provide all necessary documentation to justify changes in cost.

C. Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.

D. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

E. Field Order will describe interpretations or clarifications of Contract Documents, order minor changes in the Work, and/ or memorialize trade-off agreements.

F. Field Order work will be accomplished without change in the Contract Sum, Contract Time, and/or claims for other costs.

## 1.06 UNIT PRICE IFCA or CHANGE ORDER

A. Content of IFCAs or 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 IFCA or Change Order can be determined prior to start of the work:

1. Owner and Engineer will sign and date a Work Change Directive 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 Change Directive 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 IFCA or Change Order.
4. Contractor will sign and date the IFCA or Change Order to indicate their agreement with the terms therein.
5. Owner will then sign the IFCA or Change Order.

## 1.07 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/CONSTRUCTION CHANGE AUTHORIZATION

A. Engineer and Owner will issue a Work Change Directive 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.

D. Engineer will sign and date the IFCA or Change Order.

E. Contractor will sign and date the IFCA or Change Order to indicate agreement therewith.

F. Owner will then sign the IFCA or Change Order.

**1.08 CORRELATION WITH CONTRACTOR'S SUBMITTALS**

A. Work completed in an IFCA or Change Order cannot be included in the Contractor's application for payment until the IFCA or Change Order is fully executed.

B. 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.

C. 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.

D. Upon completion of work under an IFCA or Change Order, enter pertinent changes in Record Documents.

**PART 2 – PRODUCTS (Not Used)**

**PART 3 – EXECUTION (Not Used)**

**END OF SECTION**

**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. Applications for Payment 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.

C. In general, work shall progress from street to street and shall be depicted as such on the schedule.

## 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 substantial completion, or any interim substantial 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 substantial completion, or interim substantial 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 11 inches by 17 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.

E. The schedule shall include tasks for testing, disinfection and clearance of the new mains as well as As-Built drawing submittal.

## 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. Activity durations shall not be changed, except by updates of the actual start and completion dates. If this should result in the schedule showing the project being completed late, the Contractor shall make up time on subsequent tasks to be completed so that on future schedule submittals inclusion of actual completion dates results in the project being completed within the contract milestone dates.

C. Review and acceptance of a revised diagram by the Engineer, and/or approval of an associated Application for Payment, shall not be construed to constitute concurrence with the time frames, duration, or sequencing shown on the schedule. Contractual dates shall only be accepted as changed through an approved Change Order.

D. 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 or relationships

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.

**END OF SECTION**

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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 submit a Schedule of Submittals at the preconstruction meeting listing his anticipated submittals and their proposed submittal date. The Engineer will review and approve the Schedule of Submittals for general completeness and with respect to the project schedule. In general, one submittal shall be provided for each specification section. A preliminary list of expected submittal packages is provided at the end of this specification. Other submittals may be required by other specifications and the Engineer and Owner reserve the right to require additional submittals.

C. 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. Submittals shall be made electronically, in PDF format. When necessary for larger submittals or for legibility, or at the request of the Engineer, submittals shall be made in hardcopy.

C. The Contractor will be provided with a standard Submittal Cover Sheet that shall be provided with all shop drawings, product data, working drawings and samples. The Cover Sheet shall be filled in 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 and/or specification where the product is found in the Contract Documents.

6. Contractor Certification Statement.

7. Submittal Identification Number.

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 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. It is considered reasonable that the Contractor shall make complete and acceptable submittals and initial responses to comments. Accordingly, allowance is made for two reviews of each submittal (initial submittal plus one re-submittal to respond to the Engineer's comments). The Owner shall withhold $500 from the Contractor's payments for each 3rd and subsequent reviews of each submittal to compensate the Engineer for the additional reviews. Incomplete submittals not reviewed and returned to the Contractor will count as a submittal.

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

F. 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.

G. The Contractor shall submit to the Engineer all shop drawings and data sufficiently in advance of construction requirements. The Engineer's review period shall be as specified in Subparagraph 6.17 of the General Conditions.

H. 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.

I. 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.

J. 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 Contractor's schedule shall allow for 15 working days for the Engineer's review of each submittal.

C. 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.

D. If the shop drawings, data or samples as submitted describe variations per subparagraph (1.07H), 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.

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 10 days of the receiving the corrections.

H. 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.

I. 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.

J. It is considered reasonable that the Contractor shall provide complete and accurate submittals and responses to the Engineer's comments. Accordingly, allowance is made for two reviews of each submittal (initial submittal plus one re-submittal to respond to the Engineer's comments). The Owner shall withhold $500 from the Contractor's payments for each 3rd and subsequent reviews of each submittal to compensate the Engineer for the additional reviews.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

## Preliminary List of Contractor's Submittal Packages

| | |
|---|---|
| 1 | Emergency Contacts and Misc. |
| 2 | Hurricane Preparedness Plan |
| 3 | Construction Phasing Plan |
| 4 | CPM Schedule |
| 5 | Schedule of Values |
| 6 | Pre-Construction Video |
| 7 | Maintenance of Traffic |
| 8 | Project Signs |
| 9 | Horizontal Direction Drilling Plan |
| 10 | Dewatering Plan |
| 11 | Erosion Control |
| 12 | Flowable Fill |
| 13 | Asphalt Restoration Materials |
| 14 | Concrete |
| 15 | PVC Pipe and Fittings |
| 16 | HDPE Pipe |
| 17 | Water Services |
| 18 | Valves and Appurtenances |
| 19 | Tapping Sleeves |
| 20 | Hydrants |
| 21 | Meter Assemblies |
| 22 | Sod |

**END OF SECTION**

**SECTION 01385**

**COLOR AUDIO-VIDEO CONSTRUCTION RECORDS**

## PART 1 – GENERAL

### 1.01 DESCRIPTION

A. Audio-Video recording of all work areas, including private properties, in the Contract will be prepared by the Contractor. The video recording shall be in DVD format.

B. Mobilization will not be permitted to commence until the audio-video recordings are submitted and approved.

C. 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.

D. 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.

E. 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.

F. 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 of 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.

G. 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.

H. 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.

I. 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.

J. 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.

K. 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.

L. 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 not 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.

C. The Contractor shall provide a map of the project area, showing the location of all tests. Using an overall project drawing sheet for this purpose is acceptable.

#### 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, Owner's Representative and the Engineer shall be provided with copies of all test reports.

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## MATERIAL TESTING TABLE

| ITEM | TEST | TEST IDENTIFICATION | TEST REQUIREMENTS VERTICAL | TEST FREQUENCY HORIZONTAL |
|---|---|---|---|---|
| UTILITY TRENCH BACKFILL | MAXIMUM DENSITY<br>OPTIMUM MOISTURE | AASHTO T-180 | PER SOIL CLASSIFICATION/ PER LABORATORY | PER SOIL CLASSIFICATION/ PER LABORATORY |
| | FIELD DENSITY | AASHTO T-180 | PER PLANS | ONE PER 200 LF |
| SUBGRADE UNCLEAR NEW CURB | MAXIMUM DENSITY<br>OPTIMUM MOISTURE | AASHTO T-180 | N/A | PER SOIL CLASSIFICATION/ PER LABORATORY |
| | LBR | FM 5-515 | | ONE PER 1320 LF AND IN EACH ISOLATED AREA OF WORK |
| | FIELD DENSITY | AASHTO T-180 | PER PLANS | ONE PER 200 LF |
| LIMEROCK/ SHELL BASE | MAXIMUM DENSITY<br>OPTIMUM MOISTURE | AASHTO T-180 | N/A | PER SOIL CLASSIFICATION/ PER LABORATORY |
| | LBR | FM 5-515 | N/A | THREE PER SOURCE |
| | FIELD THICKNESS | | FULL BASE THICKNESS | ONE PER 200 LF AND IN EACH ISOLATED AREA |
| | FIELD DENSITY | AASHTO T-180 | PER PLANS | ONE PER 200 LF AND IN EACH ISOLATED AREA OF WORK |
| SOIL CEMENT BASE | SOIL CEMENT PLACEMENT/ MONITORING DENSITIES THICKNESS DETERMINATIONS | AASHTO T-134<br>AND<br>AASHTO T-135 | PER PLANS | ONE PER 200 LF |

| ITEM | TEST | TEST IDENTIFICATION | TEST REQUIREMENTS VERTICAL | TEST FREQUENCY HORIZONTAL |
|---|---|---|---|---|
| CONCRETE | COMPRESSIVE STRENGTH (THREE CYLINDERS/TEST) | AASHTO T-23 AND AASHTO T-119 | PER SPECS | PER SPECS/MIN. OF ONE SET/DAY FOR POURS BETWEEN 10 & 50 CY, ADDITIONAL |
| | SLUMP, AIR CONTENT | AASHTO T-22 AND AASHTO T-152 | PER SPECS | SET FOR EACH 50 CY DAILY OR 1 PER 50 CY MAX |
| ASPHALT | MATERIAL QUALITY: GRADATION<br>ASHPALT CONTENT<br>SPECIFIC GRAVITY | FM 1-T 030<br>FM 5-563<br>FM 1-T 209 | N/A | DAILY OR 1 PER 250 CY (500 TONS) |
| | TEMPERATURE | | | PER TRUCK DELIVERED |
| | FIELD THICKNESS AND FIELD DENSITY | FM 1-T 166 | CORE SAMPLE THROUGH FULL THICKNESS OF WEARING COURSE | 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 form entering any drain or watercourse.

### 1.06 COMBUSTABLES STORAGE

The Contractor shall protect all combustible products and materials placed on site from vehicular damage and vandalism.

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.

There shall be no fuel storage in wetland areas.

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, establish an account and 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 which will be provided by the Owner free of charge.

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, Owner's Representative 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 Owner's Representative or Engineer, but not before achieving Substantial 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. Should two (2) or more contracts be executed at one time on the same or adjacent land in such manner that work on one contract may interfere with that on another, the Owner shall decide which Contractor shall have priority to perform and in what manner. When the territory of one contract is the necessary or convenient means of access for the execution of another contract, such privilege of access or any other reasonable privilege may be granted by the Owner to the Contractor so desiring, to the extent, amount, manner, and times permitted by the Owner. No such decision as to the method or time of conducting the Work or the use of territory shall be made the basis of any claim for delay or damage, except as provided for temporary suspension of the Work.

### 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 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.

## 3.12 SPECIAL RESTORATION REQUIREMENTS

A. The Contractor shall schedule and conduct operations to minimize the impact of construction upon lawns, driveways, sidewalks, irrigation systems, and street paving. Restoration for these items shall be completed as soon as practical after installation of proposed pipelines. The following specific requirements apply.

1. Driveways and Sidewalks: The Contractor shall saw cut existing driveway or sidewalk pavement and remove the required section not sooner than the same day the Work is to be installed beneath it. The Contractor shall maintain full access to each driveway at all times. The Contractor shall re-grade and compact disturbed areas immediately after the

Work is installed. The Contractor shall provide suitable, safe, temporary walking surfaces where the sidewalk is removed. The Contractor shall construct temporary driveway or sidewalk section within 24 hours of removal of the existing section. The Contractor shall coordinate driveway construction and restoration with property owners. Property owners shall be provided with Notice of proposed method and schedule of construction and restoration a minimum of 72 hours prior to commencement of construction activities affecting the property owner's driveways or sidewalks.

2. Irrigation Systems: The Contractor shall provide 10-day Notice to property owners prior to the Contractor removing irrigation system components.

3. Lawn Areas: The Contractor shall remove existing grass along a straight line to a minimum distance of six inches beyond the areas disturbed by construction activities on each side of the affected area. Sod shall be installed in disturbed lawn areas in a strip of uniform width along each section of lawn area with sod of identical type as existing. The Contractor shall grade and compact the area before the end of the next calendar day after excavation is performed. All sodding shall be performed in accordance with these Specifications. The Contractor shall install new sod within fourteen days after excavation.

4. Trees, Shrubs, and Landscaping: The Contractor shall use a bonded company, licensed to perform landscape work, to perform all landscaping work required in accordance with these Specifications.

**END OF SECTION**

**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 e, 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. References to "Department" shall mean "City of Venice" and 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 the Owner, postal delivery, emergency services and trash pickup. The Owner, 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. Prior to initiating each phase of a detour system, the Contractor shall prepare a specific detour letter/map to be delivered 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 Owner, Owner's Representative or 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 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 special tests above and beyond those required by the Specifications, to demonstrate that the samples 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 unless the samples are found to not be in conformance with the specifications, in which case the Contractor shall 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 01740. 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 SUBSTANTIAL COMPLETION

A. When Contractor considers the Work is substantially complete, he shall submit to the Owner:

1. A written notice that the Work, or designated portion thereof, is substantially complete.

2. A list of items to be completed or corrected.

3. 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. Within a reasonable time after receipt of such notice, the Owner, Owner's Representative and/or Engineer will make an inspection to determine the status of completion.

C. Should the Owner, Owner's Representative and/or Engineer determine that the Work is not Substantially complete:

1. The Owner, Owner's Representative and/or Engineer will promptly notify the Contractor, in writing, giving the reasons therefore.

2. Contractor shall remedy the deficiencies in the Work, and send a second written notice of substantial completion to the Owner.

3. The Owner, Owner's Representative and/or Engineer will re-inspect the Work.

D. When the Owner, Owner's Representative and/or Engineer find that the Work is Substantially Complete, they will:

1. Prepare and deliver to Owner a tentative Certificate of Substantial Completion with a tentative list of items to be completed or corrected before final completion.

2. After consideration of any objections made by the Owner as provided in Conditions of the Contract, and when the Owner, Owner's Representative and/or Engineer consider the Work Substantially Complete, the Contractor will be provided with a Certificate of Substantial Completion with a revised tentative list of items to be completed or corrected.

## 1.03 FINAL INSPECTION

A. 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.

B. The Owner, Owner's Representative and/or Engineer will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.

C. Should the Work be found to be incomplete or defective:

1. The Contractor will be notified 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 Owner that the Work is complete.

3. The Owner, Owner's Representative and/or Engineer will re-inspect the Work.

D. When the Owner, Owner's Representative and/or Engineer find that the Work is acceptable under the Contract Documents, he shall request the Contractor to make closeout submittals.

## 1.04 REINSPECTION FEES

A. Should the Engineer or Owner's Representative 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.

## 1.05 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.

**1.06 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.

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.

**PART 2 – PRODUCTS (Not Used)**

**PART 3 – EXECUTION (Not Used)**

**END OF SECTION**

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**SECTION 02071**

**HORIZONTAL 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. All pipe to be installed by horizontal directional boring shall be Fusible PVC pipe.

C. 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 Drawings, and restoration. Directional boring operations shall be performed within the right-of-way and/or easements shown on the Drawings.

D. Directional boring must be completed between the hours of 8:00 AM and 3:00 PM.

E. 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.

F. 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.

G. 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.

H. 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.

I. 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.

J. 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.

K. 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.

## 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 geotechnical reports, if available and identify and potential concerns.

e. The work plan shall include the exact locations and dimensions of all drill entry/exit pits and equipment staging areas.

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 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.

i. 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 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.

E. 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 roadway.

F. The Contractor shall submit calculations 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 FPVC pipe by filling it with water prior to install or other methods to reduce tensile force.

G. 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. 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.

I. 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.

J. 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 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 via truck and via boat. 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 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.

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 spill kit (i.e., absorbent pads/boom, goggles, gloves, etc) shall be available at all times

   d. 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 fusible polyvinyl chloride (PVC) with DR-18 minimum and 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. The Contractor calculate 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.

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. Sound levels shall not exceed those listed in the governing local code. 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. 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.

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.

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.

M. Butt fused MJ adapters are required at both ends of the bore on HDPE pipe.

N. Directional boring must be completed between the hours of 8:00 AM and 3:00 PM.

O. Directionally drilled pipe installed in the road right-of-way shall be installed no less than 3 feet deep. Depth shall be adjusted to avoid frac-out in the soils encountered. In general, the pipe shall be no more than approximately 5 to 6 feet deep unless shown on the plans or necessary to cross under conflicts.

## 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 feet from the design path centerline. 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.

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 PVC. 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.

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 hydrostatic water pressure test in accordance with the manufacturer's guidelines prior to pipe pullback and 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 overstressing 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 in enters the borehole.

L. After completion of "pull back" and prior to the final pipe tie-in, PVC pipe shall be provided a sufficient relaxation period if 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 Owner's Representative or 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.

O. Contractor shall flush, clean, pig and hydrostatically test each pipeline according to the test procedures required for the respective material per Section 02640. Potable water mains will also require disinfection and testing for bacteriological clearance per Section 02640.

## 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 that 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 Owner's Representative and Engineer. The position of the drill head shall be continuously tracked and recorded a plot of actual locations of the bore path shall be maintained and updated daily, or more frequently, as directed by the Owner's Representative or 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.

**END OF SECTION**

**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 Engineer, Owner's Representative or other representatives of governmental agencies having jurisdiction over areas to be protected.

## PART 2 – PRODUCTS

### 2.01 STAKED FABRIC SILT BARRIER

A. 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.) |

B. 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's Representative.

**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's Representative. 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 OFWORK

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 and/or Owner's Representative 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 3-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:

Blue – Potable Water Main

D. All PVC pipe shall be installed with two (2) insulated tracer wires as specified in section 02640.

### 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, Owner's Representative 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, Owner's Representative, Owner 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 and/or Owner's Representative 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 and/or Owner's Representative, is not suitable for reuse shall be spoiled as specified herein for disposal of unsuitable materials.

C. Crushed Stone

1. Crushed stone for pipe bedding shall be FDOT No. 57 in accordance with Section 901-2 of the FDOT Standard Specifications for Road and Bridge Construction.

2. Crushed stone for pipe bedding shall not exceed one foot in depth. If depths in excess of one foot are required, the stone shall be covered in filter fabric prior to paying the pipe.

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 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 by-pass 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/or Owner’s Representative, 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 and/or Owner’s Representative.

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 and/or Owner's Representative 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 and/or Owner's Representative. 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 and/or Owner's Representative, should be removed, the Contractor shall excavate and remove such unsuitable material to the width and depth as directed by the Engineer and/or Owner's Representative. 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 and/or Owner's Representative.

## 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. Water Mains

1. The depth of trenches for water 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 and/or Owner's Representative 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 the Owner. 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. Water 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. The minimum compaction shall be 98% for the first three feet (3') under roadways, 95% below three feet (3') under roadways, along road shoulders, and building structures, and 95% in open, non-load bearing areas. All compaction shall be of the maximum modified Proctor density, in accordance with AASHTO T- 180 standards.

2. 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. Density tests shall be taken within seven (7) days after installation.

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 at no additional cost to the Owner.

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 and/or Owner's Representative 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 and/or Owner's Representative.

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 by neatly stockpiled at the site where designated by the Engineer and/or Owner's Representative 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 by 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 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 the Owner or Engineer.

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. 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 and/or Owner's Representative, 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 fil1, 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

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 and/or Owner's Representative, 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 and/or Owner's Representative, 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 100 psi.

C. General mix requirements are as follows:

| Components | Pounds per Cubic Yard |
|---|---|
| Cement | 50-100* |
| 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 remove all raw sewage, sludge, debris, and water from the force mains/water mains prior to filling pipeline with flowable fill.

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.

E. All raw sewage, sludge, debris, and water removed from the mains shall become the property of the Contractor and shall be legally disposed in location approved by the Owner.

F. All proposed force mains and water mains shall be installed, pressure tested, and placed in-service prior to filling any abandoned water or 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.

## 3.03 ACCEPTANCE

A. 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.

B. 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.

C. All flowable fill areas subjected to traffic loads must have a durable riding surface.

**END OF SECTION**

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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 by 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. Beach Sand

All sand in beach areas disturbed by construction shall be restored to the same grade elevation with identical type of sand prior to construction. The types and depths of sands shall be per the Geotechnical Report.

G. Pavement

1. Materials and methods used by the Contractor for pavement replacement shall conform to the specifications and permit conditions required by FDOT and/or City of Venice Standard Details Sheet D1.03, Detail 7.

## 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 Owner's Representative.

## 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. Asphalt restoration shall consist of the following:

1. Furnishing and installing 5" of ABC-3 asphalt base material;
2. Furnishing and installing a 1-1/2" temporary S-3 or SP-9.5 asphalt wearing surface patch;
3. After 30 days have passed since the temporary wearing surface has been installed, milling the asphalt to the limits shown on the drawings;
4. Overlaying the entire area with 1" of S-3 or SP-9.5 asphalt.

In lieu of sawcutting and milling existing asphalt, it is acceptable to sawcut and remove the entire asphalt layer to the milling limits shown on the drawings. Asphalt completely removed shall be replaced in-kind with type S-3 or SP-9.5 asphalt. All new asphalt, whether replacing all of the existing asphalt or topping a milled asphalt surface, shall be graded properly and free from puddling. Improperly graded asphalt shall be re-worked or replaced as necessary until proper grading is achieved at no additional cost to the Owner. Re-worked asphalt that has a jagged/unprofessional appearance will not be accepted. The Owner does not know and cannot guarantee the thickness of the existing asphalt.

C. 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").

D. 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.

E. 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**

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**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 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 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 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% |

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:

| Total Retained On | Percent |
|---|---|
| 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 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 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 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 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, cementious, 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 Engineer. The slump shall fall within the following tabulated limits:

| | Slump in Inches | |
|---|---|---|
| Type of Structure | 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 Engineer which will keep all surfaces continuously wet, for a period of 7 days unless otherwise directed by the 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 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 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 Engineer.

D. Reports: Proper reports of all tests performed by the laboratory shall be prepared by the laboratory and submitted promptly to the 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 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 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 streets shall have a two (2) – foot wide concrete curb and gutter, and meet or exceed FDOT Specifications unless otherwise approved by the Owner. Curb configurations shall be limited to the configurations detailed on the City of Venice Standard Details Sheet 3 Detail 1. 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 02640**

**POTABLE WATER 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 potable water mains and appurtenances as shown on the Drawings and as specified herein.

B. This work shall include, but not be limited to the following: ductile iron pipe, PVC pipe, HDPE pipe, valves and fittings. All proposed main tees, bends and plugs installed shall be provided with restrained joints. Thrust blocks shall be installed where indicated on the drawings, including but not limited to, existing main tie-ins, abandonment locations, and proposed fire hydrant assemblies. Thrust blocks will not be accepted in lieu of restrained joints. 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 is included in the work.

C. All pipe, fittings, valves, solvents and glue used for potable water piping shall be NSF-61 certified for continuous contact with potable water.

D. Unless otherwise shown on the drawings, all buried potable water mains shall be AWWA C900/C905 PVC. Fusible PVC water mains installed by directional drill shall be as specified in Section 02514. Ductile iron pipe may also be required at other locations if minimum separation or cover requirements cannot be maintained.

E. All pipe and pipe fittings installed under this project will contain no more than 8.0% lead, and the solder or flux used in this project will contain no more than 0.2% lead.

F. Valves and appurtenances shall be as specified in Section 15100.

### 1.02 SUBMITTALS

A. Submit shop drawings to the Engineer for review 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.

### 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.

## 1.04 CONNECTION TO WORK BY OTHERS OR EXISTING LINES

A. The following work shall be performed where piping of this Contract must connect to lines installed under other Contracts:

1. Removing the temporary plug provided in the pipe installed under another Contract (if any).
2. Furnishing and installing piping and making proper connections.

B. The following work shall be performed where piping of this Contract must connect to existing lines:

1. Expose buried lines to confirm or determine end connection, pipe material and diameter.
2. Furnish and install appropriate piping and make proper connections.

C. The Contractor shall provide, install and test any required tapping valves and perform all taps in the presence of the Owner's Representative.

# PART 2 – PRODUCTS

## 2.01 DUCTILE IRON PIPE AND FITTINGS

A. Ductile iron pipe and fittings for buried service shall meet the following requirements:

1. Ductile iron pipe shall conform to the requirements of AWWA C151/ANSI A21.51, Pressure Class 350 minimum. All pipe shall have a cement mortar lining interior, and interior and exterior asphaltic seal coat in accordance with AWWA and ANSI Standards.

2. Pipe for installation below ground shall be supplied in lengths not in excess of a nominal 20 feet. Pipe shall be either push-on joint or manufactured restrained joint where required.

3. The Contractor shall provide a polyethylene encasement over all buried ductile iron pipe and 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 blue for potable water.

4. 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.

6. All ductile iron fittings shall be coated on internal and external surfaces with a protective fusion-bonded epoxy coating conforming to the requirements of ANSI/AWWA C116/A21.16.

7. All pipe shall be given a factory hydrostatic test of not less than 500 pounds per square inch.

8. Pipe and fittings shall be as by American Cast Iron Pipe Company, US Pipe and Foundry Company, or equal.

## 2.02 POLYVINYL CHLORIDE PIPE AND FITTINGS

A. Pipe for horizontal directional drilling shall be Fusible PVC pipe per section 15065 or CertaLok PVC pipe per section 15064. PVC pipe for open cut installation shall be as specified below.

B. Class-Rated Polyvinyl Chloride (PVC) pipe shall be clearly marked indicating pipe size, manufacturer's name, AWWA and/or ASTM specification number, working pressure, and production code, and shall bear the National Sanitation Foundation (NSF) seal for potable water pipe. All PVC water piping shall be color-coded blue.

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." Class-rated PVC pipe fourteen to 24 inches (14"-24") in diameter shall meet the requirements of AWWA Specification C905. All pipe shall be Class 235 meeting the requirements of DR 18. Each length of pipe shall be hydrotested to four (4) times its class pressure by the manufacturer in accordance with AWWA C900/C905.
2. Pressure rated PVC pipe smaller than 4" shall be 200 psi SDR-21 conforming to the requirements of ASTM 2241. Pipe shall have rubber gasket push-on joints conforming with ASTM F 477 and shall be color coded in accordance with the intended service. All potable water pipe shall be color coded blue.
3. PVC pipe less than 4" in diameter which is exposed to view shall be solvent weld ASTM D-1785 Schedule 80 pipe with UV inhibitors.

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.
2. Joints for buried and exposed Schedule 80 PVC pipe less than 4" shall be solvent weld.

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 2.1, A.
2. Fittings for pressure rated PVC pipe smaller than 4" in diameter shall be SDR-21 pressure rated PVC.
3. Fittings for exposed Schedule 80 PVC pipe less than four inches (4") in diameter shall be solvent weld.
4. 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 POLYETHYLENE TUBING FOR SERVICE LINES

A. Polyethylene resins shall be high-performance, high-molecular weight, high-density polyethylene conforming to ASTM D1248 (Type III, Class C, for black color or Class B for non-black colors, Category 5, Grade P34) and ASTM D3350 (cell classification PE 345434C otherwise designated as PE 3408). All polyethylene tubing and fittings shall be made from the same resin, homogeneous throughout. All polyethylene tubing shall meet the requirements of ASTM F714. Tube shall be NSF-61 certified and shall meet the requirements of AWWA C901.

B. Each length shall be marked with the manufacturer's name or trademark, size, material code, and pressure class. Rework material is not acceptable.

C. Tubing and fittings shall have a pressure class of at least 200 psi, meeting the requirements of Standard Dimension Ratio (SDR) 9 in accordance with ASTM D2737.

D. All fittings on HDPE service lines shall be brass compression fittings. Where required, flange connections shall be provided with a full-face neoprene gasket. Flanges shall be made of the same material as the pipe. Stainless steel insert stiffeners shall not be used.

E. Polyethylene tubing for potable water services shall be blue in color with a minimum of 2% carbon black to withstand exposure to ultraviolet light without loss of properties.

**2.04 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-Flange1390-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 Series 2000PV Mechanical Joint Restraint Gland. PVC pipe with push-on joints shall be restrained with EBAA Iron Series 1500 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. 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.

G. 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 and/or Owner's Representative.

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.

E. Potable water service lines may be installed by open cut or horizontal directional drill (HDD) as shown on plans or as directed by Engineer.

F. Connections between asbestos cement pipe and cast iron fittings, valves, or hydrants shall be made with jointing materials conforming to AWWA C603. In general, the desired action would be removal and legal disposal of the asbestos cement pipe.

**3.02 DUCTILE IRON PIPE**

A. Ductile iron pipe and 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 pipe shall be constructed by tamping selected material at the sides of the pipe up to the springline. Blocking will not be permitted.

B. All pipe shall be sound and clean before laying. When laying is not in progress, including lunchtime, the open ends of the pipe shall be closed by watertight plug or other approved means. Good alignment shall be preserved 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. When cutting pipe is required, the cutting shall be done by machine, leaving a smooth cut at right angles to the axis of the pipe. Cut ends of pipe to be used with a push-on bell shall be beveled to conform to the manufactured spigot end. Cement lining shall be undamaged.

D. Jointing Ductile-Iron Pipe:

1. Push-on joints shall be made in strict accordance with the manufacturer's instructions. Pipe shall be laid with bell ends looking ahead. A rubber gasket shall be inserted in the groove of the bell end of the pipe, and the joint surfaces cleaned and lubricated. The plain end of the pipe is to be aligned with the bell of the pipe to which it is to be joined, and pushed home with a back or by other means.
2. Mechanical joints at valves, fittings, and where designated on the Drawings and/or as specified, shall be in accordance with the "Notes on Method of Installation" under ANSI Specification A21.11 and the instructions of the manufacturer. To assemble the joints in the field, thoroughly clean the joint surfaces and rubber gasket with soapy water before tightening the bolts. Bolts shall be tight to the specified torques. Under no condition shall extension wrenches or pipe over handle or ordinary ratchet wrench be used to secure greater leverage.
3. Ball joints, where designated on the Drawings and/or as specified, shall be installed in strict accordance with the manufacturer's instructions. Where ball joint assemblies occur at the face of structures or tanks, the socket end shall be at the structure or tank and the ball end assembled to the socket.

4. Flanged joints shall be in accordance with ANSI Specifications A21.15 including its Appendix "A" and the instructions of the manufacturer. Flanged joints shall be fitted so that the contact faces bear uniformly on the gasket and then are made up with relatively uniform bolt stress.

E. All valves, hydrants, 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.

F. Deflected pipe if shown on the Drawings is shown only as an assistance in illustrating a preferred means of installation in specific locations, and is not intended to indicate all deflected pipe necessary to effect the installation as shown in plan and profile views. The cost of all such deflections shall be included within the bid price for furnishing and installing the pipe.

**3.03 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 02222.

B. Solvent weld joint shall be permitted to cure for a minimum of 24 hours prior to pressurizing the pipe.

C. All PVC 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.

**3.04 POTABLE WATER SERVICES**

A. The Contractor shall install a new water service to each lot associated with the project unless otherwise shown on the plans or directed by the Owner's Representative. The size of the service shall be as indicated on the Drawings.

B. Each service shall consist of the following:
   1. A service saddle and corporation stop on the associated potable water main.
   2. A SDR-9 HDPE service line terminating with a curb stop. The length of service line constructed shall be sufficient to properly connect with the constructed location of the meter box/set.

C. Service Connection to potable water main.
   1. On new potable water mains, prior to pressure testing, Contractor shall install service saddle and corporation stop for each service that is to be connected to the new main. New service lines shall be pressure tested along with the potable water main.
   2. When a new service is to be connected to an existing potable water main, the Contractor shall install service saddle and corporation stop and make the tap.
   3. Taps shall not be closer than two feet apart or within two feet of any joint. Taps in multiple groups shall not be made in the same longitudinal line of the pipe but must be staggered vertically. The station and offset of each service saddle shall be provided on the Contractor's Record Drawings.
   4. All sleeve ends shall be sealed with foam seal

D. Service line may be installed by pneumatic bullet or horizontal directional drill (HDD) methods. Service lines under roadways shall be installed in a casing.

E. Upon clearance of the new water main for service by the Health Department or Florida Department of Environmental Protection, the Contractor shall connect the water service to the meter box/set; the Contractor's licensed plumber shall connect the customer-side water service line and water service shall be reinstated to the customer.

F. Preliminary locations of potable water services are shown on the plans. During construction, the Contractor shall work with the Owner's Representative to confirm the actual location of the services with the property owners.

## 3.06 PRESSURE AND LEAKAGE TESTS OF UNDERGROUND DUCTILE IRON AND PVC PRESSURE PIPING

A. All pipe, whether installed by open cut or horizontal directional drill, shall be tested and disinfected as specified herein.

B. 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 Owner's Representative, in the manner prescribed in the Sections of these Specifications pertaining to such installation.

C. 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 or Owner's Representative. The Contractor shall dispose of the flushing water without causing a nuisance or property damage.

D. Pressure and Leakage Test of Underground Piping

1. Hydrostatic pressure and leakage tests for ductile iron and PVC pipe shall conform to 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.
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 or Owner's Representative 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:

$$L = \frac{SD(P)^{1/2}}{148{,}000}$$

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. The equation is based on 18' pipe lengths and shall be adjusted accordingly for other lengths.

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 or Owner's Representative. Any damage to the pipe coating shall be repaired by the Contractor. Lines shall be totally free and clean prior to final acceptance.
7. No leakage will be allowed for solvent weld PVC pipe or pipe sections less than 500 feet in length.

## 3.7 DISINFECTION AND CLEARANCE OF POTABLE WATER LINES

A. Prior to disinfection, the lines shall be pigged, flushed and pressure tested. Lines shall be disinfected in accordance with the applicable requirements of AWWA C651 and as described hereinafter. At no time are valves on the distribution system to be operated without the presence of a duly qualified representative of the Owner.

B. Before being placed in service, all potable pipe installed under this Contract shall be disinfected by chlorination. Either of the following methods of procedure may be followed upon approval of the Engineer.

1. Liquid Chlorine: A chlorine gas-water mixture shall be applied by means of a solution-feed chlorination device. The device must provide a means to prevent the backflow of water into the chlorine cylinder.
2. Calcium Hypochlorite Solution: A solution consisting of 5 percent calcium hypochlorite powder and 95 percent water by weight shall be prepared and this solution will be injected or pumped into the line.

C. The point of application of the chlorinating agent shall be at the beginning of the pipeline extension and through a corporation stop inserted in the top of the newly laid pipe. The water injector for delivering the chlorine-bearing water into the pipe may be supplied from a tap on the pressure side of the gate valve controlling the flow into the pipeline extension. Water from the existing distribution system or other source of supply shall be controlled so as to flow slowly into the newly laid pipeline during the application of chlorine. The Contractor shall not allow the chlorine solution in the line being treated to flow back into the line supplying the water.

D. Treated water shall be retained in the line at least 24 hours. After the chlorine treated water has been retained for the required time, the chlorine residual in the line shall be at least 50 mg/l. Should the initial procedure fail to result in the conditions specified, the chlorination procedure shall be repeated at the Conytactor's expense until satisfactory results are obtained.

E. The Contractor shall install sample taps and blowoffs on the new main and at the end of each new branch of the piping system. The Contractor shall furnish and install all piping, tubing, valves and ancillary appurtenances for chlorination points and sample points. Sample tap locations for potable water mains shall be spaced no greater than 1,000 feet apart.

F. The Contractor shall flush the chlorinated disinfection water from the piping system until a free chlorine residual of 1 to 1.5 mg/L is maintained. All water shall be dechlorinated at the point of discharge, prior to entering swales, inlets or surface waters. All water used in testing shall become property of Contractor and shall be legally disposed of at the approved location.

G. Samples for bacterial analysis shall be taken by a certified sampler from the contractor's independent laboratory and submitted for analysis to said laboratory. Two (2) consecutive day approved samples shall be required. If samples do not demonstrate satisfactory results, the disinfection procedure shall be repeated at the Contractor's expense until two (2) consecutive sets of satisfactory samples are obtained. The period between such series of samples shall be a minimum of 24 hours.

H. Two (2) consecutive days' passing bacteriological results and the Contractor's As-Builts will be required to submit certification packages to the Health Department. The Contractor shall submit the analyses and As-Builts to the Engineer, who will review them for completeness and conformance with the Contract Documents. If data is missing, the Contractor will be required to provide the additional data, as requested by the Engineer, before the certification package can be submitted. As-Built data for clearance of the water mains does not need to include information on private property. Information on private property only needs to be included in the final As-Builts provided to the Owner for its records.

I. Once the bacteriological testing results and As-Builts are acceptable, the Engineer will generate Record Drawings using the As-Built information and submit the analysis results, Record Drawings and certification forms to the Health Department. Once the Health Department approves the Certification and issues a Letter of Clearance, the new main may be placed into service. The Contractor shall allow for a 1 week minimum period between receipt of two consecutive passing test results and issuance of the Letter of Clearance or between the Engineer's acceptance of the As-Built drawings and issuance of the Letter of Clearance, whichever is later.

## 3.8 PAINTING OF ABOVE GROUND PIPE AND FITTINGS

A. All above ground ductile iron pipe and fittings shall be painted upon completion. Acceptable painting systems are as follows:

1. Tnemec
   1st Coat: Tnemec Series 66 (3.0 - 5.0 mils D.F.T.)
   2nd Coat: Tnemec Series 66 (4.0 - 6.0 mils D.F.T.)
   3rd Coat: Tnemec Series 73 (2.5 - 4.5 mils D.F.T.)

2. Carboline
   1 Coat: Hi-Gard Epoxy (4 mils D.F.T.)
   1 Coat: Carboline 134 H.S. (2.5 mils D.F.T.)
   1 Coat: Hythane 4600 Series Polyurethane (2.0 mils D.F.T.)

3. Keeler & Long
   1 Coat: Kolor-Poxy No. 3200 (5 mils D.F.T.)
   1 Coat: Acrythane Enamel Y-Series (2 mils D.F.T.)

B. Above ground PVC piping shall be painted with one of the following systems:

1. Tnemec
   1st Coat: Tnemec Series 66 (2.5 - 3.5 mils D.F.T.)
   2nd Coat: Tnemec Series 73 (2.0 - 3.0 mils D.F.T.)
   3rd Coat: Tnemec Series 73 (2.0 - 3.0 mils D.F.T.)

2. Carboline
   1 Coat: MultiBond 120 (2 mils D.F.T.)
   1 Coat: Carboline 134 H.S. (2.5 mils D.F.T.)

1. Keeler & Long
   1 coat: Kolor-Poxy Primer No. 3200 (5 mils D.F.T.)
   1 coat: Acrythane Enamel Y-Series (2 mils D.F.T.)

C. Final colors shall be chosen by the Owner, but in general, potable water mains shall be painted blue.

**END OF SECTION**

**SECTION 02750**

**ASBESTOS CEMENT MAIN ABANDONMENT AND DISPOSAL**

## PART 1 - GENERAL

### 1.01 SCOPE OF WORK

A. Work in this Section includes all labor, material, equipment, testing, tax, overhead, and profit necessary to install, construct, and place into service the items described in this Section to provide a complete and functional system ready for use by the City.

B. If it is necessary to remove any abandoned Asbestos Pipe (AC) and/or appurtenances to accommodate improvements, the AC main(s) and/or appurtenances shall be removed and disposed of in accordance with this entire standard.

C. Cutting and disposal of asbestos cement pipe (transite pipe) must be performed by a General Contractor with appropriate training. Use of compressed air to clean transite pipes is prohibited. At no time should transite pipe or pieces be mixed in with fill.

D. Contractor must furnish all permits, labor, material, services, insurance, tools, equipment, and notifications in accordance with EPA, OSHA, State, and all other applicable agencies to handle and remove asbestos material. Specifically, refer to EPA 40 CFR Part 61.

E. All work involved in the removal, salvage or disposal of AC mains shall be the responsibility and at the expense of the Contractor.

F. All scrap AC shall be properly manifested and prepared for transport. The scrap material shall be delivered to a landfill permitted for disposal of non-friable asbestos containing materials.

G. Friable asbestos-containing materials are regulated as hazardous waste. A friable material is defined as material that can be crumbled, pulverized, or reduced to powder in the hand. AC water main piping is generally considered to be a non-friable material, unless cut or disturbed.

1. The Sarasota County Landfill will accept friable and non-friable asbestos-containing material under the following conditions:

a. **Friable Asbestos** (any asbestos-containing materials that, when dry, may be crumbled, pulverized or reduced to powder by hand pressure).

- Asbestos must be sprayed with water until wet, then double bagged, tied off, labeled and placed in a covered container.

b. **Non-friable Asbestos** (any asbestos-containing materials that remain solid when handled) –

- Asbestos must be sprayed with water until wet, and then wrapped in a double layer of 6 mil polyethylene. Transite pipe shall be kept wet during all phases of removal. No visible emissions are permitted.
- No asbestos will be accepted after 3 p.m. Monday-Friday, on Saturday or on holidays.
- Haulers must have the proper manifests and call 24 hours in advance.

2. At least ten (10) working days before actual removal, the Contractor or his designated subcontractor will complete a National Emission Standards for Hazardous Air Pollutants (NESHAP) "Notice of Renovation or Demolition" form. The contractor or his asbestos subcontractor will deliver these completed forms by hand or certified mail to the following agencies (facsimiles are not permitted). Haulers must submit a completed Waste Shipment Record to the following locations:

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Air Resources Management 2600
Blair Stone Road
Tallahassee, FL 32399-2400

SARASOTA COUNTY AIR and WATER QUALITY
North County Air and Water Quality Protection 1001
Sarasota Center Blvd.
Sarasota, FL 34232
941-861-5000
Or
South County Landfill Administration Office 4000
Knights Trail Road
Nokomis, FL 34275
941-861-5000

3. Method of payment: Cash, Visa, MasterCard and Discover or a Debit Card with a bank logo on it. They do not accept business or personal checks.

4. Important notice: If asbestos is being deposited in the Sarasota County Central County Solid Waste Disposal Complex (county landfill), a Waste Shipment Record (WSR) must accompany the load. Submit a copy of the WSR signed by the approved disposal facility to the Engineer within 35 days of shipment.

H. All loads may be subject to inspection by County personnel prior to admittance to the landfill. Label each container with the name of the City and location at which the waste was generated. Transfer pipe directly from the trench wrapped in a double layer of 6 mil polyethylene.

I. Label trucks used to transport asbestos-containing waste material during loading and unloading as follows (refer to 29 CFR 1910.145 (d)(4) for sign format).

DANGER ASBESTOS DUST
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY

**PART 2 – PRODUCTS (NOT USED)**

**PART 3 – EXECUTION (NOT USED)**

**END OF SECTION**

**SECTION 15065**

**FUSIBLE POLYVINYLCHLORIDE (FPVC) PIPE**

## PART I – GENERAL

1.01 SCOPE OF WORK

A. Fusible polyvinyl chloride (FPVC) pipe shall be used in the horizontal directional drill locations in this project. It is not the intent of this project to install FPVC pipe by open trench method.

B. Fusible PVC pipe diameters shall remain as shown on the drawings.

C. The Contractor shall furnish all the materials, tools, labor, supervision and appliances for and properly install, connect, adjust, test and place in continuous satisfactory service all fusible polyvinyl chloride pipe and fittings at the locations and to the elevations indicated, specified or required for the proper completion of all work.

D. It is the intent of these Contract Documents to require an installation, complete in every detail, whether or not indicated on the Construction Drawings, or specified herein. Consequently, the Contractor shall be responsible for all details, devices, accessories, and special construction necessary to properly furnish, install, adjust, test, place into continuous satisfactory service, and complete the Work in an acceptable manner.

1.02 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. All Work specified herein shall be in accordance with the standards of the below listed organizations, except as otherwise shown or specified. Where reference is made to a standard of one of these or other organizations the version of the standard in effect at the time of bid opening shall apply.

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. C900 - Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 12 in. (100mm Through 300mm), for Water Distribution

7. C905 - Standard for Polyvinyl Chloride (PVC Pressure Pipe and Fabricated Fittings, 14 in. through 48 in. (350mm Through 1200mm), for Water Distribution and Transmission

8. 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. D1785 - Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120

4. D2152 - Test Method for Degree of Fusion of Extruded Poly(Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion

5. D2241 - Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)

6. D2665 - Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings

7. D3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings

8. F477 - Elastomeric Seals (Gaskets) for Joining Plastic Pipe

9. F679 - Standard Specification for Poly(Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings

10. F1057 - Standard Practice for Estimating the Quality of Extruded Poly (Vinyl Chloride) (PVC) Pipe by the Heat Reversion Technique

11. 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

1.03 SUBMITTALS

A. The Contractor shall submit Shop Drawings to the Engineer of pipe and all appurtenances in accordance with these Contract Documents. The requirements of AWWA C900, C905 and the following supplemental requirements are applicable:

1. Certified catalog-cut type dimensional drawings of all pipe and appurtenances including 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. 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.

4. Drawings of special details such as reinforcement, testing stations, joint bonding, etc., shall be at a scale that clearly depicts the item being detailed and, in general, shall not be at a scale less than 1/8-inch equal to 1-foot.

5. The Supplier of the pipe shall submit, through the Contractor, an affidavit that the pipe, fittings and other products or materials furnished for this Project comply with all applicable provisions of these Specifications.

6. Records of certified shop tests.

7. A complete field pressure testing, and flushing plan for review and approval prior to the performance of any of these activities.

8. Certificates confirming that the Fusion Technician is 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.

B. The Contractor shall furnish a certified affidavit of compliance for all pipe and other products or materials furnished under this Section of the Specifications, as specified in AWWA C900 and C905, and certified copies of the following supplemental data for all pipe, fittings, and specials:

1. The Supplier shall provide, through the Contractor, a sworn statement that the inspection and all specified tests have been made and all results thereof comply with the requirements of these Specifications.

C. All expenses incurred in making samples for certification of tests and in the preparation of any design reports shall be borne by the Contractor.

D. 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.

E. 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.

1.04 QUALITY ASSURANCE

A. The Contractor shall furnish materials under this Section that are new, unused and as specified, or if not particularized herein, which are the best of their respective kind, free of defects and imperfections, and suitable for the service intended, subject to the approval of the Engineer.

B. The Contractor shall provide workmanship that is first class in every respect, and have the installation performed by workmen thoroughly experienced in such work. A neat and workmanlike appearance in the finished Work shall be required.

C. The Contractor shall perform Work in accordance with all applicable laws and regulations and in accordance with all applicable permits and easements.

D. The fusible PVC pipe furnished under this Specification shall comply with AWWA C900 and C905, except as it may be modified herein.

E. All test equipment used in activities affecting quality control shall be calibrated and certified at not longer than annual intervals, unless otherwise specified or required.

F. All pipe shall be clean, sound, and without defects. No manner of repair will be accepted, unless otherwise specified or approved by the Engineer.

G. The Contractor, at no additional cost to the Owner, shall perform all the testing and recording that is required in these Specifications unless otherwise specified.

H. The Engineer shall have the right to determine the amount of pipe to be rejected.

1.05 SUPPLIER'S QUALIFICATIONS

A. All fusible PVC pipe, fittings and appurtenances shall be furnished by a manufacturer who is fully experienced, reputable and qualified in the manufacture of the items 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. The Manufacturer shall have at least 5 years experience in work similar in specification to that which is to be furnished on this project. The Manufacturer shall be required to show experience in supplying pipe in environments similar to

those expected to exist on this project and that the pipe supplied in those environments has functioned satisfactorily.

B. Fusible polyvinylchloride pipe shall be used as manufactured under the trade names Fusible C-900®, Fusible C-905®, and FPVC®, for Underground Solutions, Inc. Fusion process shall be as patented by Underground Solutions, Inc.

1.06 SHOP TESTS

A. All pipe shall be tested by the Manufacturer in accordance with AWWA C900, C905, the Manufacturer's standard procedures, and this Specification. At the Owner's request, shop tests shall be subject to witness by the Engineer and/or Owner and/or the Owner's Representative. Certified test reports shall be submitted to the Engineer by the Contractor for approval. No lot of pipe shall be shipped to the site of the Work until acceptable shop tests are completed and approved.

1. It shall be the responsibility of the Contractor to provide notice to the Owner and the Engineer of proposed tests in accordance with this Section and the Contract Documents.

2. Tests and examinations to verify the quality of work shall be performed by persons other than those engaged in the activity being examined. Such persons shall not report directly to the production supervisor responsible for the Work. All instruments, gauges and other testing and measuring equipment used in activities affecting quality shall be of proper range, type, and accuracy to verify conformance with the Specification requirements. Procedures shall be in effect to assure that they are calibrated and certified at not longer than annual intervals. Calibration shall be against measurement standards, which have known relationship to national standards where such exist. Gauges must be calibrated and certified for the piece of equipment of which they are a part and must remain on the piece of equipment following certification. Materials and items including products previously checked or manufactured with equipment found to be out of calibration or adjustment shall be considered unacceptable until it can be determined that all applicable requirements have been met.

3. The Supplier shall maintain records of all internal and required tests and inspections. These records shall include records of materials, manufacturing, examination, repairs, and test data taken before and during fabrication. The Engineer reserves the right to request that specific data be included in the records that may not otherwise be included. Whenever tests and examinations are performed on a pipe element or pipe, the appropriate pipe identification number shall be shown on the report. Copies of all records of tests conducted by the pipe Supplier, independent laboratory, or material manufacturers shall be given to the Engineer in such form as to be appropriate for permanent records.

4. The Engineer shall have access to all records of tests and inspections related to pipe manufactured for use in the Work and shall also have the right to witness any tests being performed by the Supplier relative to products, materials, or the pipe being produced.

5. In addition to those tests specifically required, the Owner may request additional samples for testing by the Owner. The cost for these additional samples shall be borne by the Owner at no additional cost to the Contractor.

6. All tests required by AWWA C900, C905 and as required herein, shall be performed by the Supplier and records of all such tests shall be provided to the Owner.

B. Dimensions shall be subject to gauging in the presence of the Engineer. Dimensions of each pipe shall be measured as specified in ASTM D2122. Representative samples from each of the molds

each shift when the mold is used in manufacturing pipe for the Project shall be gauged.

C. One pipe from each diameter size and pressure class each shift each day shall be non-destructively tested. The wall thickness shall be measured for conformance to the thickness tolerance at the quarter points of the cross-section and at any other point selected by the Engineer. The measuring device shall be capable of measuring the pipe wall thickness to the nearest 0.001-inch. Any wall thickness measurement less than the nominal wall thickness minus the casting tolerance, shown in Table 1, shall be cause for pipe to be rejected. If the first pipe selected is rejected another pipe shall be tested. If the second pipe fails a third pipe made during that shift shall be tested. If the third pipe fails all pipe made during that shift shall be rejected.

D. Physical property tests shall be made on test specimens in accordance with the requirements of AWWA C900, C905 and applicable ASTM standards. Samples for tests shall be taken every three hours.

1.07 TOOLS

A. All special tools, solvents, lubricants, and caulking compounds required for normal installation shall be furnished with the pipe.

1.08 WARRANTIES

A. Warranties on pipe and fusion services covered under this specification shall be included in the Contractor's general warranty specified in Division 1.

PART II - PRODUCTS

2.01 GENERAL

A. The pipe shall be designed, manufactured, tested, inspected, and marked according to applicable requirements stated herein and except as modified, shall conform to AWWA C900 and C905.

B. 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

C. Pipe shall be furnished in nominal lengths of approximately 20 or 40 feet, unless otherwise directed by the Engineer. Pipe shall bear markings indicating pipe size, manufacturer's name, AWWA and/or ASTM Specification number, working pressure and production code.

2.02 DESIGN CRITERIA

A. All piping shall be made from PVC compound conforming to cell classification 12454 per ASTM D1784.

B. 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.

C. Pipe shall be DR-18, Pressure Class 235.

2.03 PIPE DESIGN

A. All fusible PVC pipe shall have a minimum wall thickness, shown in Table 1, as specified in AWWA C900 and C905.

B. The Contractor shall provide design data on the pipe including calculations showing the separate and combined stresses in the wall of the pipe due to the design loads.

2.04 MATERIALS

A. Fusible polyvinyl chloride pipe shall conform to AWWA C905, AWWA C900, ASTM D2241 or ASTM D1785 for standard dimensionality, as applicable. Testing shall be in accordance with the referenced AWWA standard.

B. Fusible polyvinyl chloride 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 polyvinyl chloride pipe shall be manufactured in a standard 40' nominal length, or custom lengths as specified.

D. Fusible polyvinyl chloride pipe shall be blue in color for water 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, or standard pressure rating for non-AWWA pipe, as applicable
5. AWWA standard designation number, or pipe type for non-AWWA pipe, as applicable
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.

2.05 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.

2.06 FITTINGS

A. All fittings shall be ductile iron as specified in section 02640.

PART III - 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, Owner's Representative 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, Owner's Representative 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 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 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.

2. 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 GENERAL INSTALLATION

A. Installation guidelines from the pipe supplier shall be followed for all installations.

B. The fusible polyvinylchloride pipe will be installed in a manner so as not to exceed the recommended bending radius.

C. Where fusible polyvinylchloride pipe is installed by pulling in tension, the recommended Safe Pulling Force established by the pipe supplier shall not be exceeded.

3.05 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.

3.06 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.

3.07 TAPPING FOR POTABLE AND NON-POTABLE WATER APPLICATIONS

A. Tapping shall be performed using standard tapping saddles designed for use on PVC piping in accordance with AWWA C605. Tapping shall be performed only with use of tap saddles or sleeves. NO DIRECT TAPPING WILL BE PERMITTED. Tapping shall be performed in accordance with the applicable sections for Saddle Tapping per Uni-Pub-8.

B. All connections requiring a larger diameter than that recommended by the pipe supplier, shall be made with a pipe connection as specified and indicated on the drawings.

C. Equipment used for tapping shall be made specifically for tapping PVC pipe:

1. Tapping bits shall be slotted "shell" style cutters, specifically made for PVC pipe. 'Hole saws' made for cutting wood, steel, ductile iron, or other materials are strictly prohibited.

2. Manually operated or power operated drilling machines may be used.

D. Taps may be performed while the pipeline is filled with water and under pressure ('wet' tap,) or when the pipeline is not filled with water and not under pressure ('dry' tap).

3.08 TESTING

A. Testing shall be as specified in section 02640. 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.

**END OF SECTION**

## SECTION 15100

## VALVES, SERVICES 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. Service Saddles
8. Meter Accessories
9. Fire Hydrants
10. Brass Pipe and Fittings
11. Insta-Valve Plus

#### 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 02640.

#### 1.03 QUALIFICATIONS

A. 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

A. Complete shop drawings of all valves and appurtenances shall be submitted to the Engineer for review, in accordance with the requirements of the General Conditions.

#### 1.05 TOOLS

A. Special tools, if required for normal operation and maintenance, shall be supplied with the equipment.

### 1.06 VALVE INDICES

A. 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 water 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 304 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 flanged end with raised male face, conforming to MSS SP-60, for connection to the tapping sleeve; and a mechanical joint connection on the outlet side of the valve. Flange end bolting shall be 304 stainless steel.

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.

I. Above Grade Valves:

1. Provide with Flanged ends that are in accordance with ANSI/AWWA C110/A21.10 (ASME B16.1, Class 125).

2. 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. Valves in master meter assembly shall be outside screw-and-yoke (OS&Y) with rising stems.

3. Provide with hand wheel operator.

**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 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 AIR RELEASE VALVES**

A. Air release valves for potable water mains shall be H-Tec 1-1-0 M986 Air Release Valve as manufactured by Hawle. Valves shall be rated to 250 psi. Materials of construction shall be:

1. Diaphragm Buna HNBR
2. Debris shield Homopolymer (PP)
3. Body Stainless Steel 316Ti
4. Float Delrin® (POM)
5. Debris screen Delrin® (POM)
6. Diaphragm holder Delrin® (POM)
7. Upper air valve part Delrin® (POM)

B. Above Ground Enclosure:

1. When drawings call for fabricated metal enclosure, fabricate an aluminum or stainless steel metal cabinet in accordance with the drawing details.

**2.04 VALVE BOXES**

A. All buried valves shall have cast-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 or Owner's Representative. The barrel shall be two-piece, screw type, having 5-1/4-inch shaft. The upper section 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. Valves for reclaimed water shall be rectangular as shown on the Drawings.

D. 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.

B. When connecting above ground water main piping to existing water or wastewater plant piping, the Contractor shall furnish valve tags for all new valves required on the work. Tags on the above ground valves shall be noncorrosive metal or plastic, 2 inches in diameter, 19 gauge thick. Tags shall have stamped on them the valve size, service, and ID number unless otherwise shown on the drawing details.

## 2.06 TAPPING SLEEVES

A. Tapping sleeves shall be constructed of epoxy-coated ductile iron. All tapping sleeves shall be suitable for tapping ductile iron pipe, C-900 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 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 high strength, low alloy steel in accordance with Section 11-6.5 of AWWA C-111, latest edition.

C. All tapping sleeve connection flanges shall be a 150 lb flange joint with a counter bore per MSS SP-60 dimensions.

D. 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.

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 Ford FTSC, JCM 432, or equal.

## 2.07 SERVICE SADDLES

A. Service saddles shall be used for all taps less than 4". Direct tapping of the pipe is not permitted.

B. Service saddles for pipe less than 3-inches shall be a single band which is hinged or split from the saddle body and is anchored by bolting one or more bolts between the band and saddle body or a double strap design anchored by four bolts.

C. Service saddles for pipe greater than 3-inches shall use a double band, with a minimum of a four bolt pattern anchoring. These service saddles shall provide for a variable range in diameter per nominal size of pipe.

D. All service saddles shall be constructed from epoxy coated ductile iron with stainless steel bands and shall seal to the distribution pipe by a synthetic or natural rubber gasket. The gasket shall maintain a resilient seal without cracking or becoming brittle during the work life of the service saddle. Gasket shall be of self-sealing design.

E. Saddle assembly should be capable of pressure up to 150 psi without rupture or failure.

F. All service saddles shall have corporation tap threads.

G. Service saddles shall be Ford FC101, FC202, FDC101, FDC202.

**2.08 METER ACCESSORIES**

A. Curb Stops for connection to water meters shall be all brass in accordance with AWWA Standard C-800 for 300 psi operating pressure and shall be of sizes required and/or noted on the Drawings. Curb stops shall be provided with lock wing cast on stop body and operating tee cap to provide for locking the stop in closed position. Provide tubular stainless steel insert stiffener for connection to polyethylene service tubing. Curb stops shall be Ford model B43-444W.

**2.09 FIRE HYDRANTS**

A. Comply with provisions of AWWA C-502 (Dry Barrel Fire Hydrants), latest revision.

B. The drain outlet for the hydrant shall be eliminated as part of the casting or machining process, or must be completely plugged with a bronze plug.

C. Hydrant shall deliver at least one thousand (1,000) gallons per minute through the pumper nozzle with the pressure head loss through the hydrant not exceeding 3.6 psi.

D. The Contractor shall be responsible for confirming the depth of the water main and ordering the barrel length required to mount the hydrant at the proper height.

E. Hydrants shall be American B84BV, Mueller Super Centurian Model A423 or equal with breakaway feature.

**2.10 BRASS PIPE AND FITTINGS**

A. Brass pipe and nipples shall be threaded schedule 40 red brass (ASTM B43). Brass nipples, caps, plugs, tees, bends, and bushings shall be manufactured of brass, cast and machined in accordance with AWWA Standard C-800 (ASTM B62 85-5-5-5). All threads shall be standard iron pipe thread conforming to ANSI B.1.20.1.

B. All pipe fittings and accessory components in contact with potable, raw, or reclaimed water shall comply with NSF Standard 61 requirements. Certification of these standards must be available.

C. Couplings for joining brass pipe or fittings to PVC or service line piping shall be brass in accordance with AWWA Standard C-800 with end connections appropriate to the pipe and/or fittings being joined. Couplings shall be as manufactured by Ford or McDonald.

D. Provide tubular stainless steel insert stiffeners with all connections to polyethylene service tubing.

**2.11 INSTA-VALVE PLUS**

A. The Insta-Valve Plus System shall provide a means to install a permanent block (open-close) resilient valve into a pressurized pipe with no interruption of flow through the pipe and no reduction of line pressure. The insertion of an Insta-Valve Plus shall be accomplished through a single circular hole cut (under full line pressure) into the top of the pipe. The Insta-Valve Plus shall permanently remain in the piping to allow shutdowns in the same manner as any valve.

B. The Contractor shall furnish all equipment, materials and labor for installation of the Insta-Valves.

C. The Insta-Valve Plus shall consist of three subassemblies: the Valve Body, which shall be mounted pressure-tight around the main; the Valve Cartridge, which shall be inserted, under full line pressure, into the Valve Body; and the Cartridge Closure Flange, which shall secure and permanently seal the Cartridge to the Body.

D. The valve body, saddles, bolting lugs and suds and nozzle shall be manufactured of type 304L stainless steel.

E. Test and maximum operating pressures shall be: Test pressure: 225 psi, Working pressure: 150 psi.

F. The contractor shall confirm the material and size of the existing pipe prior to ordering the Insta-Valves.

G. In order to provide compatibility with existing City Insta-Valve insertion equipment, Insta-Valves shall be as manufactured by Hydra-Stop with no substitutions.

## 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 Owner, Owner's Representative or 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. Check Valves

1. Install check valves of the type and at the locations shown in the drawings.
2. Unless otherwise specifically shown by the drawings or directed by the Engineer, check valves shall be installed in horizontal runs of pipe with shaft on the top side.
3. Contractor shall carefully plan the positioning of check valve in pipeline so that the final installed position of the check valve provides free and unobstructed movement of the outside lever and weight.

E. 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.

F. Fire Hydrants

1. Hydrants shall be installed plumb at the heights shown on the Drawings.
2. Hydrants shall be installed with the pumper nozzle facing the road.
3. Following installation, hydrants shall be painted with a compatible polyurethane coating system. Color shall be chosen by the Owner.

G. 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 specification Section 02640 – Water 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.

C. After installation of tapping sleeve and tapping valve, but before the existing main is tapped, Contractor shall subject the completed assembly to a hydrostatic pressure test in accordance with technical specification Section 02640 – Water Mains. The test shall be witnessed by the Owner's Representative.

D. After installation of fire hydrant assemblies, Contractor shall notify Engineer that the assembly is complete and ready to be flow tested. Owner will flow test hydrant. Contractor shall keep hydrant assembly wrapped in plastic or other suitable material until the water main to which it is connected is disinfected and cleared for service by the Health Department. After the water main is placed into service, and the Owner has flow tested the hydrant, the hydrant shall be painted by the Contractor and a blue reflective marker shall be installed in the roadway.

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**END OF SECTION**

**WATER MAIN REPLACEMENT**
**PROGRAM – PHASE 5**

**ATTACHMENTS**

**GEOTECHNICAL INVESTIGATION**

# REPORT OF THE
# GEOTECHNICAL INVESTIGATION

## CITY OF VENICE
## WATER MAIN
## VENICE, FLORIDA

DRIGGERS ENGINEERING SERVICES INCORPORATED
Geotechnical Engineering & Construction Materials Testing

King Engineering Associates, Inc.
4921 Memorial Highway, Suite 300
Tampa, FL 33634

September 30, 2015

Attn: Christopher F. Kuzler, P.E.

**RE: Report of the Geotechnical Investigation**
**Venice Water Main**
**Venice, Florida**
**Our File: DES 157710**

Dear Mr. Kuzler:

**DRIGGERS ENGINEERING SERVICES** has completed the requested subsurface investigation program for the subject project. Presented herein are the results of our field and laboratory tests, together with a discussion of our findings and recommendations.

## SUBSURFACE INVESTIGATION PROGRAM

Plate I of the report illustrations identifies the respective positioning of a series of test borings that have been completed to investigate subsurface conditions. The program consisted of twenty-two (22) classification or hand auger borings and accompanying hand cone penetrometer tests. The locations depicted on Plate I are approximate. Logs of the test borings are presented in the report attachments reflecting visual together with estimated Unified and AASHTO Soil classification. Soils were logged in the field by our geotechnician, with representative soil samples sealed in glass jars and returned to the laboratory for further examination by the project engineer and development of boring logs. A log of each hand auger boring is attached.

A cone penetration test was conducted at each location. Cone penetration resistance values obtained at six (6) inch intervals are plotted on each boring log. A description of the Cone Penetrometer Test is appended.

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## LABORATORY INVESTIGATION

A limited laboratory testing program was undertaken to aid in characterizing the engineering properties of the subsurface soils. Our laboratory tests included grainsize analyses, and organic content tests. The results of our laboratory tests are included in the report attachments.

## GENERALIZED SUBSURFACE CONDITIONS

**SOIL AND GROUNDWATER CONDITIONS** - The shallow classification borings revealed predominately identified fine sands with variable silt and organic fines from existing grade to the termination depth of the borings at about 10 feet below grade.

Cone penetration resistance values indicate that the upper 2 to 5 feet is generally loose to very loose in consistency followed by a transition into loose to medium dense sands to the termination depth.

Groundwater was recorded at the time of our investigation at 0.8 to 6.9 feet below grade at the test locations. Plate II of the report illustration presents a tabulation of groundwater observations. Considering the heavy amounts of rain accumulation that occurred during and prior to this investigation, we would not expect the groundwater levels to rise significantly above observed levels during the normal rainy season. Naturally, higher water levels can occur during extreme rainfall events.

## EVALUATION AND GEOTECHNICAL RECOMMENDATIONS

**PROJECT DESCRIPTION** – The project consists of the installation of a small diameter PVC water line using a possible combination of open-cut direct burial and directional drilling methods. It is our understanding that the pipeline embedment for the directional drill and open-cut direct burial will be located at about 3 to 4 feet below existing grade.

**HORIZONTAL DIRECTIONAL DRILLING SEGMENTS** – As previously mentioned, it has been planned that directional drill installation methods may be utilized for installation of certain segments of the water line at a depth of 3 to 4 feet below existing grade. The boring predominately indicated that the soils at this depth range are fine sands with variable silt and organic content.

During any horizontal directional drilling operation and considering the close nature of the pipe embedment to the ground surface, the contractor should exercise appropriate ways and means to minimize any potential for an escape of drilling fluids to the surface (fracking) or the development of excessive fluid pressures that could result in damage or displacement of structures and utilities, and yet maintain a stable borehole to prevent collapse of overburden soils.

**DIRECT EMBEDMENT PORTION** – It is our understanding that the sections with open-cut direct placement of the pipeline will be embedded with a minimum of three (3) foot of cover. Thus, one would anticipate that the pipe embedment would typically be in the range of perhaps 3.5 to 4 feet below existing grade.

The soils typically encountered within and just below this anticipated depth of embedment would predominately consist of fine sands with variable silt and organic fines content, which should be suitable for pipe support as well as provide suitable material for backfill placement. Careful geotechnical inspection is recommended during construction to help identify any unsuitable soils or other objectionable materials that may warrant removal and replacement. Where evidenced, these materials should be removed and replaced with suitable bedding material as directed by the project engineer. Furthermore, such zones with excessive silt, clay and organic content may not meet project specification requirements with respect to their usage as suitable backfill. Where directed, these soils should be removed and disposed as directed by project specification requirements.

It is our understanding that project specification could require certain compaction efforts. It is our understanding that compaction should achieve a minimum density of no less than 98% of the Modified Proctor maximum dry density established in ASTM D-1557 under roadways while a minimum density of no less than 95% of the Modified Proctor maximum dry density will be required for all other compaction applications including the pipe placement and pipe backfill. Excavated soils used for backfill may require adjustment in moisture content to levels suitable for replacement and compaction. It is suggested that moisture contents be controlled to within +/- 2% of optimum moisture as established by the Modified Proctor moisture-density relationship.

**EXCAVATION STABILITY AND MANAGEMENT OF GROUNDWATER** – It is anticipated that the direct embedded pipeline section of the project will be constructed in an open excavation or perhaps utilizing trench box construction. With all the excavation activities and considering the existing shallow groundwater level at various locations along the alignment, it is

anticipated that control and management of groundwater will be important to maintain excavation stability, allow appropriate placement of piping to line and grade and to permit proper backfill placement and compaction. It is recommended that groundwater levels be maintained no less than one (1) foot below the maximum depth of excavation or deeper as needed, dependent upon the ways and means of construction. It is envisioned that the de-watering where needed, will be accomplished utilizing an appropriately designed well-point system. Open excavation areas should be appropriately sloped in accordance with applicable OSHA Trench Safety requirements. The excavation contractor should certainly exercise due care with respect to identification and protection of any existing structures or utilities that are within the area of influence of his work activities.

## LIMITATIONS

The geotechnical investigation herein was performed to obtain subsurface information to help facilitate the design of the planned utilities. Our geotechnical investigation may not have included gathering of all information that may be desired by the respective contractor in the preparation of his bid proposal, or in the development of his ways and means of construction. Each contractor is encouraged to conduct such additional investigative effort or testing that he may deem appropriate to prepare his bid proposal and construction plan.

**DRIGGERS ENGINEERING SERVICES** appreciates the opportunity to serve you and we trust that if you have any questions concerning our report, you will not hesitate to contact this office at your convenience.

Respectfully Submitted,
**DRIGGERS ENGINEERING SERVICES, INC.**

Jeffry A. Driggers, P.E.
Project Engineer
FL Registration No. 70598

F. Jaime Driggers, P.E.
President
FL Registration No. 16989

F. JAIME DRIGGERS LICENSE No. 16989 9/30/15 STATE OF FLORIDA PROFESSIONAL ENGINEER

JAD
JAD-REP\157710
Copies submitted: (1) Email

# APPENDIX

PLATE I – BORING LOCATION PLAN

PLATE II – SUMMARY OF GROUNDWATER OBSERVATIONS

HAND AUGER BORING LOGS

LABORATORY TEST RESULTS

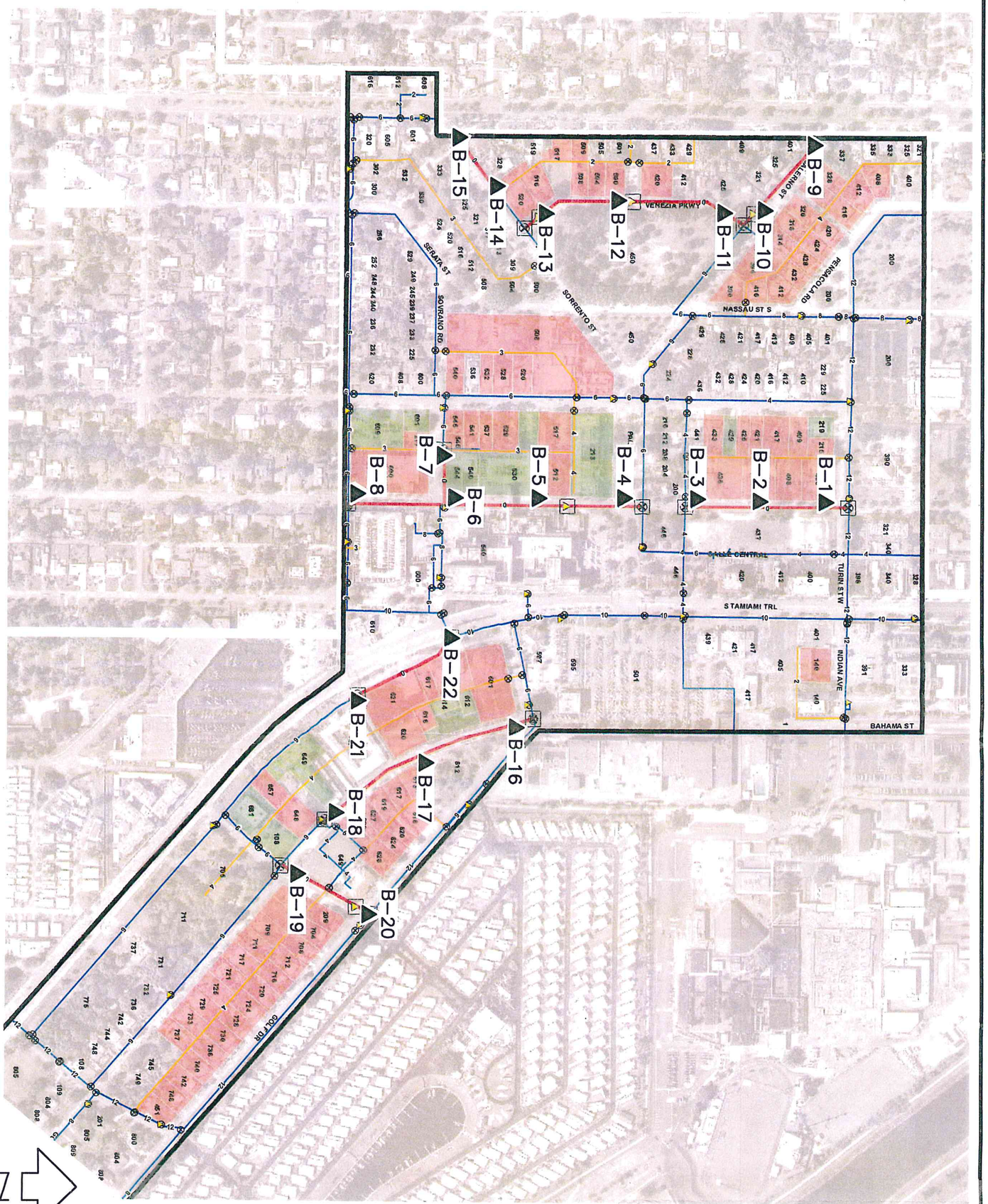
GRAINSIZE ANALYSES

METHOD OF TESTING

**PLATE I - BORING LOCATION PLAN**

LEGEND:

▲ HAND AUGER BORING/
HAND CONE SOUNDING LOCATION




0 200 400 800

SCALE IN FEET

DATE: 9/28/15

| CAD / ENGINEER | SHEET TITLE | PROJECT NO. |
|---|---|---|
| R.D.B. / F.J.D. | BORING LOCATION PLAN | DES 157710 |
| PREPARED BY | PROJECT NAME | SHEET NO. |
| DRIGGERS ENGINEERING SERVICES, INCORPORATED | PROPOSED WATER MAINS – PHASE 5 VENICE, FLORIDA | PLATE 1 |

# PLATE II

## SUMMARY OF GROUNDWATER OBSERVATIONS

# SUMMARY OF GROUNDWATER OBSERVATIONS

## Venice Water Main

| TEST LOCATION | DEPTH TO GROUND WATER (FT) |
|---|---|
| B-1 | 3.4 |
| B-2 | 3.5 |
| B-3 | 3.2 |
| B-4 | 2.3 |
| B-5 | 2.2 |
| B-6 | 3.2 |
| B-7 | 4.2 |
| B-8 | 4.3 |
| B-9 | 1.6 |
| B-10 | 0.8 |
| B-11 | 1.6 |
| B-12 | 2.9 |
| B-13 | 3.8 |
| B-14 | 3.6 |
| B-15 | 3.5 |
| B-16 | 6.9 |
| B-17 | 4.8 |
| B-18 | 3.6 |
| B-19 | 4.7 |
| B-20 | 3.2 |
| B-21 | 5.0 |
| B-22 | 5.6 |

**PLATE II**

# HAND AUGER BORING LOGS

DRIGGERS ENGINEERING SERVICES INCORPORATED

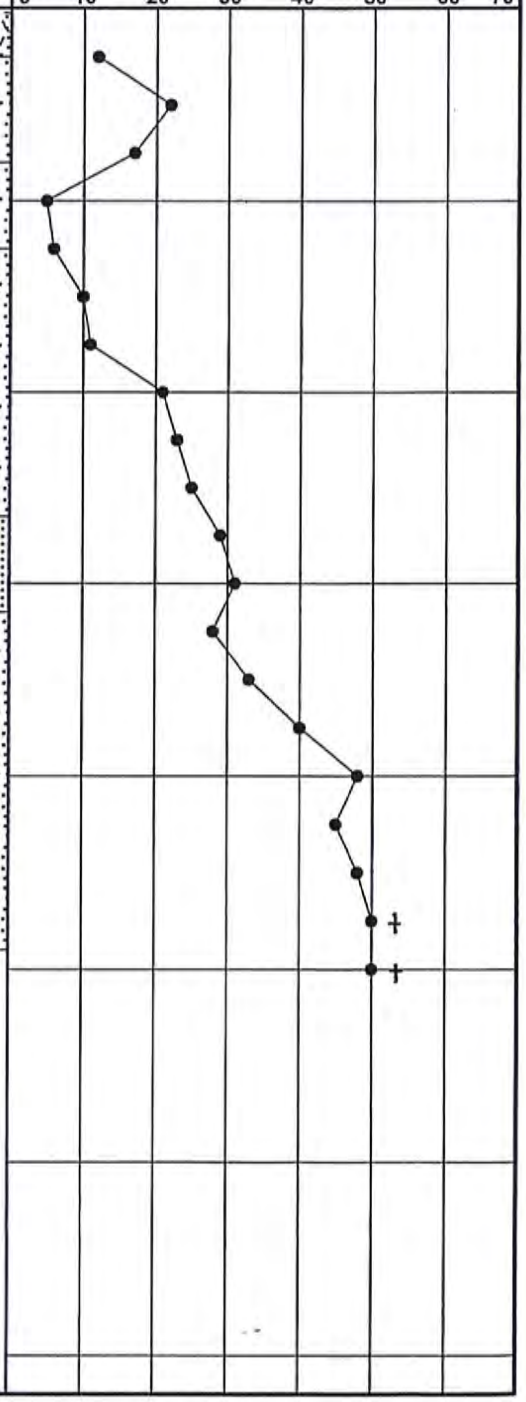
## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| **PROJECT:** Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | **CLIENT:** King Engineering Associates, Inc. |
| **TECHNICIAN:** B.D./J.R. | **WATER TABLE:** 3.4' / **DATE:** 9/1/15 |
| **LOCATION:** See Plate I | **DATE:** 9/1/15 / **COMPLETION DEPTH:** 9.8' |
| | **TEST NUMBER:** B-1 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL |
|---|---|---|---|
| | Dark grayish-brown Fine SAND with roots (SP) (A-3) | 0 | |
| | Gray and light brown Fine SAND (SP) (A-3) | | |
| | Dark brown Fine SAND (SP) (A-3) | 2 | |
| | Brown Fine SAND (SP) (A-3) | 4 | |
| | Light brown silty Fine SAND (SM) (A-2-4) | 6 | |
| | Light brown Fine SAND (SP) (A-3) | 8 | |
| | | 10 | |
| | | 12 | |
| | | 14 | |

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70



LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

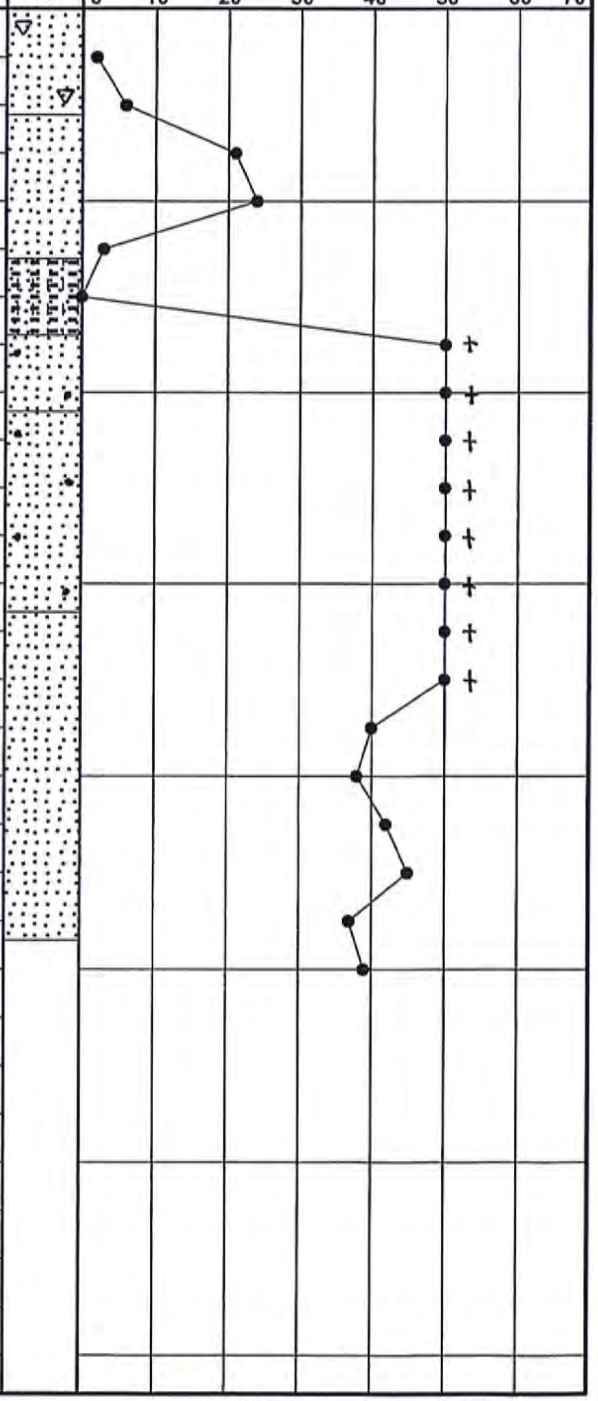
| | |
|---|---|
| **PROJECT:** Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | **CLIENT:** King Engineering Associates, Inc. |
| **TECHNICIAN:** B.D./J.R. | **WATER TABLE:** 3.5' / **DATE:** 9/1/15 |
| **LOCATION:** See Plate I | **DATE:** 9/1/15 / **COMPLETION DEPTH:** 9.7' |
| | **TEST NUMBER:** B-2 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Grayish-brown Fine SAND with trace of shell (SP) (A-3) | 0 |
| | Light brown Fine SAND (SP) (A-3) | 2 |
| | Dark brown slightly organic, slightly silty Fine SAND (SP-SM) (A-3) | |
| | Brown Fine SAND with trace of weakly cemented Fine SAND (SP) (A-3) | 4 |
| | Dark brown Fine SAND with trace of weakly cemented Fine SAND (SP) (A-3) | 6 |
| | Brown Fine SAND (SP) (A-3) | 8 |
| | | 10 |
| | | 12 |
| | LEGEND:<br>• + Denotes Penetration Resistance in excess of 50 TSF | 14 |

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70



DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| **PROJECT:** Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | **CLIENT:** King Engineering Associates, Inc. |
| **TECHNICIAN:** B.D./J.R. | **WATER TABLE:** 3.2' / **DATE:** 9/1/15 |
| **LOCATION:** See Plate I | **DATE:** 9/1/15 / **COMPLETION DEPTH:** 10.1' |
| | **TEST NUMBER:** B-3 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Dark grayish-brown Fine SAND with roots (SP) (A-3) | 0 |
| | Grayish-brown Fine SAND (SP) (A-3) | |
| | Light brown Fine SAND (SP) (A-3) | 2 |
| | Brown Fine SAND (SP) (A-3) | 4 |
| | | 6 |
| | Light brown Fine SAND (SP) (A-3) | |
| | Grayish-brown Fine SAND (SP) (A-3) | 8 |
| | Brown Fine SAND (SP) (A-3) | |
| | | 10 |
| | | 12 |
| | | 14 |

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70

LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| **PROJECT:** Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | **CLIENT:** King Engineering Associates, Inc. |
| **TECHNICIAN:** B.D./J.R. | **WATER TABLE:** 2.3' / **DATE:** 9/1/15 |
| **LOCATION:** See Plate I | **DATE:** 9/1/15 / **COMPLETION DEPTH:** 9.5' * |
| | **TEST NUMBER:** B-4 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL | HAND CONE TIP RESISTANCE (TSF) |
|---|---|---|---|---|
| | Dark gray Fine SAND with finely divided organic material and roots (SP) (A-3) | 0 | | 0 10 20 30 40 50 60 70 |
| | Light brown Fine SAND (SP) (A-3) | 2 | | |
| | Light grayish-brown Fine SAND (SP) (A-3) | 4 | | |
| | | 6 | | |
| | | 8 | | |
| | * This boring was relocated twice due to buried concrete debris at approximate depth of 2.6'. | 10 | | |
| | | 12 | | |
| | LEGEND:<br>●+ Denotes Penetration Resistance in excess of 50 TSF | 14 | | |

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| **PROJECT:** Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | **CLIENT:** King Engineering Associates, Inc. |
| **TECHNICIAN:** B.D./J.R. | **WATER TABLE:** 2.2' — **DATE:** 9/1/15 |
| **LOCATION:** See Plate I | **DATE:** 9/1/15 — **COMPLETION DEPTH:** 9.4' |
| | **TEST NUMBER:** B-5 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Dark gray Fine SAND with roots (SP) (A-3) | 0 |
| | Light brown Fine SAND (SP) (A-3) | |
| | Light grayish-brown Fine SAND (SP) (A-3) | 2 |
| | Dark grayish-brown Fine SAND (SP) (A-3) | 4 |
| | | 6 |
| | | 8 |
| | | 10 |
| | | 12 |
| | | 14 |

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70

+

+

LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| **PROJECT:** Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | **CLIENT:** King Engineering Associates, Inc. |
| **WATER TABLE:** 3.2' | **DATE:** 9/1/15 |
| **TECHNICIAN:** B.D./J.R. | **DATE:** 9/1/15 |
| **COMPLETION DEPTH:** 9.5' | |
| **LOCATION:** See Plate I | **TEST NUMBER:** B-6 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL | HAND CONE TIP RESISTANCE (TSF) |
|---|---|---|---|---|
| | Light grayish-brown Fine SAND with trace of roots (SP) (A-3) | 0 | | 0 10 20 30 40 50 60 70 |
| | Light brown Fine SAND with roots (SP) (A-3) | | | |
| | Light grayish-brown Fine SAND (SP) (A-3) | 2 | | |
| | Light brown Fine SAND (SP) (A-3) | | | |
| | Grayish-brown Fine SAND (SP) (A-3) | 4 | | |
| | | 6 | | |
| | | 8 | | |
| | | 10 | | |
| | | 12 | | |
| | | 14 | | |

LEGEND:

● + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| **PROJECT:** Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | **CLIENT:** King Engineering Associates, Inc. |
| **TECHNICIAN:** B.D./J.R. | **WATER TABLE:** 4.2' / **DATE:** 9/1/15 |
| **LOCATION:** See Plate I | **DATE:** 9/1/15 / **COMPLETION DEPTH:** 9.8' |
| | **TEST NUMBER:** B-7 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL |
|---|---|---|---|
| | Brown Fine SAND with roots (SP) (A-3) | 0 | |
| | Light grayish-brown Fine SAND (SP) (A-3) | 2 | |
| | | 4 | |
| | Light brown Fine SAND with trace of roots (SP) (A-3) | 6 | |
| | Light brown Fine SAND (SP) (A-3) | 8 | |
| | | 10 | |
| | | 12 | |
| | | 14 | |

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70

LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

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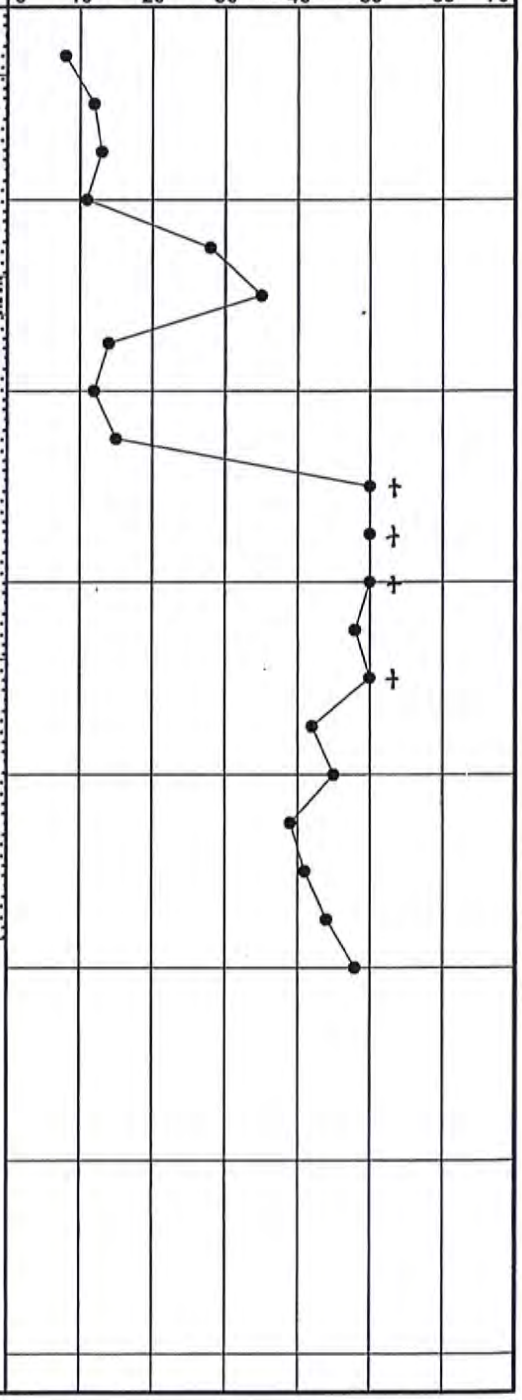
## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| PROJECT: Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | CLIENT: King Engineering Associates, Inc.<br>WATER TABLE: 4.3'<br>DATE: 9/2/15 |
| TECHNICIAN: B.D./J.R. | DATE: 9/2/15<br>COMPLETION DEPTH: 9.7' |
| LOCATION: See Plate I | TEST NUMBER: B-8 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Light grayish-brown Fine SAND with trace of roots (SP) (A-3) | 0 |
| | Light grayish-brown Fine SAND (SP) (A-3) | 2 |
| | Dark brown slightly organic, silty Fine SAND (SM) (A-2-4) | |
| | Light grayish-brown Fine SAND (SP) (A-3) | 4 |
| | | 6 |
| | Brown Fine SAND (SP) (A-3) | 8 |
| | | 10 |
| | | 12 |
| | | 14 |

SYMBOL

HAND CONE TIP RESISTANCE (TSF)




LEGEND:

•+ Denotes Penetration Resistance in excess of 50 TSF

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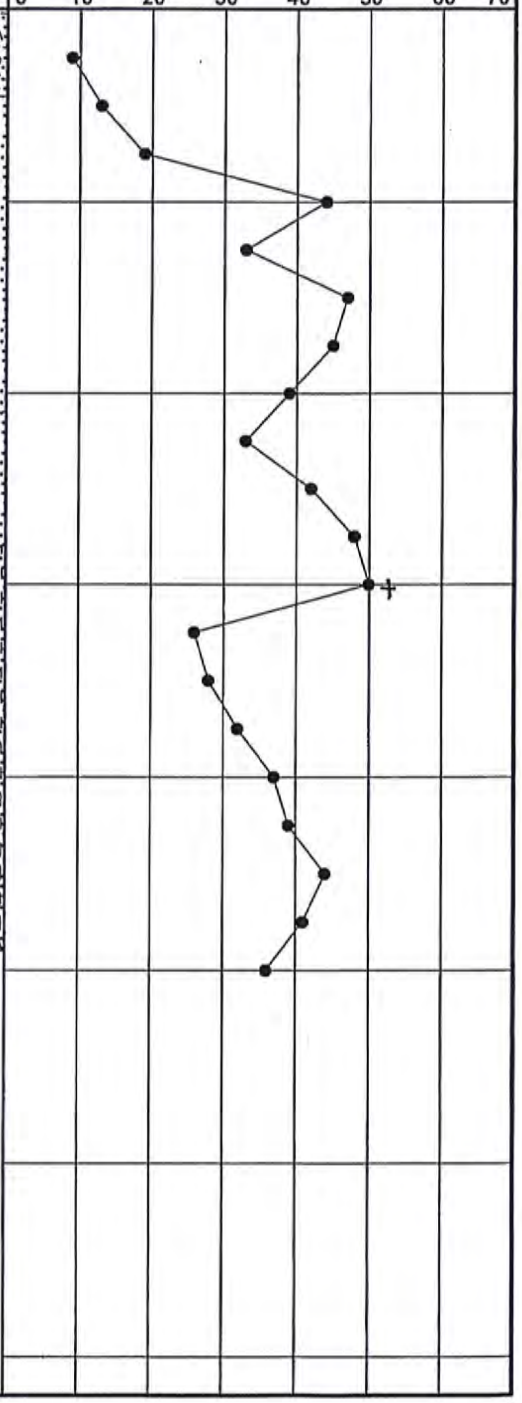
## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| **PROJECT:** Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | **CLIENT:** King Engineering Associates, Inc. |
| **TECHNICIAN:** B.D./J.R. | **WATER TABLE:** 1.6' / **DATE:** 9/2/15 |
| **LOCATION:** See Plate I | **DATE:** 9/2/15 / **COMPLETION DEPTH:** 9.8' * |
| | **TEST NUMBER:** B-9 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Grayish-brown Fine SAND with roots (SP) (A-3) | 0 |
| | Light gray Fine SAND (SP) (A-3) | 2 |
| | | 4 |
| | Light grayish-brown Fine SAND (SP) (A-3) | |
| | Dark gray slightly silty Fine SAND with trace of finely divided organic material (SP-SM) (A-3) | 6 |
| | | 8 |
| | | 10 |
| | * This boring was relocated due to asphalt. | 12 |
| | LEGEND:<br>• + Denotes Penetration Resistance in excess of 50 TSF | 14 |

SYMBOL

HAND CONE TIP RESISTANCE (TSF)



DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| PROJECT: Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | CLIENT: King Engineering Associates, Inc. |
| | WATER TABLE: 0.8' / DATE: 9/2/15 |
| TECHNICIAN: B.D./J.R. | DATE: 9/2/15 / COMPLETION DEPTH: 9.4' |
| LOCATION: See Plate I | TEST NUMBER: B-10 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL | HAND CONE TIP RESISTANCE (TSF) |
|---|---|---|---|---|
| | Dark grayish-brown Fine SAND with roots (SP) (A-3) | 0 | | |
| | Light gray Fine SAND (SP) (A-3) | 2 | | |
| | | 4 | | |
| | Light grayish-brown Fine SAND (SP) (A-3) | 6 | | |
| | Dark brown Fine SAND (SP) (A-3) | 8 | | |
| | | 10 | | |
| | | 12 | | |
| | | 14 | | |

0 10 20 30 40 50 60 70

LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

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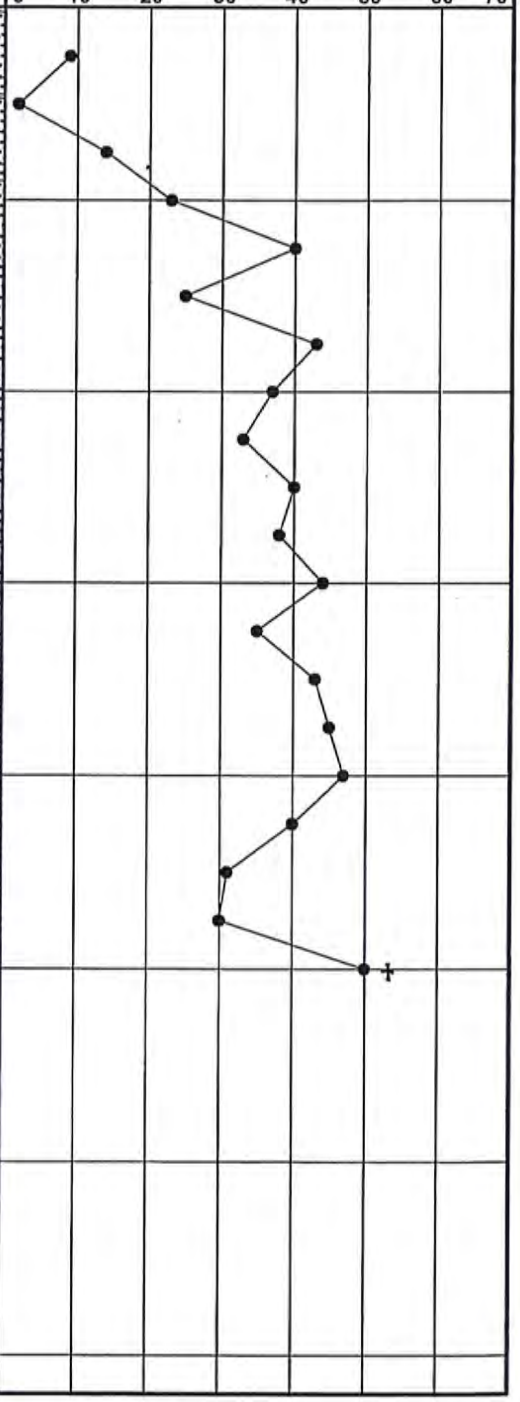
## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| **PROJECT:** Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | **CLIENT:** King Engineering Associates, Inc. |
| **TECHNICIAN:** B.D./J.R. | **WATER TABLE:** 1.6' / **DATE:** 9/2/15 |
| **LOCATION:** See Plate I | **DATE:** 9/2/15 / **COMPLETION DEPTH:** 9.7' |
| | **TEST NUMBER:** B-11 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Dark gray Fine SAND with roots (SP) (A-3) | 0 |
| | Gray Fine SAND with roots (SP) (A-3) | |
| | Light grayish-brown Fine SAND (SP) (A-3) | 2 |
| | | 4 |
| | | 6 |
| | Dark grayish-brown Fine SAND (SP) (A-3) | 8 |
| | | 10 |
| | | 12 |
| | LEGEND:<br>• + Denotes Penetration Resistance in excess of 50 TSF | 14 |

SYMBOL

HAND CONE TIP RESISTANCE (TSF)



DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| **PROJECT:** Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | **CLIENT:** King Engineering Associates, Inc. |
| **TECHNICIAN:** B.D./J.R. | **WATER TABLE:** 2.9' / **DATE:** 9/2/15 |
| **LOCATION:** See Plate I | **DATE:** 9/2/15 / **COMPLETION DEPTH:** 10.0' |
| | **TEST NUMBER:** B-12 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Dark grayish-brown Fine SAND with roots (SP) (A-3) | 0 |
| | Gray Fine SAND (SP) (A-3) | |
| | Light grayish-brown Fine SAND (SP) (A-3) | 2 |
| | Dark brown slightly silty Fine SAND with finely divided organic material (SP-SM) (A-3) | 4 |
| | | 6 |
| | | 8 |
| | | 10 |
| | | 12 |
| | | 14 |

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70

LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| PROJECT: Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | CLIENT: King Engineering Associates, Inc. |
| | WATER TABLE: 3.8' / DATE: 9/2/15 |
| TECHNICIAN: B.D./J.R. | DATE: 9/2/15 / COMPLETION DEPTH: 9.6' |
| LOCATION: See Plate I | TEST NUMBER: B-13 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Brown Fine SAND with roots (SP) (A-3) | 0 |
| | Grayish-brown Fine SAND (SP) (A-3) | 2 |
| | Dark reddish-brown Fine SAND with trace of finely divided organic material (SP) (A-3) | |
| | Light brown Fine SAND (SP) (A-3) | 4 |
| | | 6 |
| | | 8 |
| | | 10 |
| | | 12 |
| | | 14 |

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70

LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

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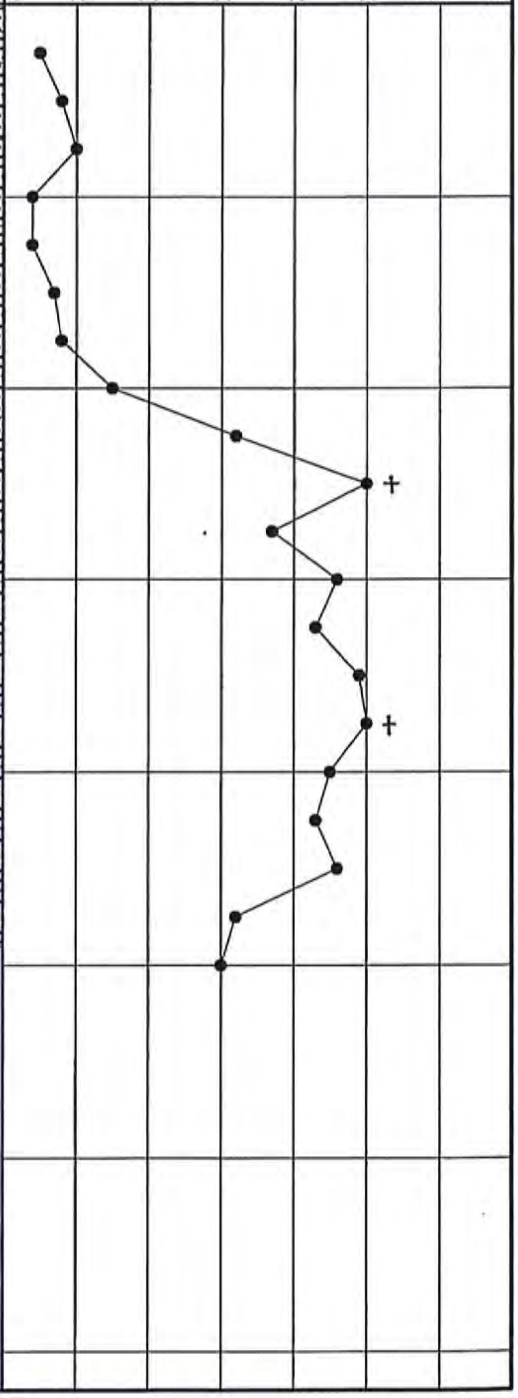
## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| **PROJECT:** Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | **CLIENT:** King Engineering Associates, Inc. |
| **TECHNICIAN:** B.D./J.R. | **WATER TABLE:** 3.6' / **DATE:** 9/2/15 |
| **LOCATION:** See Plate I | **DATE:** 9/2/15 / **COMPLETION DEPTH:** 9.8' |
| | **TEST NUMBER:** B-14 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL |
|---|---|---|---|
| | Dark grayish-brown Fine SAND with roots (SP) (A-3) | 0 | |
| | Gray Fine SAND with trace of roots (SP) (A-3) | | |
| | Dark reddish-brown Fine SAND with trace of finely divided organic material (SP) (A-3) | 2 | |
| | Brown Fine SAND (SP) (A-3) | | |
| | | 4 | |
| | Reddish-brown Fine SAND (SP) (A-3) | | |
| | | 6 | |
| | | | |
| | | 8 | |
| | | | |
| | | 10 | |
| | | | |
| | | 12 | |
| | | | |
| | | 14 | |

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70




LEGEND:

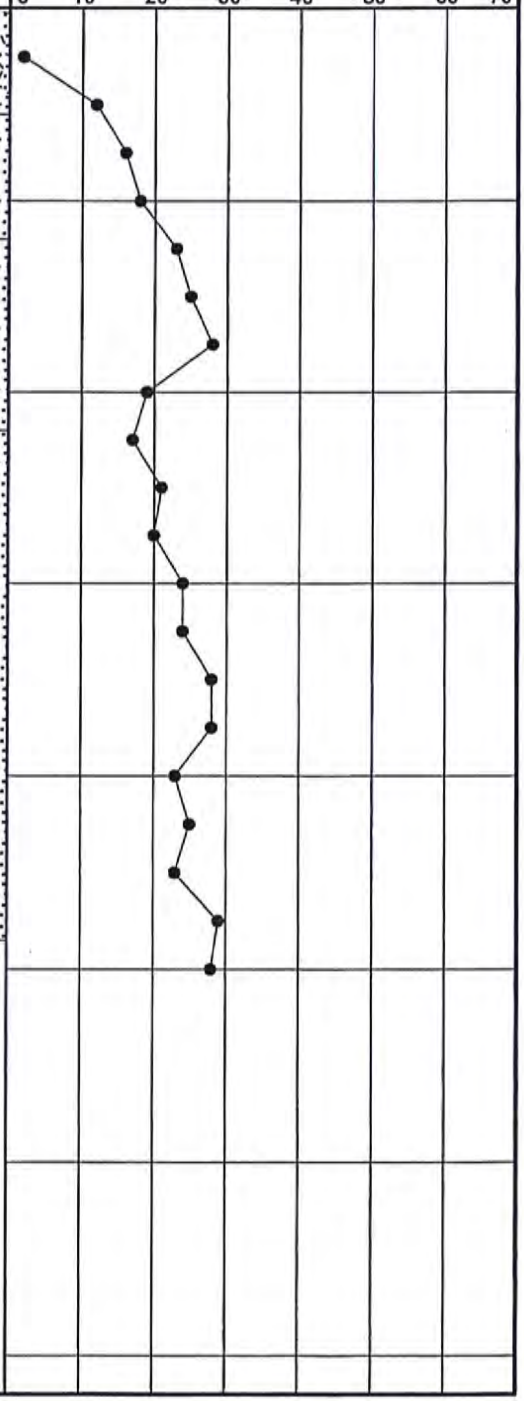
• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| PROJECT: Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | CLIENT: King Engineering Associates, Inc. |
| | WATER TABLE: 3.5' / DATE: 9/2/15 |
| TECHNICIAN: B.D./J.R. | DATE: 9/2/15 / COMPLETION DEPTH: 9.7' |
| LOCATION: See Plate I | TEST NUMBER: B-15 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL | HAND CONE TIP RESISTANCE (TSF) |
|---|---|---|---|---|
| | Dark grayish-brown Fine SAND with roots (SP) (A-3) | 0 | | 0 10 20 30 40 50 60 70 |
| | Light brown Fine SAND (SP) (A-3) | 2 | | |
| | Tan Fine SAND (SP) (A-3) | 4 | | |
| | Brown Fine SAND (SP) (A-3) | 6 | | |
| | | 8 | | |
| | | 10 | | |
| | | 12 | | |
| | | 14 | | |



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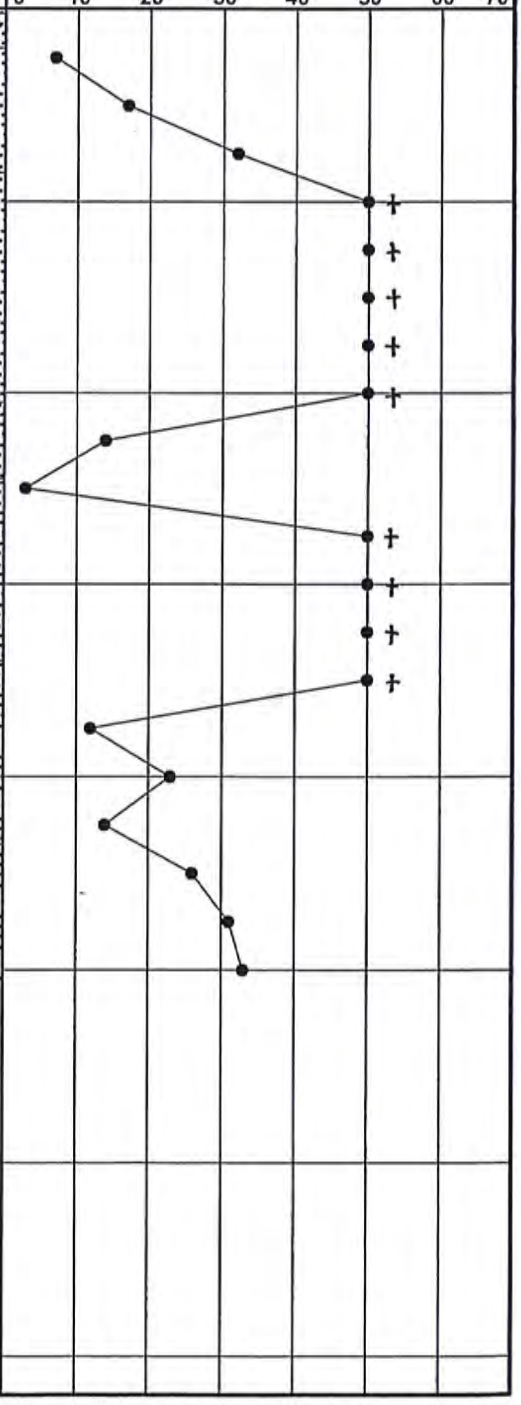
## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| PROJECT: Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | CLIENT: King Engineering Associates, Inc. |
| | WATER TABLE: 6.9' / DATE: 9/3/15 |
| TECHNICIAN: B.D./J.R. | DATE: 9/3/15 / COMPLETION DEPTH: 10.1' |
| LOCATION: See Plate I | TEST NUMBER: B-16 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Brown Fine SAND with roots (SP) (A-3) | 0 |
| | Light gray Fine SAND with trace of roots (SP) (A-3) | |
| | Light gray Fine SAND (SP) (A-3) | 2 |
| | | 4 |
| | Brown Fine SAND (SP) (A-3) | |
| | Reddish-brown weakly cemented Fine SAND (SP) (A-3) | 6 |
| | Light brown Fine SAND (SP) (A-3) | 8 |
| | Dark grayish-brown Fine SAND (SP) (A-3) | 10 |
| | | 12 |
| | | 14 |

SYMBOL

HAND CONE TIP RESISTANCE (TSF)




LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

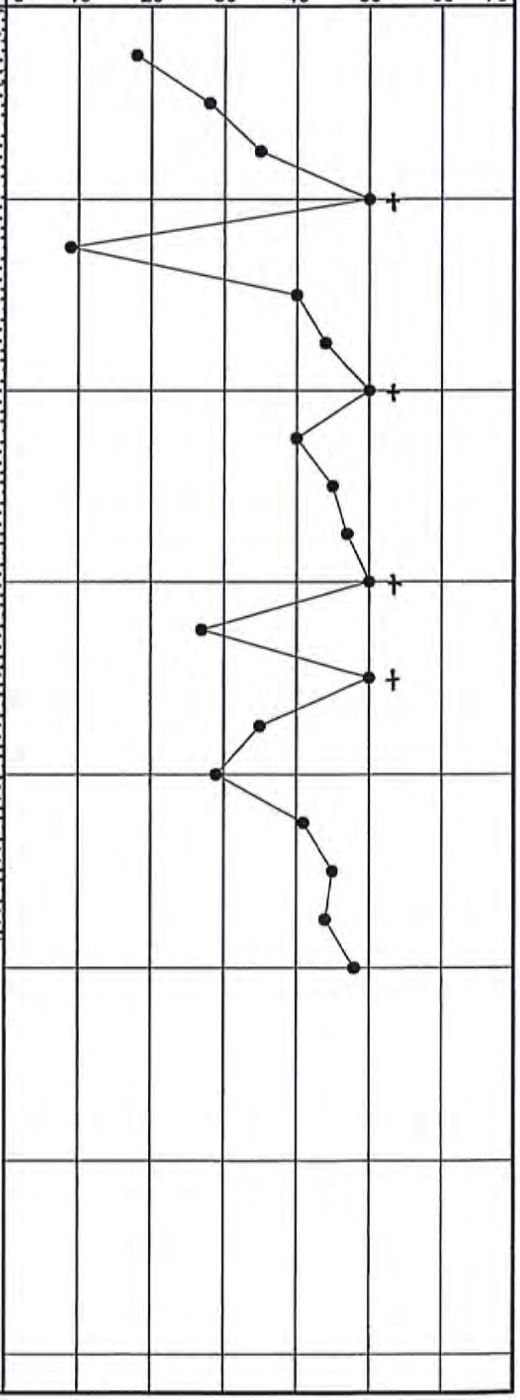
## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| **PROJECT:** Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | **CLIENT:** King Engineering Associates, Inc. |
| **TECHNICIAN:** B.D./J.R. | **WATER TABLE:** 4.8' / **DATE:** 9/3/15 |
| **LOCATION:** See Plate I | **DATE:** 9/3/15 / **COMPLETION DEPTH:** 9.7' |
| | **TEST NUMBER:** B-17 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL |
|---|---|---|---|
| | Light brown Fine SAND with roots (SP) (A-3) | 0 | |
| | Light gray Fine SAND (SP) (A-3) | 2 | |
| | | 4 | |
| | | 6 | |
| | Brown to dark brown Fine SAND (SP) (A-3) | 8 | |
| | | 10 | |
| | | 12 | |
| | | 14 | |

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70



LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

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## HAND AUGER BORING/HAND CONE SOUNDING LOG

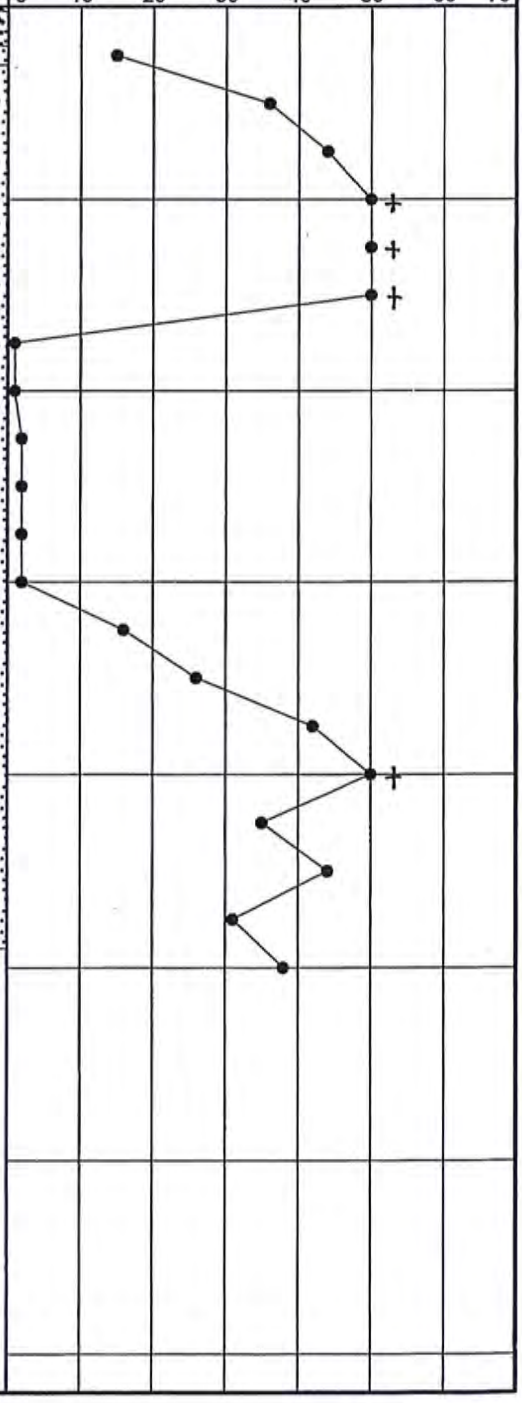
| | |
|---|---|
| **PROJECT:** Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | **CLIENT:** King Engineering Associates, Inc. |
| **TECHNICIAN:** B.D./J.R. | **WATER TABLE:** 3.6' / **DATE:** 9/3/15 |
| **LOCATION:** See Plate I | **DATE:** 9/3/15 / **COMPLETION DEPTH:** 9.8' |
| | **TEST NUMBER:** B-18 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Dark gray Fine SAND with finely divided organic material and roots (SP) (A-3) | 0 |
| | Grayish-brown Fine SAND (SP) (A-3) | |
| | Light grayish-brown Fine SAND (SP) (A-3) | 2 |
| | | 4 |
| | | 6 |
| | | 8 |
| | | 10 |
| | | 12 |
| | | 14 |

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70



LEGEND:

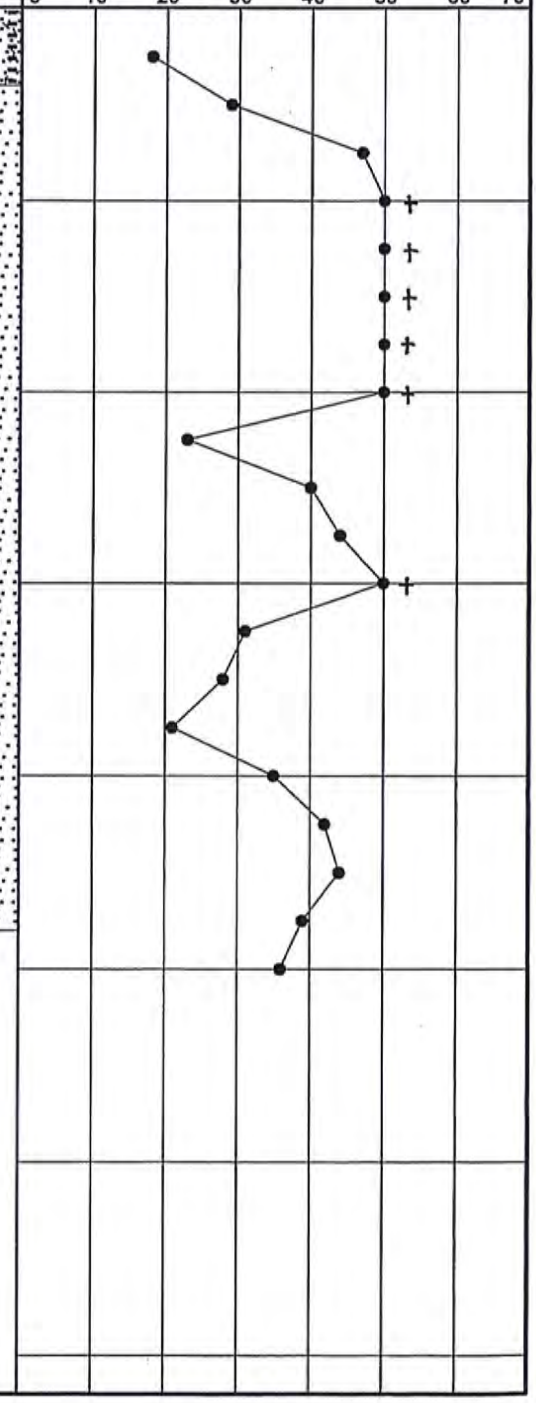
● + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| PROJECT: Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | CLIENT: King Engineering Associates, Inc. |
| | WATER TABLE: 4.7' — DATE: 9/3/15 |
| TECHNICIAN: B.D./J.R. | DATE: 9/3/15 — COMPLETION DEPTH: 9.6' |
| LOCATION: See Plate I | TEST NUMBER: B-19 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL | HAND CONE TIP RESISTANCE (TSF) |
|---|---|---|---|---|
| | Brown Fine SAND with finely divided organic material and roots (SP) (A-3) | 0 | | 0 10 20 30 40 50 60 70 |
| | Light gray Fine SAND (SP) (A-3) | 2 | | |
| | | 4 | | |
| | | 6 | | |
| | | 8 | | |
| | | 10 | | |
| | | 12 | | |
| | | 14 | | |



LEGEND:

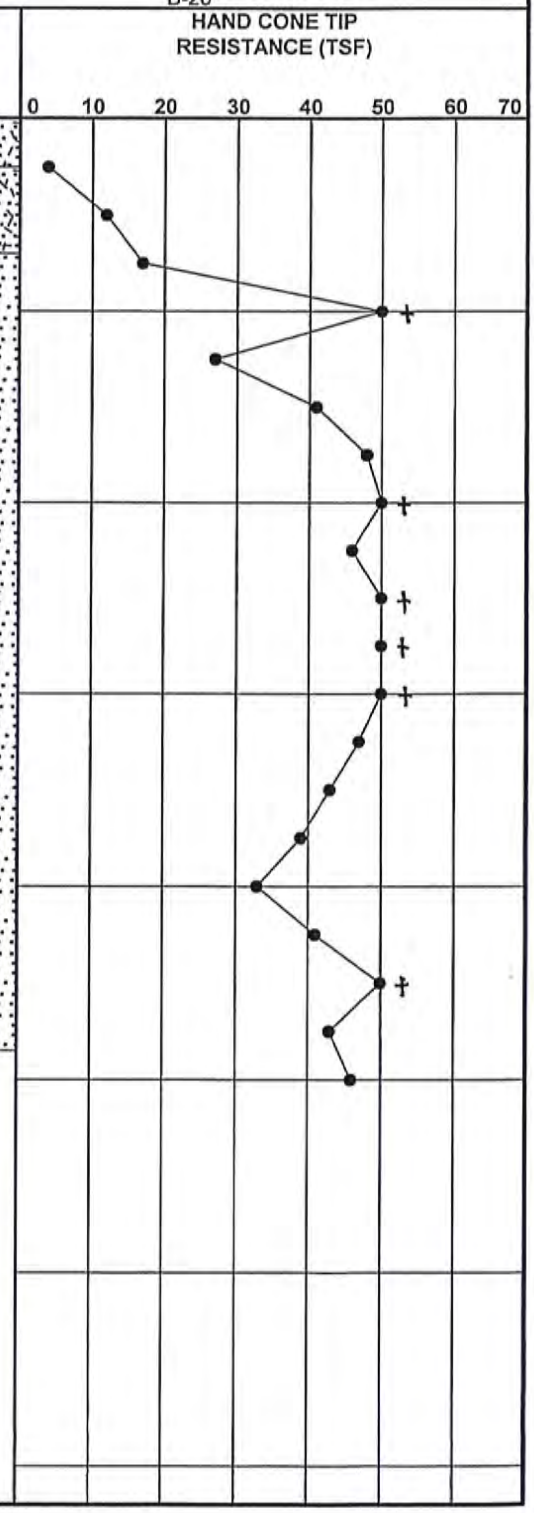
• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| PROJECT: Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | CLIENT: King Engineering Associates, Inc. |
| | WATER TABLE: 3.2' / DATE: 9/3/15 |
| TECHNICIAN: B.D./J.R. | DATE: 9/3/15 / COMPLETION DEPTH: 9.7' |
| LOCATION: See Plate I | TEST NUMBER: B-20 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Brown Fine SAND with roots (SP) (A-3) | 0 |
| | Grayish-brown Fine SAND with roots (SP) (A-3) | |
| | Light gray Fine SAND (SP) (A-3) | 2 |
| | | 4 |
| | | 6 |
| | | 8 |
| | | 10 |
| | | 12 |
| | LEGEND:<br>• + Denotes Penetration Resistance in excess of 50 TSF | 14 |



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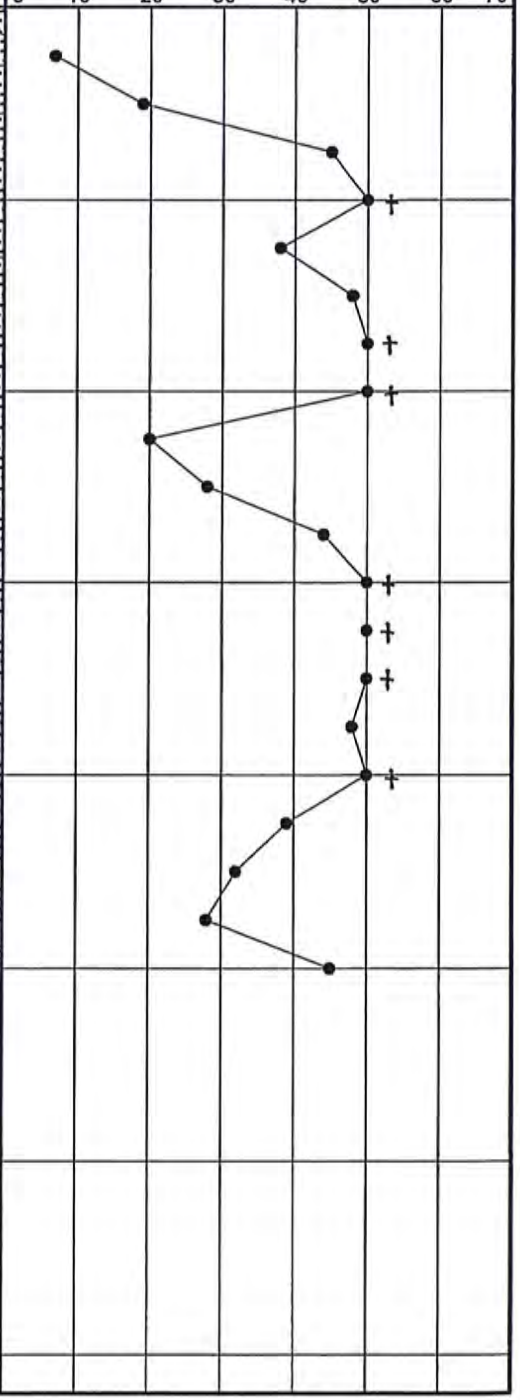
## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| **PROJECT:** Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | **CLIENT:** King Engineering Associates, Inc. |
| **TECHNICIAN:** B.D./J.R. | **WATER TABLE:** 5.0' / **DATE:** 9/3/15 |
| **LOCATION:** See Plate I | **DATE:** 9/3/15 / **COMPLETION DEPTH:** 9.9' |
| | **TEST NUMBER:** B-21 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL |
|---|---|---|---|
| | Dark grayish-brown Fine SAND with roots (SP) (A-3) | 0 | |
| | Light brown Fine SAND with trace of shell (SP) (A-3) | | |
| | Grayish-brown Fine SAND (SP) (A-3) | 2 | |
| | Light gray Fine SAND (SP) (A-3) | 4 | |
| | | 6 | |
| | | 8 | |
| | | 10 | |
| | | 12 | |
| | | 14 | |

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70



LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | | | |
|---|---|---|---|
| PROJECT: Proposed Water Mains - Phase 5<br>Venice, Florida<br>Project No.: DES 157710 | | CLIENT: King Engineering Associates, Inc. | |
| | | WATER TABLE: 5.6' | DATE: 9/3/15 |
| TECHNICIAN: B.D./J.R. | | DATE: 9/3/15 | COMPLETION DEPTH: 10.0' |
| LOCATION: See Plate I | | TEST NUMBER: B-22 | |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL | HAND CONE TIP RESISTANCE (TSF) 0 10 20 30 40 50 60 70 |
|---|---|---|---|---|
| | Light brown Fine SAND (SP) (A-3) | 0 | | |
| | Light gray Fine SAND (SP) (A-3) | 2 | | |
| | | 4 | | |
| | | 6 | | |
| | Dark brown Fine SAND with trace of finely divided organic material (SP) (A-3) | 8 | | |
| | | 10 | | |
| | | 12 | | |
| | LEGEND:<br>• + Denotes Penetration Resistance in excess of 50 TSF | 14 | | |

# 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 | PI | | | | | | | | | |
| B-1 | 2.5-5.3 | Brown Fine SAND | | | | | | | | | | * | | | | | |
| B-2 | 2.6-3.4 | Dark brown slightly organic, slightly silty Fine SAND | | | | | | | | | | ** 8.3 | 4.7 | | | | |
| B-4 | 1.2-4.1 | Light brown Fine SAND | | | | | | | | | | * | | | | | |
| B-7 | 1.1-5.7 | Light grayish-brown Fine SAND | | | | | | | | | | * | | | | | |
| B-8 | 2.7-3.2 | Dark brown slightly organic, silty Fine SAND | | | | | | | | | | | 5.2 | | | | |
| B-10 | 0.7-5.6 | Light gray Fine SAND | | | | | | | | | | * | | | | | |
| B-12 | 3.1-10.0 | Dark brown slightly silty Fine SAND with finely divided organic material | | | | | | | | | | | 2.9 | | | | |
| B-15 | 2.4-4.4 | Tan Fine SAND | | | | | | | | | | * | | | | | |
| B-18 | 0.6-6.6 | Light grayish-brown Fine SAND | | | | | | | | | | * | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

W % = Water Content
$Y_d$ (pcf) = Dry Density
$G_S$ = Specific Gravity
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
P.P. (tsf) = Pocket Penetrometer
U.C. = Unconfined Compression

Con. = Consolidation Test
G.S. (+1) = Grainsize Analysis (Hydrometer)
ORG. (%) = Organic Content
Cl. (ppm) = Total Chloride
$SO_4$ (ppm) = Total Sulfate
RES. (ohm-cm) = Lab Resistivity
* = See Test Curves
** = Percent Passing No. 200 Sieve

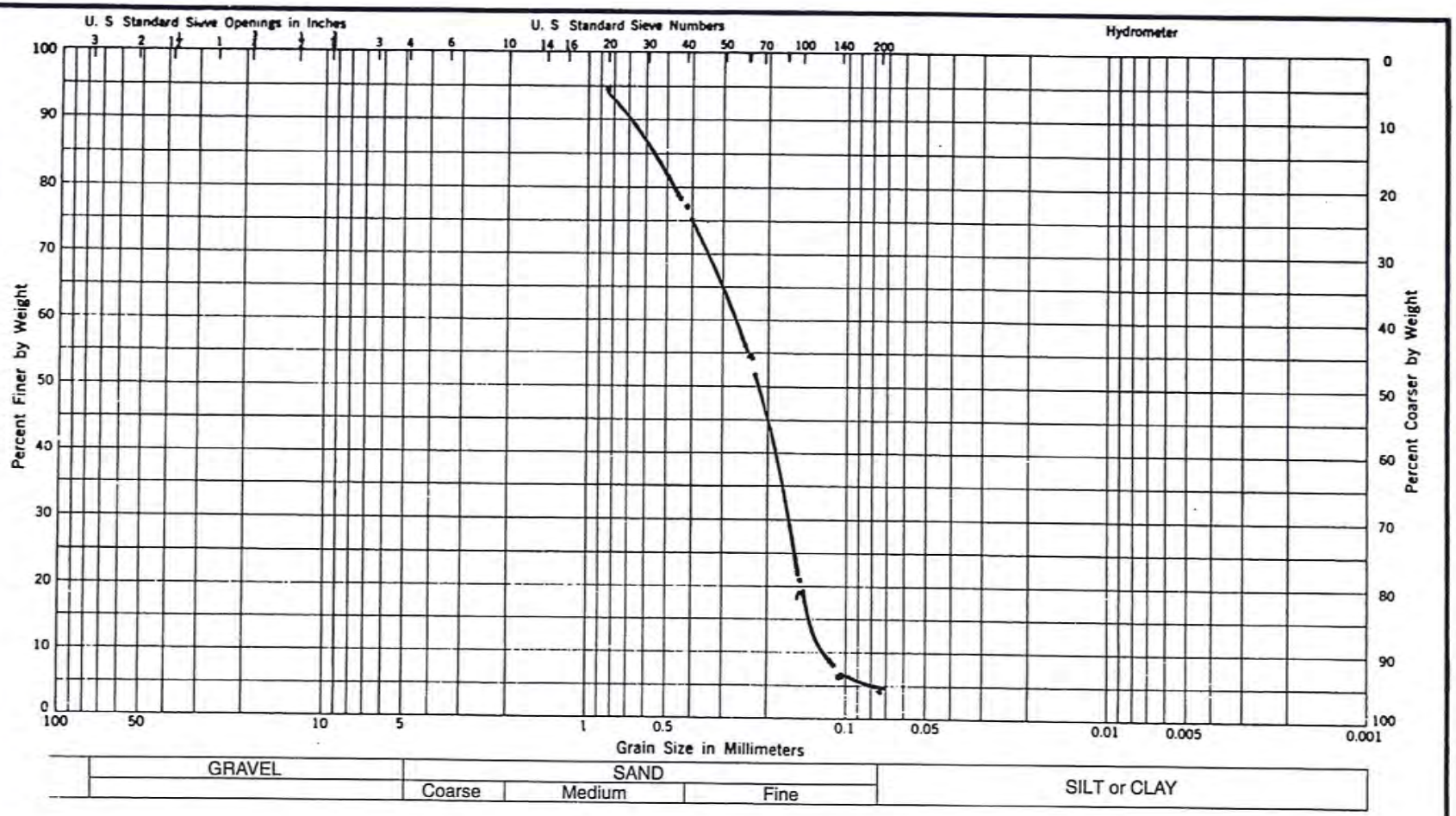
**CLIENT:** King Engineering Associates, Inc.

**PROJECT:** Proposed Water Mains – Phase 5, Venice, Florida

**FILE:** DES 157710

# GRAINSIZE ANALYSE

## DRIGGERS ENGINEERING SERVICES, INC.



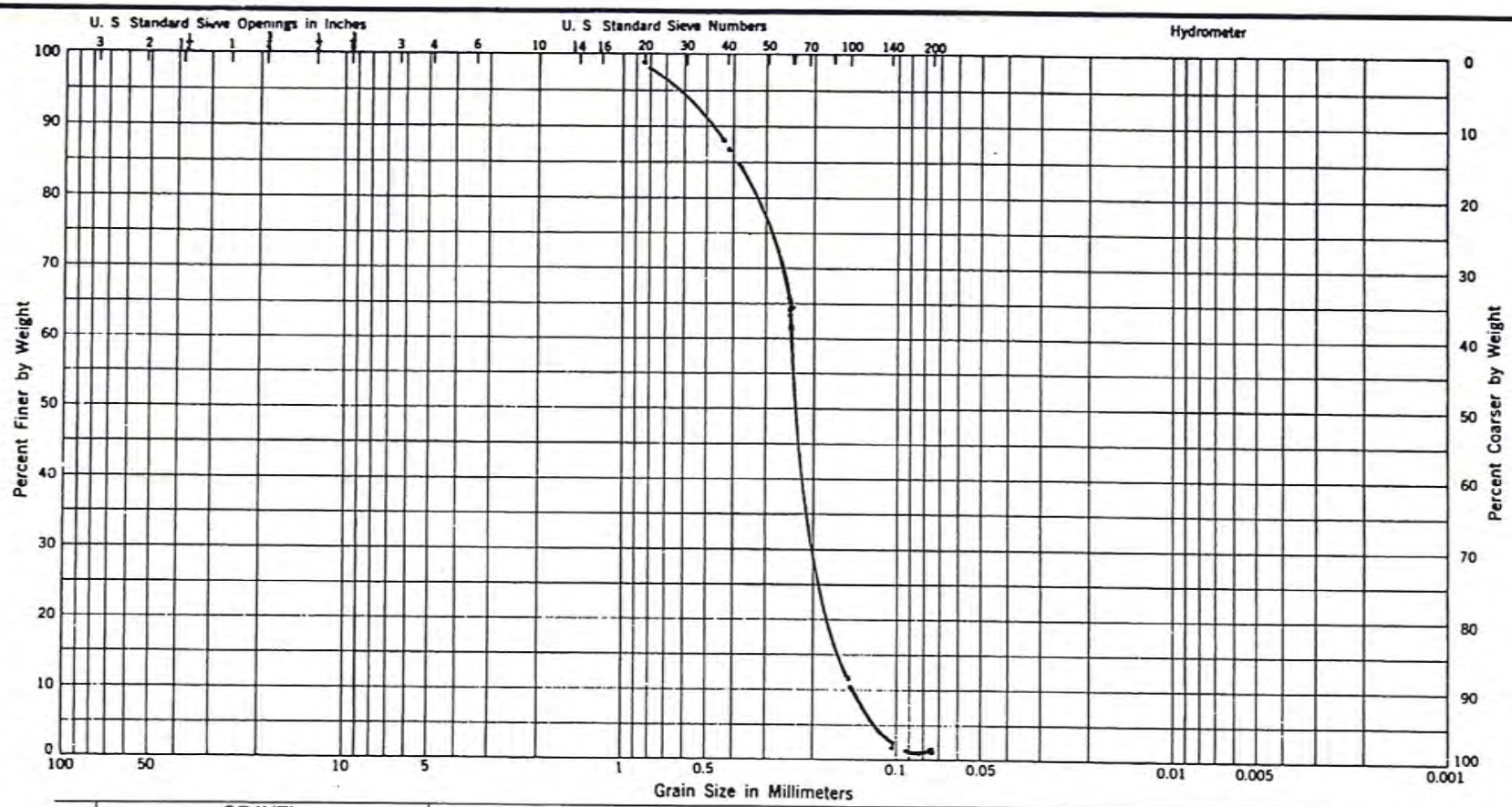

| Number | Depth | Natural Moisture | L L. | P. L | P. I. | Classification |
|---|---|---|---|---|---|---|
| B-1 | 2.5' - 5.3' | | | | | Brown Fine SAND |
| | | | | | | |
| | | | | | | |

CLIENT: King Engineering Associates, Inc.

PROJECT: Proposed Water Mains - Phase 5, Venice, Florida

FILE: DES 157710

## DRIGGERS ENGINEERING SERVICES, INC.



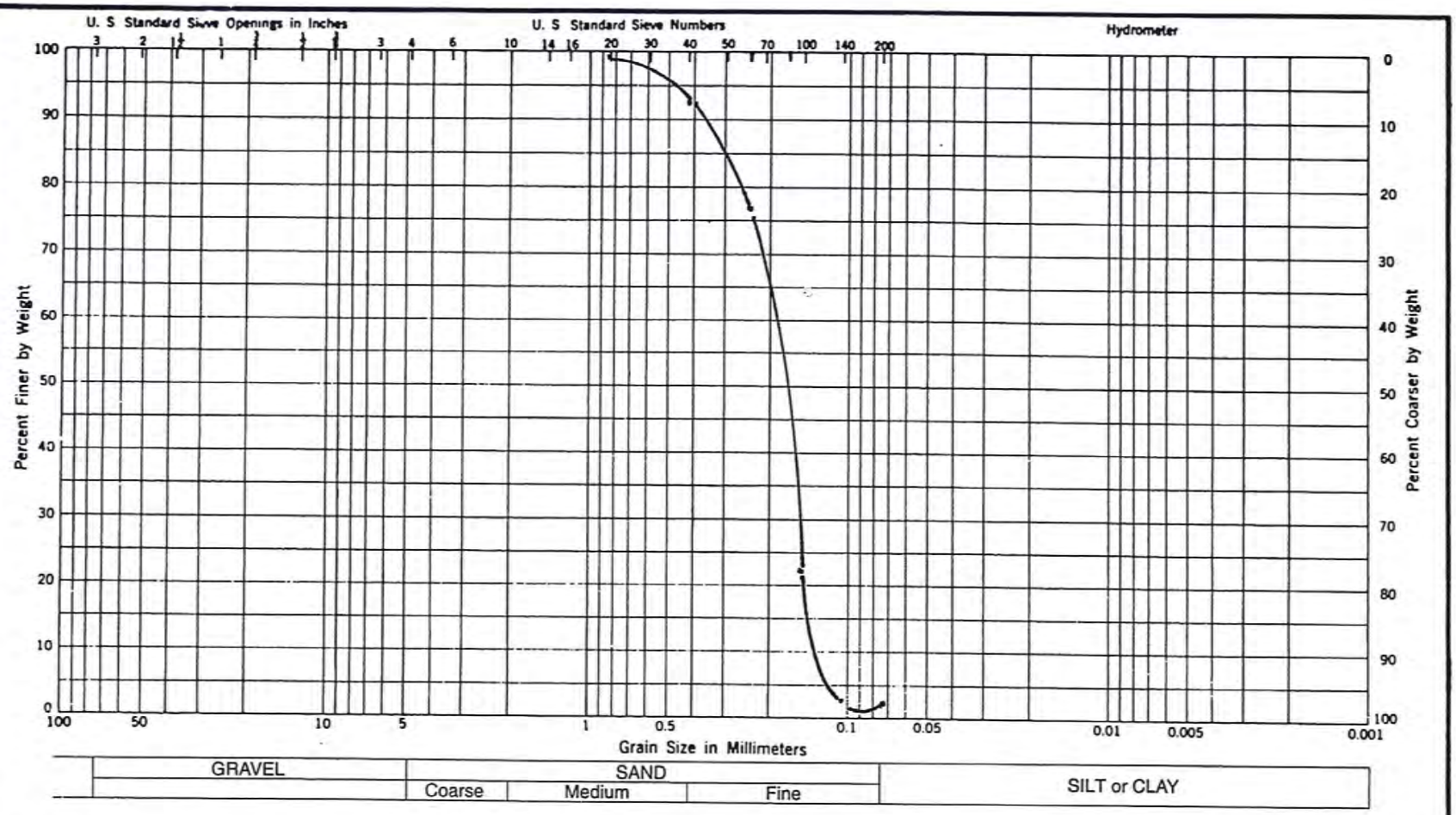

| Number | Depth | Natural Moisture | L. L. | P. L. | P. I. | Classification |
|---|---|---|---|---|---|---|
| B-4 | 1.2' - 4.1' | | | | | Light brown Fine SAND |
| | | | | | | |
| | | | | | | |

CLIENT: King Engineering Associates, Inc.

PROJECT: Proposed Water Mains - Phase 5, Venice, Florida

FILE: DES 157710

**DRIGGERS ENGINEERING SERVICES, INC.**



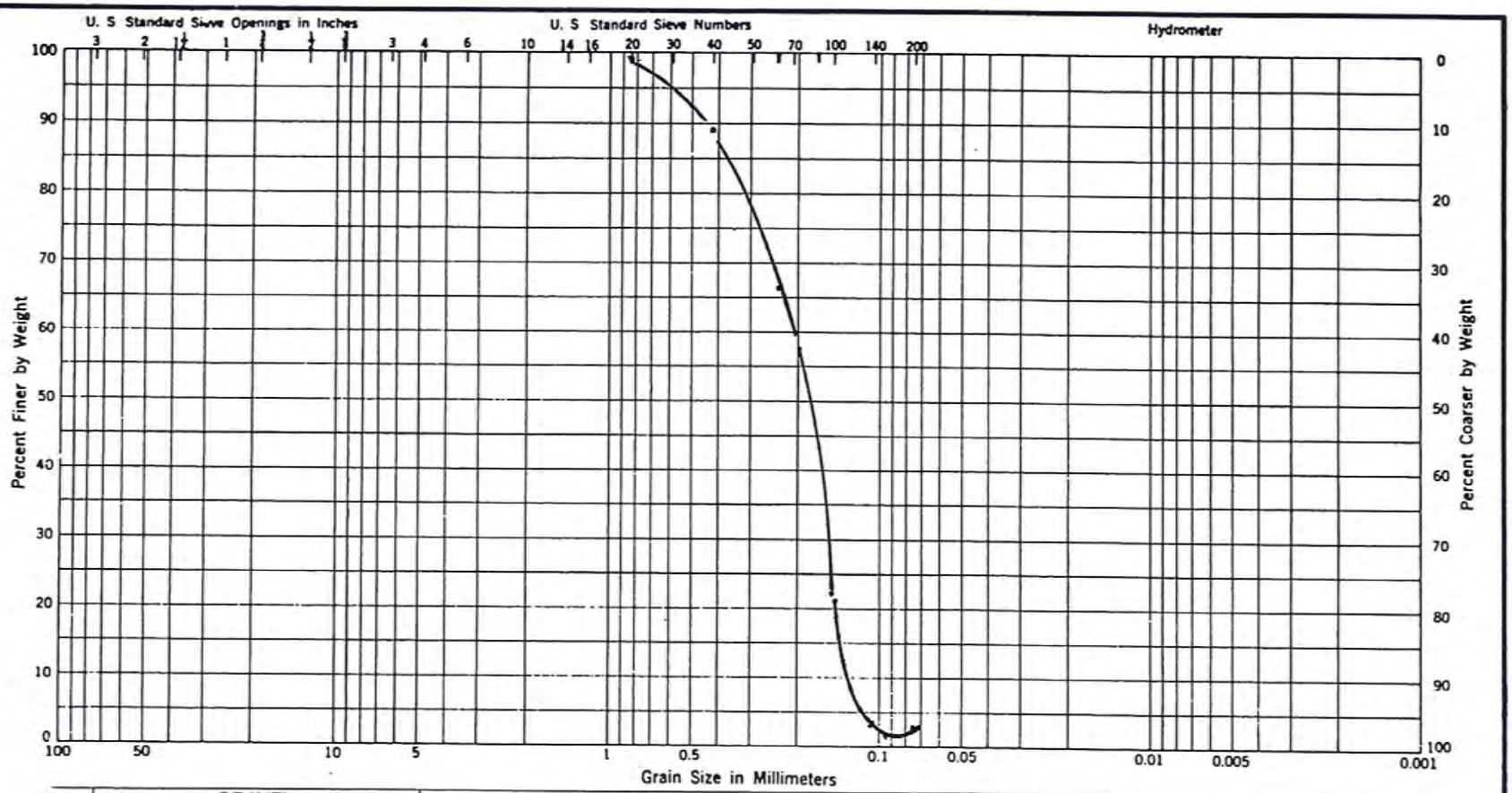

| Number | Depth | Natural Moisture | L. L. | P. L. | P. I. | Classification |
|---|---|---|---|---|---|---|
| B-7 | 1.1' - 5.7' | | | | | Light grayish-brown Fine SAND |
| | | | | | | |
| | | | | | | |

CLIENT: King Engineering Associates, Inc.

PROJECT: Proposed Water Mains - Phase 5, Venice, Florida

FILE: DES 157710

## DRIGGERS ENGINEERING SERVICES, INC.



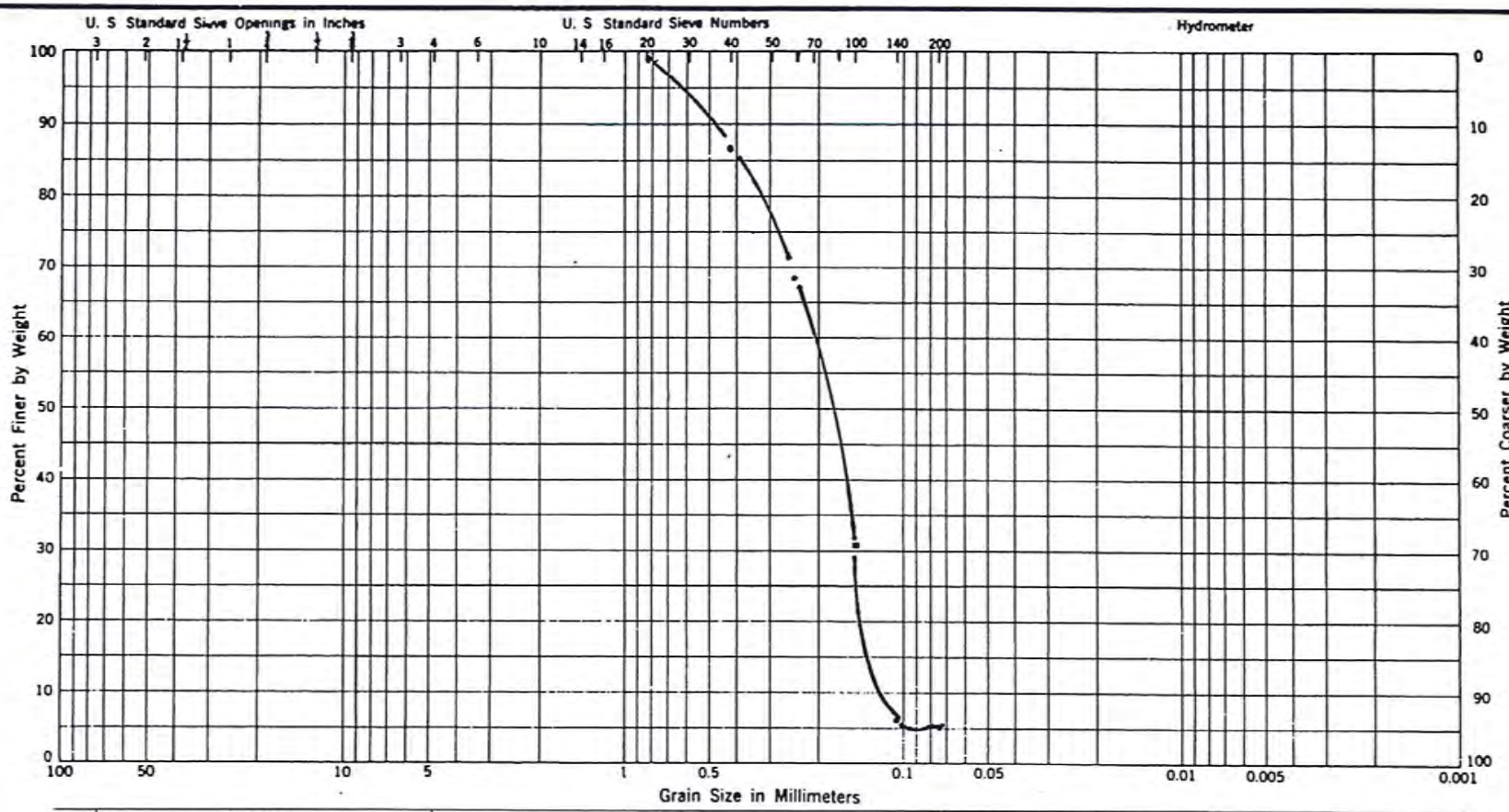

| Number | Depth | Natural Moisture | L. L. | P. L. | P. I. | Classification |
|---|---|---|---|---|---|---|
| B-10 | 0.7' - 5.6' | | | | | Light gray Fine SAND |
| | | | | | | |
| | | | | | | |

CLIENT: King Engineering Associates, Inc.

PROJECT: Proposed Water Mains - Phase 5, Venice, Florida

FILE: DES 157710

## DRIGGERS ENGINEERING SERVICES, INC.



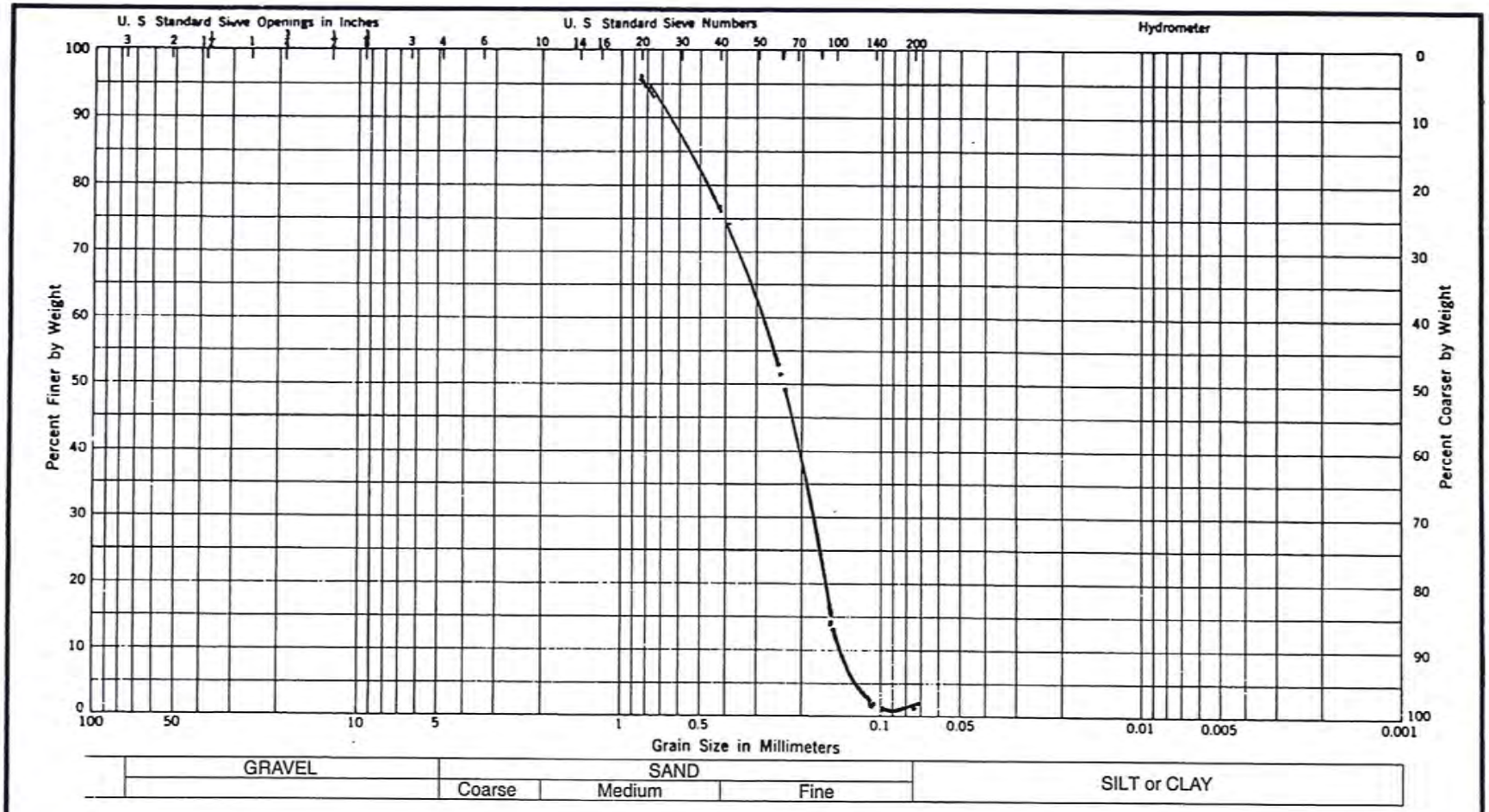

| Number | Depth | Natural Moisture | L L. | P. L. | P. I. | Classification |
|---|---|---|---|---|---|---|
| B-15 | 2.4' - 4.4' | | | | | Tan Fine SAND |
| | | | | | | |
| | | | | | | |

CLIENT: King Engineering Associates, Inc.

PROJECT: Proposed Water Mains - Phase 5, Venice, Florida

FILE: DES 157710

## DRIGGERS ENGINEERING SERVICES, INC.




| Number | Depth | Natural Moisture | L. L. | P. L. | P. I. | Classification |
|---|---|---|---|---|---|---|
| B-18 | 0.6' - 6.6' | | | | | Light grayish-brown Fine SAND |
| | | | | | | |
| | | | | | | |

CLIENT: King Engineering Associates, Inc.

PROJECT: Proposed Water Mains - Phase 5, Venice, Florida

FILE: DES 157710

# METHOD OF TESTING

# HAND CONE PENETRATION TEST

The cone penetration test was performed using a DGSI Model S-215 double rod Static Cone Penetrometer.

Dual rods enable the cone stress to be measured directly. Soil friction on the outer rod does not influence the reading. Depending upon the application, either the maximum bearing for an increment of push or the least bearing for an increment can be reported. If you were investigating for soft spots, you would take the least reading. In typical use, you would force the cone into the soil 6 inches, retract the cone slightly until the gauge reads zero, then advance an additional 6 inch increment. If you meet with refusal, the cone can be removed and the hole opened with a hand auger to permit a continuation of measurements against depth.

The tool has been designed to allow a maximum force of 250 lbf to be applied, somewhat more than the average weight of an operator. The unit can be operated in a vertical or horizontal position. The cone tip has an included angle of 60°. The cone has a section area of 1.5 $cm^2$. The maximum total bearing ($Q_c$) is 70 $kg/cm^2$.

The reading ($Q_c$) is in $kg/cm^2$ which is essentially equal to $ton/ft^2$.

The cone index ($Q_c$) is read directly. The correlation between the cone index and soil constants is not absolute. Generally, the following results have been determined through extensive field use of the unit. Further verification of correlation in your local soil types is essential.

| **Standard Penetration** | **Strength and Cohesion** |
|---|---|
| Test "N" Value<br>$Q_c = 4$ "N" | $Q_u$ - Unconfined compression ($kg/cm^2$)<br>c - Cohesion (kg/cm2)<br><br>Uniform clay and silty clays: $Q_c = 5\ Q_u$<br>$Q_c = 10\ c$<br>Clayey Silts: $Q_c = (10 \text{ to } 20)\ Q_u$<br>$Q_c = (20 \text{ to } 40)\ c$ |

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**CITY OF VENICE BOIL WATER NOTICE FORMS**

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City of Venice
Utilities Department

Telephone 941-480-3333 After Hours Telephone 941-486-2770

# NOTICE OF WATER SERVICE SHUTDOWN

**Date of Notice:** _____

**Date of Shutdown:** _____

**Duration of Shutdown:** _____ **hour** **from** _____ to _____

**Reason for Shutdown:** _____

**Area of Shutdown:** _____

_____

_____

**As a precautionary measure, you are advised to boil water vigorously for at least three (3) minutes or use bottled water for drinking and cooking purposes. This precautionary period will extend for 72 hours. For additional information you may call the numbers listed above.**

**WHY SHOULD YOU BOIL WATER?**

**Pipes that carry clean water to your home normally are kept contaminant - free using state regulated disinfectant procedures. But, when a water pipe breaks or is cut to make repairs, contaminants can get into the pipe. Mud and dirt can get into the pipe, as well as contaminated surface water. Boiling water will kill any microorganisms that may be in the water. It is advised that you boil water for drinking and cooking purposes.**

**WHY DOES THE PRECAUTIONARY PERIOD LAST 72 HOURS?**

**City employees must restore the water to its proper chemical balance. The water must be sampled and be analyzed for bacteriological content and chlorine level. The treatment and testing to ensure proper water typically takes 72 hours.**

**WHO IS AT RISK?**

**Everyone in the notified area is advised to boil water as a precautionary measure. Some people, such as the very young or old, or those with *suppressed immune systems* such as *cancer chemotherapy patients* or people with *AIDS*, should be especially careful to use boiled water for drinking and cooking purposes.**

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City on the Gulf
Venice, Florida

**City of Venice Utilities**

**ADVISORY NOTICE**

***Date:*** _____

# This notice is to advise you that, effective immediately, the boil water notice has been rescinded.

***Should you have any questions, please call (941) 480-3333 ext. 229.***

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**FDEP NOTICED GENERAL PERMIT**

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**December 4, 2015**

**Notification of Acceptance of Use of a General Permit**

**Permittee:**
City of Venice
Tim Hochuli, Utilities Director
3510 E. Laurel Road
Venice, FL 34275

thochuli@venicegov.com

**Permit Number:** 0124807-169
**Issue Date:** 12/04/2015 WD: 1901-15-005
**Expiration Date:** 12/04/2020
**County: Sarasota**
**Project Name: Water Main Replacement Program Phase 5**
**Water Supplier: City of Venice Utilities**

**PWS ID:** 6581901

Dear Mr. Hochuli:

On November 23, 2015, the Florida Department of Health received a "*Notice of Intent to Use the General Permit for Construction of Water Main Extensions for PWSs*" [DEP Form No. 62-555.900(7)], under the provisions of Rule 62-4.530 and Chapter 62-555, Florida Administrative Code (F.A.C.). The proposed project includes installation of approximately 6,800 L.F. of 6inch PVC water main to replace rear lot connections along Salerno, Venezia, Sorrento, Nokomis, Guild, Fairway, Nassau and Tamiami Trail between Golf and San Marco in Venice, Florida.

Based upon the submitted Notice and accompanying documentation, this correspondence is being sent to advise that the Department does not object to the use of such general permit at this time. Please be advised that the permittee is required to abide by Rule 62-555.405, F.A.C., all applicable rules in Chapters 62-4, 62-550, 62-555, F.A.C., and the General Conditions for All General Drinking Water Permits (found in 62-4.540, F.A.C.).

The permittee shall comply with all sampling requirements specific to this project. These requirements are attached for review and implementation.

Pursuant to Rule 62-555.345, F.A.C., the permittee shall submit a certification of construction completion [DEP Form No. 62-555.900(9)] to the Department and obtain approval, or clearance, from the Department before placing any water main extension constructed under this general permit into operation for any purpose other than disinfection or testing for leaks.

Within 30 days after the sale or legal transfer of ownership of the permitted project that has not been cleared for service in total by the Department, both the permittee and the proposed permittee shall sign and submit an application for transfer of the permit using Form 62-555.900(8), F.A.C., with the appropriate fee. The permitted construction is not authorized past the 30-day period unless the permit has been transferred.

This permit will expire five years from the date of issuance. If the project has been started and not completed by that time, a new permit must be obtained before the expiration date in order to continue work on the project, per Rule 62-4.030, F.A.C.

Sincerely

Brian C. Dietz, P.E.
Professional Engineer III

cc: Christopher F. Kuzler, P.E./King Engineering

**A Civil Penalty May Be Incurred**
**if this project is placed into operation before obtaining a clearance from this office.**

Requirements for clearance upon completion of projects are as follows:

**1) Clearance Form**
Submission of a fully completed Department of Environmental Protection (DEP) Form 62-555.900(9) *Certification of Construction Completion and Request for Clearance to Place Permitted PWS Components into Operation.*

**2) Record Drawings**
Submission of the portion of record drawings showing deviations from the DEP construction permit, including preliminary design report or drawings and specifications.

**3) Bacteriological Results**
Copies of satisfactory bacteriological analysis (a.k.a. Main Clearance), taken within sixty (60) days of completion of construction, from locations within the distribution system or water main extension to be cleared, in accordance with Rules 62-555.315(6), 62-555.340, and 62-555.330, F.A.C. and American Water Works Association (AWWA) Standard C 651-92, as follows:

- Connection(s) to an existing system (13)
- Any internal Phase lines

Each location shall be sampled on two consecutive days, with sample points and chlorine residual readings clearly indicated on the report. A sketch or description of all bacteriological sampling locations must also be provided.

For further clarification contact:
Brian C. Dietz, P.E.
Florida Department of Health in Sarasota County
1001 Sarasota Center Blvd
Sarasota, FL 34240
941-861-6133
brian_dietz@flhealth.gov

**When any existing asbestos cement (AC) pipes are replaced under this permit, the permittee shall do so in accordance with the applicable rules of the Federal Asbestos Regulation and Florida DEP requirements. For specific requirements 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.**

**All main clearances are to be scheduled with the Sarasota County Health Department, Office of Environmental Health per Florida Statutes 403.862. Sample points will be reviewed prior to main clearances.**
**All water lines will be disinfected in accordance with AWWA C651-99 with the chlorinated water being sampled by a utility inspector. Introduction of the disinfection shall be witnessed by a utility inspector. All sample taps shall be non-threaded.**
**Any sampling location that is a fire hydrant requires prior approval by this Department and the Utility.**

**All water mains will be pressure-tested in accordance with AWWA C600 Pipe Laying Section and test being witnessed by the Utility.**

City of Venice Utilities
Tim Hochuli, Utilities Director
3510 E. Laurel Road
Venice, FL 34275

Permit/Cert. Site: 0124807-169
WD: 1901-15-005
Date of Issue: December 4, 2015
Expiration Date: December 4, 2020
Project: Water Main Replacement Program Phase 5

GENERAL CONDITIONS

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727 or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, or its agent, employees, servants or representatives.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by this department.

3. As provided is in Subsections 403.08(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state of local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the internal Improvement Trust Fund may express state opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefore caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution or contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
   a. Having access to and copying any records that must be kept under the conditions of the permittee;
   b. Inspecting the facility, equipment, practices, or operations regulated or require under this permit; and
   c. Sampling or monitoring any substances or parameters at any locations reasonably necessary to assure compliance with this permit or department rules.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

   a. a description of and cause of non-compliance; and
   b. the period of non-compliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, and may be used by the department as evidence in any enforcement case arising; under the Florida Statutes or department rules, except where such use is prescribed by Section 403.73 and 403.111, Florida Statutes.

10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

13. This permit also constitutes:
*Determination of Best Available Control Technology (BACT)
*Determination of Prevention of Significant Deterioration (PSD)
*Certification of Compliance with State Water Quality Standards
*Compliance with New Source Performance Standards

14. The permittee shall comply with the following monitoring and record keeping requirements:
    a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.
    b. The permittee shall retain at the facility or other location designated by this permit, records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample measurement, report or application unless otherwise specified by department rule.
    c. Records of monitoring information shall include:
        *the date, exact place, and time of sampling or measurements;
        *the person responsible for performing the sampling or measurements;
        *the date(s) analyses were performed;
        *the person responsible for performing the analyses;
        *the analytical techniques or methods used; and
        *the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnished any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

# CITY OF VENICE PROCUREMENT-
# FINANCE DEPARTMENT

**401 W. VENICE AVE. - ROOM # 204**
**VENICE, FL. 34285**
**(941) 486-2626**
**FAX (941) 486-2790**

# ADDENDUM NO. 1

**Date: December 4, 2017**

**To: All Prospective Proposers**

**Re: ITB# 3073-17: Water Main Replacement Program - Phase 5 Re-Bid**

---

This addendum sets forth changes and/or information as referenced and is hereby made part of and should be attached to the subject Contract Documents. Receipt of this Addendum shall be acknowledged below and in the submitted proposal. It shall be the responsibility of each proposer, prior to submitting a proposal, to contact the City of Venice- Procurement- Finance Department to determine if addenda were issued and to make such addenda a part of their proposal.

---

The following is to clarify and provide additional information requested during the pre-bid meeting held November 29, 2017 at 2:00 P.M.

Peter Boers, Procurement Manager, opened the meeting

1. **Important dates:** Bids are due December 20, 2017 at 2:00 p.m. at City Hall room #204. Bids are to be delivered to Suite 204 in City Hall. The bid opening will take place in the Community Hall (room #114).

2. The Cut-Off for questions will be December 8, 2017 at 1:00 PM

3. Mr. Boers advised the bidders to read through *Instructions to Bidders*, but made note of the following Articles.

4. Article 10 Bid Security - 5% Bid Security is required.

5. Article 11 Contract Times – time to completion is 300 days from NTP.

6. Article 12 Liquidated Damages - Mr. Boers advised that the stipulated damages for this project are $1532 per day.

7. Article 23 Contract Securities - The awarded contractor will be required to provide a Performance and Payment Bond equaling 100% of the contact amount. **EXHIBIT A**

8. Article 24 Contractors Insurance -Mr. Boers reviewed **EXHIBIT B**: *Insurance Requirements*.
    a. General Liability -$1,000,000 per occurrence
    b. Business Auto Liability - $1,000,000 combined single limit
    c. Worker's Comp per State Statute
    d. Builders' Risk Installation Coverage to be provided prior to Notice to Proceed

9. Article 29 Local Preference – Local preference is not applicable to this bid.

10. Bid Form

11. Mr. Boers reviewed the required forms that must be returned with each firm's submittal. These required forms are listed in the Appendix of the bid document. Mr. Boers advised, even if a form does not pertain to said company - to still mark it with a "N/A" and return it with each submittal. Mr. Boers also advised that the *Required Forms List* could be used as a "check off" sheet for firms to use. Strike Local Preference Form from required forms list.

12. Ms. Brendalee Westlake reviewed the SRF requirements and distributed the attached handout.

13. Mr. Christopher Kuzler & Ms. Patience Anastasio, the City's consulting Engineers from King Engineering, reviewed the scope of work and provided a brief overview of the project.

14. Mr. Boers opened the floor for bidder's questions. He advised the attendee's to follow up in writing if they do not see an answer to their question published in an addendum and to not assume a change is in effect unless published in an addendum.

**REVISIONS:**

1. Article 10 REQUIRED FORMS has been amended to read:

ARTICLE 10 – REQUIRED FORMS

Required Forms Check List: ITB# 3073-17: Water Main Replacement Program – Phase 5 Re-Bid

- 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)

The Local Preference Form provided in the Bid documents is not required in the bid submittal.

2. Specification 01150 – Measurement and Payment

a. Paragraph 3.1, I., 2., delete the words “and concrete stepping stone”.
b. Paragraph 3.1, J., 2., change the words “concrete stepping stone” to “concrete pad”.
c. Paragraph 3.1, K., 10., change the words “concrete stepping stone” to “concrete pad”.

3. Bid Form

a. Pay Item #37, General Conditions, delete the words “(max 5% of Base Bid Subtotal)”.

4. Drawings

Delete sheets D1.00, D1.01, D1.02 and D1.03 in their entirety and replace with new sheets D1.00, D1.01, D1.02 and D1.03 provided in this Addendum.

5. Revised file set 3 of 10, which includes missing sheets, of the bid plans is attached to this Addendum

**QUESTIONS**

Q. In measurement and payment page 01150-7 I.2 and J.2 a concrete stepping stone is called for under bid items 15, 16 and 17. How is this to be utilized? I do not see it in the details.
A. Refer to revision 2 above.

Q. Line Items #24 thru 29 are shown in LF. Please advise if this unit should be in SF/SY?

A. Payment for these items is based on LF, refer to the Measurement and Payment section.

Q. Line Item #37 shown with a 5% max of Base Bid Subtotal? Is this 5% stipulation intended for Line Item #38 Mob/Demob?
A. We deleted the 5% max in the Addendum. Refer to revision 3 above.

Peter A. Boers
Procurement Department

Acknowledgment is requested even if you have elected not to respond to this bid. A designated management representative of your firm can sign the receipt for this addendum. Please acknowledge receipt of this addendum immediately by fax to (941) 486-2790 or mail to the above noted address, if a fax is not possible.

Receipt Acknowledged:

_____

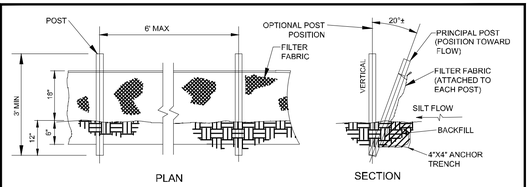
Signature

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Company

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Date

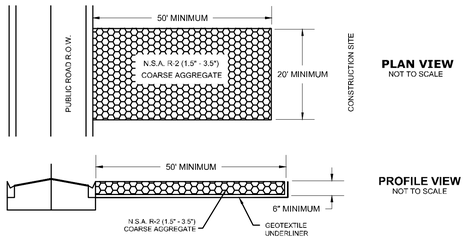



PLAN SECTION

1.) POSTS SHALL BE WOOD (2"X4" OR 2 ½" DIA.) OR STEEL (MIN. 1.33 LBS/FT.).
2.) SILT FENCE SHALL BE PLACED PRIOR TO ANY EARTHMOVING, EXCAVATION OR VEGETATION REMOVAL.
3.) CONTRACTOR IS RESPONSIBLE FOR MONITORING & MAINTAINING THE SILT FENCE IN GOOD CONDITION THROUGHOUT THE LIFE OF THE PROJECT.
4.) THE CITY ENGINEER OR HIS DESIGNEE MAY ISSUE A STOP WORK ORDER IN THE EVENT THAT SILT FENCE IS NOT BEING MAINTAINED OR IF SEDIMENT IS MIGRATING OFF-SITE.

# SILT FENCE DETAIL

N.T.S.




# CRUSHED STONE CONSTRUCTION EXIT DETAIL

N.T.S.

| | | | |
|---|---|---|---|
| Venice, Florida "City on the Gulf" | **CITY OF VENICE** ENGINEERING DEPARTMENT 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | **ENGINEERING** SILT FENCE & CONSTRUCTION EXIT | DATE JAN. 2017 SHEET NO. ENG-7 |

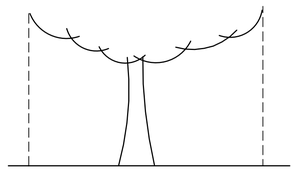


FIGURE A

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)

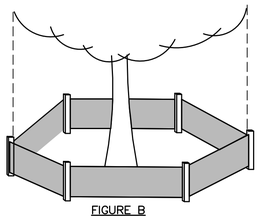
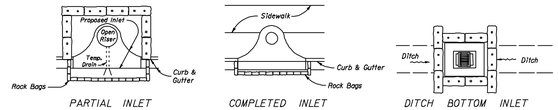


FIGURE B

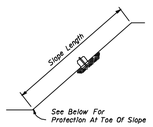
FOUR CORNER UPRIGHT STAKES OF NO LESS THAN 2"x2" LUMBER CONNECTED BY HORIZONTAL MEMBERS OF NO LESS THAN 1"x4" LUMBER; OR UPRIGHT STAKES SPACED AT 5' INTERVALS OF NO LESS THAN 2"x2" LUMBER CONNECTED BY SILT SCREEN FABRIC OR MATERIAL OF COMPARABLE DURABILITY.

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

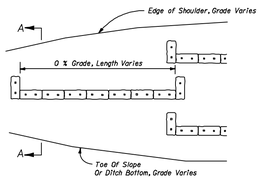



PROTECTION AROUND INLETS OR SIMILAR STRUCTURES



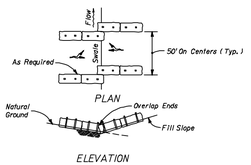

SECTION AA

Note:
Where the slope length exceeds 25 feet, construct one row of bale barriers at 0% longitudinal grade midway up the slope. Contruct two rows of bale barriers where the slope length exceeds 50 feet.

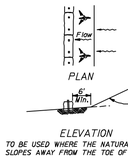



ALONG FILL SLOPE

ELEVATION



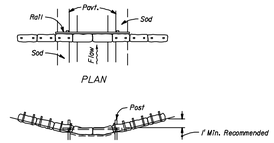

TO BE USED WHERE THE NATURAL GROUND SLOPES TOWARD THE TOE OF SLOPE



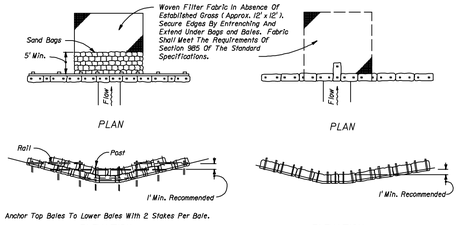

TO BE USED WHERE THE NATURAL GROUND SLOPES AWAY FROM THE TOE OF SLOPE

AT TOE OF SLOPE

BARRIERS FOR FILL SLOPES




BARRIER FOR PAVED DITCH



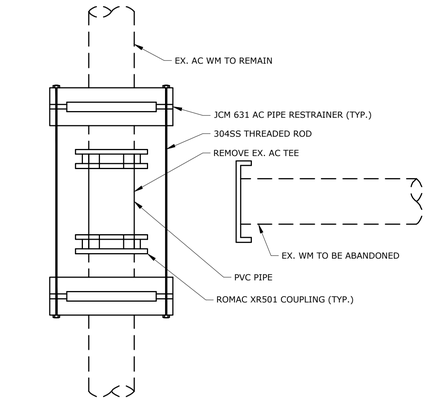

BARRIERS FOR UNPAVED DITCHES

## NOTES FOR BALED HAY OR STRAW BARRIERS

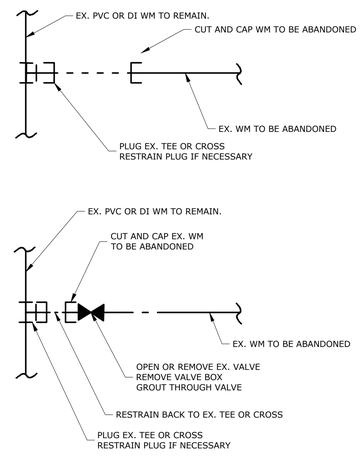
1. Type I and II Barriers should be spaced in accordance with Chart 1, Sheet 1.
2. Hay bales shall be trenched 3" to 4" and anchored with 2 - 1" x 2" ( or 1" dia. ) x 4' wood stakes. Stakes of other material or shape providing equivalent strength may be used if approved by the Engineer. Stakes other than wood shall be removed upon completion of the project.
3. Rails 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 butted firmly together. Unavoidable gaps shall be plugged with hay or straw to prevent silt from passing.
5. Where used in conjunction with silt fence, hay bales shall be placed on the upstream side of the fence.
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. Sand bags shall be paid for under the unit price for Sandbagging, CY. Rock bags to be paid for under the contract unit price for Rock Bags, EA.

FLORIDA DEPARTMENT OF TRANSPORTATION
TEMPORARY EROSION AND SEDIMENT CONTROL

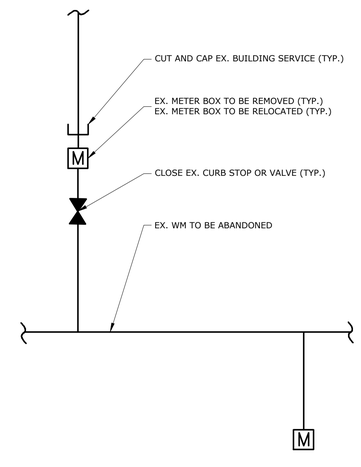
Sheet No. 2 of 3
Index No. 102



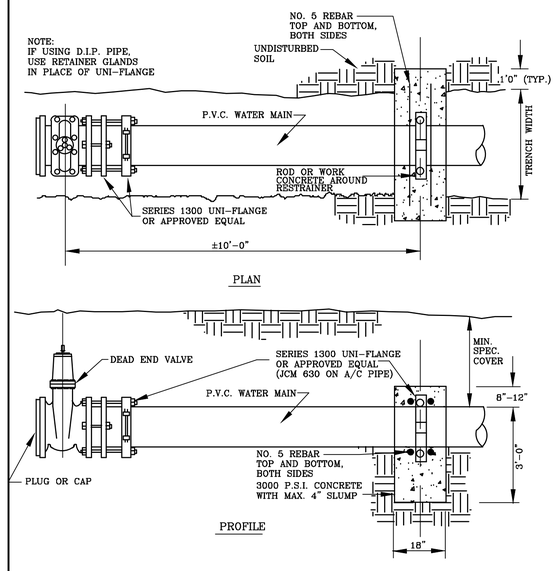

## WATER MAIN ABANDONMENT AT AC PIPE




## WATER MAIN ABANDONMENT DETAILS




## WATER SERVICE ABANDONMENT DETAIL




## REVERSE DEADMAN

City Of Venice
Utility Deparment
200 North Warfield Avenue
Venice FL 34285
Ph. 941-486-3333
Fax 941-480-3031

King
ENGINEERING ASSOCIATES, INC.
2930 University Parkway
Sarasota, Florida 34243
Phone 941 358-6500
Fax 941 358-6540
www.kingengineering.com
Engineering License #2610

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| - | | | CPK |
| 1 | 12/08/17 | ADDENDUM #1 | |
| 0 | 09/06/17 | BID DOCUMENTS | |

**WATER MAIN REPLACEMENT PROGRAM**
PHASE 5
EROSION CONTROL AND MISCELLANEOUS DETAILS

CHRISTOPHER F. KUZLER
10/26/2017
FL. P.E. NO. 45532

| | |
|---|---|
| JOB NO: | 4799-010-000 |
| DATE: | 10/26/2017 |
| SCALE: | AS SHOWN |

**D1.00**

BID DOCUMENTS
10/26/2017

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| MINIMUM LENGTH (FT) OF FORCE MAIN TO BE RESTRAINED ON EACH SIDE OF FITTINTG | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 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 FITTINTG | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 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 |
| 45 BEND: H | 10 | 14 | 18 | 21 | 25 | 31 | 34 | 37 | 43 |
| VU | 6 | 8 | 11 | 13 | 16 | 20 | 22 | 24 | 28 |
| VD | 22 | 30 | 40 | 48 | 56 | 72 | 80 | 87 | 102 |
| 22.5 BEND: H | 5 | 7 | 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.

1.) FOR TEE OR REDUCER FITTINGS SUBMIT RESTRAINED JOINT LENGTH CALCULATIONS TO CITY ENGINEER FOR REVIEW AND APPROVAL, USING THE ASSUMPTIONS LISTED ABOVE.

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 EOR SHALL PROVIDE CALCULATIONS BASED ON ACTUAL CONDITIONS.

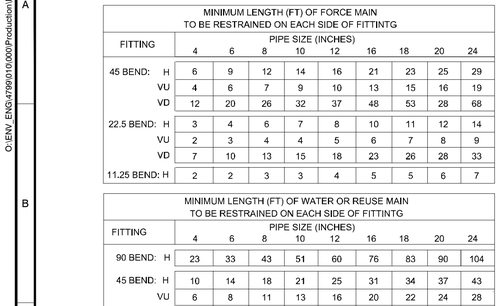
3.) RESTRAINED JOINT SHALL BE USED ON ALL JOINTS FROM ANY MAIN TEE TO ANY FIRE HYDRANT ASSEMBLY.

4.) THRUST BLOCKS WILL NOT BE ACCEPTED, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

## PRESSURE MAIN RESTRAINED JOINT TABLE

N.T.S.

| CITY OF VENICE ENGINEERING DEPARTMENT | UTILITIES - GENERAL | DATE |
|---|---|---|
| 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | RESTRAINED JOINT TABLE | JAN. 2017 |
| Venice, Florida "City on the Gulf" | | SHEET NO. U-7 |



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.

## PIPE FITTINGS

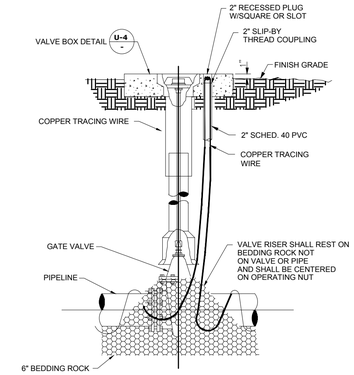
N.T.S.

| SERVICE | COLOR | MATERIAL/CLASS |
|---|---|---|
| POTABLE WATER MAIN | BLUE | AWWA C900 PVC / DR 18 FUSIBLE C900 PVC / DR 18 HDPE PPI PE 3408 / DR 11 (DUCTILE IRON PIPE SIZE) |
| RAW WATER MAIN | WHITE | |
| REUSE MAIN | PURPLE | |
| FORCE MAIN (MIN. 4" DIAMETER) | GREEN | |
| WATER SERVICE | BLUE | PE (POLYTUBING) / DR 9 |
| REUSE SERVICE | PURPLE | PE (POLYTUBING) / DR 9 |
| GRAVITY SEWER MAIN (MIN. 8" DIAMETER) | GREEN | ASTMD3034 / SDR 26 FUSIBLE PVC / SDR 26 |
| SEWER LATERAL (MIN. 6" DIAMETER) | GREEN | ASTMD3034 / SDR 26 / SDR 35 / SCH 40 PVC |

## PIPE MATERIAL SCHEDULE

N.T.S.

| CITY OF VENICE ENGINEERING DEPARTMENT | UTILITIES - GENERAL | DATE |
|---|---|---|
| 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | PIPE FITTINGS & MATERIAL | JAN. 2017 |
| Venice, Florida "City on the Gulf" | | SHEET NO. U-6 |




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 USE BUTTERFLY STYLE VALVE.

3.) VALVE SHALL BE INSTALLED IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.

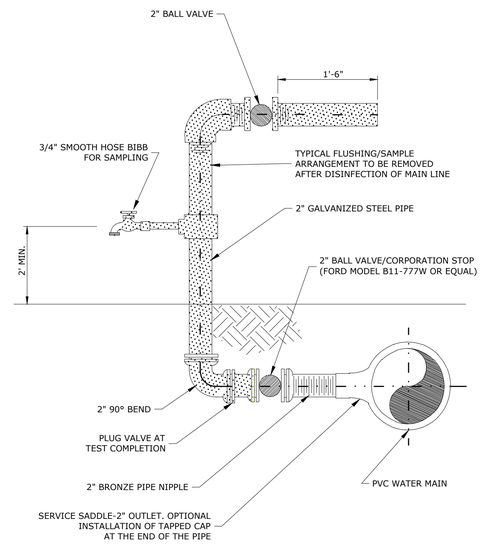
4.) COPPERHEAD TRACING WIRE PART #12 AWG OR EQUAL SHALL BE USED. IT SHALL BE COLOR CODED TO REFLECT WHAT THE PIPE CARRIES. (BLUE = WATER, PURPLE = REUSE)

5.) FOR CURBED ROADWAYS: CURB SHALL BE ETCHED WITH THE LETTER "V" DIRECTLY PERPENDICULAR TO THE VALVE BOX.

## GATE VALVE DETAIL

(WATER AND REUSE ONLY)
N.T.S.

| CITY OF VENICE ENGINEERING DEPARTMENT | UTILITIES - WATER | DATE |
|---|---|---|
| 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | GATE VALVE | JAN. 2017 |
| Venice, Florida "City on the Gulf" | | SHEET NO. W-1 |



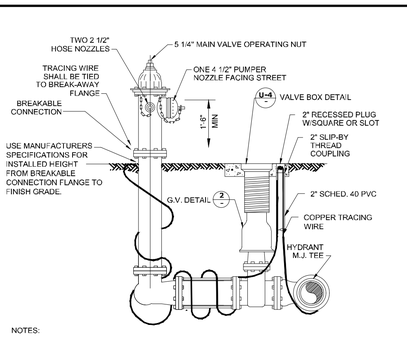

## TEMPORARY 2" BLOW-OFF / SAMPLE POINT ASSEMBLY

SCALE: NONE

City Of Venice
Utility Deparment
200 North Warfield Avenue
Venice FL 34285
Ph. 941-486-3333
Fax 941-480-3031

King
ENGINEERING ASSOCIATES, INC.
2930 University Parkway
Sarasota, Florida 34243
Phone 941 358-6500
Fax 941 358-6540
www.kingengineering.com
Engineering License #2610

| NO. | DATE | REVISION | BY |
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| 1 | 12/08/17 | ADDENDUM #1 | CPK |
| 0 | 09/06/17 | BID DOCUMENTS | - |




NOTES:

1.) POTABLE WATER FIRE HYDRANTS SHALL BE PAINTED "SAFETY YELLOW".

2.) REUSE FIRE HYDRANTS SHALL BE PAINTED PANTONE PURPLE 522C AND TAGGED WITH A PERMANENT LABEL "RECLAIMED WATER-DO NOT DRINK."

3.) HYDRANT SHALL BE MUELLER SUPER CENTURIAN MODEL A423, AMERICAN B84BV WITH BREAK-AWAY FEATURE. ALL BOLTS SHALL BE SS (BONNET, SAFETY FLANGE, SHOE).

4.) RESTRAINED JOINTS SHALL BE USED BETWEEN TEE AND HYDRANT.

5.) HYDRANTS SHALL HAVE "OUT OF SERVICE" TAGS AND BE BAGGED UNTIL MAINS PASS.

6.) ALL WEEP HOLES SHALL BE PLUGGED.

7.) HYDRANT LOCATED AT LEAST 3' OR MORE FROM ANY STORM WATER PIPE OR DITCH AND AT LEAST 6' OR MORE FROM ANY SANITARY SEWER STRUCTURE.

8.) FOR CLEARANCE ISSUES, PLEASE REFER TO CURRENT FLORIDA FIRE PREVENTION CODE REQUIREMENTS.

9.) COPPERHEAD TRACING WIRE #12 AWG OR EQUAL SHALL BE USED. IT SHALL BE COLOR CODED TO REFLECT WHAT THE PIPE CARRIES. (BLUE = WATER, PURPLE = REUSE)

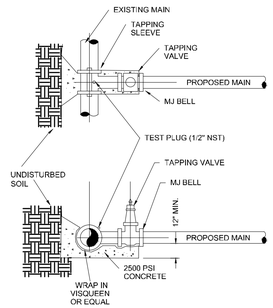
10.) FIRE HYDRANT ASSEMBLY SHALL BE BEDDED IN 6" OF CRUSHED SHELL.

11.) FIRE HYDRANT ASSEMBLY INCLUDES GATE VALVE.

## FIRE HYDRANT ASSEMBLY DETAIL

N.T.S.

| CITY OF VENICE ENGINEERING DEPARTMENT | UTILITIES - WATER | DATE |
|---|---|---|
| 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | FIRE HYDRANT ASSEMBLY | JAN. 2017 |
| Venice, Florida "City on the Gulf" | | SHEET NO. W-2 |




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.

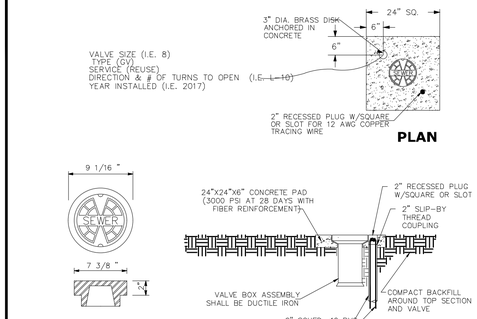
4.) GATE VALVES SHALL BE RESILIENT WEDGE-TYPE MANUFACTURED BY MUELLER OR AMERICAN VALVE. ALL GATE VALVES SHALL BE FUSION BONDED EPOXY COATED (INTERIOR AND EXTERIOR) MEET ANSI/AWWA C550, AND BE NSF61 CERTIFIED.

5.) TAPPING SLEEVES MAY ONLY BE USED WHEN THE TAP DIAMETER IS AT LEAST ONE PIPE SIZE SMALLER THAN THE DIAMETER OF THE MAIN BEING TAPPED.

## TAPPING SLEEVE & VALVE DETAIL

N.T.S.

| CITY OF VENICE ENGINEERING DEPARTMENT | UTILITIES - GENERAL | DATE |
|---|---|---|
| 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | TAPPING SLEEVE & VALVE | JAN. 2017 |
| Venice, Florida "City on the Gulf" | | SHEET NO. U-3 |




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 #12 AWG OR EQUAL SHALL BE USED. IT SHALL BE COLOR CODED TO REFLECT WHAT THE PIPE CARRIES. (BLUE = WATER, GREEN = SEWER, PURPLE = REUSE)

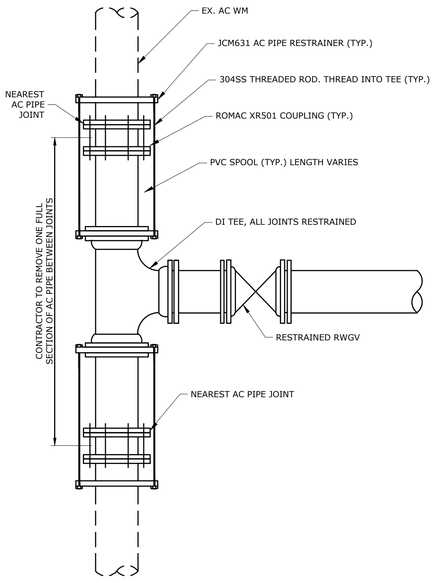
5.) PRE-CAST PADS MAY BE USED WITH CITY APPROVAL.

6.) FOR CURBED ROADWAYS: CURB SHALL BE ETCHED WITH THE LETTER "V" DIRECTLY PERPENDICULAR TO THE VALVE BOX.

## VALVE BOX DETAIL

N.T.S.

| CITY OF VENICE ENGINEERING DEPARTMENT | UTILITIES - GENERAL | DATE |
|---|---|---|
| 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | VALVE BOX | JAN. 2017 |
| Venice, Florida "City on the Gulf" | | SHEET NO. U-4 |




## AC PIPE TIE-IN DETAIL

SCALE: NONE

**WATER MAIN REPLACEMENT PROGRAM**
PHASE 5
POTABLE WATER DETAILS (1)

CHRISTOPHER F. KUZLER
10/26/2017
FL. P.E. NO. 45532

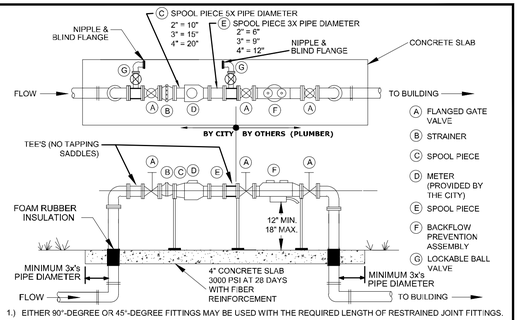
| | |
|---|---|
| JOB NO: | 4799-010-000 |
| DATE: | 10/26/2017 |
| SCALE: | AS SHOWN |

**D1.01**

BID DOCUMENTS
10/26/2017

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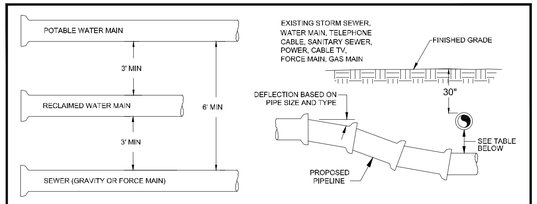



1.) EITHER 90°-DEGREE OR 45°-DEGREE FITTINGS MAY BE USED WITH THE REQUIRED LENGTH OF RESTRAINED JOINT FITTINGS.
2.) BACKFLOW PREVENTION ASSEMBLY TYPE SHALL BE DETERMINED BY THE CITY OF VENICE UTILITIES DEPARTMENT'S MOST CURRENT CROSS-CONNECTION CONTROL PROGRAM.
3.) ALL BACKFLOW PREVENTION ASSEMBLIES SHALL BE APPROVED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH AND/OR ASSE 1013.
4.) ALL CONCRETE PENETRATIONS SHALL REQUIRE PIPE TO BE WRAPPED WITH INSULATING MATERIAL
5.) VALVES SHALL BE FULL PORTED FULL FLOW BALL VALVES OR RESILIENT WEDGE NON-RISING STEM GATE VALVES.
6.) ALL METERS 1 1/2 & UP WILL HAVE FLANGES.
7.) PIPE BETWEEN TAP & ISOLATION VALVE SHALL BE C900 PVC.
8.) THE WATER METER MAY SHALL MATCH THE BACKFLOW AND ASSEMBLY PIPE SIZE.
9.) 2" AND SMALLER METERS REQUIRE A LOCKABLE CURB STOP. LARGER THAN 2" METERS WILL HAVE A FLANGED WHEEL HANDLE RESILIENT WEDGE GATE VALVE.
10.) NO SPOOL PIECE REQUIRED FOR 3/4", 1", OR 1 1/2".
11.) ALL COMMERCIAL AND MULTI FAMILY UNIT METERS MUST BE ABOVE GRADE. REUSE METERS 2" AND LESS MAY BE BELOW GROUND.
12.) BACKFLOW PREVENTION ASSEMBLY AND BYPASS ARE NOT REQUIRED FOR REUSE METER ONLY.
13.) BACKFLOW PREVENTION ASSEMBLIES SHALL NOT BE BY-PASSED.
14.) NO BRANCH OR TEE SERVICE CONNECTIONS, OTHER THAN THE UTILITIES METER BY-PASS RETURN TEE, SHALL EXIST BETWEEN THE WATER METER AND BACKFLOW PREVENTER.
15.) THE ENGINEER OF RECORD SHALL SUBMIT METER SIZING CALCULATIONS BASED ON SERVICE DEMAND PER AWWA M-22 AND SUBJECT TO APPROVAL BY THE UTILITY DEPARTMENT.
16.) PARALLEL BACKFLOW ASSEMBLY PERMITTED TO ALLOW FOR UNINTERRUPTED SERVICE.

| METER SIZE (IN.) | BY-PASS SIZE |
|---|---|
| 3/4" | NO BYPASS |
| 1" | NO BYPASS |
| 1 1/2" | 1" |
| 2" | 1 1/2" |
| 3" | 2" |
| 4" | 3" |

## WATER & REUSE METER & BACKFLOW PREVENTION ASSEMBLY
ABOVE GROUND COMMERCIAL/MULTI-UNIT/SINGLE SERVICE/MASTER METER (WITH BY-PASS AROUND METER ONLY) N.T.S.

| CITY OF VENICE ENGINEERING DEPARTMENT | UTILITIES - WATER | DATE |
|---|---|---|
| 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | WATER & REUSE METER & BACKFLOW | JAN. 2017 |
| Venice, Florida "City on the Gulf" | | SHEET NO. W-4 |




### MINIMUM HORIZONTAL SEPARATION DISTANCES (FT)
(OUTSIDE OF PIPELINE TO OUTSIDE OF PIPELINE)

| | 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 |

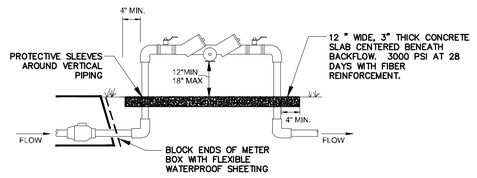
### MINIMUM VERTICAL SEPARATION DISTANCES (IN)
(OUTSIDE OF PIPELINE TO OUTSIDE OF PIPELINE)

| | WATER MAIN | FORCE MAIN | SANITARY SERVICE | REUSE MAIN | STORM WATER | OTHER UTILITIES (TELEPHONE, CABLE, ETC) |
|---|---|---|---|---|---|---|
| WATER MAIN | 6 | 12 | 12 | 6 | 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 |

1.) MAXIMUM JOINT DEFLECTION SHALL BE 90% OF MANUFACTURER'S RECOMMENDATION.
2.) WHEREVER POSSIBLE, THE LAYOUT 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.
3.) ACCEPTABLE VARIANCES:
A. WHERE HORIZONTAL SEPARATION CANNOT BE MAINTAINED, C900 DR14 PVC PIPE SHALL BE USED FOR ONE OF THE PIPELINES.
B. WHERE VERTICAL CLEARANCE CANNOT BE MAINTAINED, ONE FULL LENGTH OF DR14 C900 PIPE SHALL BE INSTALLED CENTERED AT THE POINT OF CROSSING.
C. WHERE 36" MINIMUM DEPTH OF COVER CANNOT BE MAINTAINED, SPECIAL PROTECTION OR PIPE MATERIAL UPGRADE MAY BE REQUIRED, AT THE DISCRETION OF THE UTILITY DEPARTMENT.
4.) NO WATER PIPE SHALL PASS THROUGH, OR COME IN CONTACT WITH ANY PART OF A SANITARY MANHOLE OR STORMWATER STRUCTURE.

## UTILITY CONFLICT & SEPARATION DETAIL
N.T.S.

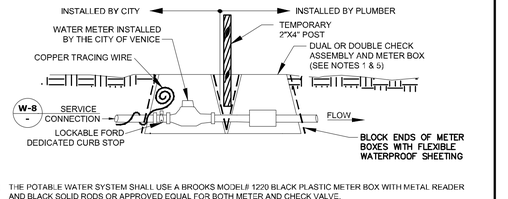
| CITY OF VENICE ENGINEERING DEPARTMENT | UTILITIES - GENERAL | DATE |
|---|---|---|
| 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | UTILITY CONFLICTS & SEPARATIONS | JAN. 2017 |
| Venice, Florida "City on the Gulf" | | SHEET NO. U-5 |




1.) BACKFLOW PREVENTION ASSEMBLY TYPE SHALL BE DETERMINED BY THE CITY OF VENICE UTILITIES DEPARTMENT'S MOST CURRENT CROSS-CONNECTION CONTROL PROGRAM.
2.) ALL BACKFLOW PREVENTION ASSEMBLIES SHALL BE APPROVED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH AND/OR ASSE 1013.
3.) ALL ABOVE GROUND PIPING SHALL BE RIGID COPPER.
4.) THE WATER METER AND BACKFLOW PREVENTER SHALL BE THE SAME SIZE.
5.) INSTALLED IMMEDIATELY AFTER THE UTILITY WATER METER UNLESS OTHERWISE APPROVED BY THE CITY OF VENICE UTILITIES DEPARTMENT.
6.) NO BRANCH OR TEE CONNECTIONS SHALL EXIST BETWEEN THE WATER METER AND BACKFLOW PREVENTER.
7.) ALL METER BOXES SHALL BE SET FLUSH WITH FINISHED GRADE.

## BACKFLOW PREVENTION ASSEMBLY
(RESIDENTIAL, NOT MASTER METERED)
N.T.S.

| CITY OF VENICE ENGINEERING DEPARTMENT | UTILITIES - WATER | DATE |
|---|---|---|
| 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | BACKFLOW ASSEMBLY (NO MASTER METER) | JAN. 2017 |
| Venice, Florida "City on the Gulf" | | SHEET NO. W-5 |




1.) THE POTABLE WATER SYSTEM SHALL USE A BROOKS MODEL# 1220 BLACK PLASTIC METER BOX WITH METAL READER AND BLACK SOLID RODS OR APPROVED EQUAL FOR BOTH METER AND CHECK VALVE.
2.) CENTER METER IN BOX AND BLOCK ENDS OF BOX TO PREVENT DIRT FROM ENTERING WITH FLEXIBLE WATERPROOF SHEETING.
3.) COPPERHEAD TRACING WIRE #12 AWG OR EQUAL SHALL BE USED AND COLOR CODED TO REFLECT WHAT THE PIPE CARRIES (BLUE = WATER).
4.) LOCKING CURB STOP MUST BE LOCATED IN BOX AND SHALL BE LOCKED IN THE CLOSED POSITION WITH A LOCK SUPPLIED BY THE UTILITIES DEPARTMENT AT THE TIME OF SERVICE LINE INSTALLATION. LOCK TO BE REMOVED BY THE UTILITIES DEPARTMENT ONLY AFTER STANDARD DETAIL REQUIREMENTS ARE MET. DEDICATED FIRE SERVICE CURB STOPS SHALL BE LOCKED IN THE OPEN POSITION BY THE UTILITIES DEPARTMENT AFTER STANDARD DETAIL REQUIREMENTS ARE MET. ALL CURB STOPS SHALL BE ORIENTED WITH THE OPERATING NUT ON TOP AND ACCESSIBLE FOR SERVICE BY A CURB STOP KEY.
5.) DUAL OR DOUBLE CHECK ASSEMBLY, WHEN REQUIRED BY THE CITY OF VENICE UTILITIES DEPARTMENT'S MOST CURRENT CROSS-CONNECTION CONTROL PROGRAM, SHALL BE INSTALLED BY A PLUMBER IN A SEPARATE BOX IMMEDIATELY AFTER THE WATER METER BOX. TEST PORTS SHALL BE PLUGGED WITH NON-METALLIC OR PLASTIC PLUGS.
6.) RESIDENTIAL FIRE SERVICE SPRINKLERS INCORPORATED INTO DOMESTIC RESIDENTIAL PLUMBING SHALL BE SERVICED BY AN ELECTRONIC WATER METER MEETING NFPA STANDARDS FOR FLOW AND PRESSURE LOSS.
7.) THE ENGINEER OF RECORD SHALL SUBMIT METER SIZING CALCULATIONS BASED ON SERVICE DEMAND PER AWWA M 22 AND SUBJECT TO APPROVAL BY THE UTILITIES DEPARTMENT.
8.) ALL METER BOXES SHALL BE SET FLUSH WITH FINISHED GRADE.

## RESIDENTIAL WATER & FIRE METER
(RESIDENTIAL USE ONLY)
N.T.S.

| CITY OF VENICE ENGINEERING DEPARTMENT | UTILITIES - WATER | DATE |
|---|---|---|
| 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | RESIDENTIAL WATER & FIRE METER | JAN. 2017 |
| Venice, Florida "City on the Gulf" | | SHEET NO. W-6 |

City Of Venice
Utility Deparment
200 North Warfield Avenue
Venice FL 34285
Ph. 941-486-3333
Fax 941-480-3031

King
ENGINEERING ASSOCIATES, INC.
2930 University Parkway
Sarasota, Florida 34243
Phone 941 358-6500
Fax 941 358-6540
www.kingengineering.com
Engineering License #2610

| NO. | DATE | REVISION BY |
|---|---|---|
| 1 | 12/08/17 | ADDENDUM #1 CPK |
| 0 | 09/06/17 | BID DOCUMENTS - |

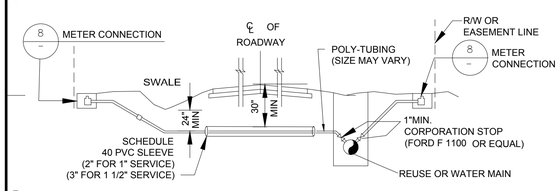
**WATER MAIN REPLACEMENT PROGRAM**
PHASE 5
POTABLE WATER DETAILS (2)

CHRISTOPHER F. KUZLER
10/26/2017
FL. P.E. NO. 45532

| | |
|---|---|
| JOB NO: | 4799-010-000 |
| DATE: | 10/26/2017 |
| SCALE: | AS SHOWN |

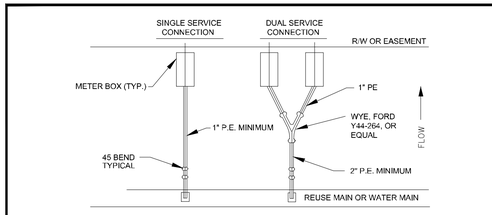
**D1.02**

BID DOCUMENTS
10/26/2017

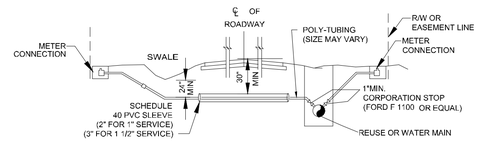



NOTES:
1.) TAPS SHALL NOT BE CLOSER THAN TWO FEET APART OR WITHIN TWO FEET OF ANY JOINT.
2.) TAPS IN MULTIPLE GROUPS SHALL NOT BE MADE IN THE SAME LONGITUDINAL LINE OF THE PIPE BUT MUST BE STAGGERED VERTICALLY.
3.) TAPPING SADDLE SHALL BE EPOXY COATED, DUCTILE IRON BODY WITH STAINLESS STEEL BAND(S) AND HARDWARE.
4.) BRASS FITTINGS AND BALL VALVES SHALL BE FORD F1100 OR EQUAL.
5.) ALL SERVICES SHALL HAVE COPPER TRACING WIRE.
6.) ALL SLEEVE ENDS SHALL BE SEALED WITH FOAM SEAL.
7.) INSERT STIFFENERS WILL NOT BE ACCEPTABLE.
8.) ALL WATERWORKS BRASS MUST BE LEAD FREE.
9.) METER SIZE AND SERVICE LINE PIPING DOWNSTREAM OF METER SHALL BE MINIMALLY SIZED BASED ON F IXTURE CALCS AS DETERMINED BY THE EOR.

**9 - SERVICE CONNECTIONS**



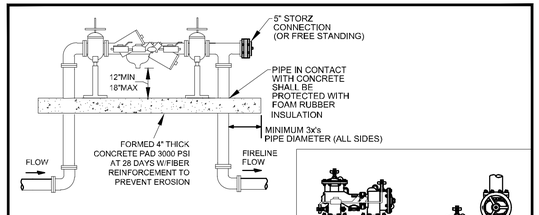

## RESIDENTIAL METER CONNECTION DETAIL
N.T.S.




1.) TAPS SHALL NOT BE CLOSER THAN TWO FEET APART OR WITHIN TWO FEET OF ANY JOINT.
2.) TAPS IN MULTIPLE GROUPS SHALL NOT BE MADE IN THE SAME LONGITUDINAL LINE OF THE PIPE BUT MUST BE STAGGERED VERTICALLY.
3.) TAPPING SADDLE SHALL BE EPOXY COATED, DUCTILE IRON BODY WITH STAINLESS STEEL BAND(S) AND HARDWARE.
4.) BRASS FITTINGS AND BALL VALVES SHALL BE FORD F1100 OR EQUAL.
5.) ALL SERVICES SHALL HAVE COPPER TRACING WIRE.
6.) ALL SLEEVE ENDS SHALL BE SEALED WITH FOAM SEAL.
7.) INSERT STIFFENERS WILL NOT BE ACCEPTABLE.
8.) ALL WATERWORKS BRASS MUST BE LEAD FREE.
9.) METER SIZE AND SERVICE LINE PIPING DOWNSTREAM OF METER SHALL BE MINIMALLY SIZED BASED ON FIXTURE CALCS AS DETERMINED BY THE EOR.
10.) FOR CURBED ROADWAYS: CURB SHALL BE ETCHED WITH THE LETTER "W" FOR WATER SERVICE AND "R" FOR REUSE SERVICE DIRECTLY PERPENDICULAR TO THE METER.

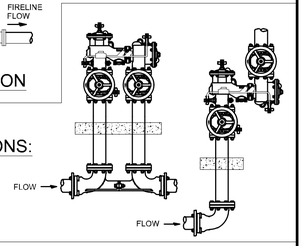
## WATER & REUSE SERVICE CONNECTION
N.T.S.

| CITY OF VENICE ENGINEERING DEPARTMENT | UTILITIES - WATER | DATE |
|---|---|---|
| 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | RESIDENTIAL METER & SERVICE CONNECTION | JAN. 2017 |
| Venice, Florida "City on the Gulf" | | SHEET NO. W-8 |




## STANDARD ORIENTATION

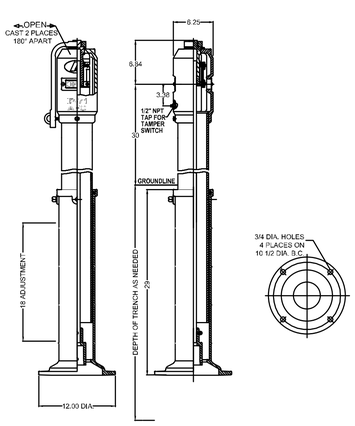
## OPTIONAL ORIENTATIONS:




1.) ALL BACKFLOW PREVENTION ASSEMBLIES SHALL BE APPROVED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH AND/OR 1047 OR 1048 ASSE AS APPLICABLE
2.) 45° FITTINGS MAY BE SUBSTITUTED FOR 90° FITTINGS.
3.) PIPE BETWEEN TAP & ISOLATION VALVE SHALL BE C900 PVC OR HDPE.
4.) IF TEEING OFF FOR POTABLE SERVICE, INSTALL INDICATOR VALVE BETWEEN TEE FOR POTABLE SERVICE AND FIRE SERVICE BACKFLOW ASSEMBLY.
5.) ASSEMBLY SHALL BE PAINTED RED WITH ALKYD ENAMEL, EPOXY OR POLYURETHANE BASED PAINT, EXCEPT FOR STAINLESS STEEL PARTS.
6.) VALVE ASSEMBLIES SHALL MEET NFPA 24 REQUIREMENTS AND INDICATOR VALVES SHALL BE PROVIDED.
7.) FOR CLEARANCE ISSUES, PLEASE REFER TO THE CURRENT FLORIDA FIRE PREVENTION CODE REQUIREMENTS.
8.) FOR FIRE PROTECTION SYSTEMS EQUIPPED WITH A FIRE PUMP, THE PIPE BETWEEN THE CHECK VALVE AND THE OUTSIDE CONNECTION SHALL BE EQUIPPED WITH AN APPROVED BALL DRIP.
9.) BACKFLOW PREVENTION ASSEMBLY TYPE SHALL BE DETERMINED BY THE CITY OF VENICE UTILITIES DEPARTMENT'S MOST CURRENT CROSS-CONNECTION CONTROL PROGRAM.
10.) 5" STORZ INLET CONNECTION MAY BE REDUCED FOR PIPE SIZES LESS THAN 5".

## FIRE SERVICE BACKFLOW ASSEMBY
SIZE 2" - 10"
N.T.S.

| CITY OF VENICE ENGINEERING DEPARTMENT | UTILITIES - WATER | DATE |
|---|---|---|
| 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | FIRE SERVICE BACKFLOW ASSEMBLY | JAN. 2017 |
| Venice, Florida "City on the Gulf" | | SHEET NO. W-9 |



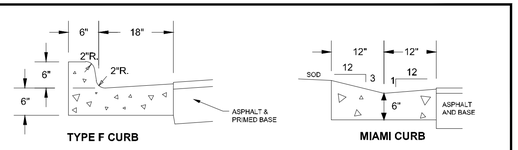

1) INDICATOR POST REQUIRED WHEN FIRE SERVICE POINT OF CONNECTION IS ON A POTABLE WATER SERVICE.
2) INSTALL INDICATOR POST AND VALVE BETWEEN TEE FOR POTABLE SERVICE AND FIRE SERVICE BACKFLOW ASSEMBLY.
3.) AMERICAN FLOW CONTROL IP-71 INDICATOR POST OR EQUIVALENT SHALL BE INSTALLED.
4.) UNDERWRITERS LABORATORIES LISTED AND FACTORY MUTUAL RESEARCH APPROVED.
5.) FOR USE WITH VALVES WITH O-RING STEM SEALS.
6.) ALL EXPOSED EXTERIOR SURFACES COATED WITH TNEMEC 140 EPOXY AND TOP COATED WITH "RED" ENAMEL PER MANUFACTURER'S STANDARD PAINT.

## FIRE SERVICE VALVE INDICATOR POST
N.T.S.

| CITY OF VENICE ENGINEERING DEPARTMENT | UTILITIES - WATER | DATE |
|---|---|---|
| 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | FIRE SERVICE INDICATOR POST | JAN. 2017 |
| Venice, Florida "City on the Gulf" | | SHEET NO. W-10 |

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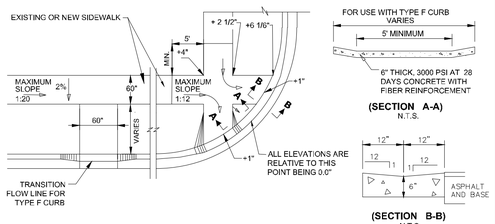



**TYPE F CURB** | **MIAMI CURB**

1.) ALL STREETS SHALL HAVE A TWO-FOOT WIDE CONCRETE (3000 PSI AT 28 DAYS WITH FIBER REINFORCEMENT) CURB AND GUTTER. AND MEET OR EXCEED FDOT SPECIFICATIONS UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

# CURB DETAIL

N.T.S.





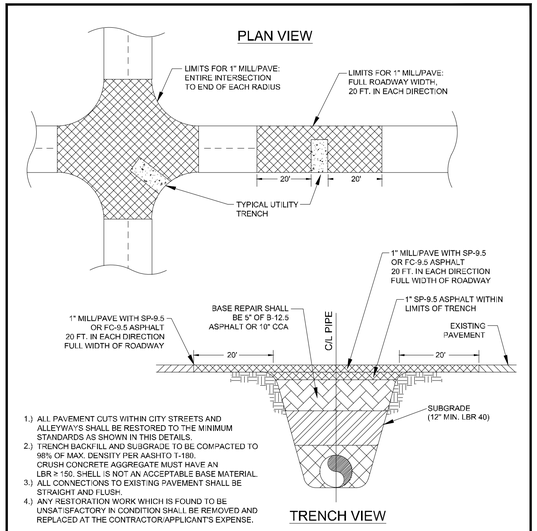


1.) ALL CONCRETE RAMPS SHALL BE 4" THICK, INCREASING TO 6" THICK WITHIN 48" OF THE CURB
2.) ALL CONNECTIONS TO AN EXISTING SIDEWALK SHALL BE AT AN EXPANSION OR CONTRACTION JOINT
3.) THE MAXIMUM RAMP SLOPE SHALL BE 1:12, FOR A VERTICAL DISTANCE OF NOT MORE THAN 6 INCHES.
4.) THE MAXIMUM RUNNING SIDEWALK SLOPE SHALL BE 1:20, AND MAXIMUM CROSS SLOPE SHALL BE 2%.
5.) ALL SIDEWALK RAMPS AND STREET CONNECTIONS WITHIN THE PUBLIC ROW SHALL HAVE A TACTILE SURFACE.
6.) TACTILE SURFACES SHALL MEET THE MOST CURRENT AMERICANS WITH DISABILITIES ACT STANDARDS, BE FDOT COMPLIANT AND SHALL BE BRICK RED IN COLOR.
7.) 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.

# SIDEWALK RAMP DETAIL

N.T.S.

| | | | |
|---|---|---|---|
| Venice, Florida "City on the Gulf" | **CITY OF VENICE** ENGINEERING DEPARTMENT 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | **ENGINEERING** SIDEWALK RAMPS & CURBING | DATE JAN. 2017 SHEET NO. ENG-1 |

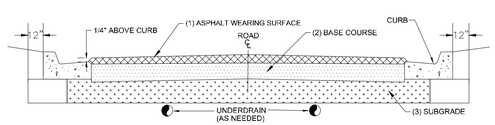



1.) ALL PAVEMENT CUTS WITHIN CITY STREETS AND ALLEYWAYS SHALL BE RESTORED TO THE MINIMUM STANDARDS AS SHOWN IN THIS DETAILS.
2.) TRENCH BACKFILL AND SUBGRADE TO BE COMPACTED TO 98% OF MAX. DENSITY PER AASHTO T-180. CRUSH CONCRETE AGGREGATE MUST HAVE AN LBR ≥ 150. SHELL IS NOT AN ACCEPTABLE BASE MATERIAL.
3.) ALL CONNECTIONS TO EXISTING PAVEMENT SHALL BE STRAIGHT AND FLUSH.
4.) ANY RESTORATION WORK WHICH IS FOUND TO BE UNSATISFACTORY IN CONDITION SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR/APPLICANT'S EXPENSE.

# PAVEMENT RESTORATION DETAIL

N.T.S.

| | | | |
|---|---|---|---|
| Venice, Florida "City on the Gulf" | **CITY OF VENICE** ENGINEERING DEPARTMENT 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | **ENGINEERING** PAVEMENT RESTORATION | DATE JAN. 2017 SHEET NO. ENG-2 |




**ROADWAY SECTION DESIGN (MINIMUM THICKNESS)**

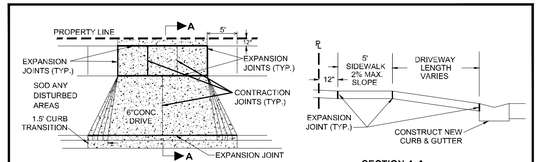
| STREET CLASSIFICATION | (1) ASPHALT SURFACE: | (2) BASE: B-12.5 | CTB | CCA | (3) SUB-GRADE: TYPE B STAB. |
|---|---|---|---|---|---|
| RESIDENTIAL STREET (PRIVATE) & LIGHT DUTY PARKING | 2" TYPE SP-9.5 (INSTALLED AS TWO 1" LIFTS) | 4" | 8" | 8" | 8" MIN 40 LBR |
| RESIDENTIAL STREET (PUBLIC) | 2" TYPE SP-9.5 (INSTALLED AS TWO 1" LIFTS) | 5" | 10" | 10" | 12" MIN 40 LBR |
| INDUSTRIAL STREET (PUBLIC/PRIVATE) | 2" TYPE SP-12.5 & 1" TYPE FC-9.5 | 5" | 10" | 10" | 12" MIN 40 LBR |
| COLLECTOR / ARTERIAL STREET | 3" TYPE SP-12.5 & 1" TYPE FC-9.5 | 5" | 10" | 10" | 12" MIN 40 LBR |

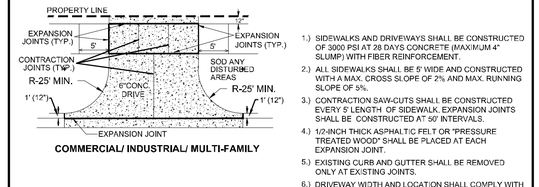
1.) ALL STREETS WITHIN THE CITY LIMITS SHALL MEET THE MINIMUM DESIGN STANDARDS AS ESTABLISHED IN THIS DETAIL.
2.) ALL INSTALLATION METHODS AND MATERIALS SHALL CONFORM WITH THE LATEST EDITION OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
3.) CRUSHED CONCRETE AGGREGATE (CCA) MUST HAVE AN LBR ≥150. SHELL IS NOT AN ACCEPTABLE BASE MATERIAL.
4.) CEMENT TREATED BASE:
   a.) THE MATERIAL TO BE USED AS THE FILLER AGGREGATE IN CTB MUST BE LBR TESTED PRIOR TO DESIGN FORMULATION (ADDING CEMENT). THIS MATERIAL MUST ACHIEVE AN LBR VALUE OF ≥ 100.
   b.) CTB DESIGN CRITERION SHOULD TARGET RANGE FROM 175 TO 275 PSI ON 7 DAY BREAK. TESTING MUST BE PROVIDED TO VERIFY THE COMPRESSIVE STRENGTH OF THE MIX.
5.) ALL GRANULAR COURSES OF ROAD CONSTRUCTION MUST BE COMPACTED TO 98% OF ITS OPTIMUM DENSITY AS PER T-180 (AASHTO). CTB SHALL BE COMPACTED TO 98% OF ITS LAB FORMULATION DENSITY (AASHTO T-99).
6.) ALL MINERAL MATERIALS USED IN CONSTRUCTION OF ROADWAYS MUST MEET THE FOLLOWING CRITERIA:
   a.) FINES (PASSING # 200 SIEVE) MUST BE LIMITED TO ≤ 12%, ORGANICS LIMITED TO ≤ 5%, NO DELETERIOUS MATERIALS.
7.) SIGNAGE AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH LATEST EDITION OF THE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD MANUAL).
8.) ALL CITY STREET SIGNS WILL BE BLUE BACKGROUND WITH 6" WHITE LETTERS AND CONSTRUCTED WITH HIGH INTENSITY REFLECTORIZED MATERIAL. ALL STREET SIGNS SHALL BE 9 INCHES WIDE AND APPROVED BY THE DIRECTOR OF PUBLIC WORKS PRIOR TO INSTALLATION.
9.) ALL CURB PADS SHALL MEET THE SAME STRUCTURAL AND COMPACTION STANDARDS AS ROAD SUB GRADE. THESE PADS WILL EXTEND TO AT LEAST 12" BEYOND THE CURB.
10.) UNDERDRAINS OR SIDEDRAINS MAY BE INCLUDED WHEN THE GROUND WATER LEVELS MAY AFFECT THE STRUCTURAL INTEGRITY OF THE ROAD. THIS DESIGN SHALL BE THE RESPONSIBILITY OF ENGINEER OF RECORD.
11.) ANY PROPOSED TRAFFIC CALMING DEVICES MUST BE APPROVED BY THE CITY ENGINEER & FIRE CHIEF.
12.) ASPHALT COURSES AND CONCRETE SHALL NOT BE PLACED WHILE RAIN IS FALLING, OR WHEN THERE IS STANDING WATER ON THE SURFACE TO BE COVERED.
13.) TACK COAT SHALL BE APPLIED BETWEEN ALL ASPHALT LAYERS.

# TYPICAL ROADWAY SECTION

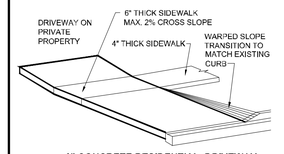
N.T.S.

| | | | |
|---|---|---|---|
| Venice, Florida "City on the Gulf" | **CITY OF VENICE** ENGINEERING DEPARTMENT 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | **ENGINEERING** TYPICAL ROADWAY SECTION | DATE JAN. 2017 SHEET NO. ENG-3 |



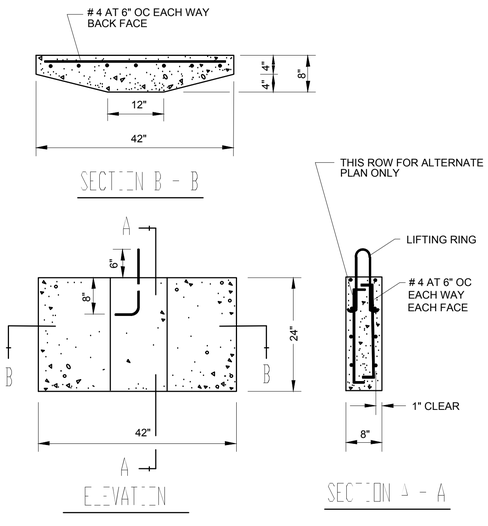

1.) SIDEWALKS AND DRIVEWAYS SHALL BE CONSTRUCTED OF 3000 PSI AT 28 DAYS CONCRETE (MAXIMUM 4" SLUMP) WITH FIBER REINFORCEMENT.
2.) ALL SIDEWALKS SHALL BE 5' WIDE AND CONSTRUCTED WITH A MAX. CROSS SLOPE OF 2% AND MAX. RUNNING SLOPE OF 5%.
3.) CONTRACTION SAW-CUTS SHALL BE CONSTRUCTED EVERY 5' LENGTH OF SIDEWALK. EXPANSION JOINTS SHALL BE CONSTRUCTED AT 50' INTERVALS.
4.) 1/2-INCH THICK ASPHALTIC FELT OR "PRESSURE TREATED WOOD" SHALL BE PLACED AT EACH EXPANSION JOINT.
5.) EXISTING CURB AND GUTTER SHALL BE REMOVED ONLY AT EXISTING JOINTS.
6.) DRIVEWAY WIDTH AND LOCATION SHALL COMPLY WITH ZONING CODES, SECTIONS 122-446, 62-64, 62-65.
7.) DRIVEWAY SLOPES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FDOT, "ROADWAY AND TRAFFIC DESIGN STANDARDS", INDEX 515.




# DRIVEWAY & SIDEWALK DETAIL

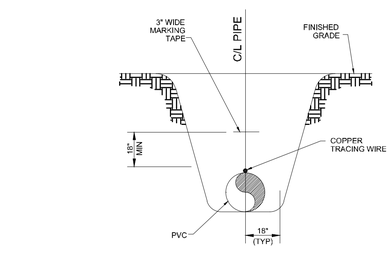
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|---|---|---|---|
| Venice, Florida "City on the Gulf" | **CITY OF VENICE** ENGINEERING DEPARTMENT 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | **ENGINEERING** TYPICAL DRIVEWAY & SIDEWALK | DATE JAN. 2017 SHEET NO. ENG-4 |




NOTES:
1. REINFORCING TO BE STANDARD DEFORMED BAR. FC = 3000 PSI.
2. PRECAST THRUST BLOCKING TO BE USED ONLY ON FIRE HYDRANTS AND 8" OR SMALLER FITTINGS, IF ALLOWED BY THE ENGINEER.
3. A 12"x18" SPACER BLOCK SHALL BE PLACED BETWEEN THE PRECAST THRUST BLOCK AND FITTING IF SO DIRECTED BY THE ENGINEER.

# PRECAST CONCRETE THRUST BLOCK DETAIL



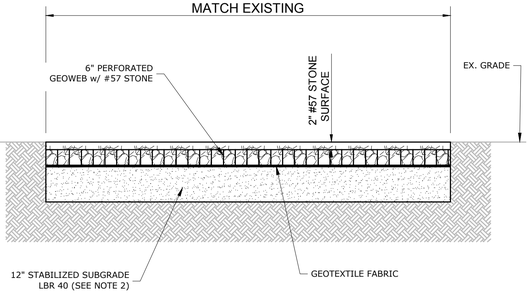

| MARKING TAPE AND MESSAGES | | |
|---|---|---|
| PIPE | TAPE COLOR | MESSAGE |
| PVC STORM WATER | WHITE | CAUTION STORM WATER OR STORM DRAIN BELOW |
| POTABLE WATER MAIN | BLUE | CAUTION POTABLE WATER MAIN BELOW |
| REUSE WATER MAIN | PURPLE | CAUTION REUSE WATER MAIN BELOW |
| SEWER FORCE MAIN | GREEN | CAUTION SEWER FORCE MAIN BELOW |
| SEWER & SERVICE LATERALS | GREEN | CAUTION SEWER MAIN BELOW |

1.) COPPERHEAD TRACING WIRE #12 AWG OR EQUAL 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)
2.) MINIMUM COVER SHALL BE 36" FROM TOP OF PIPE TO FINISHED GRADE MAXIMUM COVER SHALL BE 42" FROM FINISHED GRADE UNLESS OTHERWISE APPROVED.
3.) INSTALLATION OF PIPE SHALL BE IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4.) PAVEMENT RESTORATION SHALL CONFORM WITH DETAIL ENG-2 OF THESE CITY STANDARDS.
5.) CONFLICTS - UTILIZE 45° BENDS WITH SEPARATION AS PER CITY DETAILS.
6.) ALL UTILITIES (PUBLIC & PRIVATE) THAT CROSS A DITCH/SWALE SHALL BE 36" MIN. BELOW THE ACTUAL/DESIGN BOTTOM OF CONVEYANCE.

# PIPE TRENCH DETAIL

N.T.S.

| | | | |
|---|---|---|---|
| Venice, Florida "City on the Gulf" | **CITY OF VENICE** ENGINEERING DEPARTMENT 401 WEST VENICE AVE. VENICE FL 34285 (941) 486-2626 FAX (941) 480-3031 | **UTILITIES - GENERAL** UTILITY PIPE TRENCH | DATE JAN. 2017 SHEET NO. U-1 |



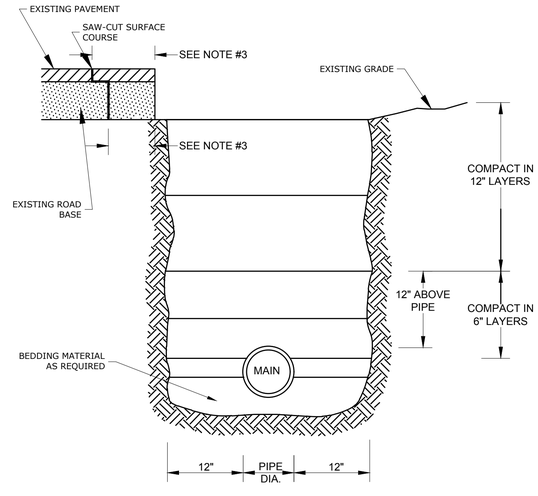

NOTES:

1. EXCAVATE OR FILL THE SUBGRADE SOIL TO THE GRADES, ELEVATIONS AND DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS.
2. COMPACT THE TOP 12-INCHES OF THE SUBGRADE SOIL, TO A MINIMUM 98% OF STANDARD PROCTOR DRY DENSITY (SPDD).
3. EXPAND GEOWEB SECTIONS, DIMENSIONED ACCORDING TO THE CONSTRUCTION DRAWINGS, INTO POSITION USING STRETCHER FRAMES, TEMPORARY STAKES, OR OTHER SUITABLE METHODS TO TEMPORARILY HOLD IN PLACE. INTERLEAF OR OVERLAP ADJACENT SECTIONS ACCORDING TO WHICH SIDE WALL PROFILES ABUT. ENSURE THAT ALL ADJOINING CELLS ARE FULLY STAPLED.
4. PLACE THE SPECIFIED INFILL MATERIAL APPROXIMATELY 2-INCHES ABOVE THE CELL WALLS. COMPACT THE INFILL MATERIAL TO A MINIMUM OF 95% SPDD.
5. PLACE AND COMPACT ADDITIONAL SURFACE MATERIAL AS REQUIRED BY DESIGN.

# GRAVEL DRIVEWAY REPLACEMENT DETAIL

NOTES:

1. TRENCHED 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.
2. 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.
3. REMOVAL AND REPLACEMENT OF PAVEMENT AND ROAD BASE SHALL BE MADE IN ACCORDANCE WITH APPLICABLE LOCAL REGULATIONS.




# TYPICAL TRENCH BACKFILL DETAIL

SCALE: NONE

City Of Venice
Utility Deparment
200 North Warfield Avenue
Venice FL 34285
Ph. 941-486-3333
Fax 941-480-3031

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2930 University Parkway
Sarasota, Florida 34243
Phone 941 358-6500
Fax 941 358-6540
www.kingengineering.com
Engineering License #2610

| NO. | DATE | REVISION | BY |
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| 1 | 12/08/17 | ADDENDUM #1 | |
| 0 | 09/06/17 | BID DOCUMENTS | |

**WATER MAIN REPLACEMENT PROGRAM**
PHASE 5
PIPE TRENCHING & PAVEMENT RESTORATION DETAILS

CHRISTOPHER F. KUZLER
10/26/2017
FL. P.E. NO. 45532

| | |
|---|---|
| JOB NO: | 4799-010-000 |
| DATE: | 10/26/2017 |
| SCALE: | AS SHOWN |

**D1.03**

BID DOCUMENTS
10/26/2017

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MATCHLINE – SEE SHEET C1.08

PROP. 2" (SS) WATER SERVICE (TYP.)

VENEZIA PKWY

CONSTRUCTION BASELINE

APP R/W LINE

PROP. 6" PVC WM BY OPEN CUT

PROP FIRE HYDRANT ASSEMBLY VENEZIA PKWY STA. 118+94, 21' RT

UTILITY CONFLICT PROP. 6" WM CROSSES UNDER EX. 2" WM W/ MIN. 12" SEPARATION SEE DETAIL 5 SHT. D1.02

3'-0" O/S EX. BOC

LIMITS OF MILLING AND RESURFACING STA. 118+91

EX 8" VCP SAN

UTILITY CONFLICT PROP. 6" WM CROSSES OVER EX. 8" PVC SAN W/ MIN. 12" SEPARATION SEE DETAIL 5 SHT. D1.02

EX. 2" WM TO BE ABANDONED

LIMITS OF MILLING AND RESURFACING STA. 256+35

UTILITY CONFLICT PROP. 6" WM CROSSES UNDER EX. 2" WM W/ MIN. 12" SEPARATION SEE DETAIL 5 SHT. D1.02

STA. 258+00
N=1002558.21
E=510354.45

SORRENTO ST

LIMITS OF MILLING AND RESURFACING STA. 172+37

NORTH RIM=13.64
NW IE=7.82 (8"PVC)
SE IE=9.11 (6"VCP)
SW IE=7.62 (8"PVC)

NORTH RIM=13.64
N IE=11.44 (12"RCP)
SE IE=11.11 (12"RCP)
NW IE=11.11 (12"RCP)

STATION EQUATION
SORRENTO ST STA. 255+93.25 =
VENEZIA PKWY STA. 119+34.32

256+00 257+00 258+00 259+00

CONSTRUCTION BASELINE

PROP. 2" (SS) WATER SERVICE

PROP. 6" PVC WM BY OPEN CUT

6" 22.5° MJ BEND
6" 11.25° MJ BEND
SORRENTO ST STA. 258+85, 17' RT

CURB INLET TOP=13.70
THROAT=13.16
NW IE=11.30 (12"RCP)

1'-6" O/S EX. BOC

APP R/W LINE

172+00

MATCHLINE – SEE SHEET C1.10

BENCHMARK #106 SND LB2610
N=1002420.40
E=510192.24
EL=13.28

6" MJ TEE
(2) 6" RWGV
STA. 255+73, 17' RT

POTENTIAL HDD PIT LOCATION

PROP. 1" (SS) WATER SERVICE (TYP.)

OPEN EX. VALVE REMOVE VALVE BOX

CONNECT TO WATER SERVICE DOWNSTREAM OF EX. METER

EX. 3" WM TO BE ABANDONED IN PLACE

313

309

WSC

APP PROPERTY LINE

WATER SERVICE ON PRIVATE PROPERTY (TYP., SEE WATER SERVICE NOTE)

500

504

WSC/PRIVATE METER

CONNECT TO WATER SERVICES DOWNSTREAM OF EX. METERS

EX. 3" WM TO BE ABANDONED IN PLACE

PROP. 1" (LS) WATER SERVICE (TYP.)

TOP 5/8" PLS 6844

NASSAU ST S

LIMITS OF MILLING AND RESURFACING STA. 172+99

3'-0" O/S EX. BOC

NO PARKING

173+00

174+00

6" 90° MJ BEND
STA. 173+33, 23' LT

PROP. 6" PVC WM BY OPEN CUT

UTILITY CONFLICT PROP. 6" WM CROSSES OVER EX. 6" SAN W/ 12" SEPARATION SEE DETAIL 5 D1.02

NORTH RIM=14.92
NE IE=10.10 (6"VCP)
S IE=9.87 (8"VCP)

508
(RIVIERA ST)

EX 6" VCP SAN

MATCHLINE – SEE SHEET C1.14

**WATER SERVICE NOTE**
CONTRACTOR SHALL COORDINATE WITH PROPERTY OWNER AND CITY REPRESENTATIVE PRIOR TO INSTALLATION OF THE NEW METER AND SERVICE.

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Ph. 941-486-3333
Fax 941-480-3031

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2930 University Parkway
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Phone 941 358-6500
Fax 941 358-6540
www.kingengineering.com
Engineering License #2610

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# WATER MAIN REPLACEMENT PROGRAM

## PHASE 5

SORRENTO ST. STA. 255+58 THRU STA. 259+43
& NASSAU ST. S. STA. 171+40 THRU STA. 174+37

CHRISTOPHER F. KUZLER
10/26/2017
FL. P.E. NO. 45532

| | |
|---|---|
| JOB NO: | 4799-010-000 |
| DATE: | 10/26/2017 |
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**C1.09**

BID DOCUMENTS
10/26/2017

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MATCHLINE – SEE SHEET C1.08

MATCHLINE – SEE SHEET C1.09

MATCHLINE – SEE SHEET C1.11

MATCHLINE – SEE SHEET C1.13

MATCHLINE – SEE SHEET C1.14

OUT OF SERVICE PROPANE TANK (APPROX. LOCATION)

EX. 2" WM TO BE ABANDONED IN PLACE

REPLACE EX. METER BOX CONNECT TO EX. METER

PROP. 1" (LS) WATER SERVICE (TYP.)

OPEN EX. 2" VALVE, REMOVE VALVE BOX

LIMITS OF MILLING AND RESURFACING STA. 255+53

PROP. 2" (SS) WATER SERVICE (TYP.)

PROP. 1" (SS) WATER SERVICE (TYP.)

SORRENTO ST

CONSTRUCTION BASELINE

1'-6" O/S EX. BOC

PROP. 6" FUSIBLE DR-18, C-900 PVC WM BY HDD

UTILITY CONFLICT PROP. 6" WM CROSSES OVER EX. 18" SAN W/ 12" SEPARATION SEE DETAIL 5 SHT. D102

WATER SERVICE ON PRIVATE PROPERTY (TYP., SEE WATER SERVICE NOTE)

CONNECT TO EX. WATER SERVICE SOUTH OF FENCED AREA

CONNECT TO EX. WATER SERVICE PIPE DOWNSTREAM OF EXISTING METER (TYP.)

CONNECT TO IRRIGATION SERVICE DOWNSTREAM OF EX. IRRIGATION METER

EX. 3" WM TO BE ABANDONED IN PLACE

CONNECT TO EX. WATER SERVICE PIPE DOWNSTREAM OF EXISTING METER (TYP.)

WATER SERVICE NOTE
CONTRACTOR SHALL COORDINATE WITH PROPERTY OWNER AND CITY REPRESENTATIVE PRIOR TO INSTALLATION OF THE NEW METER AND SERVICE.

CURB INLET TOP=12.14
THROAT=11.56
W IE=9.74 (12"RCP)

NORTH RIM=12.98
NE IE=3.68 (8"PVC)
NE IE=6.43 (10"DIP)
SE IE=3.48 (18"PVC)
SW IE=3.48 (18"PVC)
SW IE=8.53 (4"PVC)

FOP 3/4"

FDP 3/4"
TOP 5.76"

328 520 333 325 321 317

WSC

APP R/W LINE

APP PROPERTY LINE

EX 2" WM

EX 8" VCP SAN

EX 18" VCP SAN

EX 18" VCP SAN

EX 3" WM

253+00 254+00 255+00

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SCALE: FEET

City Of Venice
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# WATER MAIN REPLACEMENT PROGRAM

PHASE 5

SORRENTO ST. STA. 252+00
THRU STA. 255+58

CHRISTOPHER F. KUZLER
10/26/2017
FL. P.E. NO. 45532

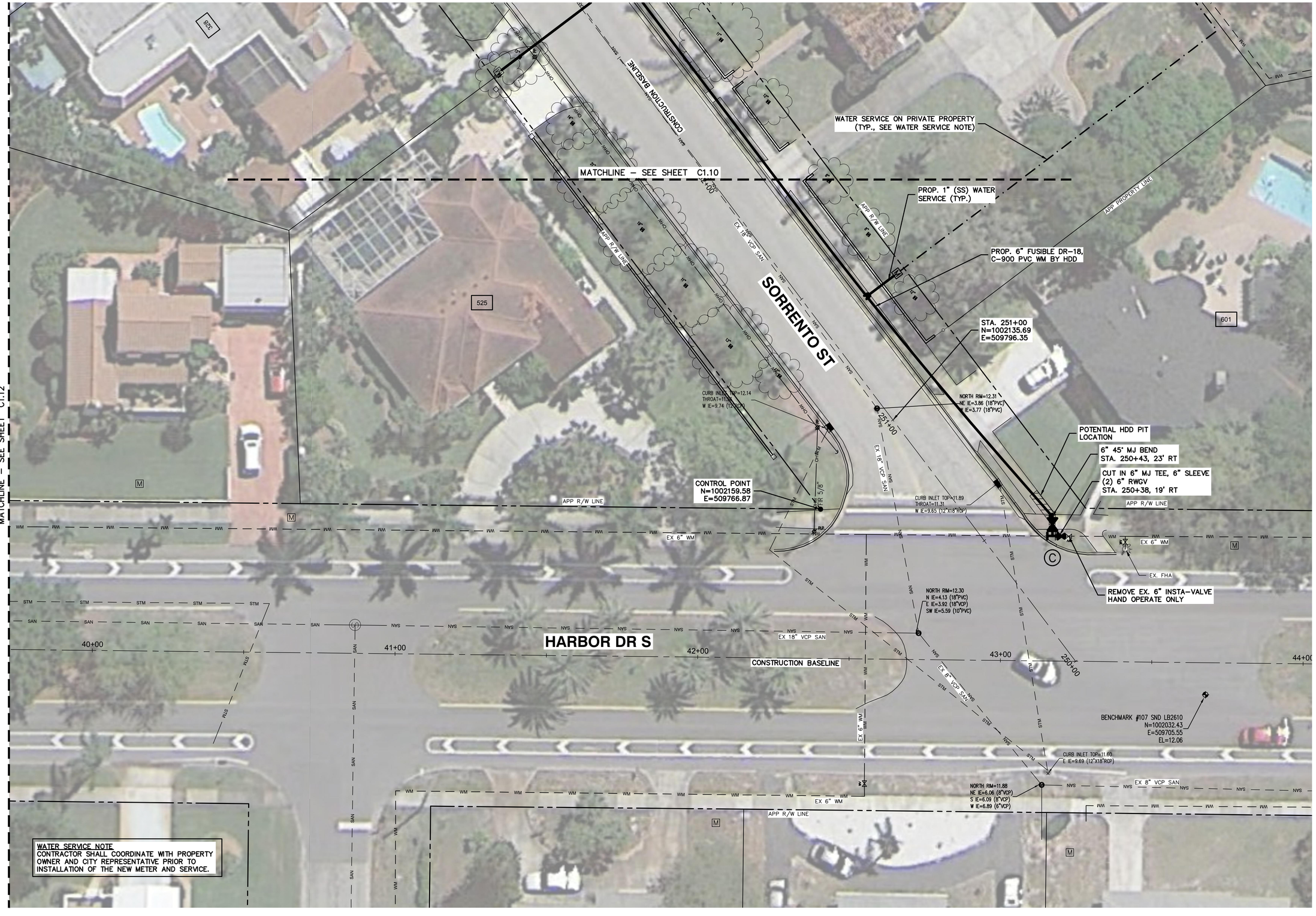
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| SCALE: | AS SHOWN |

**C1.10**

BID DOCUMENTS
10/26/2017

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**WATER SERVICE NOTE**
CONTRACTOR SHALL COORDINATE WITH PROPERTY OWNER AND CITY REPRESENTATIVE PRIOR TO INSTALLATION OF THE NEW METER AND SERVICE.

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# CITY OF VENICE PROCUREMENT-
# FINANCE DEPARTMENT

**401 W. VENICE AVE. - ROOM # 204**
**VENICE, FL. 34285**
**(941) 486-2626**
**FAX (941) 486-2790**

# ADDENDUM NO. 2

**Date: December 18, 2017**

**To: All Prospective Proposers**

**Re: ITB# 3073-17: Water Main Replacement Program - Phase 5 Re-Bid**

---

This addendum sets forth changes and/or information as referenced and is hereby made part of and should be attached to the subject Contract Documents. Receipt of this Addendum shall be acknowledged below and in the submitted proposal. It shall be the responsibility of each proposer, prior to submitting a proposal, to contact the City of Venice- Procurement- Finance Department to determine if addenda were issued and to make such addenda a part of their proposal.

---

**The bid due date and time has been extended to January 10, 2018 at 2:00 PM.**

Peter A. Boers
Procurement Department

---

Acknowledgment is requested even if you have elected not to respond to this bid. A designated management representative of your firm can sign the receipt for this addendum. Please acknowledge receipt of this addendum immediately by fax to (941) 486-2790 or mail to the above noted address, if a fax is not possible.

Receipt Acknowledged:

Signature

Company

Date

# CITY OF VENICE PROCUREMENT-
# FINANCE DEPARTMENT

**401 W. VENICE AVE. - ROOM # 204**
**VENICE, FL. 34285**
**(941) 486-2626**
**FAX (941) 486-2790**

# ADDENDUM NO. 3

**Date: December 29, 2017**

**To: All Prospective Proposers**

**Re: ITB# 3073-17: Water Main Replacement Program - Phase 5 Re-Bid**

---

This addendum sets forth changes and/or information as referenced and is hereby made part of and should be attached to the subject Contract Documents. Receipt of this Addendum shall be acknowledged below and in the submitted proposal. It shall be the responsibility of each proposer, prior to submitting a proposal, to contact the City of Venice- Procurement- Finance Department to determine if addenda were issued and to make such addenda a part of their proposal.

---

**The bid due date and time has been extended to January 17, 2018 at 2:00 PM.**

**REVISIONS:**

1. Specification 01030 – Special Project Procedures

   Paragraph 1.21, GEOTECHNICAL INVESTIGATION, add the following:

   "C. A report entitled "Addendum to the Report of the Geotechnical Investigation, City of Venice Water Main – Phase 5, Venice, Florida" completed by Driggers Engineering Services Inc. and dated December 1, 2017, is provided in this Addendum to assist contractors with preparation of their bids. Contractors shall note the potential presence of organic soils detected by the testing."

2. Specification 01150 – Measurement and Payment

   Delete specification 01150 in its entirety and replace with new specification 01150 provided in this Addendum.

3. Bid Form

Delete the Bid Form in its entirety and replace with the new Bid form provided in this Addendum.

BIDDERS MUST SUBMIT BID FORM ADDENDUM 3 REVISION WITH THEIR BID.

4. Drawings

Delete the cover and sheet C1.00 and replace with the new cover and sheet C1.00 provided in this Addendum.

Add sheets C1.00B, C2.01, C2.02, C2.03, C2.04 and C2.05 provided in this Addendum.

5. SRF requirements reviewed during the pre-bid meeting are summarized in the attached handout.

Peter A. Boers
Procurement Department

---

Acknowledgment is requested even if you have elected not to respond to this bid. A designated management representative of your firm can sign the receipt for this addendum. Please acknowledge receipt of this addendum immediately by fax to (941) 486-2790 or mail to the above noted address, if a fax is not possible.

Receipt Acknowledged:

_____
Signature

_____
Company

_____
Date

# ADDENDUM TO THE REPORT OF THE GEOTECHNICAL INVESTIGATION

## CITY OF VENICE
## WATER MAIN-PHASE 5
## VENICE, FLORIDA

Driggers Engineering Services Incorporated

DRIGGERS ENGINEERING SERVICES INCORPORATED
Geotechnical Engineering & Construction Materials Testing

King Engineering Associates, Inc.
4921 Memorial Highway, Suite 300
Tampa, FL 33634

December 1, 2017

Attn: Christopher F. Kuzler, P.E.

**RE: Addendum to the Report of the Geotechnical Investigation**
**Venice Water Main- Phase 5**
**Venice, Florida**
**Our File: DES 157710-A**

Dear Mr. Kuzler:

Pursuant to recently obtained additional soil boring information, we present this brief report as an addendum to our geotechnical report for the subject residence, dated September 30, 2015. **DRIGGERS ENGINEERING SERVICES, INC.** has completed the requested additional subsurface investigation program for the subject project pipeline segment. Presented herein are the results of our field and laboratory tests, together with a discussion of our findings and recommendations.

## SUBSURFACE INVESTIGATION PROGRAM

Plate I of the report illustrations identifies the respective positioning of a series of additional test borings that have been completed to investigate the recently added pipeline segment of phase 5. The additional program consisted of six (6) classification or hand auger borings and accompanying hand cone penetrometer tests. Due to encountered soil conditions, a series of seven (7) additional hand probe borings were authorized at selected locations. The locations depicted on Plate I are approximate. Logs of the test borings are presented in the report attachments reflecting visual together with estimated Unified and AASHTO Soil classification. Soils were logged in the field by our geotechnician, with representative soil samples sealed in glass jars and returned to the laboratory for further examination by the project engineer and development of boring logs. A log of each hand auger boring is attached.

Cone penetration tests were conducted at each boring location. Cone penetration resistance values obtained at six (6) inch intervals are plotted on each boring log. A description of the Cone Penetrometer Test is appended.

## LABORATORY INVESTIGATION

A limited laboratory testing program was undertaken to aid in characterizing the engineering properties of the subsurface soils. Our laboratory tests included organic content tests. The results of our laboratory tests are included in the report attachments.

## GENERALIZED SUBSURFACE CONDITIONS

**SOIL AND GROUNDWATER CONDITIONS** – The shallow classification borings revealed predominately identified fine sands with variable silt and organic fines from existing grade to the termination depth of the borings at about 10 feet below grade. Please note that borings HA-3 and HA-5 along with probe borings P-3, P-6 and P-7 penetrated a highly organic silt/fine sand zone from about 3.5 to 5.5 feet below existing grade. Please find the attached table noting depth and thickness of highly organic zones at each boring.

Groundwater was recorded at the time of our investigation at 1.6 to 4.2 feet below grade at the test locations. Considering the moderate amounts of rain accumulation that occurred during and prior to this investigation, we expect the groundwater levels to rise slightly above observed levels during the normal rainy season. Naturally, significantly higher water levels can occur during extreme rainfall events.

## EVALUATION AND GEOTECHNICAL RECOMMENDATIONS

**PROJECT DESCRIPTION** – The project consists of the installation of a small diameter PVC water line using a possible combination of open-cut direct burial and directional drilling methods. It is our understanding that the pipeline embedment for the directional drill and open-cut direct burial will be located at about 3 to 4 feet below existing grade.

**HORIZONTAL DIRECTIONAL DRILLING SEGMENTS** – As previously mentioned, it has been planned that directional drill installation methods may be utilized for installation of certain segments of the water line at a depth of 3 to 4 feet below existing grade. The boring predominately indicated that the soils at this depth range are fine sands with variable silt and organic content.

During any horizontal directional drilling operation and considering the close nature of the pipe embedment to the ground surface, the contractor should exercise appropriate ways and means to minimize any potential for an escape of drilling fluids to the surface (fracking) or the development of excessive fluid pressures that could result in damage or displacement of structures and utilities, and yet maintain a stable borehole to prevent collapse of overburden soils.

**DIRECT EMBEDMENT PORTION** – It is our understanding that the sections with open-cut direct placement of the pipeline will be embedded with a minimum of three (3) foot of cover. Thus, one would anticipate that the pipe embedment would typically be in the range of perhaps 3.5 to 4 feet below existing grade.

The soils typically encountered within and just below this anticipated depth of embedment would predominately consist of fine sands with variable silt and organic fines content, which should be suitable for pipe support as well as provide suitable material for backfill placement. However, several borings identified highly organic soils within the potential bedding depth of the pipe that will warrant removal, replacement with suitable fill soils and compaction. A series of hand probe borings were conducted to aid in determining potential limits of such soils to be removed. The borings generally identified highly organic soils at borings HA-3 and HA-5 along with offset organic probe borings P-3, P-6 and P-7. Please review the location plan to aid in estimating potential limits of organic zones. Careful geotechnical inspection is recommended during construction along the entire alignment to help identify any other unsuitable soils or other objectionable materials that may warrant removal and replacement. Where evidenced, these materials should be removed and replaced with suitable bedding material as directed by the project engineer.

It is our understanding that project specification could require certain compaction efforts. It is our understanding that compaction should achieve a minimum density of no less than 98% of the Modified Proctor maximum dry density established in ASTM D-1557 under roadways, while a minimum density of no less than 95% of the Modified Proctor maximum dry density will be required for all other compaction applications including the pipe placement and pipe backfill. Excavated soils used for backfill may require adjustment in moisture content to levels suitable for replacement and compaction. It is suggested that moisture contents be controlled to within +/- 2% of optimum moisture as established by the Modified Proctor moisture-density relationship.

**EXCAVATION STABILITY AND MANAGEMENT OF GROUNDWATER** – It is anticipated that the direct embedded pipeline section of the project will be constructed in an open excavation or perhaps utilizing trench box construction. With all the excavation activities and considering the existing shallow groundwater level at various locations along the alignment, it is anticipated that control and management of groundwater will be important to maintain excavation stability, allow appropriate placement of piping to line and grade and to permit proper backfill placement and compaction. It is recommended that groundwater levels be maintained no less than one (1) foot below the maximum depth of excavation or deeper as needed, dependent upon the ways and means of construction. It is envisioned that the de-watering where needed, will be

accomplished utilizing an appropriately designed well-point system. Open excavation areas should be appropriately sloped in accordance with applicable OSHA Trench Safety requirements. The excavation contractor should certainly exercise due care with respect to identification and protection of any existing structures or utilities that are within the area of influence of his work activities.

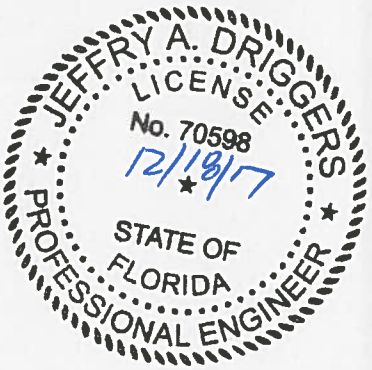
## LIMITATIONS

The geotechnical investigation herein was performed to obtain subsurface information to help facilitate the design of the planned utilities. Our geotechnical investigation may not have included gathering of all information that may be desired by the respective contractor in the preparation of his bid proposal, or in the development of his ways and means of construction. Each contractor is encouraged to conduct such additional investigative effort or testing that he may deem appropriate to prepare his bid proposal and construction plan.

**DRIGGERS ENGINEERING SERVICES** appreciates the opportunity to serve you and we trust that if you have any questions concerning our report, you will not hesitate to contact this office at your convenience.

Respectfully Submitted,
**DRIGGERS ENGINEERING SERVICES, INC.**

Jeffry A. Driggers, P.E.
Project Engineer
FL Registration No. 70598




F. Jaime Driggers, P.E.
President
FL Registration No. 16989

JAD
JAD-REP\157710-A
Copies submitted: (1) Email

# APPENDIX

## PLATE I – BORING LOCATION PLAN

## HAND AUGER BORING LOGS

## TABLE OF ORGANIC SOIL DEPTHS

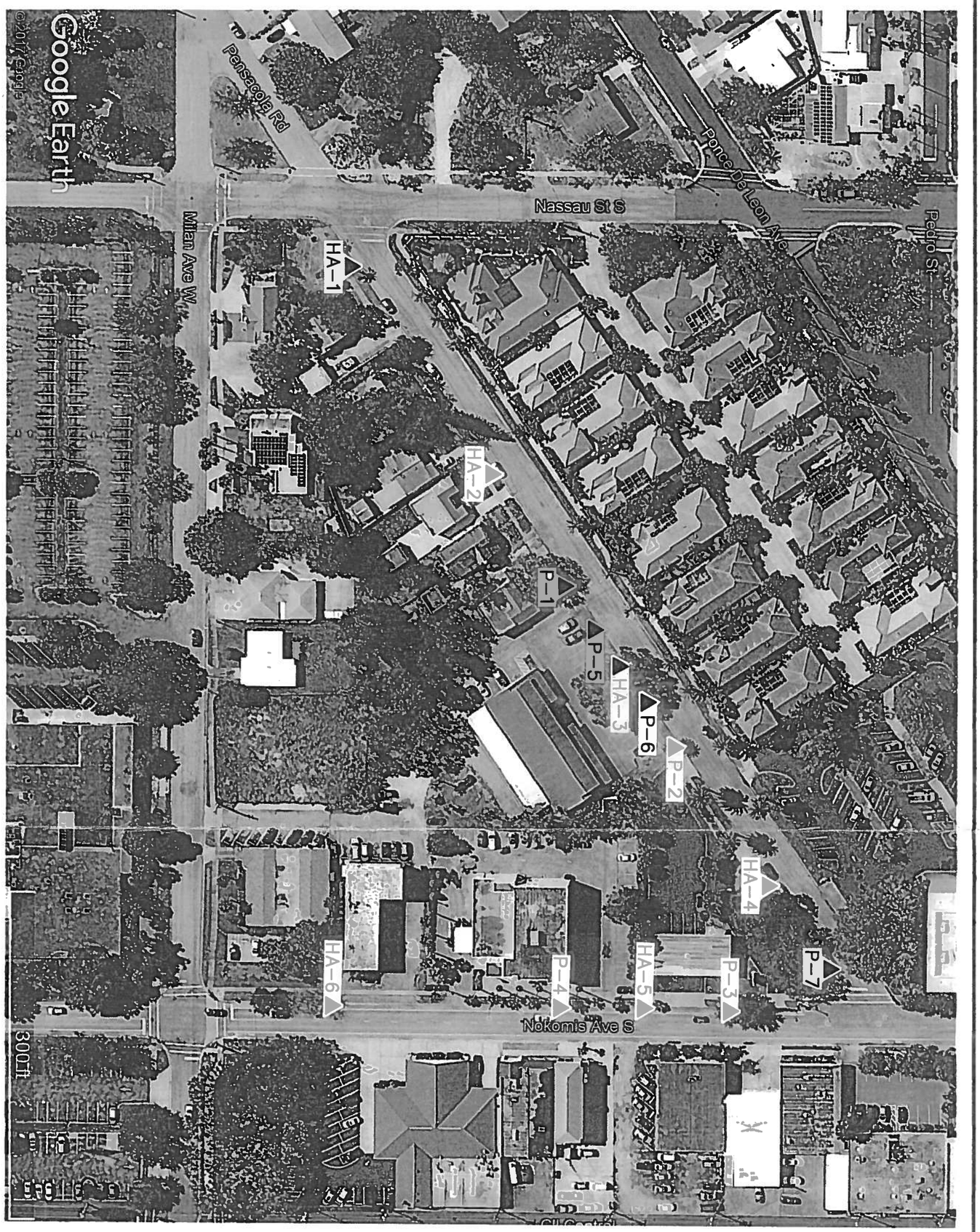
## SUMMARY OF LABORATORY TEST RESULTS

## METHOD OF TESTING

# PLATE I – BORING LOCATION PLAN

LEGEND:

▲ HAND AUGER BORING/
HAND CONE SOUNDING LOCATION




0 50 100 200

SCALE IN FEET

DATE: 11/21/17

| CAD / ENGINEER | SHEET TITLE | PROJECT NO. |
|---|---|---|
| R.D.B. / J.A.D. | BORING LOCATION PLAN | DES 157710 |
| PREPARED BY | PROJECT NAME | SHEET NO. |
| DRIGGERS ENGINEERING SERVICES, INCORPORATED | PROPOSED WATER MAINS PHASE 5 EXTENSION VENICE, FLORIDA | PLATE 1 |

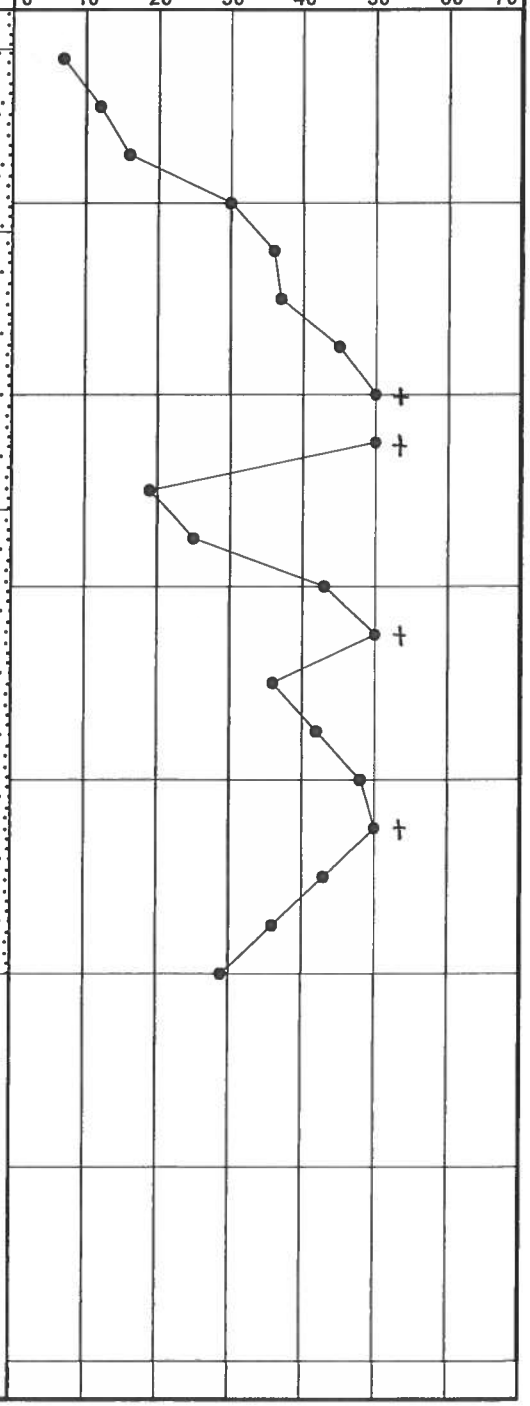
# HAND AUGER BORING LOGS

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | | | |
|---|---|---|---|
| PROJECT: Proposed Water Mains Phase 5 Extension Venice, Florida Project No.: DES 157710 | | CLIENT: King Engineering Associates, Inc. | |
| | | WATER TABLE: 2.1' | DATE: 11/1/17 |
| TECHNICIAN: C.D./B.B. | | DATE: 11/1/17 | COMPLETION DEPTH: 10.0' |
| LOCATION: See Plate I | | TEST NUMBER: HA-1 | |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL | HAND CONE TIP RESISTANCE (TSF) |
|---|---|---|---|---|
| | Dark grayish-brown Fine SAND (SP) (A-3) | 0 | | |
| | Light grayish-brown Fine SAND (SP) (A-3) | 2 | | |
| | Light gray Fine SAND (SP) (A-3) | 4 | | |
| | Grayish-brown Fine SAND (SP) (A-3) | 6 | | |
| | | 8 | | |
| | Note: Set 6.0' of 4" Dia. PVC Casing. | 10 | | |
| | LEGEND: • + Denotes Penetration Resistance in excess of 50 TSF | 12 | | |
| | | 14 | | |

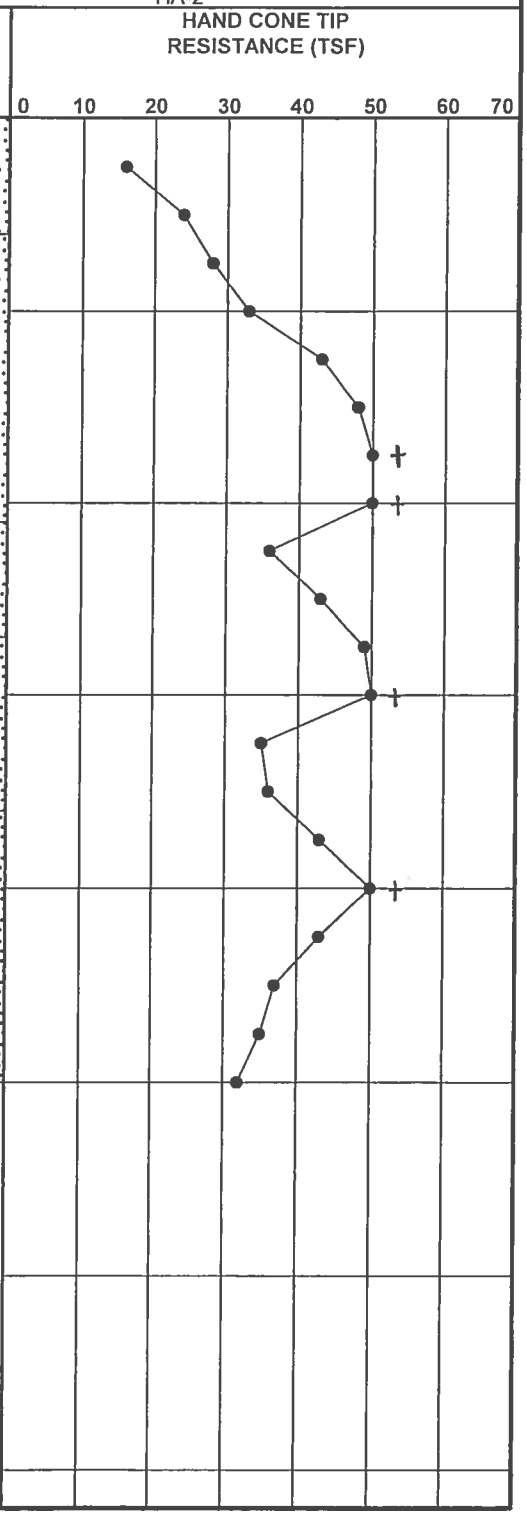


DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | | | |
|---|---|---|---|
| PROJECT: Proposed Water Mains<br>Phase 5 Extension<br>Venice, Florida<br>Project No.: DES 157710 | | CLIENT: King Engineering Associates, Inc. | |
| | | WATER TABLE: 1.6' | DATE: 11/1/17 |
| TECHNICIAN: C.D./B.B. | | DATE: 11/1/17 | COMPLETION DEPTH: 10.0' |
| LOCATION: See Plate I | | TEST NUMBER: HA-2 | |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL |
|---|---|---|---|
| | Light grayish-brown Fine SAND (SP) (A-3) | 0 | |
| | Light gray Fine SAND (SP) (A-3) | 2 | |
| | Light brown Fine SAND (SP) (A-3) | 4 | |
| | Brownish-gray Fine SAND (SP) (A-3) | 6 | |
| | Grayish-brown Fine SAND (SP) (A-3) | 8 | |
| | | 10 | |
| | Note: Set 6.0' of 4" Dia. PVC Casing. | 12 | |
| | LEGEND:<br>• + Denotes Penetration Resistance in excess of 50 TSF | 14 | |

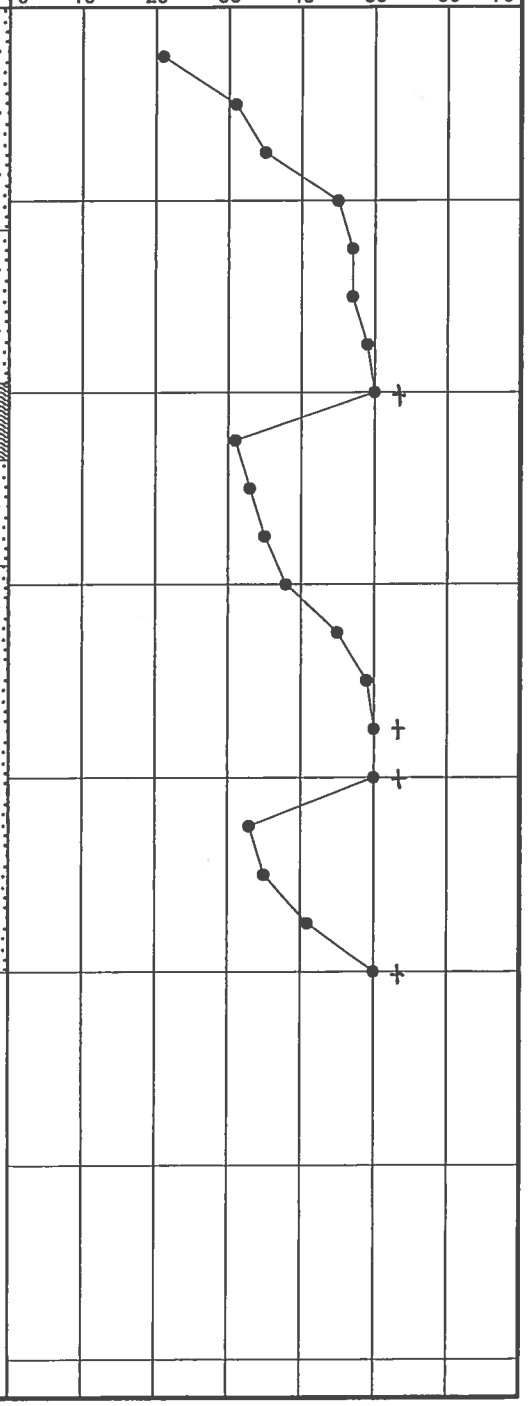


DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| PROJECT: Proposed Water Mains<br>Phase 5 Extension<br>Venice, Florida<br>Project No.: DES 157710 | CLIENT: King Engineering Associates, Inc. |
| | WATER TABLE: 2.2' / DATE: 11/1/17 |
| TECHNICIAN: C.D./B.B. | DATE: 11/1/17 / COMPLETION DEPTH: 10.0' |
| LOCATION: See Plate I | TEST NUMBER: HA-3 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Light grayish-brown Fine SAND (SP) (A-3) | 0 |
| | Light gray Fine SAND (SP) (A-3) | 2 |
| | Dark brown highly organic, silty Fine SAND with trace of roots (Pt) (A-8) | 4 |
| | Dark grayish-brown Fine SAND (SP) (A-3) | |
| | Grayish-brown Fine SAND (SP) (A-3) | 6 |
| | | 8 |
| | | 10 |
| | Note: Set 6.0' of 4" Dia. PVC Casing. | 12 |
| | LEGEND:<br>• + Denotes Penetration Resistance in excess of 50 TSF | 14 |



DRIGGERS ENGINEERING SERVICES INCORPORATED

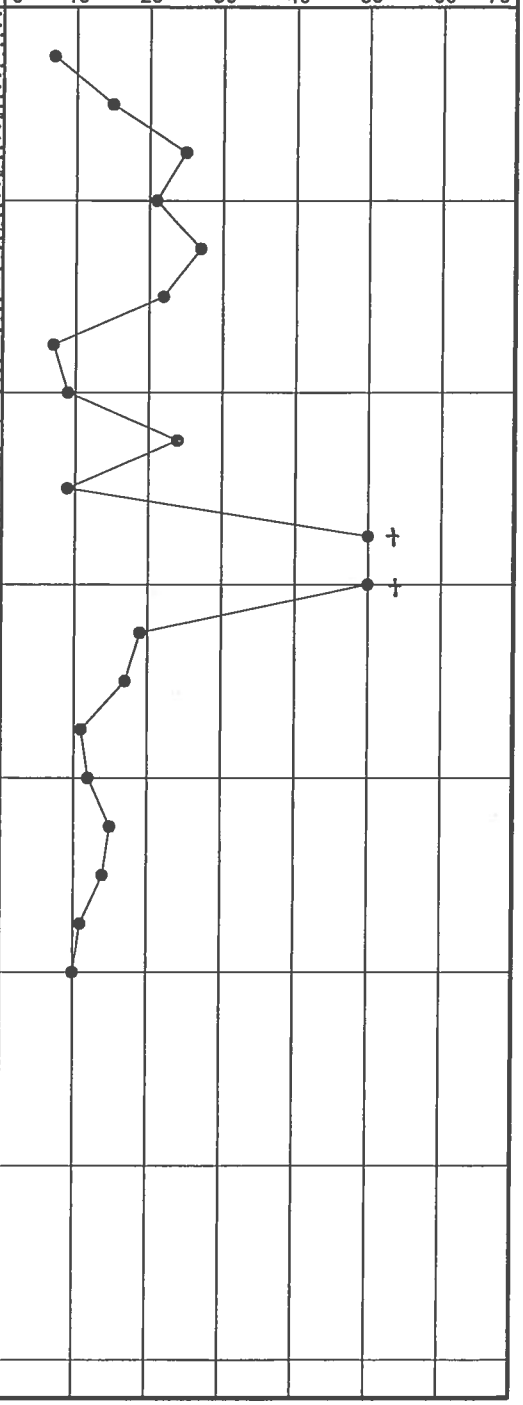
## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| PROJECT: Proposed Water Mains<br>Phase 5 Extension<br>Venice, Florida<br>Project No.: DES 157710 | CLIENT: King Engineering Associates, Inc.<br>WATER TABLE: 3.0'<br>DATE: 11/1/17 |
| TECHNICIAN: C.D./B.B. | DATE: 11/1/17<br>COMPLETION DEPTH: 10.0' |
| LOCATION: See Plate I | TEST NUMBER: HA-4 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Dark grayish-brown Fine SAND (SP) (A-3) | 0 |
| | Gray Fine SAND (SP) (A-3) | |
| | Light gray Fine SAND (SP) (A-3) | 2 |
| | Gray Fine SAND (SP) (A-3) | |
| | | 4 |
| | Dark brownish-gray Fine SAND (SP) (A-3) | |
| | | 6 |
| | Dark grayish-brown Fine SAND (SP) (A-3) | |
| | | 8 |
| | | 10 |
| | Note: Set 6.0' of 4" Dia. PVC Casing. | |
| | | 12 |
| | LEGEND:<br>• + Denotes Penetration Resistance in excess of 50 TSF | |
| | | 14 |

SYMBOL

HAND CONE TIP RESISTANCE (TSF)



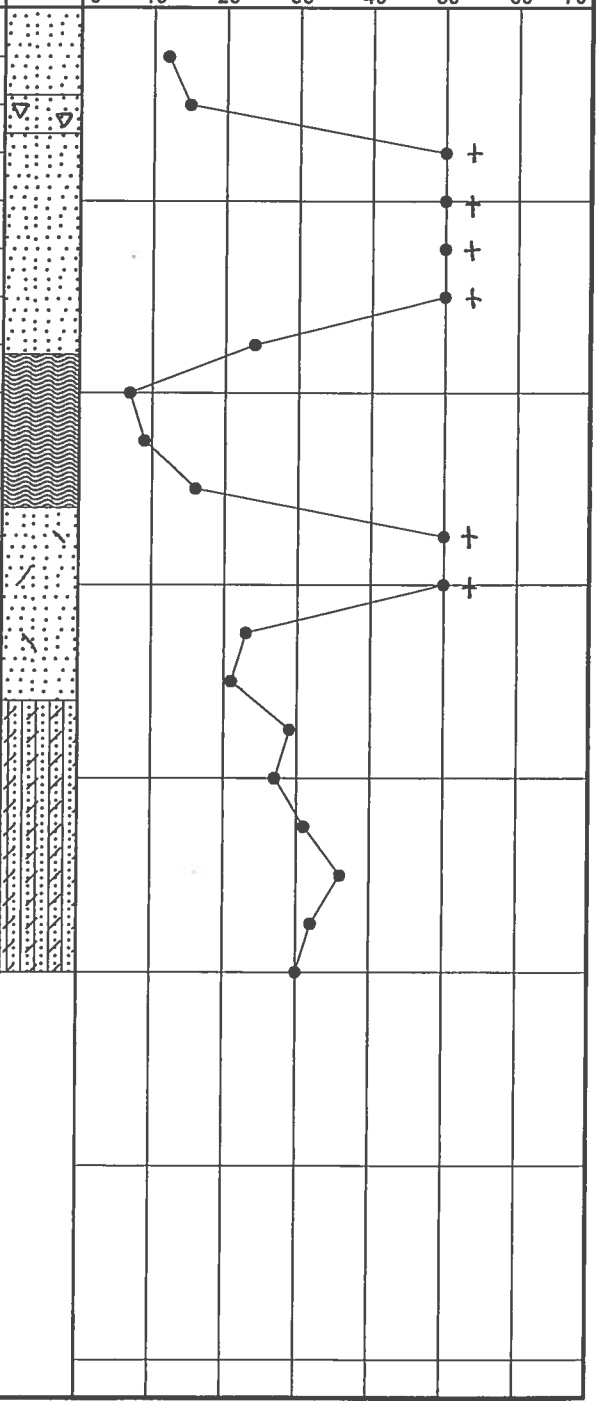
DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| PROJECT: Proposed Water Mains<br>Phase 5 Extension<br>Venice, Florida<br>Project No.: DES 157710 | CLIENT: King Engineering Associates, Inc.<br>WATER TABLE: 4.2'<br>DATE: 11/1/17 |
| TECHNICIAN: C.D./B.B. | DATE: 11/1/17<br>COMPLETION DEPTH: 10.0' |
| LOCATION: See Plate I | TEST NUMBER: HA-5 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Brownish-gray Fine SAND (SP) (A-3) | 0 |
| | Brown Fine SAND with trace of shell (SP) (A-3) | |
| | Dark brownish-gray Fine SAND (SP) (A-3) | 2 |
| | Dark brown highly organic, silty Fine SAND (Pt) (A-8) | 4 |
| | Grayish-brown Fine SAND with trace of roots (SP) (A-3) | 6 |
| | Grayish-brown silty, slightly clayey Fine SAND (SM) (A-2-4) | 8 |
| | | 10 |
| | Note: Set 6.0' of 4" Dia. PVC Casing. | 12 |
| | LEGEND:<br>• + Denotes Penetration Resistance in excess of 50 TSF | 14 |

SYMBOL



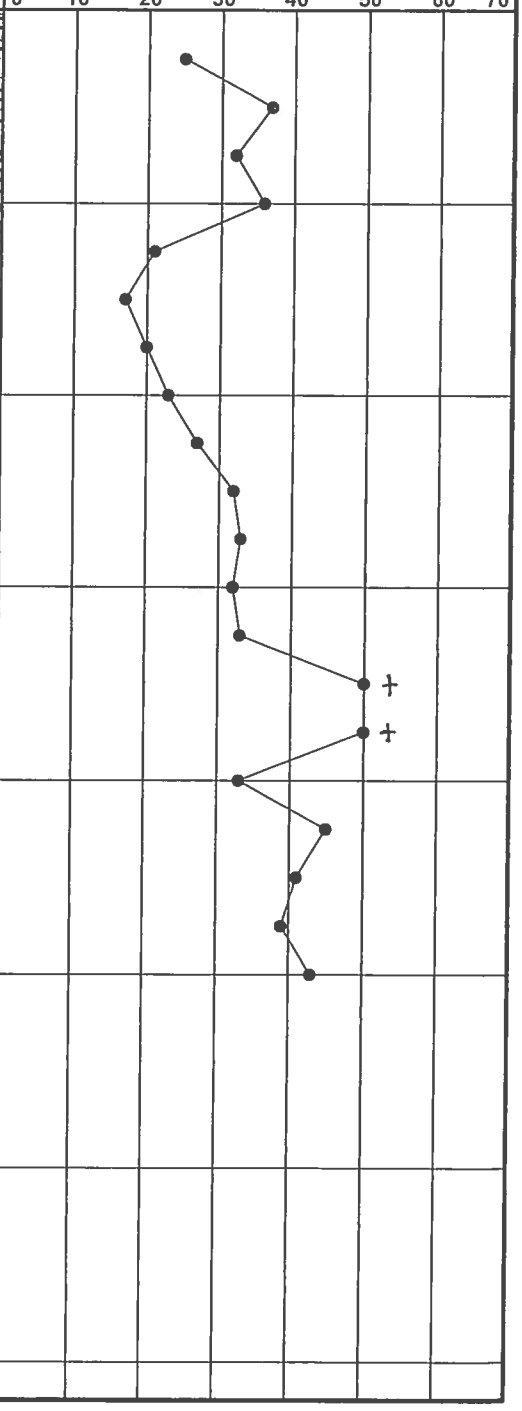
DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| PROJECT: Proposed Water Mains, Phase 5 Extension, Venice, Florida, Project No.: DES 157710 | CLIENT: King Engineering Associates, Inc. |
| | WATER TABLE: 3.8' / DATE: 11/1/17 |
| TECHNICIAN: C.D./B.B. | DATE: 11/1/17 / COMPLETION DEPTH: 10.0' |
| LOCATION: See Plate I | TEST NUMBER: HA-6 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Grayish-brown Fine SAND with roots (SP) (A-3) | 0 |
| | Brown Fine SAND with trace of shell (SP) (A-3) | |
| | Dark brown slightly silty Fine SAND with finely divided organic material (SP-SM) (A-3) | 2 |
| | Brown Fine SAND (SP) (A-3) | 4 |
| | | 6 |
| | Light brown Fine SAND (SP) (A-3) | |
| | Brown Fine SAND (SP) (A-3) | 8 |
| | | 10 |
| | Note: Set 6.0' of 4" Dia. PVC Casing. | 12 |
| | LEGEND: | |
| | • + Denotes Penetration Resistance in excess of 50 TSF | 14 |

SYMBOL



DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| PROJECT: Proposed Water Mains<br>Phase 5 Extension<br>Venice, Florida<br>Project No.: DES 157710 | CLIENT: King Engineering Associates, Inc.<br>WATER TABLE: 2.8' DATE: 11/15/17 |
| TECHNICIAN: B.B./J.W. | DATE: 11/15/17 COMPLETION DEPTH: 6.0' |
| LOCATION: See Plate I | TEST NUMBER: P-1 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL | HAND CONE TIP RESISTANCE (TSF) 0 10 20 30 40 50 60 70 |
|---|---|---|---|---|
| | Light grayish-brown Fine SAND (SP) (A-3) | 0 | | |
| | | 2 | | |
| | | 4 | | |
| | Brown Fine SAND (SP) (A-3) | 6 | | |
| | | 8 | | |
| | | 10 | | |
| | | 12 | | |
| | | 14 | | |

LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| PROJECT: Proposed Water Mains<br>Phase 5 Extension<br>Venice, Florida<br>Project No.: DES 157710 | CLIENT: King Engineering Associates, Inc. |
| TECHNICIAN: B.B./J.W. | WATER TABLE: 3.3' / DATE: 11/15/17 |
| LOCATION: See Plate I | DATE: 11/15/17 / COMPLETION DEPTH: 6.0' |
| | TEST NUMBER: P-2 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL | HAND CONE TIP RESISTANCE (TSF) |
|---|---|---|---|---|
| | Dark grayish-brown Fine SAND with roots (SP) (A-3) | 0 | | |
| | Gray Fine SAND with roots (SP) (A-3) | | | |
| | Gray Fine SAND (SP) (A-3) | 2 | | |
| | Light gray Fine SAND (SP) (A-3) | 4 | | |
| | Dark grayish-brown slightly silty Fine SAND (SP-SM) (A-3) | 6 | | |
| | | 8 | | |
| | | 10 | | |
| | | 12 | | |
| | | 14 | | |

0 10 20 30 40 50 60 70

LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | | | |
|---|---|---|---|
| PROJECT: Proposed Water Mains<br>Phase 5 Extension<br>Venice, Florida<br>Project No.: DES 157710 | | CLIENT: King Engineering Associates, Inc. | |
| | | WATER TABLE: 5.6' | DATE: 11/15/17 |
| TECHNICIAN: B.B./J.W. | | DATE: 11/15/17 | COMPLETION DEPTH: 6.0' |
| LOCATION: See Plate I | | TEST NUMBER: P-3 | |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL | HAND CONE TIP RESISTANCE (TSF) 0 10 20 30 40 50 60 70 |
|---|---|---|---|---|
| | Brownish-gray Fine SAND (SP) (A-3) | 0 | | |
| | Brownish-gray Fine SAND with trace of shell (SP) (A-3) | | | |
| | Light brown slightly silty Fine SAND with shell (SP-SM) (A-3) | 2 | | |
| | Grayish-brown Fine SAND with trace of shell (SP) (A-3) | | | |
| | Dark gray highly organic, silty Fine SAND (Pt) (A-8) | 4 | | |
| | Dark grayish-brown Fine SAND (SP) (A-3) | | | |
| | | 6 | | |
| | | 8 | | |
| | | 10 | | |
| | | 12 | | |
| | | 14 | | |

LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

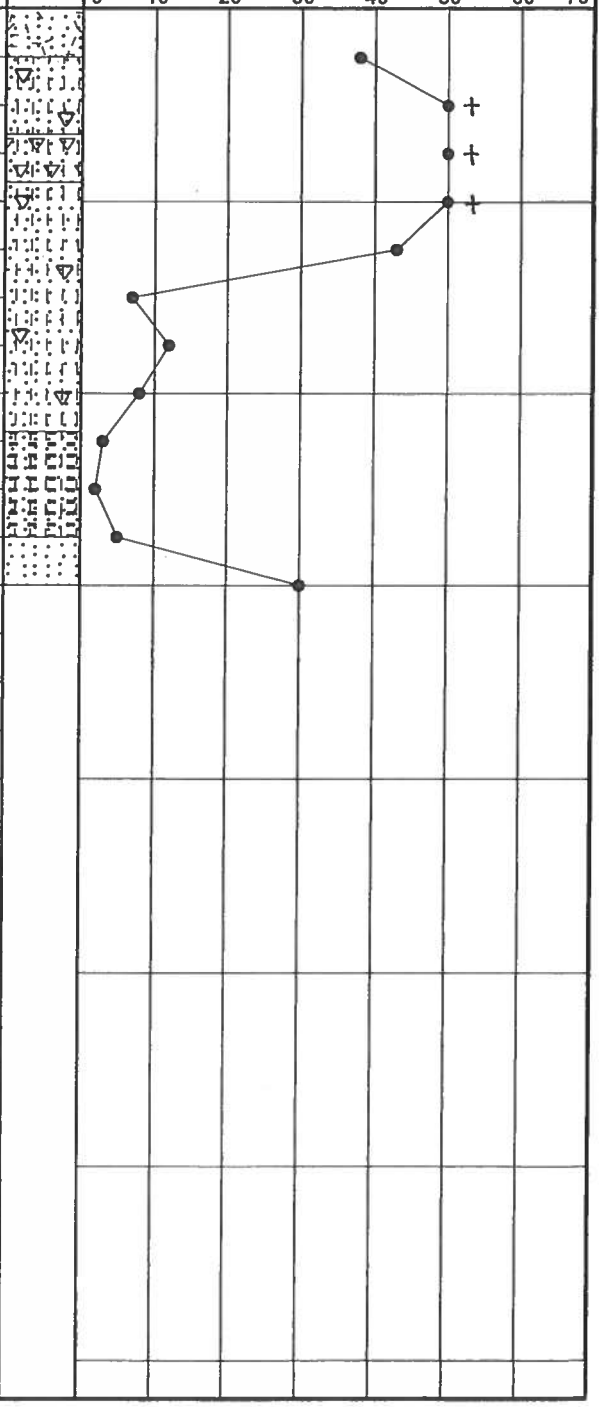
| | |
|---|---|
| PROJECT: Proposed Water Mains<br>Phase 5 Extension<br>Venice, Florida<br>Project No.: DES 157710 | CLIENT: King Engineering Associates, Inc.<br>WATER TABLE: 4.8'<br>DATE: 11/15/17 |
| TECHNICIAN: B.B./J.W. | DATE: 11/15/17<br>COMPLETION DEPTH: 6.0' |
| LOCATION: See Plate I | TEST NUMBER: P-4 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Brown Fine SAND with roots (SP) (A-3) | 0 |
| | Grayish-brown slightly silty Fine SAND with trace of shell (SP-SM) (A-3) | |
| | Light brown slightly silty Fine SAND with shell (SP-SM) (A-3) | 2 |
| | Dark grayish-brown slightly silty Fine SAND with trace of shell (SP-SM) (A-3) | 4 |
| | Dark gray slightly organic, slightly silty Fine SAND (SP-SM) (A-3) | 6 |
| | Dark grayish-brown Fine SAND (SP) (A-3) | 8 |
| | | 10 |
| | | 12 |
| | | 14 |

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70



LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

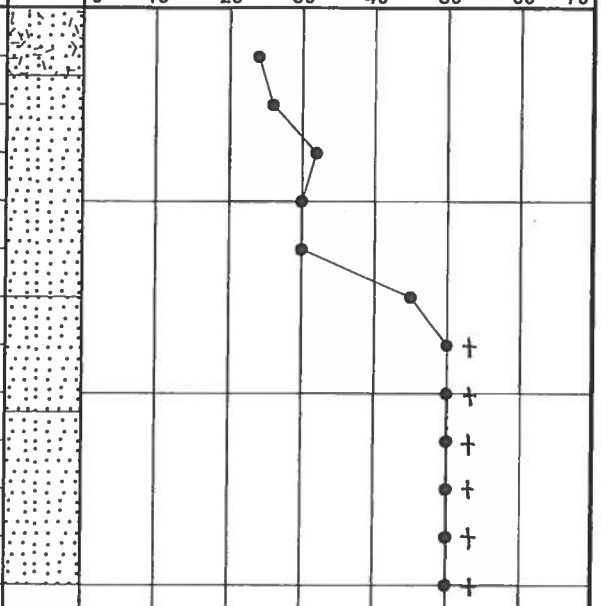
| | |
|---|---|
| PROJECT: Proposed Water Mains<br>Phase 5 Extension<br>Venice, Florida<br>Project No.: DES 157710 | CLIENT: King Engineering Associates, Inc.<br>WATER TABLE: 2.9'<br>DATE: 11/15/17 |
| TECHNICIAN: B.B./J.W. | DATE: 11/15/17<br>COMPLETION DEPTH: 6.0' |
| LOCATION: See Plate I | TEST NUMBER: P-5 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Grayish-brown Fine SAND with roots (SP) (A-3) | 0 |
| | Light grayish-brown Fine SAND (SP) (A-3) | 2 |
| | Light gray Fine SAND (SP) (A-3) | 4 |
| | Brown Fine SAND (SP) (A-3) | 6 |
| | | 8 |
| | | 10 |
| | | 12 |
| | | 14 |

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70



LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | | | |
|---|---|---|---|
| PROJECT: Proposed Water Mains<br>Phase 5 Extension<br>Venice, Florida<br>Project No.: DES 157710 | | CLIENT: King Engineering Associates, Inc. | |
| | | WATER TABLE: 3.1' | DATE: 11/15/17 |
| TECHNICIAN: B.B./J.W. | | DATE: 11/15/17 | COMPLETION DEPTH: 6.0' |
| LOCATION: See Plate I | | TEST NUMBER: P-6 | |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) | SYMBOL | HAND CONE TIP RESISTANCE (TSF) |
|---|---|---|---|---|
| | Dark grayish-brown Fine SAND with roots (SP) (A-3) | 0 | | 0 10 20 30 40 50 60 70 |
| | Gray Fine SAND (SP) (A-3) | | | |
| | Light grayish-brown Fine SAND (SP) (A-3) | 2 | | |
| | Light grayish-brown Fine SAND with trace of roots (SP) (A-3) | 4 | | |
| | Dark brown organic, silty Fine SAND with roots (SM/Pt) (A-8) | | | |
| | Dark brown Fine SAND (SP) (A-3) | 6 | | |
| | | 8 | | |
| | | 10 | | |
| | | 12 | | |
| | | 14 | | |

LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

DRIGGERS ENGINEERING SERVICES INCORPORATED

## HAND AUGER BORING/HAND CONE SOUNDING LOG

| | |
|---|---|
| PROJECT: Proposed Water Mains<br>Phase 5 Extension<br>Venice, Florida<br>Project No.: DES 157710 | CLIENT: King Engineering Associates, Inc. |
| TECHNICIAN: B.B./J.W. | WATER TABLE: 4.5' DATE: 11/15/17 |
| LOCATION: See Plate I | DATE: 11/15/17 COMPLETION DEPTH: 6.0' |
| | TEST NUMBER: P-7 |

| ELEV. (FT) | DESCRIPTION | DEPTH (FT) |
|---|---|---|
| | Dark grayish-brown Fine SAND with trace of roots (SP) (A-3) | 0 |
| | Gray Fine SAND (SP) (A-3) | 2 |
| | Dark gray highly organic, silty Fine SAND (Pt) (A-8) | 4 |
| | Dark brown Fine SAND (SP) (A-3) | 6 |
| | | 8 |
| | | 10 |
| | | 12 |
| | | 14 |

SYMBOL

HAND CONE TIP RESISTANCE (TSF)

0 10 20 30 40 50 60 70

LEGEND:

• + Denotes Penetration Resistance in excess of 50 TSF

# TABLE OF ORGANIC SOIL DEPTHS

**VENICE WATER MAIN - PHASE 5**
**VENICE, FLORIDA**
**DES 157710-A**

## TABLE OF HIGHLY ORGANIC SOIL DEPTHS

| BORING NO. | HIGHLY ORGANIC SOIL DEPTH (FT.) |
|---|---|
| HA-3 | 3.9' - 4.7' |
| HA-5 | 3.6' - 5.2' |
| P-3 | 3.9' - 5.2' |
| P-6 | 4.2' - 5.4' |
| P-7 | 3.0' - 5.3' |

# 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 | PI | | | | | | | | | |
| HA-3 | 3.9-4.7 | Dark brown highly organic, silty fine SAND with trace of roots | | | | | | | | | | | 11.1 | | | | |
| HA-5 | 3.6-5.2 | Dark brown highly organic, silty Fine SAND | | | | | | | | | | | 17.4 | | | | |
| HA-6 | 1.5-2.9 | Dark brown slightly silty Fine SAND with finely divided organic material | | | | | | | | | | | 2.8 | | | | |
| P-4 | 4.4-5.5 | Dark gray slightly organic, slightly silty Fine SAND | | | | | | | | | | | 5.6 | | | | |
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W % = Water Content
$Y_d$ (pcf) = Dry Density
$G_s$ = Specific Gravity
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
P.P. (tsf) = Pocket Penetrometer
U.C. = Unconfined Compression

Con. = Consolidation Test
G.S. (+1) = Grainsize Analysis (Hydrometer)
ORG. (%) = Organic Content
Cl. (ppm) = Total Chloride
$SO_4$ (ppm) = Total Sulfate
RES. (ohm-cm) = Lab Resistivity
* = See Test Curves
** = Percent Passing No. 200 Sieve

**CLIENT:** King Engineering Associates, Inc.

**PROJECT:** Proposed Water Mains, Phase 5 Extension, Venice, Florida

**FILE:** DES 157710

# METHOD OF TESTING

# HAND CONE PENETRATION TEST

The cone penetration test was performed using a DGSI Model S-215 double rod Static Cone Penetrometer.

Dual rods enable the cone stress to be measured directly. Soil friction on the outer rod does not influence the reading. Depending upon the application, either the maximum bearing for an increment of push or the least bearing for an increment can be reported. If you were investigating for soft spots, you would take the least reading. In typical use, you would force the cone into the soil 6 inches, retract the cone slightly until the gauge reads zero, then advance an additional 6 inch increment. If you meet with refusal, the cone can be removed and the hole opened with a hand auger to permit a continuation of measurements against depth.

The tool has been designed to allow a maximum force of 250 lbf to be applied, somewhat more than the average weight of an operator. The unit can be operated in a vertical or horizontal position. The cone tip has an included angle of 60°. The cone has a section area of 1.5 $cm^2$. The maximum total bearing ($Q_c$) is 70 $kg/cm^2$.

The reading ($Q_c$) is in $kg/cm^2$ which is essentially equal to $ton/ft^2$.

The cone index ($Q_c$) is read directly. The correlation between the cone index and soil constants is not absolute. Generally, the following results have been determined through extensive field use of the unit. Further verification of correlation in your local soil types is essential.

| **Standard Penetration** | **Strength and Cohesion** |
|---|---|
| Test "N" Value<br>$Q_c = 4$ "N" | $Q_u$ - Unconfined compression ($kg/cm^2$)<br>c - Cohesion (kg/cm2)<br><br>Uniform clay and silty clays: $Q_c = 5\ Q_u$<br>$Q_c = 10\ c$<br>Clayey Silts: $Q_c = (10 \text{ to } 20)\ Q_u$<br>$Q_c = (20 \text{ to } 40)\ c$ |

**SECTION 01150**

**MEASUREMENT AND PAYMENT**

## PART 1 – GENERAL

### 1.1 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 or Owner's Representative;
5. Backfill;
6. Grading;
7. Replacement or restoration of paved or unpaved roadways, grass and shrubbery plots outside of established pay limits;
8. Replacement or restoration of curbing, gutter, sidewalk, and site restoration of any areas damaged during construction activities;
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 of irrigation systems damaged during construction;
18. Repair and/or cleaning of storm sewers, inlets & catch basins damaged or filled with sediment during construction;
19. Color audio-video construction record;
20. Providing the services of an Independent Testing Laboratory for materials and compaction testing;

21. 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;
22. Cost to reproduce drawings, specifications, shop drawings, and reports for the Contractor's use and for submissions to the Owner;
23. Temporary fencing;
24. Dust Control;
25. Noise suppression measures;
26. Removing, relocating, resetting existing street signage to facilitate construction;
27. Removing, relocating, resetting mailboxes to facilitate construction;
28. Utility notification and location and exploratory pits; and
29. 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, and during the entire warranty period, the Contractor shall maintain the surface of the unpaved trenches, shrubbery, trees, fences, sod, and other disturbed surfaces. 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.

**1.2 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 Owner, 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.

**1.3 Payment**

The Contractor will be paid monthly, by the Owner, 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**

**3.1 Bid Items: Water Main Replacement Program – Phase 5**

A. WATER MAIN INSTALLED BY HORIZONTAL DIRECTIONAL DRILL METHOD (Bid Items #1 and #3)

The Contractor shall provide all labor, equipment and materials to furnish and install Fusible PVC 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 or Owner's Representative;
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. Backfilling and compaction of pits;
11. Hydrostatic pressure testing 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 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. WATER MAIN INSTALLED BY OPEN CUT METHOD (Bid Item #2)

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 or Owner's Representative;
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. Furnishing and installing leak detector assemblies where called for on the drawings;
9. Furnish and install joint restraints complete with all tie rods and hardware;
10. Furnishing and installing pipe;
11. Furnishing and installing polyethylene encasement on ductile iron pipe;
12. Backfilling and compacting the trench including regrading the terrain;
13. Hydrostatic pressure testing, pigging, and cleaning the pipe;
14. Cleaning up and restoring the job site which shall include removing excess materials and debris and re-grading the terrain;
15. Driveway, sidewalk, asphalt and other restoration;
16. Disinfecting the potable or raw water main pipe;
17. Connecting piping to existing piping and/or structures;

18. Furnishing and installing any lateral pipe and making any connection needed; and
19. 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 pipe by the open cut method shall be based on the 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 all miscellaneous fittings. The installation of these 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 or Owner's Representative;
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 polyethylene encasement;
5. Furnishing and installing glands, hardware and restrained joints on the fittings;
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.

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. RESILIENT WEDGE GATE VALVES WITH BOX (Bid Item #5)

The Contractor shall provide all labor, equipment and certain materials to completely furnish and install all resilient wedge gate valves. The resilient wedge gate 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 or Owner's Representative;
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, valve boxes, and tapping sleeves;
5. Furnishing and installing mechanical joint restraints;
6. Furnishing and installing valve extension rods where necessary;
7. Furnishing and installing the concrete pad and brass 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 resilient wedge gate valves.

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

Payment shall be made for the number of each resilient wedge gate 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. City personnel can insert a valve key through the valve box and completely open and close the valve.

E. TAPPING SLEEVES AND VALVES (Bid Items #6 and #7)

The Contractor shall provide all labor, equipment and certain materials to completely install and test all tapping sleeves and valves. The tapping sleeve and 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 or Owner's Representative;
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, valve boxes, adapter fittings and tapping sleeves;
5. Pressure testing the tapping sleeve;
6. Furnishing and installing mechanical joint restraints;
7. Furnishing and installing valve extension rods where necessary;
8. Furnishing and installing the concrete pad and brass valve identification tag;
9. Backfilling and compacting the trench/pit;
10. Furnishing paint and painting valve cover; and
11. All other ancillary materials, equipment, labor, and power required for the complete installation of valves and appurtenances.

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

Payment shall be made based on the size and for each tapping sleeve and valve 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. City personnel can insert a valve key through the valve box and completely open and close the valve.

F. INSTA-VALVE PLUS WITH BOX (Bid Item #8)

The Contractor shall provide all labor, equipment and certain materials to completely install and test all insta-valves. The insta-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 or Owner's Representative;
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, valve boxes, and adapter fittings;
5. Pressure testing the Insta-Valve sleeve;
6. Furnishing and installing mechanical joint restraints;
7. Furnishing and installing valve extension rods where necessary;

8. Furnishing and installing the concrete pad and brass valve identification tag;
9. Backfilling and compacting the trench/pit;
10. Furnishing paint and painting valve cover; and
11. All other ancillary materials, equipment, labor, and power required for the complete installation of valves and appurtenances.

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

Payment shall be made for each insta-valve 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. City personnel can insert a valve key through the valve box and completely open and close the valve.

G. FIRE HYDRANT ASSEMBLIES (Bid Item #9)

The Contractor shall provide all labor, equipment and certain materials to completely install fire hydrants and fire hydrant assemblies. The fire hydrant 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 or Owner's Representative;
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 fire hydrant assemblies as shown on the detail drawings including the hydrant valve as specified;
5. Taking measurements before ordering, and furnishing and installing hydrant risers as necessary to provide proper nozzle height above proposed grade;
6. Furnishing and installing brass valve identification tag;
7. Backfilling and compacting the trench/pit;
8. Furnishing paint and painting valve cover; and
9. All other ancillary materials, equipment, labor, and power required for the complete installation of fire hydrant assemblies.
10. The main line tee shall not be included in this bid item.

All work shall be in accordance with the Technical Specifications and Plans. Payment for the tee shall be made under the Ductile Iron Fittings pay item.

Payment shall be made for the number of each fire hydrant or fire hydrant assembly installed and incorporated into the piping system complete, working, and operating to the satisfaction of the Engineer.

H. WATER SERVICES WITH NEW METER BOX (Bid Items #10, #11, #12, #13, 14)

The Contractor shall provide all labor, equipment and materials to completely install water services and meter assemblies for each residential lot. The water service and meter assembly installation shall include, but may not be limited to:

1. Excavating the trench/pit;
2. Maintaining the trench/pits, which shall include dewatering, barricading, sheeting, shoring, containment, berming and disposal of drill fluid as required or as directed by the Engineer or Owner's Representative;

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 the far-side PVC or HDPE casings;
5. Performing all evaluations and calculations necessary for the proper implementation of the HDD;
6. Preparing and implementing the HDD work plan, bentonite management and emergency spill plan;
7. Excavating the launch, recovery, intermediate mud and exploratory pits;
8. Furnishing and installing the locator wires on the casing pipe;
9. Backfilling and compaction of trench/pits;
10. Furnishing and installing the service saddle, corporation stop, carrier piping, service lateral and curb stop;
11. Furnishing and installing the new meter box;
12. Backfilling and compacting the trench/pit; and
13. All other ancillary materials, equipment, labor, and power required for the complete installation of water services and meter assemblies.

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

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

I. RELOCATE WATER METER (Bid Item #15)

The Contractor shall provide all labor, equipment, and materials to completely remove, relocate, and reinstall existing meters where necessary. This item describes water services that do not require a backflow preventer as identified by the Owner/Engineer. The relocation shall include, but may not be limited to:

1. Removing the meter from the existing service;
2. Removing the existing backflow preventer;
2. Installing the meter as shown on the Drawings including piping, isolation valves, fittings and concrete stepping stone;
3. Repairing leaks; and
5. Miscellaneous fittings, piping and accessories necessary for a complete installation.

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

Payment shall be made for the number of each meter relocated and incorporated into the piping system complete, working, and operating to the satisfaction of the Engineer.

J. RELOCATE METER AND DUAL CHECK VALVE/RPZ ASSEMBLIES (Bid Item #16, #17)

The Contractor shall provide all labor, equipment, and materials to completely remove, relocate and reinstall existing meter and/or backflow assemblies where necessary. This pay item does not include backflow preventers serving private fire protection systems. The relocation shall include, but may not be limited to:

1. Removing the meter and backflow assembly from the existing service;
2. Installing the meter and backflow assembly as shown on the Drawings including piping, isolation valves, fittings and concrete stepping stone;
3. Permitting through the City of Venice Building Department (not including permit fees);
4. Repairing leaks;

5. Coordination with the property owner regarding Thermal Expansion protection (tank or relief valve) installation by a licensed plumber contracted to perform this work by the property owner.
6. Testing and Certification of the relocated assemblies, and;
7. Miscellaneous fittings, piping and accessories necessary for a complete installation.

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

Payment shall be made for the number of each backflow device with meter relocated and incorporated into the piping system complete, working, and operating to the satisfaction of the Engineer.

K. RELOCATED FIRE SERVICE (Bid Items #18, #19, #20)

The Contractor shall provide all labor, equipment and materials to completely remove, relocate and reinstall existing fire service and backflow assembly from the water main to the existing building. This pay item does not include restoration on private property. The fire service relocation shall include, but may not be limited to:

1. Excavating the trench/pit;
2. Maintaining the trench/pits, which shall include dewatering, barricading, sheeting, shoring, containment, berming and disposal of drill fluid as required or as directed by the Engineer or Owner's Representative;
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. Backfilling and compaction of trench/pits;
5. Furnishing and installing the service saddle, corporation stop, carrier piping, fire service piping and valves;
6. Backfilling and compacting the trench/pit;
7. Coordinating with the property owner to determine the service route and backflow assembly location;
8. Permitting through the City of Venice Building Department;
9. Removing the backflow assembly from the existing service;
10. Installing the above-ground backflow assembly as shown on the Drawings including piping, isolation valves, and concrete stepping stone;
11. Furnishing, installing, testing and connecting the new service line by open cut;
12. Testing and Certification of the fire service;
13. Miscellaneous fittings, piping and accessories necessary for a complete installation; and
14. All other ancillary materials, equipment, labor, and power required for the complete installation of fire services and backflow assemblies.

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

Payment shall be made for the number of each fire services relocated and incorporated into the piping system complete, working, and operating to the satisfaction of the Engineer.

L. NEW WATER SERVICE CONNECTIONS ON PRIVATE PROPERTY (Bid Items #21, #22, #23)

The Contractor's plumber shall provide all labor, equipment and certain materials to completely install new water services from the new meter assemblies to each existing building or, in the case of irrigation meters, to the connection point on the lot's irrigation system. The new water service shall include, but may not be limited to:

1. Excavation;

2. Maintaining the trench/pit, which shall include dewatering and bracing and sheeting where required or as directed by the Engineer or Owner's Representative;
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, testing and connecting the new service line by either open cut or by horizontal directional drill;
5. Installing the water meter and switching service to the new connection;
6. Testing and inspection of the service as required for Building/Plumbing permits;
7. Backfilling and compacting the trench/pit; and
8. All other ancillary materials, equipment, labor, and power required for the complete installation of water services and meter assemblies.

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

Payment shall be based on the horizontal distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the Engineer.

M. PRIVATE PROPERTY RESTORATION (Bid Items #24, #25, #26, #27, #28, #29)

The Contractor shall provide all labor, equipment, and materials to restore private property that was cut, removed or damaged during the course of the water service installation on private property. These pay items are only applicable to restoration on private property, outside of the right-of-way. Private property restoration shall include, but may not be limited to:

1. St. Augustine, Bermuda, or other sod to match existing;
2. Landscaping including replacement shrubbery, trees, mulch, fences, and other disturbed surfaces;
3. Brick or Concrete Pavers;
4. Asphalt restoration including driveways or walkways;
5. Concrete restoration including driveways or walkways;
6. Loose Stone or Gravel including river rock, limerock, pea gravel, or shell;
7. Excavation and removal of landscaping and/or surface;
8. Placing, grading, and compacting sub-base and/or base;
9. Earth bed preparation including rolling, tamping, and compaction;
10. Furnishing and placing or replacing the landscaping and/or surface;
11. Grading and leveling, so as to provide a uniform longitudinal profile and cross-section with existing surface;
12. Mowing sod; and,
13. Disposal of all surplus existing materials.

Private property restoration shall be in as good or better condition as prior to construction. Payment for private property restoration shall be based on the horizontal distance in linear feet of restoration on private property measured along the top centerline of the installed and connected pipe, in place, complete and acceptable to the Engineer. Unless approved by the Owner and/or Engineer limits of payment for restoration shall be 18 inches over the water service pipe route.

N. PRIVATE PROPERTY RESTORATION – UNAVOIDABLE OBSTRUCTIONS (Bid Item #30)

The Contractor shall provide all labor, equipment and certain materials to work around unavoidable obstructions encountered during the installation of the water service pipe. Examples of these unavoidable obstructions include walls, above-ground wood decks and patios and structures.

Payment shall be made for the number of unavoidable obstructions encountered during the installation of the water service pipe. Private property restoration shall be in as good or better condition as prior to construction.

O. CONTRACTOR/PROPERTY OWNER COORDINATION (Bid Item #31)

The Contractor shall coordinate with the property owner for every water service connection on private property. Contractor/Property Owner coordination shall include, but not be limited to:

1. Meeting with the Property Owner and the Contractor's Plumber and City Representative to coordinate the location of the water service connection and preferred service route on private property;
2. Discussions with the property owner regarding any changes to the property since the execution of Agreement or the issuance of bid documents, unanticipated obstructions in the service route, and other items relevant to the installation;
3. Contacting the Property Owner to schedule installation and coordinate property access; and
4. Meeting with the property owner after construction to ensure that there are no pending issues or concerns.

Payment shall be made for the number of property owners that the Contractor has provided coordination services. Contractor shall maintain a log book that will record the coordination hours. Log book shall include the date, address, time/duration, description of coordination efforts for each event. Contractor shall allow for an average of thirty (30) minutes of coordination per affected property.

P. ABANDONMENT OF EXISTING WATER MAINS (Bid Item #32)

The Contractor shall provide all labor, equipment and materials to abandon the existing water mains as shown on the drawings. The water main abandonment shall include, but may not be limited to:

1. Cutting the abandoned line and, except when the line is connected to an existing asbestos cement main remaining in service, capping/plugging its connection to the remaining, in service water main;
2. Removal and disposal of all potable water in the abandoned line;
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. Materials, equipment, labor, and power required to furnish and install flowable fill on mains 3" or greater;
5. Capping/plugging the abandoned main;
6. Removing or opening valves to be abandoned and removing the valve box;
7. Removing Automatic Blow-Off Assemblies and appurtenances and returning to the Owner;
8. Pipe clamps, rebar, concrete, equipment, labor, and power required to furnish and install the reverse dead man or thrust block;
9. Restraining the stub on the water main remaining in service; and
10. All other ancillary materials, equipment, labor, water, and power required for the complete abandonment of the line.

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

Payment shall be made and shall be based on percent complete of the Lump Sum price according to the schedule of values.

Q. ABANDON EXISTING MAIN AT ASBESTOS CEMENT PIPE (Bid Item #33)

The Contractor shall provide all labor, equipment and materials to completely remove tees on existing asbestos cement mains remaining in service, as part of abandonment of existing mains, in accordance

with the "Water Main Abandonment at AC Pipe" detail provided in the Drawings. The removal of the tees 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 or Owner's Representative;
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. Cutting, removing and disposing of the removed asbestos cement pipe and tee;
5. Draining the existing main;
6. Disinfecting the new spool piece and fittings by swabbing with sodium hypochlorite;
7. Furnishing and installing couplings, hardware, PVC spool, tie rods and pipe restraints;
8. Notifying customers of service interruptions and distributing Boil Water Notices;
9. Backfilling and compacting the trench/pit; and
10. All other ancillary materials, equipment, labor, and power required for the complete removal of the tee.

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

Payment shall for each tee removed, based on the Contract unit price.

R. TIE NEW WATER MAIN INTO ASBESTOS CEMENT MAIN (Bid Item #34)

The Contractor shall provide all labor, equipment and materials to tie new water mains into existing asbestos cement mains in accordance with the "AC Pipe Tie-In" detail provided in the Drawings. Connecting to existing AC mains 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 or Owner's Representative;
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. Cutting, removing and disposing of the removed asbestos cement pipe and tee;
5. Draining the existing main;
6. Disinfecting the new spool pieces, tee and appurtenances by swabbing with sodium hypochlorite;
7. Furnishing and installing couplings, hardware, PVC spools, tie rods and pipe restraints;
8. Notifying customers of service interruptions and distributing Boil Water Notices;
9. Backfilling and compacting the trench/pit; and
10. All other ancillary materials, equipment, labor, and power required for the complete tie-in.

Payment for the ductile iron tee and resilient wedge gate valve shall be made under the fitting and valve pay items.

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

Payment shall be for each tie-in completed and accepted, based on the Contract unit price.

S. ASPHALT RESTORATION (Bid Item #35)

The Contractor shall provide all labor, equipment, and materials to restore asphalt roadway in the right-of-way that was cut, removed or damaged during the course of the pipeline construction and milling and paving of full lane widths as shown on the drawings. The asphalt restoration shall include sawcutting, removing and replacing the entire asphalt layer to the milling limits shown on the drawings or:

1. Placing, grading, and compacting sub-base, base, and approved asphaltic pavement over excavated area as specified in the Contract Documents;
2. Returning 30-days later to mill the full lane width of all damaged lanes and designated intersection areas indicated in the Approved Construction Plans so as to provide a uniform longitudinal profile and cross-section;
3. Sweeping of the milled surface;
4. Disposal of all surplus existing materials resulting from milling operations;
5. Restoring, placing, grading, and compacting approved asphaltic pavement at the thickness specified in the Contract Documents;
6. Maintenance of Traffic;
7. Temporary and final striping.

Payment shall be made on a square yard basis, in place complete and acceptable to the Engineer.

T. REMOVAL AND REPLACMENT OF UNSUITABLE SOIL (Bid Item #36)

If encountered, the Contractor shall provide all labor, equipment, and materials to remove unsuitable soils from the pipe trench and replace the soil with select fill in accordance with the specifications including:

1. Removing and disposing of the unsuitable soil to the specified depths;
2. Replacing the soil with select fill.
3. All other ancillary materials, equipment, labor, and power required to remove and replace the unsuitable soil.

Dewatering, excavation, maintaining the trench, erosion and sediment control, and backfill and compaction of the trench shall be paid for under the appropriate pipe, fitting or appurtenance line item.

Payment for removal and replacement of unsuitable soil will only be made if the Owner's representative confirms the presence of the unsuitable soil and the need for its replacement.

Payment shall be made on a cubic yard basis, based on the measurements of the trench as confirmed by the Owner's representative.

U. MAINTENANCE OF TRAFFIC AND TRAFFIC CONTROL (Bid Item #37)

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 Owner's 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.

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 |

V. GENERAL CONDITIONS, MOBILIZATION AND DEMOBILIZATION (Bid Items #38, #39)

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.

Payment for mobilization 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 |
|---|---|
| 5 | 15 |
| 10 | 25 |
| 25 | 50 |
| 50 | 75 |
| 75 | 85 |
| 100 | 100 |

W. INDEMNIFICATION (Bid Item #40)

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 at the time of the first invoice.

X. OWNER'S ALLOWANCE (Bid Item #41)

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 Owner 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.

Y. PERMIT FEE ALLOWANCE (Bid Item #42)

Payment will be made to the Contractor based on actual invoiced amounts paid by the Contractor to obtain required Building Permits and inspections and for the FDEP Notice of Intent to Discharge Stormwater from Construction Activities.

Payment will not be made for:

a. Contractor premiums or markups.
b. Fees incurred due to Contractor's negligence.
c. Permits required for items for the Contractor’s convenience but not required by the Contract Documents or the Engineer.
d. Fees and costs associated with utility services to temporary construction trailers and electricity required by the Contractor during construction.

**END OF SECTION**

**BID ITEMS: WATER MAIN REPLACEMENT PROGRAM – PHASE 5**
**ADDENDUM 3 REVISION**

| Item No. | Estimated Quantity | Unit | Description (Print or Type in Words) | Unit Bid Price (In Numbers) | Total Amount (In Numbers) |
|---|---|---|---|---|---|
| | | | **BASE BID ITEMS** | | |
| 1 | 410 | LF | 4” Water Main Installed by HDD | | |
| 2 | 2,100 | LF | 6” Water Main Installed by Open Cut Method | | |
| 3 | 7,100 | LF | 6” FPVC Water Main Installed by HDD Method | | |
| 4 | 2 | TN | Ductile Iron Fittings | | |
| 5 | 28 | EA | 6” Resilient Wedge Gate Valves with Box | | |
| 6 | 3 | EA | 8” Tapping Sleeves and Valves | | |
| 7 | 3 | EA | 12” Tapping Sleeves and Valves | | |
| 8 | 2 | EA | 4” Insta-Valve Plus with Box | | |
| 9 | 7 | EA | Fire Hydrant Assemblies | | |
| 10 | 48 | EA | Water Services From New Water Mains With New Meter Box (Near Side Single) | | |
| 11 | 12 | EA | Water Services From New Water Mains With New Meter Box (Near Side Tandem) | | |
| 12 | 53 | EA | Water Services From New Water Mains With New Meter Box (Far Side Single) | | |
| 13 | 13 | EA | Water Services From New Water Mains With New Meter Box (Far Side Tandem) | | |
| 14 | 1 | EA | Water Services From New Water Mains With New Meter Boxes (Far Side Multi) | | |
| 15 | 58 | EA | Relocate Water Meter | | |
| 16 | 52 | EA | Relocate Water Meter and Dual Check Valve Assemblies | | |
| 17 | 50 | EA | Relocate Water Meter and Reduced Pressure Principle Assemblies | | |
| 18 | 2 | EA | Relocate 1" Fire Service | | |
| 19 | 2 | EA | Relocate 2" Fire Service | | |
| 20 | 1 | EA | Relocate 2-1/2" Fire Service | | |
| 21 | 14,900 | LF | New 1” Water Service Connections from Meter Assemblies to Water Service Connections and/or Irrigation System | | |
| 22 | 290 | LF | New 1 ½ ” Water Service Connections from Meter Assemblies to Water Service Connections | | |
| 23 | 875 | LF | New 2” Water Service Connections from Meter Assemblies to Water Service Connections | | |
| 24 | 6,500 | LF | Private Property Restoration - Sod | | |
| 25 | 900 | LF | Private Property Restoration – Concrete/Brick Pavers | | |

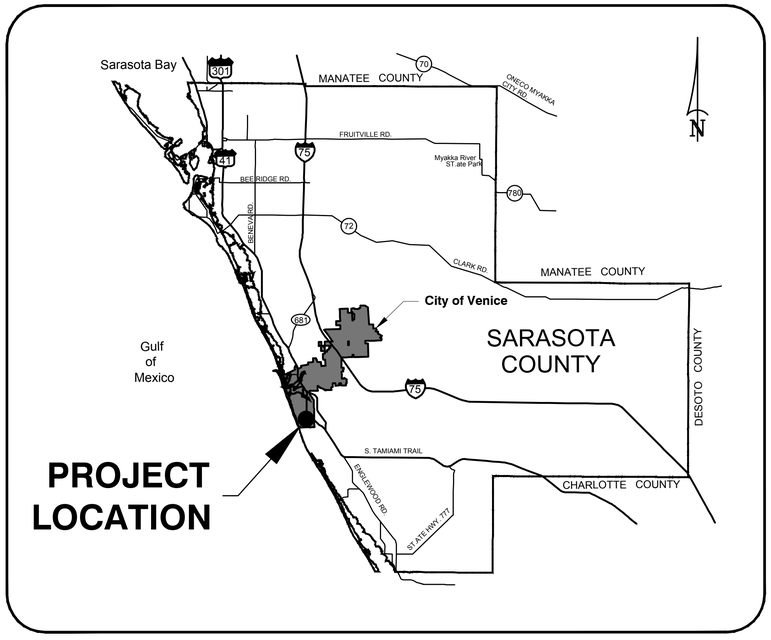
| | | | | | |
|---|---|---|---|---|---|
| 26 | 2,200 | LF | Private Property Restoration – Asphalt Driveway | | |
| 27 | 500 | LF | Private Property Restoration - Concrete Driveway/Walkway | | |
| 28 | 2,300 | LF | Private Property Restoration - Loose Stone/Gravel | | |
| 29 | 2,500 | LF | Private Property Restoration - Landscaping | | |
| 30 | 5 | EA | Private Property Restoration - Unavoidable Obstructions (e.g. wall, wood deck) | | |
| 31 | 160 | EA | Contractor/Property Owner Coordination | | |
| 32 | 1 | LS | Abandonment of Existing Water Mains | | |
| 33 | 1 | EA | Abandon Existing Main at Asbestos Cement Pipe | | |
| 34 | 2 | EA | Tie New Water Main into Asbestos Cement Main | | |
| 35 | 3,500 | SY | Asphalt Restoration | | |
| 36 | 15 | CY | Removal and Replacement of Unsuitable Soil | | |
| | | | **BASE BID SUBTOTAL** | | |
| 37 | 1 | LS | Maintenance of Traffic and Traffic Control | | |
| 38 | 1 | LS | General Conditions (Max 5% of Base Bid Subtotal) | | |
| 39 | 1 | LS | Mobilization and Demobilization | | |
| 40 | 1 | LS | Indemnification | $10.00 | $10.00 |
| 41 | 1 | LS | Owner's Allowance | $100,000 | $100,000 |
| 42 | 1 | LS | Permit Fee Allowance | $15,000 | $15,000 |
| | | | **BASE BID TOTAL** | | |

| |
|---|
| **TOTAL BASE BID PRICE written in words:** |

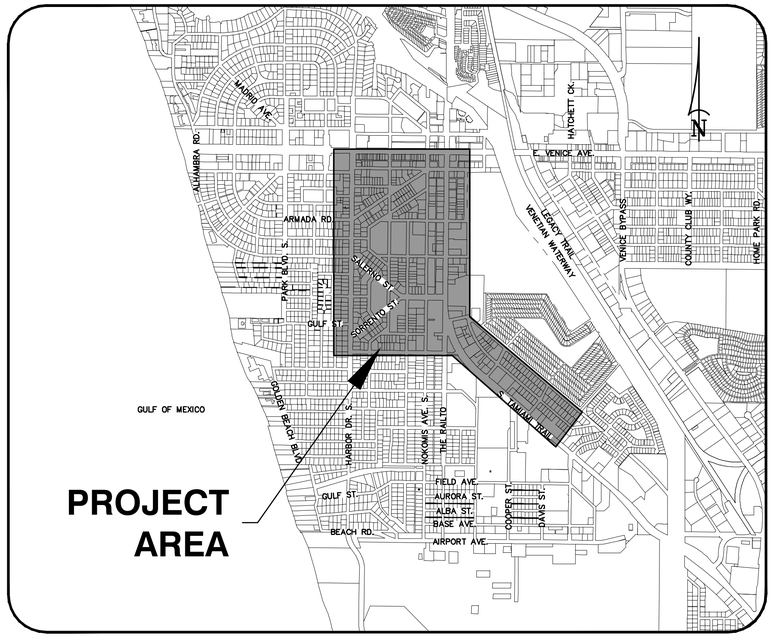
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|---|
| Name and address of bidding firm: |
| |
| Signature and title of authorized individual signing bid: |

# WATER MAIN REPLACEMENT PROGRAM PHASE 5

## VENICE, FLORIDA




SARASOTA COUNTY VICINITY MAP



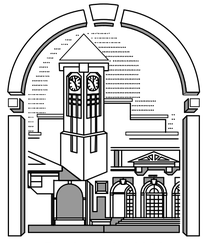

LOCATION MAP

### Sheet List Table

| Sheet Number | Sheet Title |
|---|---|
| G0.00 | COVER |
| G1.00 | ABBREVIATIONS, LEGENDS & CITY STANDARD NOTES |
| G1.01 | GENERAL NOTES |
| G1.02 | STORM WATER POLLUTION PREVENTION PLAN |
| C1.00 | OVERALL SITE PLAN & KEY MAP |
| C1.00A | NEW SERVICE LOT MAP |
| ⚠ C1.00B | OFF-SITE PROPERTIES |
| C1.01 | OVERALL EX. WATERMAIN ABANDONMENT SITE PLAN |
| C1.02 | ABANDONMENT AND TIE IN SHUTDOWN PLAN |
| C1.03 | PENSACOLA RD. STA. 51+84 THRU STA. 55.29 |
| C1.04 | PENSACOLA RD. STA. 55+29 THRU STA. 58+63 |
| C1.05 | SALERNO ST. STA. 80+13 THRU STA. 84+43 |
| C1.06 | SALERNO ST. STA. 84+43 THRU STA. 88+74 |
| C1.07 | VENEZIA PKWY. STA. 110+67 THRU STA. 114+72 |
| C1.08 | VENEZIA PKWY. STA. 114+72 THRU STA. 118+07 |
| C1.09 | SORRENTO ST. STA. 255+58 thru STA. 259+43 |
| C1.10 | SORRENTO ST. STA. 252+00 THRU STA. 255+58 |
| C1.11 | SORRENTO ST. STA. 250+00 THRU STA. 252+00 |
| C1.12 | HARBOR DR. S. STA. 35+42 THRU STA. 39+72 |
| C1.13 | SERATA ST. STA. 500+19 thru STA. 503+65 |
| C1.14 | SERATA ST. STA. 503+65 thru STA. 506+63 |
| C1.15 | RIVIERA ST. STA. 181+81 THRU STA. 184+56 |
| C1.16 | RIVIERA ST. STA. 184+56 THRU STA. 188+87 |
| C1.17 | RIVIERA ST. STA. 188+87 THRU STA. 193+17 |
| C1.18 | RIVIERA ST. STA. 193+17 THRU STA. 197+48 |
| C1.19 | NOKOMIS AVENUE S. STA. 221+00 THRU STA. 224+55 |
| C1.20 | NOKOMIS AVENUE S. STA. 224+55 THRU 228+85 |
| C1.21 | NOKOMIS AVENUE S. STA. 228+85 THRU STA. 233+16 |
| C1.22 | NOKOMIS AVENUE S. STA. 233+16 THRU STA. 237+46 |
| C1.23 | S TAMIAMI TRAIL STA. 331+26 THRU STA. 335+48 |
| C1.24 | GOLF DR. STA. 458+00 THRU STA. 461+14 |
| C1.25 | GOLF DR. STA. 461+14 THRU STA. 465+44 |
| C1.26 | GOLF DR. STA. 465+44 THRU STA. 469+75 |
| C1.27 | GOLF DR. STA. 469+75 THRU STA. 474+05 |
| C1.28 | GOLF DR. STA. 474+05 THRU STA. 478+36 |
| C1.29 | GUILD DR. STA. 400+66 THRU STA. 403+34 |
| C1.30 | GUILD DR. STA. 403+34 THRU STA. 407+77 |
| C1.31 | GUILD DR. STA. 407+77 THRU STA. 411+95 |
| C1.32 | GUILD DR. STA. 411+95 THRU STA. 416+26 |
| C1.33 | GUILD DR. STA. 416+26 THRU STA. 420+56 |
| C1.35 | S TAMIAMI TRAIL STA. 339+45 THRU STA. 343+27 |
| C1.36 | S TAMIAMI TRAIL STA. 343+27 THRU STA. 347+06 |
| C1.37 | S TAMIAMI TRAIL STA. 349+82 THRU STA. 354+13 |
| C2.01 | PENSACOLA RD. STA. 100+00 THRU STA. 103+50 |
| C2.02 | PENSACOLA RD. STA. 103+50 THRU. STA. 107+81 |
| ⚠ C2.03 | NOKOMIS AVE. S. STA 89+33 THRU STA. 91+49 |
| C2.04 | NOKOMIS AVE. S. STA. 91+49 THRU STA. 95+79 |
| C2.05 | NOKOMIS AVE. S. STA. 95+79 THRU STA. 100+00 |
| D1.00 | EROSION CONTROL AND MISCELLANEOUS DETAILS |
| D1.01 | POTABLE WATER DETAILS (1) |
| D1.02 | POTABLE WATER DETAILS (2) |
| D1.03 | PIPE TRENCHING & PAVEMENT RESTORATION DETAILS |
| TC1.01 | TRAFFIC CONTROL GENERAL NOTES |
| TC1.02 | TRAFFIC CONTROL LOCAL STREET– LANE CLOSURE DETAILS |

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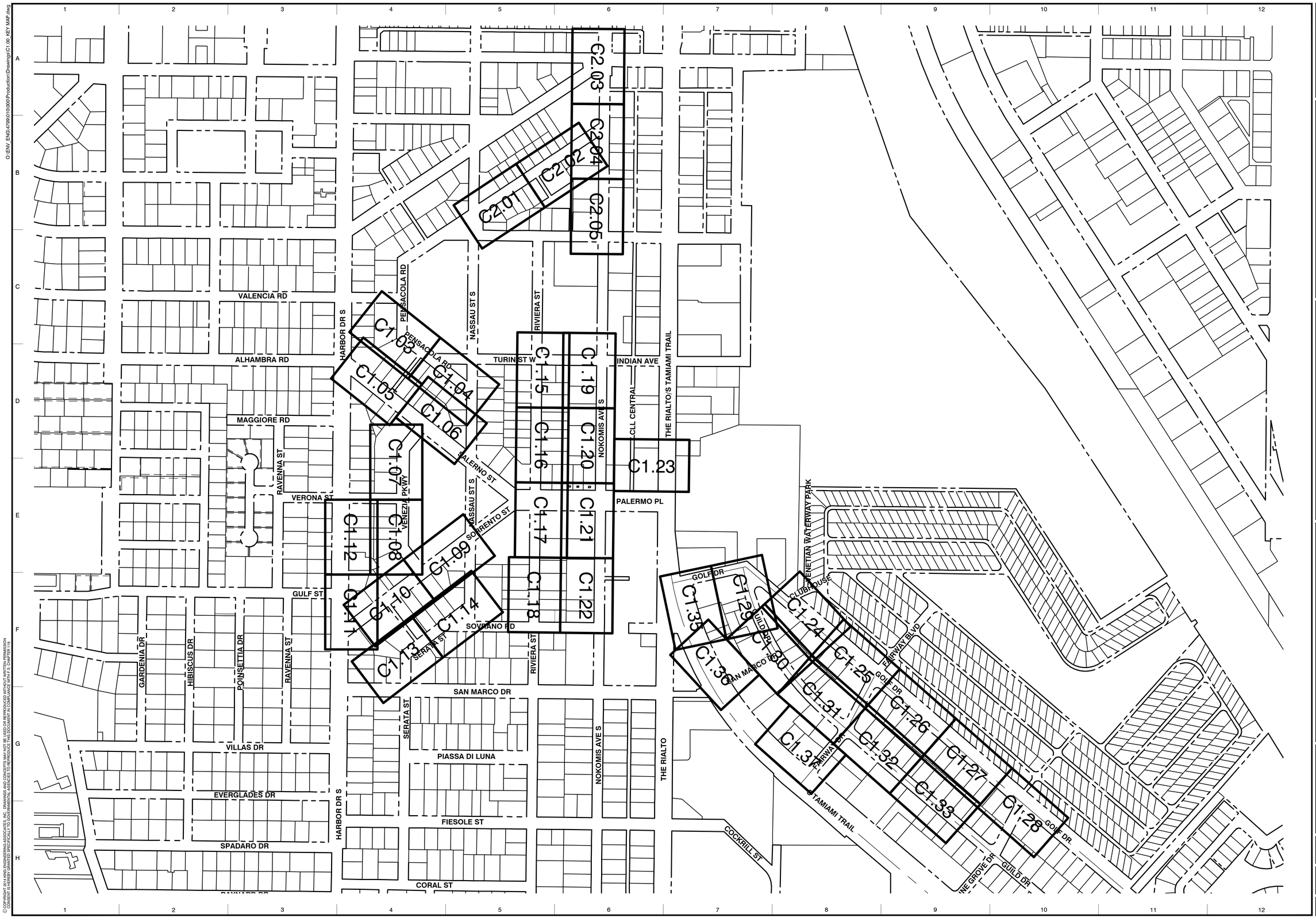
CHANGE ORDER #2
12/20/2017

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| 1 | 12/28/17 | ADDENDUM #3 | |
| 0 | 09/06/17 | BID DOCUMENTS | CFK |

JOB NO.: 4799-010-000
DATE: 10/26/2017
**G0.00**

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|---|---|---|---|
| - | - | - | CPK |
| 1 | 12/28/17 | ADDENDUM #3 | |
| 0 | 09/06/17 | BID DOCUMENTS | |

**WATER MAIN REPLACEMENT PROGRAM**

PHASE 5

OVERALL SITE PLAN & KEY MAP

| | |
|---|---|
| JOB NO: | 4799-010-000 |
| DATE: | 10/26/2017 |
| SCALE: | AS SHOWN |

**C1.00**

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NEW SERVICE LOT MAP

LEGEND

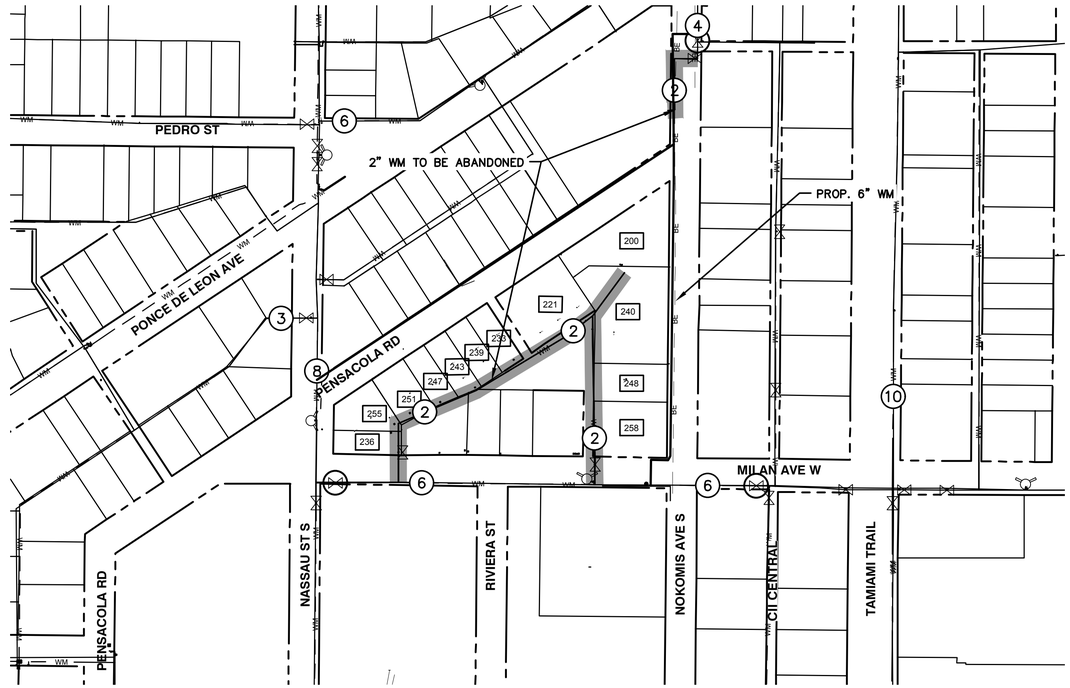
- EX. WATER MAINS / SIZE
- EX. WATER MAINS / SIZE TO BE ABANDONED
- EX. VALVE
- PROP. WM/SIZE
- PROP. VALVE
- PROP. HYDRANT
- EX. HYDRANT
- CHLORINATION POINT
- BLOWOFF
- SAMPLE POINT
- LOT ADDRESS NUMBER
- LOT PROVIDED NEW WATER SERVICE
- EX. VALVE TO BE TEMPORARILY CLOSED FOR SHUT DOWN
- EX. MAIN WITHOUT SERVICE DURING SHUT DOWN



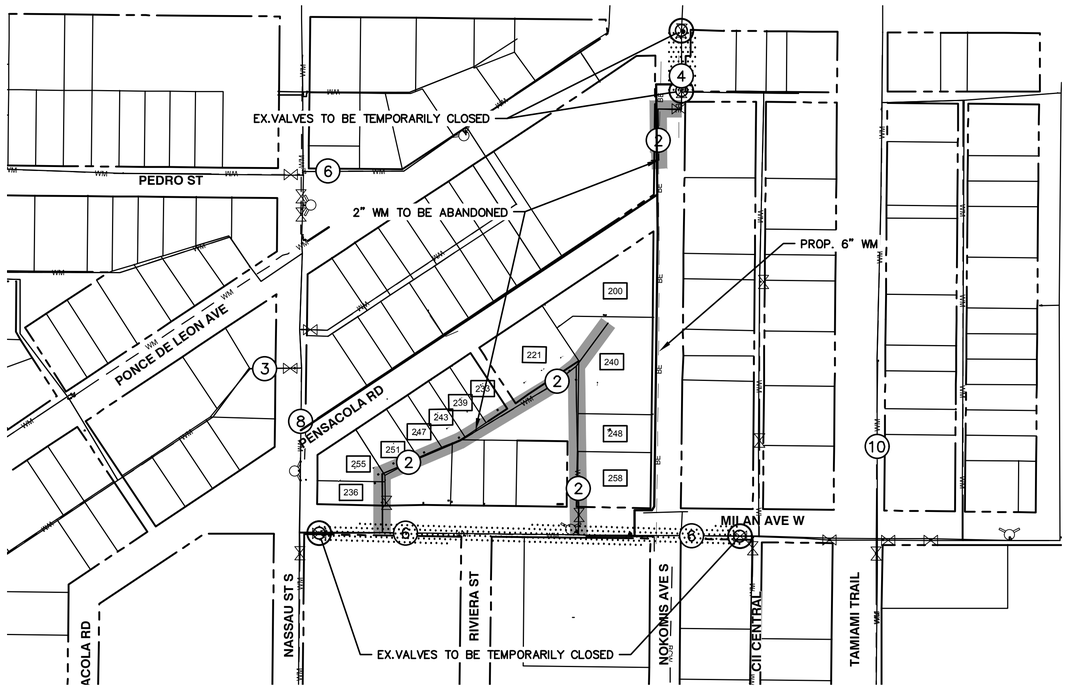

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AREA EX. WATERMAIN ABANDONMENT SITE PLAN




ABANDONMENT AND TIE IN SHUTDOWN PLAN

**WATER MAIN REPLACEMENT PROGRAM**

PHASE 5

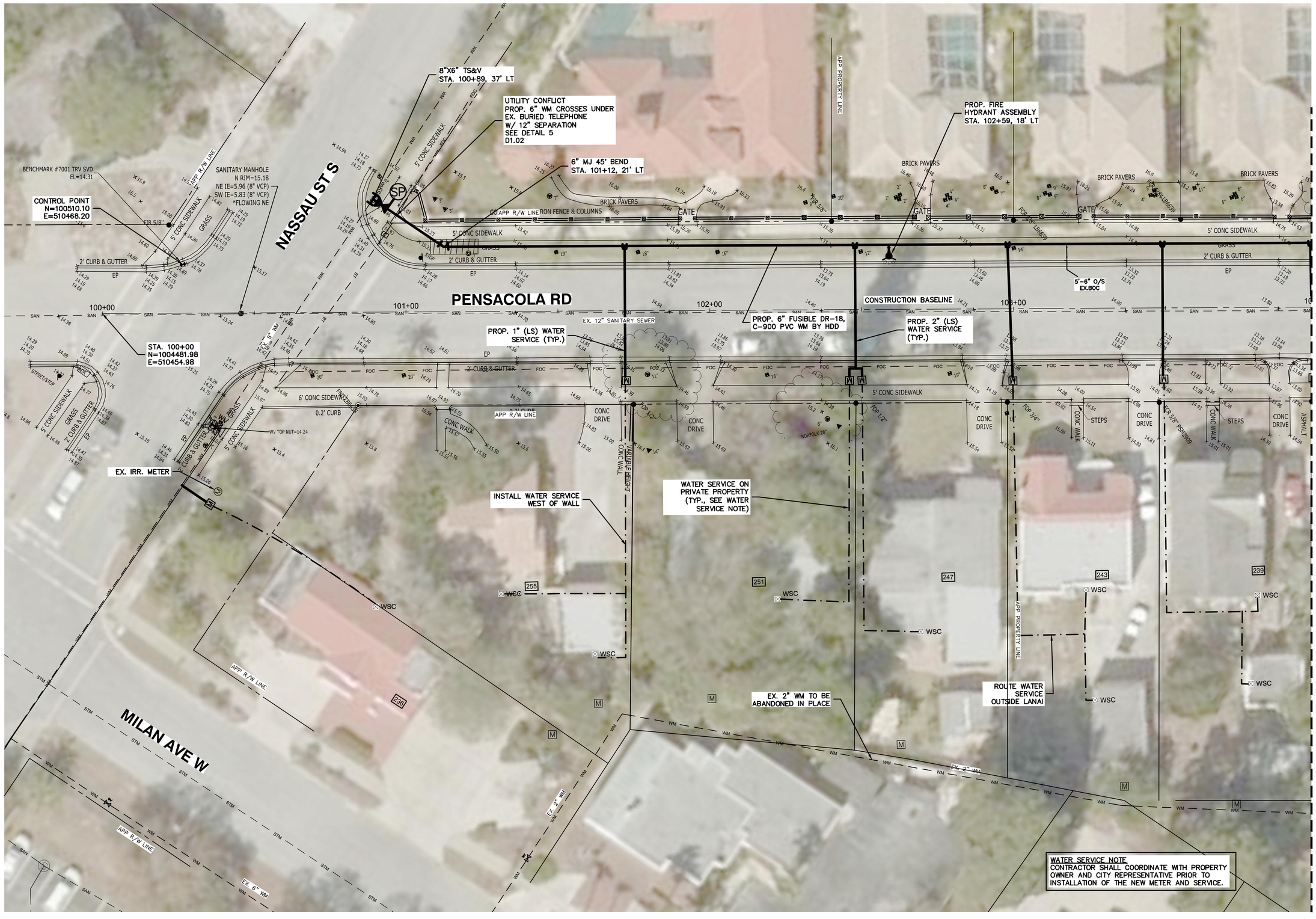
OFF-SITE PROPERTIES

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|---|---|
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**WATER MAIN REPLACEMENT PROGRAM**

PHASE 5

PENSACOLA RD. STA. 100+00
THRU STA. 103+50

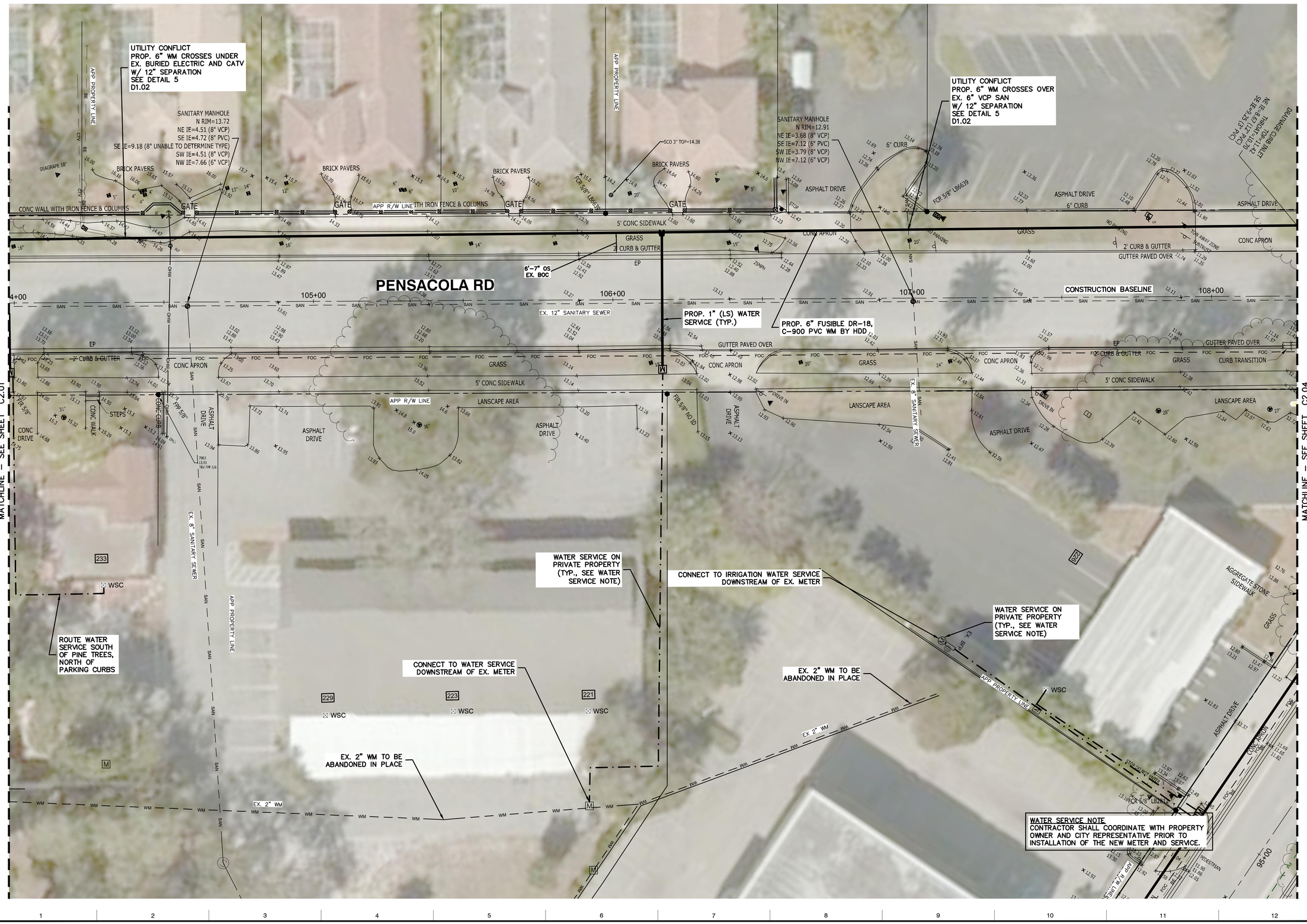
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| JOB NO: | 4799-010-000 |
| DATE: | 10/26/2017 |
| SCALE: | AS SHOWN |

**C2.01**

CHANGE ORDER #2
12/20/2017

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# WATER MAIN REPLACEMENT PROGRAM

PHASE 5

PENSACOLA RD. STA. 103+50
THRU. STA. 107+81

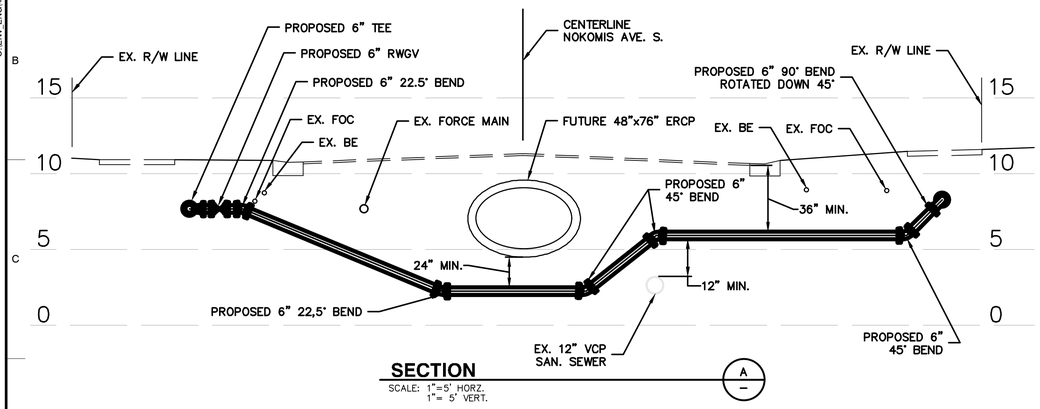
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**C2.02**

CHANGE ORDER #2
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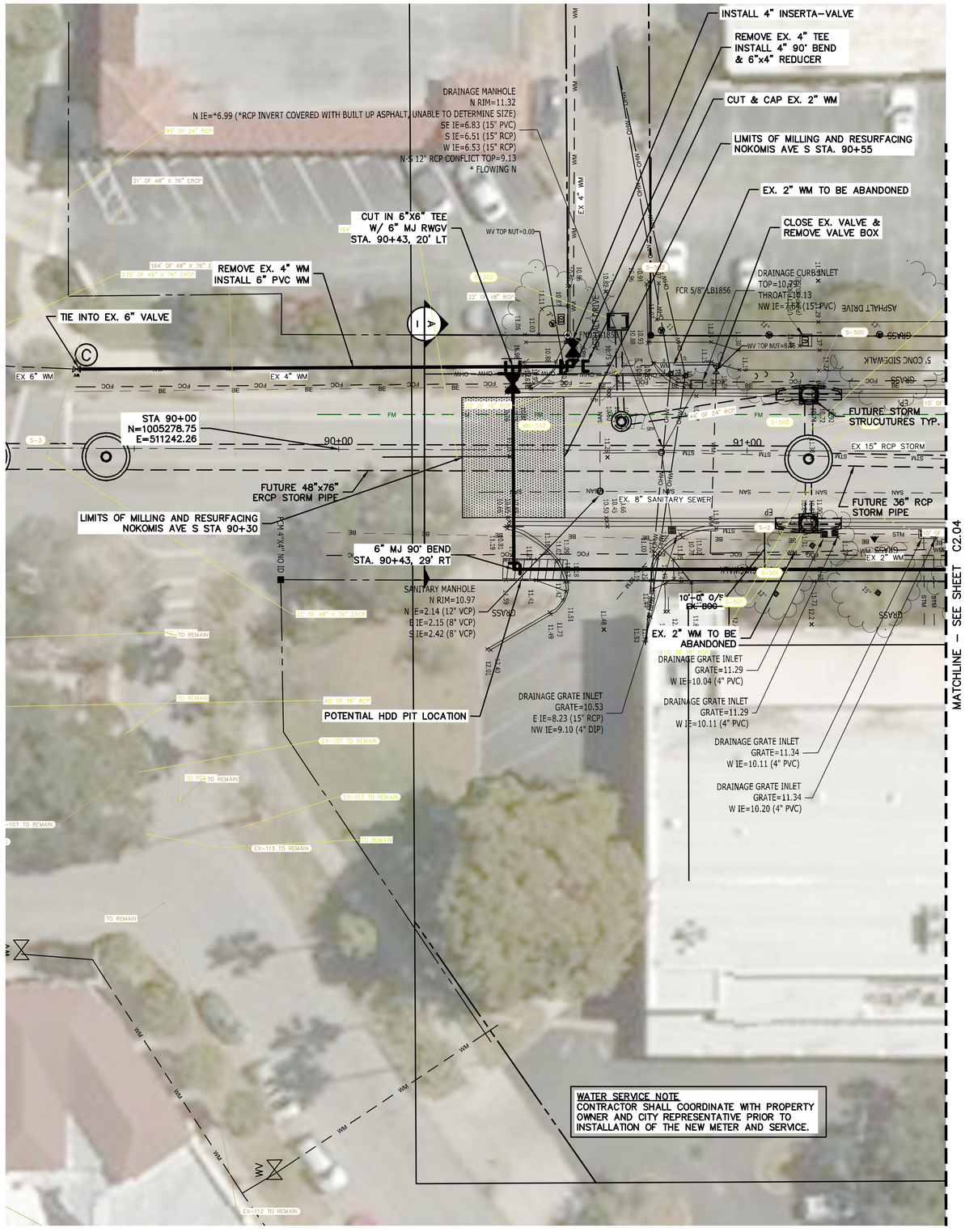
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## SECTION

SCALE: 1"=5' HORZ.
1"= 5' VERT.

A




MATCHLINE – SEE SHEET C2.04

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SCALE: FEET

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# WATER MAIN REPLACEMENT PROGRAM

PHASE 5

NOKOMIS AVE. S. STA 89+33
THRU STA. 91+49

| | |
|---|---|
| JOB NO: | 4799-010-000 |
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| SCALE: | AS SHOWN |

**C2.03**

CHANGE ORDER #2
12/20/2017

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STATION EQUATION
PENSACOLA STA. 109+42.40 =
NOKOMIS AVE S. STA. 92+74.08
N=1005004.69
E=511239.13

CONTROL POINT
N=1005010.61
E=511252.96

SANITARY MANHOLE
N RIM=11.86
N IE=2.86 (8" VCP)
SW IE=2.86 (8" VCP)

DRAINAGE MANHOLE
N RIM=11.87
N IE=7.25 (15" RCP)
SE IE=7.42 (15"RCP)
SW IE=7.97 (12" RCP)
W IE=7.94 (10" R/C)

UTILITY CONFLICT
PROP. 6" WM CROSSES UNDER
EX. 12" RCP STORM/FUTURE 24" RCP STORM
W/ 12" SEPARATION
SEE DETAIL 5
D1.02

UTILITY CONFLICT
PROP. 6" WM CROSSES UNDER
EX. 12" RCP STORM
W/ 12" SEPARATION
SEE DETAIL 5
D1.02

DRAINAGE CURB INLET
TOP=11.59
THROAT=10.93
NW IE=7.94 (15" RCP)
S IE=9.32 (3"DIP)

BENCHMARK #7000 TRV SVD
EL=11.14

6" TEE
(2) 6" MJ RWGV
STA. 92+69, 30' RT

PROP. FIRE
HYDRANT ASSEMBLY
STA. 92+51, 25' RT

FUTURE 36" RCP
EX FORCEMAIN

CUT & CAP EX. 2" WM

POTENTIAL HDD PIT LOCATION

EX. 8" SANITARY SEWER

PROP. 6" FUSIBLE DR-18,
C-900 PVC WM BY HDD

11'-2" O/S
EX. BOC

NOKOMIS AVE S

CONSTRUCTION BASELINE

PROP. 1" (SS)
WATER SERVICE
(TYP.)

5'-0" O/S
EX. BOC

6' MJ 22.5° BEND
STA. 92+55, 29' RT

6' MJ 22.5° BEND
STA. 92+60, 31' RT

DRAINAGE GRATE INLET
GRATE=11.53
W IE=10.33 (3" PVC)

CONNECT TO EX. METER

6' MJ 22.5° BEND
6" MJ RWGV
STA. 109+12, 23' LT

DRAINAGE GRATE INLET
GRATE=11.43
W IE=10.33 (3" PVC)

EX. 2" WM TO BE ABANDONED

DRAINAGE GRATE INLET
GRATE=11.
E IE=8.29 (10" RCP)
NW IE=10.23 (2" DIP)

8'-3" O/S
EX. BOC

PROP. 6" WM
BY OPEN CUT

UTILITY CONFLICT
PROP. 6" WM CROSSES UNDER
EX. FOC
W/ 12" SEPARATION
SEE DETAIL 5
D1.02

PROP. 6" FUSIBLE DR-18,
C-900 PVC WM BY HDD

DRAINAGE CURB INLET
TOP=11.42
THROAT=10.70
NE IE=8.67 (12" PVC)
SE IE=9.25 (3" PVC)

POTENTIAL HDD PIT LOCATION

UTILITY CONFLICT
PROP. 6" WM CROSSES UNDER
EX. 8" VCP SAN
W/ 12" SEPARATION
SEE DETAIL 5
D1.02

UTILITY CONFLICT
PROP. 6" WM CROSSES UNDER
EX. BURIED TELEPHONE
W/ 12" SEPARATION
SEE DETAIL 5
D1.02

PROP. 6" FUSIBLE DR-18,
C-900 PVC WM BY HDD

WSC

CONNECT TO IRRIGATION WATER SERVICE
DOWNSTREAM OF EX. METER

EX. 2" WM TO BE
ABANDONED IN PLACE

WATER SERVICE ON
PRIVATE PROPERTY
(TYP., SEE WATER
SERVICE NOTE)

EX. BFP

WSC

WATER SERVICE NOTE
CONTRACTOR SHALL COORDINATE WITH PROPERTY OWNER AND CITY REPRESENTATIVE PRIOR TO INSTALLATION OF THE NEW METER AND SERVICE.

MATCHLINE – SEE SHEET C2.03

MATCHLINE – SEE SHEET C2.05

MATCHLINE – SEE SHEET C2.02

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| | | | |

# WATER MAIN REPLACEMENT PROGRAM

PHASE 5

NOKOMIS AVE. S. STA. 91+49
THRU STA. 95+79

| | |
|---|---|
| JOB NO: | 4799-010-000 |
| DATE: | 10/26/2017 |
| SCALE: | AS SHOWN |

**C2.04**

CHANGE ORDER #2
12/20/2017

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MATCHLINE – SEE SHEET C2.04

NOKOMIS AVE S

MILAN AVE W

CONSTRUCTION BASELINE

96+00 97+00 98+00 99+00 100+00

CONTROL POINT
N=1004345.37
E=511209.06

DRAINAGE MANHOLE
N RIM=12.92
N IE=8.29 (15" RCP)
E IE=7.18 (36" PVC)
SW IE=7.19 (36" PVC IN RCP)
W IE=8.47 (15" RCP)

DRAINAGE CURB INLET
TOP=12.77
THROAT=12.18
NW IE=8.71 (15" RCP)
E IE=8.80 (12" RCP)

DRAINAGE MANHOLE
N RIM=13.08
NE IE=7.51 (36" PVC IN RCP)
SE IE=8.52 (15" RCP)
S IE=7.51 (36" PVC IN RCP)
SW IE=8.61 (15" RCP)

DRAINAGE CURB INLET
TOP=12.83
THROAT=12.13
NE IE=9.23 (15" RCP)

DRAINAGE CURB INLET
TOP=12.67
THROAT=12.08
N IE=9.87 (3" DIP)
S IE=8.93 (15" RCP)
W IE=9.05 (15" RCP)

DRAINAGE CURB INLET
TOP=12.58
THROAT=11.99
E IE=9.88 (15" RCP)

POTENTIAL HDD PIT LOCATION

PROP. 1 1/2" (SS) WATER SERVICE

5'-5" O/S EX. BOC

PROP. 1" (SS) WATER SERVICE (TYP.)

PROP. 6" FUSIBLE DR-18, C-900 PVC WM BY HDD

STEEL TRAFFIC-RATED METER BOX

WATER SERVICE ON PRIVATE PROPERTY (TYP., SEE WATER SERVICE NOTE)

EX. 2" WM TO BE ABANDONED IN PLACE

6" MJ 45° BEND
STA. 98+66, 24' RT

6" MJ 45° BEND
STA. 98+81, 28' RT

6" MJ 45° BEND
STA. 98+86, 32' RT

6" MJ 45° BEND
STA. 98+71, 28' RT

3' MIN. SEPARATION

PROP. 6" WM BY OPEN CUT

6"X6" TEE
6" MJ 90° BEND
PROP. FIRE HYDRANT ASSEMBLY
STA. 98+86, 63' RT

LIMITS OF MILLING AND RESURFACING
MILAN AVE W
50' RT

LIMITS OF MILLING AND RESURFACING
MILAN AVE W
75' RT

CUT IN 6" TEE
6" SLEEVE
(3) 6" MJ RWGV
STA. 99+35, 62' RT

STA. 100+00
N=1004278.82
E=511230.82

UTILITY CONFLICT
PROP. 6" WM CROSSES UNDER
EX. 15" RCP STORM
W/ 12" SEPARATION
SEE DETAIL 5
D1.02

WATER SERVICE NOTE
CONTRACTOR SHALL COORDINATE WITH PROPERTY OWNER AND CITY REPRESENTATIVE PRIOR TO INSTALLATION OF THE NEW METER AND SERVICE.

APP R/W LINE
APP PROPERTY LINE
EX. 6" WM
EX 15" RCP STORM
EX FORCEMAIN
240
248
256
WSC

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# WATER MAIN REPLACEMENT PROGRAM

PHASE 5

NOKOMIS AVE. S. STA. 95+79
THRU STA. 100+00

JOB NO: 4799-010-000
DATE: 10/26/2017
SCALE: AS SHOWN

C2.05

CHANGE ORDER #2
12/20/2017

**Florida Department of Environmental Protection / State Revolving Fund**

**FDEP Supplementary Conditions were included in the bid specifications – MUST READ ENTIRE Supplementary Conditions. You are responsible to meet all the requirements. Please note it is very important to understand that the Supplementary Conditions along with the forms included in the bid submittal must be incorporated into all your subcontracts (all-tier levels) including the Wage Decisions.**

**We are only outlining some of the Key Points: Division 0800 (00800-15)**

- FDEP/EPA/DOL – Access to Project Records and Project Sites
- Disadvantaged Business Enterprises: 5% Minority Business Enterprise/5% Women's Business Enterprise

  **Must** show good faith effort: Read the Supplementary Conditions to review the efforts

- Debarment & Suspension – Certification page is included in the bid document, but will also need to check and verify all subcontractors.
- Equal Employment Opportunity – FDEP page 6-11 (MUST READ CARFULLY) applies to Prime and all subcontractors. (Goals)
- Immigration Reform and Control Act: The Contractor shall use the US Department of Homeland Security's E-Verify Employment Eligibility Verification System to verify the employment eligibility of:
- All new employees, during the term of this Agreement, to perform employment duties within the Florida; and
- All new employees (including subcontractors and subrecipients) assignment by the Contractor to perform work pursuant to this Agreement.
- Federal Labor Standards Provisions – Davis-Bacon Act – Wage Decision – www.wdo.gov – up to 10 days prior you must verify there have not been any updates and if the wage decision changes you must use the new updated wage decision. (1/8/2016 for Highway and Heavy 7/22/2016
- Select DBA WD's – Select – State/County/WD Number (Highway – Heavy) Please note when using two different wage decisions that have several duplicate job classifications you will either have to submit two separate certified payrolls weekly (one for Heavy and one for Highway) or one certified payroll but use the **highest rate and fringe** for the job classifications that are duplicated. This applies to the Prime and all subcontractors. The Prime contractor is responsible to review all subcontractors certified payrolls for accuracy.
- American Iron and Steel Provisions – www.epa.gov/cwsrf/state-revolving-fund-american-iron-and-steel-ais-requirment

AIS Training Material – All manufacturing processes, including application of coatings, must take place in the US. All manufacturing processes includes processes such as melting, refining, forming, rolling, drawing, finishing, fabricating and coating must take place in the US. Primarily Iron or Steel – Listed products must be made of greater than 50% Irion and Steel, Measured by Cost.

- **Appendix A: Certification of Compliance – Must be executed by Prime Contractor and by all subcontractors. Certification states "I certify that I have read the FDEP Supplementary and agree to incorporate the Article's into the bid or contact" "I agree that I will obtain identical certifications from prospective lower-tier construction subcontractors prior to the award of any lower-tier construction subcontracts".**

Debarment and Suspension – Equal Employment Opportunity – Immigration Reform and Control Act – Environmental Compliance – Federal Labor Standards – American Iron and Steel

# HELPFUL LINKS:

- **American Iron and Steel (AIS)**

http://www.epa.gov/cwsrf/state-revolving-fund-american-iron-and-steel-ais-requirement

http://www.epa.gov/cwsrf/american-iron-and-steel-requirement-guidance-and-questions-and-answers (Question and Answers)

http://www.epa.gov/sites/production/files/2015-09/documents/aiswebcast_04-30-14_final.pdf (Initial Webinar 2014)

http://www.epa.gov/sites/production/files/2015-09/documents/webcast-final-feb-2015_final-edits-for-web.pdf (Refresher Webinar 2015)

- **Wage Determinations Online**

www.wdol.gov

Selecting DBA WD's

http://www.wdol.gov/dba.aspx

Selection Criteria: State/County/Construction Type

- **E-Verify**

http://www.uscis.gov/e-verify

- **System for Award Management (SAM)**

https://www.sam.gov/portal/SAM/#1

Search Records