



# Pines Village Water Main Improvements Phase I

## Invitation for Bids # PSUT-18-05

<b>General Information</b>		
Project Cost Estimate	\$3,600,000	See Section 1.4
Project Timeline	365 calendar days from NTP with an estimated start date of October 1, 2018	See Section 1.4
Evaluation of Proposals	Staff	See Section 1.6
Mandatory Pre-Bid Meeting	9:00 a.m. on June 26, 2018 at the Public Services Building Large Conference Room, 8300 S. Palm Drive, Pembroke Pines, FL 33025	See Section 1.7
Question Due Date	July 3, 2018	See Section 1.7
Proposals will be accepted until	2:00 p.m. on July 17, 2018	See Section 1.7
5% Proposal Security / Bid Bond	Required	See Section 4.1
100% Payment and Performance Bonds	Required	See Section 4.2

**THE CITY OF PEMBROKE PINES**  
**PURCHASING DIVISION**  
**8300 SOUTH PALM DRIVE**  
**PEMBROKE PINES, FLORIDA 33025**  
**(954) 518-9020**



## Table of Contents

SECTION 1 - INSTRUCTIONS..... 5

    1.1 NOTICE..... 5

    1.2 PURPOSE..... 5

    1.3 SCOPE OF WORK..... 6

    1.4 PROJECT COST ESTIMATE & TIMELINE..... 6

        1.4.1 PERMITS..... 6

        1.4.2 PERMIT ALLOWANCE..... 6

    1.5 PROPOSAL REQUIREMENTS ..... 7

        1.5.1 Attachment A: Contact Information Form..... 7

        1.5.2 Attachment B: Vendor Information Form and a W-9..... 7

        1.5.3 Attachment C: Non-Collusive Affidavit..... 8

        1.5.4 Attachment D: Sworn Statement on Public Entity Crimes Form ..... 8

        1.5.5 Attachment E: Local Vendor Preference Certification..... 8

        1.5.6 Attachment F: Veteran Owned Small Business Preference Certification ..... 8

        1.5.7 Attachment G: Equal Benefits Certification Form ..... 8

        1.5.8 Attachment H: Vendor Drug-Free Workplace Certification Form..... 8

        1.5.9 Attachment I: Proposer’s Completed Qualification Statement..... 8

        1.5.10 Attachment L: References Form..... 8

        1.5.11 Attachment M: Mandatory Pre-Bid Meeting Form ..... 9

        1.5.12 Attachment O: Vendor Certification Regarding Scrutinized Companies List..... 9

        1.5.13 Proposal Security (Bid Bond Form or Cashier’s Check)..... 9

    1.6 EVALUATION OF PROPOSALS & PROCESS OF SELECTION ..... 9

    1.7 TENTATIVE SCHEDULE OF EVENTS ..... 10

        1.7.1 MANDATORY PRE-BID MEETING / SITE VISIT ..... 10

    1.8 SUBMISSION REQUIREMENTS ..... 10

SECTION 2 - INSURANCE REQUIREMENTS..... 12

    2.1 REQUIRED INSURANCE ..... 13

    2.2 REQUIRED ENDORSEMENTS ..... 15

SECTION 3 - GENERAL TERMS & CONDITIONS..... 16

    3.1 EXAMINATION OF CONTRACT DOCUMENTS..... 16

    3.2 CONFLICT OF INSTRUCTIONS ..... 16

    3.3 ADDENDA or ADDENDUM ..... 16



3.4 INTERPRETATIONS AND QUESTIONS ..... 16

3.5 RULES, REGULATIONS, LAWS, ORDINANCES and LICENSES ..... 16

3.6 WARRANTIES FOR USAGE ..... 17

3.7 BRAND NAMES..... 17

3.8 QUALITY ..... 17

3.9 SAMPLES..... 17

3.10 DEVELOPMENT COSTS..... 17

3.11 PRICING..... 17

3.12 DELIVERY POINT..... 17

3.13 TAX EXEMPT STATUS ..... 17

3.14 CONTRACT TIME ..... 17

3.15 COPYRIGHT OR PATENT RIGHTS ..... 18

3.16 PUBLIC ENTITY CRIMES ..... 18

3.17 CONFLICT OF INTEREST ..... 18

3.18 FACILITIES ..... 18

3.19 ENVIRONMENTAL REGULATIONS..... 18

3.20 SIGNATURE REQUIRED..... 19

3.21 MANUFACTURER’S CERTIFICATION..... 19

3.22 MODIFICATION OR WITHDRAWAL OF PROPOSAL ..... 19

3.23 PUBLIC BID; BID OPENING AND GENERAL EXEMPTIONS ..... 19

3.24 RESERVATIONS FOR REJECTION AND AWARD..... 20

3.25 BID PROTEST ..... 20

3.26 INDEMNIFICATION..... 20

3.27 DEFAULT PROVISION ..... 20

3.28 ACCEPTANCE OF MATERIAL..... 21

3.29 LOCAL GOVERNMENT PROMPT PAYMENT ACT ..... 21

3.30 SCRUTINIZED COMPANIES LIST ..... 21

**SECTION 4 - SPECIAL TERMS & CONDITIONS..... 23**

4.1 PROPOSAL SECURITY..... 23

4.2 PAYMENT AND PERFORMANCE BONDS ..... 23

4.3 OWNER’S CONTINGENCY ..... 24

4.4 TAX SAVER PROGRAM ..... 24

4.5 RELEASE OF LIEN..... 24



4.6 SOLID WASTE CONSTRUCTION AND DEMOLITION DEBRIS COLLECTION AND DISPOSAL REQUIREMENTS ..... 24

ATTACHMENTS

- Attachment A: Contact Information Form
- Attachment B: Vendor Information Form and a W-9
- Attachment C: Non-Collusive Affidavit
- Attachment D: Sworn Statement on Public Entity Crimes Form
- Attachment E: Local Vendor Preference Certification
- Attachment F: Veteran Owned Small Business Preference Certification
- Attachment G: Equal Benefits Certification Form
- Attachment H: Vendor Drug-Free Workplace Certification Form
- Attachment I: Proposer’s Completed Qualification Statement
- Attachment J: Sample Insurance Certificate
- Attachment K: Specimen Contract/Agreement
- Attachment L: References Form
- Attachment M: Mandatory Pre-Bid/Site Visit Confirmation Form
- Attachment N: Standard Release of Lien Form
- Attachment O: Vendor Certification Regarding Scrutinized Companies List
- Attachment P: Technical Specifications
- Attachment Q: Drawings



## **SECTION 1 - INSTRUCTIONS**

### **1.1 NOTICE**

Notice is hereby given that the City Commission of the City of Pembroke Pines is seeking sealed proposals for:

#### **IFB # PSUT-18-05 Pines Village Water Main Improvements Phase I**

Solicitations may be obtained from the City of Pembroke Pines website at <http://www.ppines.com/index.aspx?NID=667> and on the [www.BidSync.com](http://www.BidSync.com) website.

If you have any problems downloading the solicitation, please contact the BidSync Support line at 1-800-990-9339.

If additional information help is needed with downloading the solicitation package please contact the Purchasing Office at (954) 518-9020 or by email at [purchasing@ppines.com](mailto:purchasing@ppines.com). The Purchasing Office hours are between 7:00 a.m. - 6:00 p.m. on Monday through Thursday and is located at 8300 South Palm Drive, Pembroke Pines, Florida 33025.

The City requires all questions relating to the solicitation be entered through the “Ask a Question” option tab available on the BidSync website. Responses to the questions will be provided online at [www.bidsync.com](http://www.bidsync.com). Such request must be received by the “Question Due Date” stated in the solicitation. The issuance of a response via BidSync is considered an Addendum and shall be the only official method whereby such an interpretation or clarification will be made.

**Proposals will be accepted until 2:00 p.m., Tuesday, July 17, 2018.** Proposals must be submitted electronically at [www.BidSync.com](http://www.BidSync.com). The sealed electronic proposals will be publicly opened at 2:30 p.m. by the City Clerk’s Office, in the City Hall Administration Building, 4<sup>th</sup> Floor Conference Room located at 601 City Center Way, Pembroke Pines, Florida, 33025.

### **1.2 PURPOSE**

The City of Pembroke Pines is seeking proposals from qualified firms, hereinafter referred to as the Contractor, to construct new potable water mains, water services, meters and house services for the Pines Village Water Main Improvements Phase I project in accordance with the terms, conditions, and specifications contained in this solicitation.

The Pines Village Water Main Improvements Phase I project is located in Pembroke Pines, and the project limits are Pines Boulevard to the north, SW 9th Street to the south, SW 72nd Avenue to the West, and SW 67th Avenue to the east. The water main pipes in this neighborhood require replacement due to their age, frequent breaks and customer service complaints due to poor



service. Water meters are often located in the rear yards with inadequate piping and should be relocated to the front yards on new, larger water mains.

**1.3 SCOPE OF WORK**

The following is a general list of the work included. It is not intended to be complete. Consult the attached contract drawings and technical specifications for all contract requirements.

The work includes, but is not limited to, approximately 20,000 linear feet of new PVC water main, replacement of existing water main, abandonment of old water mains, relocation of backyard water meters to the front of properties, installation of new water services, new meters, private plumbing to reconnect residential services, including new house service pressure valves, and restoration.

**1.4 PROJECT COST ESTIMATE & TIMELINE**

Staff estimates this project to cost approximately \$3,600,000, which does not include permit costs.

Please note the City will include a Permit Allowance for this project, **therefore proposers should not include permit costs in their total proposal price.**

The work shall be completed within 365 days from issuance of CITY’s Notice to Proceed, with an estimated start date of October 1, 2018.

**1.4.1 PERMITS**

The City anticipates this project to require the following permits:

<b>Permit</b>	<b>Agency</b>	<b>Cost (or related method of calculation)</b>
Engineering	City of Pembroke Pines Engineering Department	4.67% of construction costs
Building	City of Pembroke Pines Building Department (Calvin, Giordano & Associates, Inc.)	2.80% of construction costs

**1.4.2 PERMIT ALLOWANCE**

The City shall include a “Permit Allowance” for this project. The Contractor shall obtain all required permits to complete the work, however the City shall utilize the Permit Allowance to reimburse the contractor for the related permit, license, impact or inspection fees. Payments will be made to the contractor based on the actual cost of permits upon submission of paid permit receipts. The City shall not pay for other costs related to obtaining or securing permits.



The City shall determine the amount of the allowance at time of award. The allowance may be based on a specified percent of the proposed project amount and shall be established for the specific project being performed under the contract. This dollar amount shall be shown on the specific project purchase order as a distinct item from the vendor's overall offer to determine the total potential dollar value of the contract. Any Permit Allowance funds that have not been utilized at the end of the project will remain with the City, if the City Permit fees exceed the allowance indicated, the City will reimburse the contractor the actual amount of City Permit Fees required for project completion.

## **1.5 PROPOSAL REQUIREMENTS**

**The following documents will need to be completed, scanned and submitted through [www.bidsync.com](http://www.bidsync.com) as part of the bidder's submittal.** The proposer interested in responding to this solicitation must provide the information requested below. Submittals that do not respond completely to all requirements specified herein may be considered non-responsive and eliminated from the process.

### **1.5.1 Attachment A: Contact Information Form**

- a. Attached is contact information form (Attachment A) where the vendor will enter their contact information and complete the proposal checklist. The Contact information form shall be electronically signed by the contact person authorized to represent the contractor. This form must be completed and submitted through [www.bidsync.com](http://www.bidsync.com) as part of the bidder's submittal. The vendor must provide their pricing through the designated lines items listed on the BidSync website.
- b. Please note vendors should be registered on BidSync under the name of the organization that they are operating as and it should match the organization name on the documents that they are submitting and utilizing when responding to the solicitation.
- c. The contact information form should contain an electronic signature of the authorized representative of the Proposer along with the address and telephone number for communications regarding the Proposal.
- d. Proposals by corporations should be executed in the corporate name by the President or other corporate officer accompanied by evidence of authority to sign. The corporate address and state of incorporation must also be shown.
- e. Proposals by partnerships should be executed in the partnership name and signed by a partner whose title and the official address of the partnership must be shown.

### **1.5.2 Attachment B: Vendor Information Form and a W-9**



- a. In addition to the Vendor Information Form, please ensure that you provide the completed W-9 (Rev. November 2017), as previously dated versions of this form will delay the processing of any payments to the awarded vendor.

**1.5.3 Attachment C: Non-Collusive Affidavit**

**1.5.4 Attachment D: Sworn Statement on Public Entity Crimes Form**

**1.5.5 Attachment E: Local Vendor Preference Certification**

- a. If claiming Local Pembroke Pines Vendor Preference, business must attach a current business tax receipt from the City of Pembroke Pines
- b. If claiming Local Broward County Vendor Preference, business must attach a current business tax receipt from Broward County or the city within Broward County where the business resides.
- c. The Local Vendor Preference Certification form must be completed by/for the proposer; the proposer **WILL NOT** qualify for Local Vendor Preference based on their sub-contractors' qualifications.

**1.5.6 Attachment F: Veteran Owned Small Business Preference Certification**

- a. If claiming Veteran Owned Small Business Preference Certification, business must attach the "Determination Letter" from the United States Department of Veteran Affairs Center for Verification and Evaluation notifying the business that they have been approved as a Veteran Owned Small Business (VOSB).
- b. The Veteran Owned Small Business Preference Certification form must be completed by/for the proposer; the proposer **WILL NOT** qualify for Veteran Owned Small Business Preference based on their sub-contractors' qualifications.

**1.5.7 Attachment G: Equal Benefits Certification Form**

**1.5.8 Attachment H: Vendor Drug-Free Workplace Certification Form**

**1.5.9 Attachment I: Proposer's Completed Qualification Statement**

**1.5.10 Attachment L: References Form**

- a. Complete **Attachment L: References Form**, providing specific examples of similar contracts delivered by the proposed team members. Provide details on related projects (preferably where the team was the same). References should be from the last five years and should be capable of



explaining and confirming your firm's capacity to successfully complete the scope of work outlined herein. As part of the proposal evaluation process, the City may conduct an investigation of references, including a record check or consumer affairs complaints. Proposers' submission of a proposal constitutes acknowledgment of the process and consent to investigate. The City is the sole judge in determining Proposers qualifications.

**1.5.11 Attachment M: Mandatory Pre-Bid Meeting Form**

**1.5.12 Attachment O: Vendor Certification Regarding Scrutinized Companies List**

**1.5.13 Proposal Security (Bid Bond Form or Cashier's Check)**

- a. Each Proposal must be accompanied by a certified or cashier's check or by a Bid Bond made payable to the City of Pembroke Pines on an approved form, duly executed by the Proposer as principal and having as surety thereon a surety company acceptable to CITY and authorized to write such Bond under the laws of the State of Florida, in an amount not less than five percent (5%) of the amount of the base Proposal price.
- b. Contingency is not to be counted in the total amount the proposal security is based on.
- c. Proposers must submit a scanned copy of their bid security (bid bond form or cashier's check) with their bid submittal through BidSync.
- d. Proposers must also submit their original bid security (bid bond form or cashier's check) at time of the bid due date, or they may be deemed as non-responsive.
- e. The original Bid Bond or Cashier's Check should be in a sealed envelope, plainly marked "**BID SECURITY - IFB # PSUT-18-05 Pines Village Water Main Improvements Phase I**" and sent to the City of Pembroke Pines, City Clerk's Office, 4th Floor, 601 City Center Way, Pembroke Pines, Florida, 33025.
- f. Please see SECTION 4 - SPECIAL TERMS & CONDITIONS of this RFP for additional information.

**1.6 EVALUATION OF PROPOSALS & PROCESS OF SELECTION**

- A. Staff will evaluate all responsive proposals received from proposers who meet or exceed the bid requirements contained in the solicitation. Evaluations shall be based upon the information contained in the proposals as submitted.



B. Staff will make a recommendation to the City Commission for award of contract.

**1.7 TENTATIVE SCHEDULE OF EVENTS**

<b>Event</b>	<b>Time &amp;/or Date</b>
Issuance of Solicitation (Posting Date)	<b>June 12, 2018</b>
Mandatory Pre-Bid Meeting	<b>9:00 a.m. on June 26, 2018, 2018</b>
Question Due Date	<b>July 3, 2018</b>
Anticipated Date of Issuance for the Addenda with Questions and Answers	<b>July 9, 2018</b>
Proposals will be accepted until	<b>2:00 p.m. on July 17, 2018</b>
Proposals will be opened at	<b>2:30 p.m. on July 17, 2018</b>
Evaluation of Proposals by Staff	<b>July 18, 2018 to July 26, 2018</b>
Recommendation of Contractor to City Commission award	<b>August 15, 2018</b>
Issuance of Notice to Proceed	<b>October 1, 2018</b>
Project Commencement	<b>Not later than 10 days after NTP</b>
Project Completion	<b>365 days after NTP</b>

**1.7.1 MANDATORY PRE-BID MEETING / SITE VISIT**

There will be a mandatory scheduled pre-bid meeting on **June 26, 2018 at 9:00 a.m.** Meeting location will be at the Public Services Building, Large Conference Room, located at 8300 S. Palm Drive, Pembroke Pines, FL 33025.

All vendors will be required to complete **Attachment M "Mandatory Pre-Bid Meeting Form"** at the meeting and submit it as part of their proposal to show proof of attendance to the mandatory meeting.

**1.8 SUBMISSION REQUIREMENTS**

Bids/proposals **must be submitted electronically** at [www.bidsync.com](http://www.bidsync.com) on or before **2:00 p.m. on July 17, 2018.**

Please note vendors should be registered on BidSync under the name of the organization that they are operating as and it should match the organization name on the documents that they are submitting and utilizing when responding to the solicitation.

The vendor must provide their pricing through the designated lines items listed on the BidSync website. In addition, the vendor must complete any webforms on the BidSync website and provide any additional information requested throughout this solicitation. Any additional information requested in the solicitation should be scanned and uploaded. **Unless otherwise specified, the City requests for vendors to upload their documents as one (1) PDF document in the order that is outline in the bid package.**



The City recommends for proposers to submit their proposals as soon as they are ready to do so. Please allow ample time to submit your proposals on the BidSync website. Proposals may be modified or withdrawn prior to the deadline for submitting Proposals. BidSync Support is happy to help you with submitting your proposal and to ensure that you are submitting your proposals correctly, but we ask that you contact their support line at 1-800-990-9339 with ample time before the bid closing date and time.

**PLEASE DO NOT SUBMIT ANY PROPOSALS VIA MAIL, E-MAIL OR FAX.**



## **SECTION 2 - INSURANCE REQUIREMENTS**

The CONTRACTOR shall indemnify and hold harmless the CITY and its officers, employees, agents and instrumentalities from any and all liability, losses or damages, including attorneys' fees and costs of defense, which the CITY or its officers, employees, agents or instrumentalities may incur as a result of claims, demands, suits, causes of actions or proceedings of any kind or nature arising out of, relating to or resulting from the performance of this Agreement by the CONTRACTOR or its employees, agents, servants, partners principals or subcontractors. The CONTRACTOR shall pay all claims and losses in connection therewith and shall investigate and defend all claims, suits or actions of any kind or nature in the name of the CITY, where applicable, including appellate proceedings, and shall pay all costs, judgments, and attorney's fees which may issue thereon. The CONTRACTOR expressly understands and agrees that any insurance protection required by this Agreement or otherwise provided by the CONTRACTOR shall in no way limit the responsibility to indemnify, keep and save harmless and defend the CITY or its officers, employees, agents and instrumentalities as herein provided.

CONTRACTOR shall not commence work under this Agreement until it has obtained all insurance required under this paragraph and such insurance has been approved by the Risk Manager of the CITY nor shall the CONTRACTOR allow any subcontractor to commence work on his subcontract until all similar such insurance required of the subcontractor has been obtained and similarly approved.

**CERTIFICATES OF INSURANCE**, reflecting evidence of the required insurance, shall be filed with the City's Risk Manager prior to the commencement of this Agreement. Policies shall be issued by companies authorized to do business under the laws of the State of Florida. The insurance company shall be rated no less than "A" as to management, and no less than "Class VI" as to financial strength according to the latest edition of Best's Insurance Guide published by A.M. Best Company.

Policies shall be endorsed to provide the CITY thirty (30) days notice of cancellation, material change or non-renewal of policies required under the contract. If the carrier will not agree to this notification, the CONTRACTOR or its insurance broker shall notify the CITY of any cancellation or reduction in coverage within seven days of receipt of insurer's notification of cancellation or reduction in coverage.

Insurance shall be in force until all obligations required to be fulfilled under the terms of the Agreement are satisfactorily completed as evidenced by the formal acceptance by the CITY. In the event the insurance certificate provided indicates that the insurance shall terminate and lapse during the period of this Agreement, then in that event, the CONTRACTOR shall furnish, at least fifteen (15) days prior to the expiration of the date of such insurance, a renewed certificate of insurance as proof that equal and like coverage for the balance of the period of the Agreement and extension thereunder is in effect. The CONTRACTOR shall not commence nor continue to provide any services pursuant to this Agreement unless all required insurance remains in full force and effect. CONTRACTOR shall be liable to CITY for any lapses in service resulting from a gap in insurance coverage.

The insurance requirements specified in this Agreement are minimum requirements and in no way reduce any liability the CONTRACTOR has assumed in the indemnification/hold harmless section(s) of this Agreement.



**2.1 REQUIRED INSURANCE**

**A. COMMERCIAL GENERAL LIABILITY INSURANCE** including, but not limited to: coverage for premises & operations, personal & advertising injury, products & completed operations, Liability assumed under an Insured Contract (including tort liability of another assumed in a business contract), and independent contractors. Coverage must be written on an occurrence basis, with limits of liability no less than:

1. Each Occurrence Limit - \$1,000,000
2. Fire Damage Limit (Damage to rented premises) - \$100,000
3. Personal & Advertising Injury Limit - \$1,000,000
4. General Aggregate Limit - \$2,000,000
5. Products & Completed Operations Aggregate Limit - \$2,000,000 **(mostly for construction or equipment sold to the CITY)**

Products & Completed Operations Coverage shall be maintained for two (2) years after the final payment under this contract. (Increase to 10 years for construction projects) (For construction projects also include: Designated Construction Project(s) General Aggregate Limit)

**The City of Pembroke Pines must be shown as an additional insured with respect to this coverage.** City's Additional Insured status shall extend to any coverage beyond the minimum requirements for limits of liability found herein.

**B. WORKERS' COMPENSATION AND EMPLOYERS LIABILITY INSURANCE** covering all employees, and/or volunteers of the CONTRACTOR engaged in the performance of the scope of work associated with this Agreement. In the case any work is sublet, the CONTRACTOR shall require the subcontractors similarly to provide Workers Compensation Insurance for all the latter's employees unless such employees are covered by the protection afforded by the CONTRACTOR. Coverage for the CONTRACTOR and his subcontractors shall be in accordance with applicable state and/or federal laws that may apply to Workers' Compensation Insurance with limits of liability no less than:

1. Workers' Compensation : Coverage A – Statutory
2. Employers Liability: Coverage B \$500,000 Each Accident
  - \$500,000 Disease – Policy Limit
  - \$500,000 Disease – Each Employee

If CONTRACTOR claims to be exempt from this requirement, CONTRACTOR shall provide CITY proof of such exemption along with a written request for CITY to exempt CONTRACTOR, written on CONTRACTOR letterhead.

Coverage shall be included for injuries or claims under the USL&H or Jones Act, when applicable.

**C. AUTO LIABILITY INSURANCE** covering all owned, leased, hired, non-owned and employee non-owned vehicles used in connection with the performance of work under this Agreement, with a combined single limit of liability for bodily injury and property damage no less than:



1. Any Auto (Symbol 1)  
Combined Single Limit (Each Accident) - \$1,000,000
2. Hired Autos (Symbol 8)  
Combined Single Limit (Each Accident) - \$1,000,000
3. Non-Owned Autos (Symbol 9)  
Combined Single Limit (Each Accident) - \$1,000,000

If work under this Agreement includes transportation of hazardous materials, policy shall include pollution liability coverage equivalent to that provided by ISO pollution liability-broadened coverage for auto endorsement CA9948 and the Motor Carrier Act endorsement MCS90.

- D. PROFESSIONAL LIABILITY/ERRORS & OMISSIONS INSURANCE**, when applicable, with a limit of liability no less than \$1,000,000 per wrongful act. This coverage shall be maintained for a period of no less than three (3) years after final payment of the contract. (Increase to 10 years for construction projects)
- E. ENVIRONMENTAL/POLLUTION LIABILITY** shall be required with a limit of no less than \$1,000,000 per wrongful act whenever work under this Agreement involves potential losses caused by pollution conditions. Coverage shall include: Contractor's completed operations as well as sudden and gradual pollution conditions. If coverage is written on a claims-made basis, coverage shall be maintained for a period of no less than three (3) years after final payment of the contract. **The City of Pembroke Pines must be shown as an additional insured with respect to this coverage.** Furthermore, the CITY'S Additional Insured status shall extend to any coverage beyond the minimum requirements for limits of liability found herein.
- F. CYBER LIABILITY including Network Security and Privacy Liability** when applicable, with a limit of liability no less than \$1,000,000 per loss. Coverage shall include liability arising from: theft, dissemination and/or use of confidential information stored or transmitted in electronic form, unauthorized access to, use of, or tampering with computer systems, including hacker attacks or inability of an authorized third party to gain access to your services, including denial of service, and the introduction of a computer virus into, or otherwise causing damage to, a customer's or third person's computer, computer system, network, or similar computer-related property and the data, software and programs thereon. This coverage shall be maintained for a period of no less than three (3) years after final payment of the contract. **The City of Pembroke Pines must be shown as an additional insured with respect to this coverage.** Furthermore, the CITY'S Additional Insured status shall extend to any coverage beyond the minimum requirements for limits of liability found herein.
- G. CRIME COVERAGE** when applicable, shall include employee dishonesty, forgery or alteration, and computer fraud in an amount of no less than \$1,000,000 per loss. If Contractor is physically located on the City's premises, a third-party fidelity coverage extension shall apply.
- H. BUILDER'S RISK INSURANCE** shall be "All Risk" for one hundred percent (100%) of the completed value of the project with a deductible of not more than five percent (5%) for Named Windstorm and \$20,000 per claim for all other perils. The Builder's Risk Insurance



shall include interests of the CITY, the CONTRACTOR and subcontractors of the project. The CONTRACTOR shall include a separate line item for all costs associated with the Builder's Risk Insurance Coverage for the project. The CITY reserves the right at its sole discretion to utilize the CONTRACTOR'S Builder's Risk Insurance or for the CITY to purchase its own Builder's Risk Insurance for the Project. Prior to the CONTRACTOR purchasing the Builder's Risk insurance for the project, the CONTRACTOR shall allow the CITY the opportunity to analyze the CONTRACTOR'S coverage and determine who shall purchase the coverage. Should the CITY utilize the CONTRACTOR'S Builder's Risk Insurance, the CONTRACTOR shall be responsible for all deductibles. If the CITY chooses to purchase the Builder's Risk Coverage on the project, the CONTRACTOR shall provide the CITY with a change order deduct for all premiums and costs associated with the Builder's Risk insurance in their schedule. Should the CITY choose to utilize the CITY'S Builder's Risk Program, the CITY shall be responsible for the Named Windstorm Deductible and the CONTRACTOR shall be responsible for the All Other Perils Deductible.

- I. **SEXUAL ABUSE** may not be excluded from any policy for Agreements involving any interaction with minors or seniors.

## 2.2 REQUIRED ENDORSEMENTS

1. The City of Pembroke Pines shall be named as an Additional Insured on each of the General Liability policies required herein
2. Waiver of all Rights of Subrogation against the CITY
3. 30 Day Notice of Cancellation or Non-Renewal to the CITY
4. CONTRACTORS' policies shall be Primary & Non-Contributory
5. All policies shall contain a "severability of interest" or "cross liability" liability clause without obligation for premium payment of the CITY
6. The City of Pembroke Pines shall be named as a Loss Payee on all Property and/or Inland Marine Policies as their interest may appear.

CONTRACTOR shall name the CITY, as an additional insured on each of the General Liability policies required herein and shall hold the CITY, its agents, officers and employees harmless on account of claims for damages to persons, property or premises arising out of the services provided hereunder. Any insurance required of the CONTRACTOR pursuant to this Agreement must also be required by any subcontractor in the same limits and with all requirements as provided herein, including naming the CITY as an additional insured, in any work is subcontracted unless such subcontractor is covered by the protection afforded by the CONTRACTOR and provided proof of such coverage is provided to CITY. The CONTRACTOR and any subcontractors shall maintain such policies during the term of this Agreement.

The CITY reserves the right to require any other additional types of insurance coverage and/or higher limits of liability it deems necessary based on the nature of work being performed under this Contract.



## **SECTION 3 - GENERAL TERMS & CONDITIONS**

### **3.1 EXAMINATION OF CONTRACT DOCUMENTS**

Before submitting a Proposal, each Proposer should (a) consider federal, state and local laws, ordinances, rules and regulations that may in any manner affect cost or performance of the work, (b) study and carefully correlate the Proposer's observations with the Proposal Documents; and (c) notify the Purchasing Manager of all conflicts, errors and discrepancies, if any, in the Proposal Documents.

The Proposer, by and through the submission of a Proposal, agrees that Proposer shall be held responsible for having familiarized themselves with the nature and extent of the work and any local conditions that may affect the work to be done and the services, equipment, materials, parts and labor required.

### **3.2 CONFLICT OF INSTRUCTIONS**

If a conflict exists between the General Conditions and Instructions stated herein and specific conditions and instructions contained in specifications, the specifications shall govern.

### **3.3 ADDENDA or ADDENDUM**

A formal solicitation may require an Addendum to be issued. An addendum in some way may clarify, correct or change the original solicitation (i.e. due date/time, specifications, terms, conditions, line item). Vendors submitting a proposal should check the BidSync website for any addenda issued. Vendors are cautioned not to consider verbal modifications to the solicitation, as the addendum issued through BidSync will be the only official method whereby changes will be made.

### **3.4 INTERPRETATIONS AND QUESTIONS**

If the Proposer is in doubt as to the meaning of any of the Proposal Documents, is of the opinion that the Conditions and Specifications contain errors or contradictions or reflect omissions, or has any question concerning the conditions and specifications, the Proposer shall submit a question for interpretation or clarification. The City requires all questions relating to the solicitation be entered through the “**Ask a Question**” option tab available on the BidSync website. Responses to the questions will be provided online at [www.bidsync.com](http://www.bidsync.com). Such request must be received by the “**Question Due Date**” stated in the solicitation. Questions received after “**Question Due Date**” shall not be answered. Interpretations or clarifications in response to such questions will be issued via BidSync. The issuance of a response via BidSync is considered an Addendum and shall be the only official method whereby such an interpretation or clarification will be made.

BidSync Support is also available to assist proposers with submitting their proposal and to ensure that proposers are submitting their proposals correctly. Proposers should ensure that they contact their BidSync support line at 1-800-990-9339 with ample time before the bid closing date and time.

For all other questions related to this solicitation, please contact the Purchasing Division at [purchasing@ppines.com](mailto:purchasing@ppines.com).

### **3.5 RULES, REGULATIONS, LAWS, ORDINANCES and LICENSES**

The awarded contractor shall observe and obey all laws, ordinances, rules, and regulations of the federal, state, and CITY, which may be applicable to the service being provided. The awarded firm shall have or be responsible for obtaining all necessary permits or licenses required, if necessary, in order to provide this service.



Bidder warrants by submittal that prices quoted here are in conformity with the latest federal price guidelines, if any.

### **3.6 WARRANTIES FOR USAGE**

Whenever a bid is sought, seeking a source of supply for a specified time for materials or service, the quantities or usage shown are estimated only. No guarantee or warranty is given or implied by the City as to the total amount that may or may not be purchased from any resulting contracts. These quantities are for bidders information only and will be used for tabulation and presentation of bid.

### **3.7 BRAND NAMES**

If and wherever in the specifications a brand name, make, name of manufacturer, trade name, or vendor catalog number is mentioned, it is for the purpose of establishing a grade or quality of material only. Since the City does not wish to rule out other competition and equal brands or makes, the phrase "OR EQUAL" is added. However, if a product other than that specified is bid, Bidders shall indicate on their proposal and clearly state the proposed substitution and deviation. It is the vendor's responsibility to provide any necessary documentation and samples within their bid submittal to prove that the product is equal to that specified. Such samples are to be furnished before the date of bid opening, unless otherwise specified. Additional evidence in the form of documentation and samples may be requested if the proposed brand is other than that specified. The City retains the right to determine if the proposed brand shall be considered as an approved equivalent or not.

### **3.8 QUALITY**

All materials used for the manufacture or construction of any supplies, materials, or equipment covered by this bid shall be new, the latest model, of the best quality, and

highest grade workmanship, unless otherwise noted.

### **3.9 SAMPLES**

Samples, when requested, must be furnished before, or at the bid opening, unless otherwise specified, and delivered free of expense to the City and if not used in testing or destroyed, will upon request within thirty (30) days of bid award be returned at the bidders expense.

### **3.10 DEVELOPMENT COSTS**

Neither the City nor its representatives shall be liable for any expenses incurred in connection with the preparation, submission or presentation of a Bid in response to this solicitation. All information in the Bid shall be provided at no cost to the City.

### **3.11 PRICING**

Prices should be stated in units of quantity specified in the bidding specifications. In case of discrepancy in computing the amount of the bid, the unit prices quoted will govern.

Bidder warrants by virtue of bidding that prices, terms, and conditions quoted in his bid will be firm for acceptance for a period of ninety (90) days from date of bid opening unless otherwise stated by the City or bidder.

### **3.12 DELIVERY POINT**

All items shall be delivered F.O.B. destination, and delivery cost and charges included in the bid price. Failure to do so may be cause for rejection of bid.

### **3.13 TAX EXEMPT STATUS**

The City is exempt from Florida Sales and Federal Excise taxes on direct purchase of tangible property.

### **3.14 CONTRACT TIME**

By virtue of the submission of the Proposal, Proposer agrees and fully understands that



the completion time of the work of the Contract is an essential and material condition of the Contract and that time is of the essence. The Successful Proposer agrees that all work shall be prosecuted regularly, diligently and uninterrupted at such rate of progress as will ensure full completion thereof within the time specified. Failure to complete the work within the time period specified shall be considered a default.

In addition, time will be of the essence for any orders placed as a result of this bid. Purchaser reserves the right to cancel such orders, or part thereof, without obligation if delivery is not made at the time(s) or place(s) specified.

### **3.15 COPYRIGHT OR PATENT RIGHTS**

Bidder warrants that there have been no violations of copyrights or patent rights in manufacturing, producing, or selling other goods shipped or ordered as a result of this bid, and seller agrees to hold the purchaser harmless from any and all liability, loss or expense occasioned by such violation.

### **3.16 PUBLIC ENTITY CRIMES**

“A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.”

The Public Entity Crime Affidavit Form, attached to this solicitation, includes

documentation that shall be executed by an individual authorized to bind the Proposer. The Proposer further understands and accepts that any contract issued as a result of this solicitation shall be either voidable or subject to immediate termination by the City. In the event there is any misrepresentation or lack of compliance with the mandates of Section 287.133 or Section 287.134, respectively, Florida Statutes. The City in the event in such termination, shall not incur any liability to the Bidder for any goods, services or materials furnished.

### **3.17 CONFLICT OF INTEREST**

The award of any contract hereunder is subject to the provisions of Chapter 112, Florida Statutes. Proposers must disclose with their Proposal the name of any officer, director, partner, proprietor, associate or agent who is also an officer or employee of CITY or any of its agencies. Further, all Proposers must disclose the name of any officer or employee of CITY who owns, directly or indirectly, an interest of five percent (5%) or more in the Proposer 's firm or any of its branches or affiliate companies.

### **3.18 FACILITIES**

The City reserves the right to inspect the Bidder's facilities at any time with prior notice.

### **3.19 ENVIRONMENTAL REGULATIONS**

CITY reserves the right to consider Proposer's history of citations and/or violations of environmental regulations in determining a Proposer's responsibility, and further reserves the right to declare a Proposer not responsible if the history of violations warrant such determination. Proposer shall submit with the Proposal, a complete history of all citations and/or violations, notices and dispositions thereof. The non-submission of any such documentation shall be deemed to be an affirmation by the Proposer that there are no citations or violations. Proposer shall notify



CITY immediately of notice of any citation or violation that Proposer may receive after the Proposal opening date and during the time of performance of any contract awarded to Proposers.

### **3.20 SIGNATURE REQUIRED**

All proposals must be signed with the firm name and by an officer or employee having authority to bind the company or firm by his signature. FAILURE TO PROPERLY SIGN PROPOSAL SHALL INVALIDATE SAME, AND IT MAY NOT BE CONSIDERED FOR AWARD.

The individual executing this Bid on behalf of the Company warrant to the City that the Company is authorized to do business in the State of Florida, is in good standing and that Company possesses all of the required licenses and certificates of competency required by the State of Florida and Broward County to provide the goods or perform the services herein described.

The signed bid shall be considered an offer on the part of the bidder or contractor, which offer shall be deemed accepted upon approval by the City Commission of the City of Pembroke Pines and in case of default on the part of the bidder or contractor after such acceptance, the City of Pembroke Pines may take such action as it deems appropriate including legal action for damages or specific performance.

### **3.21 MANUFACTURER'S CERTIFICATION**

The City of Pembroke Pines reserves the right to request from bidder separate manufacturer certification of all statements made in the proposal.

### **3.22 MODIFICATION OR WITHDRAWAL OF PROPOSAL**

The City recommends for proposers to submit their proposals as soon as they are ready to do so. Please allow ample time to submit your proposals on the BidSync

website. Proposals may be modified or withdrawn prior to the deadline for submitting Proposals.

### **3.23 PUBLIC BID; BID OPENING AND GENERAL EXEMPTIONS**

All submittals received by the deadline will be recorded, and will subsequently be publicly opened on the same business day at 2:30 p.m. at the office of the City Clerk, 4th Floor, 601 City Center Way, Pembroke Pines, Florida, 33025.

All Proposals received from Proposers in response to the solicitation will become the property of CITY and will not be returned to the Proposers. In the event of Contract award, all documentation produced as part of the Contract shall become the exclusive property of CITY. Proposers are requested to identify specifically any information contained in their Proposals which they consider confidential and/or proprietary and which they believe to be exempt from disclosure, citing specifically the applicable exempting law.

Pursuant to Section 119.071 of the Florida Statutes, sealed bids, proposals, or replies received by a Florida public agency shall remain exempt from disclosure until an intended decision is announced or until 30 days from the opening, whichever is earlier.

Therefore, bidders will not be able to procure a copy of their competitor's bids until an intended decision is reached or 30 days has elapsed since the time of the bid opening.

However, pursuant to Section 255.0518 of the Florida Statutes, when opening sealed bids that are received pursuant to a competitive solicitation for **construction or repairs on a public building or public work**, the entity shall:

- (a) Open the sealed bids at a public meeting.



- (b) Announce at that meeting the name of each bidder and the price submitted in the bid.
- (c) Make available upon request the name of each bidder and the price submitted in the bid.

For solicitations that are **not** for **“construction or repairs on a public building or public work”** the City shall not reveal the prices submitted in the bids until an intended decision is announced or until 30 days from the opening, whichever is earlier.

**3.24 RESERVATIONS FOR REJECTION AND AWARD**

The City of Pembroke Pines reserves the right to accept or reject any and all bids or parts of bids, to waive irregularities and technicalities, and to request rebids. The City also reserves the right to award a contract on such items(s) or service(s) the City deems will best serve its interests. All bids shall be awarded to the most responsive/responsible bidder, provided the (City) may for good cause reject any bid or part thereof. It further reserves the right to award a contract on a split order basis, or such combinations as shall best serve the interests of the City unless otherwise specified. No premiums, rebates or gratuities permitted, either with, prior to, or after award. This practice shall result in the cancellation of said award and/or return of items (as applicable) and the recommended removal of bidder from bid list(s).

**3.25 BID PROTEST**

Any protests or challenges to this competitive procurement shall be governed by Section 35.38 of the City’s Code of Ordinances.

**3.26 INDEMNIFICATION**

The Successful Proposer shall pay all claims, losses, liens, settlements or judgments of any nature whatsoever in connection with the subsequent indemnifications including, but not limited to,

reasonable attorney's fees (including appellate attorney's fees) and costs.

CITY reserves the right to select its own legal counsel to conduct any defense in any such proceeding and all costs and fees associated therewith shall be the responsibility of Successful Proposer under the indemnification agreement. Nothing contained herein is intended nor shall it be construed to waive City’s rights and immunities under the common law or Florida Statute 768.28 as amended from time to time.

Additional indemnification requirements may be included under Special Terms and Conditions and/or as part of a specimen contract included in the solicitation package.

**General Indemnification:** To the fullest extent permitted by laws and regulations, Successful Proposer shall indemnify, defend, save and hold harmless the CITY, its officers, agents and employees, harmless from any and all claims, damages, losses, liabilities and expenses, direct, indirect or consequential arising out of or in consequence of the products, goods or services furnished by or operations of the Successful Proposer or his subcontractors, agents, officers, employees or independent contractors pursuant to or in the performance of the Contract.

**Patent and Copyright Indemnification:** Successful Proposer agrees to indemnify, defend, save and hold harmless the CITY, its officers, agents and employees, from all claims, damages, losses, liabilities and expenses arising out of any alleged infringement of copyrights, patent rights and/or the unauthorized or unlicensed use of any invention, process, material, property or other work manufactured or used in connection with the performance of the Contract, including its use by CITY.

**3.27 DEFAULT PROVISION**



In the case of default by the bidder or contractor, the City of Pembroke Pines may procure the articles or services from any other sources and hold the bidder or contractor responsible for any excess costs occasioned or incurred thereby.

The City shall be the sole judge of nonperformance, which shall include any failure on the part of the successful Bidder to accept the Award, to furnish required documents, and/or to fulfill any portion of the contract within the time stipulated. Upon default by the successful Bidder to meet any terms of this agreement, the City will notify the Bidder five (5) days (weekends and holidays excluded) to remedy the default. Failure on the Contractor's part to correct the default within the required five (5) days shall result in the contract being terminated and upon the City notifying in writing the Contractor of its intentions and the effective date of the termination. The following shall constitute default:

- A. Failure to perform the Work required under the contract and/or within the time required or failing to use the subcontractor, entities and personnel as identified and set forth, and to the degree specified in the contract.
- B. Failure to begin the Work under this Bid within the time specified.
- C. Failure to perform the Work with sufficient Workers and equipment or with sufficient materials to ensure timely completion.
- D. Neglecting or refusing to remove materials or perform new Work where prior Work has been rejected as non-conforming with the terms of the contract.
- E. Becoming insolvent, being declared bankrupt, or committing act of bankruptcy or insolvency, or making an assignment renders the successful Bidder incapable of performing the Work in accordance with and as required by the contract.

F. Failure to comply with any of the terms of the contract in any material respect.

In the event of default of a contract, the successful Bidder shall pay all attorney's fees and court costs incurred in collecting any damages. The successful Bidder shall pay the City for any and all costs incurred in ensuing the completion of the project.

Additional provisions may be included in the specimen contract.

### **3.28 ACCEPTANCE OF MATERIAL**

The material delivered under this proposal shall remain the property of the seller until a physical inspection and actual usage of this material and/or services is made and thereafter accepted to the satisfaction of the City and must comply with the terms herein, and be fully in accord with specifications and of the highest quality. In the event the material and/or services supplied to the City are found to be defective or do not conform to specifications, the City reserves the right to cancel the order upon written notice to the seller and return product to seller at the sellers expense.

### **3.29 LOCAL GOVERNMENT PROMPT PAYMENT ACT**

The City complies with Florida Statute 218.70, Florida Prompt Payment Act.

### **3.30 SCRUTINIZED COMPANIES LIST**

In accordance with Florida Statute 287.135, as amended, a company is ineligible to, 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 if:

- (a) Any amount of, at the time of bidding on, submitting a proposal for, or entering into or renewing such contract, the company is on the Scrutinized Companies that Boycott Israel List, created pursuant to s. 215.4725, or is engaged in a boycott of Israel; or



(b) One million dollars or more if, at the time of bidding on, submitting a proposal for, or entering into or renewing such contract, the company:

1. 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 s. 215.473; or

2. Is engaged in business operations in Syria.

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



**SECTION 4 - SPECIAL TERMS & CONDITIONS**

**4.1 PROPOSAL SECURITY**

**Proposal Security Requirements:** Each Proposal must be accompanied by a certified or cashier's check or by a Bid Bond made payable to the City of Pembroke Pines on an approved form, duly executed by the Proposer as principal and having as surety thereon a surety company acceptable to CITY and authorized to write such Bond under the laws of the State of Florida, in an amount not less than five percent (5%) of the amount of the base Proposal price. **Note: Contingency is not to be counted in the total amount the proposal security is based on.**

Proposers must submit a scanned copy of their bid security (bid bond form or cashier's check) with their bid submittal through BidSync. Proposers must also submit their original bid security (bid bond form or cashier's check) at time of the bid due date, or they may be deemed as non-responsive. The original Bid Bond or Cashier's Check should be in a sealed envelope, plainly marked "**BID SECURITY - IFB # PSUT-18-05 Pines Village Water Main Phase I**" and sent to the:

City of Pembroke Pines,  
City Clerk's Office, 4th Floor,  
601 City Center Way,  
Pembroke Pines, Florida, 33025.

**Successful Proposer:** The Proposal Security of the Successful Proposer will be retained until such Proposer has executed the Contract and furnished the required insurance, payment and performance bonds, whereupon the Proposal Security will be returned. If the Successful Proposer fails to execute and deliver the Contract and furnish the required insurance and bonds within fifteen (15) calendar days of the Notice of Award, CITY may annul the Notice of Award

and the entire sum of the Proposal Security shall be forfeited.

**Three Lowest Proposers:** The Proposal Security of the three (3) lowest Proposers will be returned within seven (7) calendar days after CITY and the Successful Proposer have executed the written Contract or if no such written Contract is executed within ninety (90) calendar days after the date of the Proposal opening, upon the demand of any Proposer at any time thereafter, provided that he has not been notified of the acceptance of his Proposal.

**All Other Proposers:** Proposal Security of all other Proposer will be returned within seven (7) calendar days after the proposal opening. The agent or attorney in fact or other officer who signs a Bid Bond for a surety company must file with such bond a certified copy of his power of attorney authorizing him to do so.

**4.2 PAYMENT AND PERFORMANCE BONDS**

Within fifteen (15) calendar days after Notice of Award and in any event prior to commencing work, the Contractor shall execute and furnish to City a performance bond and a payment bond, each written by a corporate surety, having a resident agent in the State of Florida and having been in business with a record of successful continuous operation for at least five (5) years. The surety shall hold a current certificate of authority from the Secretary of Treasury of the United States as an acceptable surety on federal bonds in accordance with United States Department of Treasury Circular No. 570. If the amount of the Bond exceeds the underwriting limitation set forth in the circular, in order to qualify, the net retention of the surety company shall not exceed the underwriting limitation in the circular and the excess risks must be protected by coinsurance, reinsurance, or other methods, in accordance with Treasury Circular 297,



revised September 1, 1978 (31DFR, Section 223.10, Section 223.11). Further, the surety company shall provide City with evidence satisfactory to City, that such excess risk has been protected in an acceptable manner. The surety company shall have at least the following minimum qualification in accordance with the latest edition of A.M. Best's Insurance Guide, published by Alfred M. Best Company, Inc., Ambest Road, Oldwick, New Jersey 08858:

B+ to A+

Two (2) separate bonds are required and both must be approved by the City. **The penal sum stated in each bond shall be 100% of the contract price, not including contingency.** The performance bond shall be conditioned that the Contractor performs the contract in the time and manner prescribed in the contract. The payment bond shall be conditioned that the Contractor promptly make payments to all persons who supply the Contractor with labor, materials and supplies used directly or indirectly by the Contractor in the prosecution of the work provided for in the Contract and shall provide that the surety shall pay the same in the amount not exceeding the sum provided in such bonds, together with interest at the maximum rate allowed by law; and that they shall indemnify and save harmless the City to the extent of any and all payments in connection with the carrying out of said Contract which the City may be required to make under the law.

Pursuant to the requirements of Section 255.05(1)(a), Florida Statutes, it shall be the duty of the Contractor to record the aforesaid payment and performance bonds in the public records of Broward County, with the Contractor to pay all recording costs.

**4.3 OWNER'S CONTINGENCY**

While the specifications contained in this solicitation and any ensuing Purchase Orders or contracts have incorporated all

anticipated work to be accomplished, there may be unanticipated work required of the vendor in conjunction with a specific project. For this reason, the City Commission may award a project with an "Owner's Contingency". This contingency or allowance authorizes the City execute change orders up to the amount of the contingency without the need to obtain additional Commission approval. The Owner's Contingency is usually based on a specified percent of the proposed project amount and is established for the specific project being performed under the contract. This dollar amount shall be shown on the specific project purchase order as a distinct item from the vendor's overall offer to determine the total potential dollar value of the contract. It is hereby understood and agreed that the vendor shall not expend any dollars in connection with the Owner's Contingency without the expressed prior approval of the City's authorized representative. Any Owner's Contingency funds that have not been utilized at the end of the project will remain with the Owner, the contractor shall only be paid for the proposed project cost as approved by the City Commission along with any Owner Contingency expenses that were approved by the City's authorized representative.

**4.4 TAX SAVER PROGRAM**

The Contractor shall cooperate on certain projects to allow the City to avail itself of a sales tax savings program.

**4.5 RELEASE OF LIEN**

Contractor must provide an executed Partial/Final Release of Lien utilizing the City's standard Release of Lien Form in order for the City to release any payments to the Contractor.

**4.6 SOLID WASTE CONSTRUCTION AND DEMOLITION DEBRIS**



## **COLLECTION AND DISPOSAL REQUIREMENTS**

The City of Pembroke Pines has an exclusive solid waste franchise agreement with Waste Pro of Florida, Inc. for the collection and disposal of all solid waste including construction and demolition (C & D) debris. All applicants for bids to perform construction work for the City of Pembroke Pines shall be subject to the requirements found in the City's exclusive solid waste franchise agreement and must contract Waste Pro of Florida, Inc. for the collection and disposal of all construction and demolition debris generated at such construction job sites.

For the current applicable rates and fees for Waste Pro of Florida, Inc. dumpsters, roll-off containers, and other related solid waste service equipment needs, please contact Sixto Pepin, Waste Pro of Florida, Inc. Waste Pro's Pembroke Pines Sales Representative at (954) 967-4200 or [spepin@wasteprousa.com](mailto:spepin@wasteprousa.com).

For further information related to the solid waste franchise requirements, please contact Rose Colombo, Solid Waste Franchise Agreement Contract Manager, at (954) 518-9011 or [rcolombo@ppines.com](mailto:rcolombo@ppines.com).

For solid waste franchise enforcement questions, please contact the City of Pembroke Pines Code Compliance Unit at (954) 431-4466.



### CONTACT INFORMATION FORM

IN ACCORDANCE WITH “IFB # PSUT-18-05” dated titled “Pines Village Water Main Improvements Phase I” attached hereto as a part hereof, the undersigned submits the following:

#### **A) Contact Information**

The Contact information form shall be electronically signed by one duly authorized to do so, and in case signed by a deputy or subordinate, the principal's properly written authority to such deputy or subordinate must accompany the proposal. This form must be completed and submitted through [www.bidsync.com](http://www.bidsync.com) as part of the bidder's submittal. The vendor must provide their pricing through the designated lines items listed on the BidSync website.

#### **COMPANY INFORMATION:**

COMPANY:   
 STREET ADDRESS:   
 CITY, STATE & ZIP CODE:

#### **PRIMARY CONTACT FOR THE PROJECT:**

NAME:  TITLE:   
 E-MAIL:   
 TELEPHONE:  FAX:

#### **AUTHORIZED APPROVER:**

NAME:  TITLE:   
 E-MAIL:   
 TELEPHONE:  FAX:   
 SIGNATURE:

#### **B) Proposal Checklist**

Did you submit the Proposal Security/Bid Bonds as required in Section 4.1 of the bid package? Yes

#### **C) Sample Proposal Form**

*The following sample price proposal is for information only. The vendor must provide their pricing through the designated lines items listed on the BidSync website.*

#### **I. GENERAL**

Item #	Item Description	Est. Qty.	Unit of Measure	Unit Price
1.01	General Requirements (Bonds, Insurance, etc.)	1	Lump Sum	<input type="text"/>

<b>1.02</b>	Mobilization / Demobilization	1	Lump Sum	<input type="text"/>
<b>1.03</b>	Stormwater Pollution Prevention	1	Lump Sum	<input type="text"/>
<b>1.04</b>	Maintenance of Traffic	1	Lump Sum	<input type="text"/>

**II. WATER**

<b>Item #</b>	<b>Item Description</b>	<b>Est. Qty.</b>	<b>Unit of Measure</b>	<b>Unit Price</b>
<b>2.01</b>	12" C-900 PVC Water Main	3,200	Linear Feet	<input type="text"/>
<b>2.02</b>	8" C-900 PVC Water Main	16,000	Linear Feet	<input type="text"/>
<b>2.03</b>	6" C-900 PVC Water Main	40	Linear Feet	<input type="text"/>
<b>2.04</b>	8" DIP Water Main	600	Linear Feet	<input type="text"/>
<b>2.05</b>	12"x8" DIP Tee	5	Each	<input type="text"/>
<b>2.06</b>	12"x6" DIP Tee	7	Each	<input type="text"/>
<b>2.07</b>	12"x6" DIP Reducer	1	Each	<input type="text"/>
<b>2.08</b>	12" DIP 45° Bend	2	Each	<input type="text"/>
<b>2.09</b>	8"x8" DIP Tee	17	Each	<input type="text"/>
<b>2.10</b>	8"x6" DIP Tee	55	Each	<input type="text"/>
<b>2.11</b>	8"x8" DIP Cross	6	Each	<input type="text"/>
<b>2.12</b>	8"x6" DIP Reducer	1	Each	<input type="text"/>
<b>2.13</b>	8" DIP Plug	6	Each	<input type="text"/>
<b>2.14</b>	8" DIP 11.25° Bend	2	Each	<input type="text"/>
<b>2.15</b>	8" DIP 22.5° Bend	2	Each	<input type="text"/>
<b>2.16</b>	8" DIP 45° Bend	15	Each	<input type="text"/>
<b>2.17</b>	6" DIP 45° Bend	5	Each	<input type="text"/>
<b>2.18</b>	6" DIP 90° Bend	1	Each	<input type="text"/>
<b>2.19</b>	12" Gate Valve	6	Each	<input type="text"/>
<b>2.20</b>	8" Gate Valve	60	Each	<input type="text"/>
<b>2.21</b>	6" Gate Valve	55	Each	<input type="text"/>
<b>2.22</b>	Cut-In and Connect to Existing	4	Each	<input type="text"/>

	ACP Water Main			<input type="text"/>
<b>2.23</b>	Cut-In and Connect to Existing Non-ACP Water Main	2	Each	<input type="text"/>
<b>2.24</b>	Cut-In and Connect to Existing GSP with Poly Tubing	3	Each	<input type="text"/>
<b>2.25</b>	DIP Point Repairs	42	Each	<input type="text"/>
<b>2.26</b>	Fire Hydrant Assemblies	50	Each	<input type="text"/>
<b>2.27</b>	Remove Existing Fire Hydrant Assemblies	5	Each	<input type="text"/>
<b>2.28</b>	Bacteriological Sample Points	30	Each	<input type="text"/>
<b>2.29</b>	1" Single, Short Water Services (from new main to new meter)	12	Each	<input type="text"/>
<b>2.30</b>	1" Single, Long Water Services (from new main to new meter)	5	Each	<input type="text"/>
<b>2.31</b>	1.5" Double, Short Water Services (from new main to new meter)	102	Each	<input type="text"/>
<b>2.32</b>	1.5" Double, Long Water Services (from new main to new meter)	72	Each	<input type="text"/>
<b>2.33</b>	Single Meter Box Assembly	17	Each	<input type="text"/>
<b>2.34</b>	Double Meter Box Assembly	174	Each	<input type="text"/>
<b>2.35</b>	2" Manual Blow Off Assembly	6	Each	<input type="text"/>
<b>2.36</b>	Cap, Grout, and Abandon Existing Water Main (4" and larger)	9,500	Linear Feet	<input type="text"/>
<b>2.37</b>	Cap and Abandon Existing Water Main (3" and smaller)	42	Each	<input type="text"/>
<b>2.38</b>	Remove Existing Water Meter and Restoration	190	Each	<input type="text"/>
<b>2.39</b>	Sidewalk Replacement (4'x5' Sections)	160	Each	<input type="text"/>

**III. PRIVATE WORK**

<b>Item #</b>	<b>Item Description</b>	<b>Est. Qty.</b>	<b>Unit of Measure</b>	<b>Unit Price</b>
<b>3.01</b>	1" Single Poly Service (from new meter to existing service or house connection)	365	Each	<input type="text"/>
<b>3.02</b>	3/4" Single Brass House Connection (including pressure valve)	365	Each	<input type="text"/>

**IV. ROADWAY**

Item #	Item Description	Est. Qty.	Unit of Measure	Unit Price
4.01	Solid Traffic Stripe (24" White) - Thermoplastic	480	Linear Feet	<input type="text"/>
4.02	Solid Traffic Stripe (12" White) - Thermoplastic	380	Linear Feet	<input type="text"/>
4.03	Solid Traffic Stripe (6" Double Yellow) - Thermoplastic	2,920	Linear Feet	<input type="text"/>
4.04	Solid Traffic Stripe (6" White) - Thermoplastic	160	Linear Feet	<input type="text"/>
4.05	Solid Traffic Stripe (6" Yellow, 10-30 Skip) - Thermoplastic	2,762	Linear Feet	<input type="text"/>
4.06	Retro-Reflective Pavement Markers	337	Each	<input type="text"/>
4.07	Painted School Message	1	Each	<input type="text"/>

#### V. MISCELLANEOUS

Item #	Item Description	Est. Qty.	Unit of Measure	Extended Total
5.01	Permitting Allowance	1	Allowance	<b>\$10,000</b>



**(OFFICE USE ONLY)** Vendor number:

Please entirely complete this vendor information form along with the IRS Form W-9, and email to [accountspayable@ppines.com](mailto:accountspayable@ppines.com)

**City of Pembroke Pines**  
**Finance Department**  
**601 City Center Way**  
**Pembroke Pines, FL 33025**

## Vendor Information Form

<b>Operating Name (Payee)</b>			
<b>Legal Name (as filed with IRS)</b>			
<b>Remit-to Address (For Payments)</b>			
<b>Remit-to Contact Name:</b>		<b>Title:</b>	
<b>Email Address:</b>			
<b>Phone #:</b>		<b>Fax #</b>	
<b>Order-from Address (For purchase orders)</b>			
<b>Order-from Contact Name:</b>		<b>Title:</b>	
<b>Email Address:</b>			
<b>Phone #:</b>		<b>Fax #</b>	
<b>Return-to Address (For product returns)</b>			
<b>Return-to Contact Name</b>		<b>Title:</b>	
<b>Email Address:</b>			
<b>Phone #:</b>		<b>Fax #</b>	
<b>Payment Terms:</b>			

**Type of Business** (please check one and provide Federal Tax identification or social security Number)

Corporation

**Federal ID Number:**

Sole Proprietorship/Individual

**Social Security No.:**

Partnership

Health Care Service Provider

LLC – C (C corporation) – S (S corporation) – P (partnership)

Other (Specify):

**Name & Title of Applicant** \_\_\_\_\_

**Signature of Applicant** \_\_\_\_\_ **Date** \_\_\_\_\_

# Request for Taxpayer Identification Number and Certification

**Give Form to the  
 requester. Do not  
 send to the IRS.**

▶ Go to [www.irs.gov/FormW9](http://www.irs.gov/FormW9) for instructions and the latest information.

Print or type. See Specific Instructions on page 3.	<p><b>1</b> Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.</p> <hr/> <p><b>2</b> Business name/disregarded entity name, if different from above</p> <hr/> <p><b>3</b> Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only <b>one</b> of the following seven boxes.</p> <p> <input type="checkbox"/> Individual/sole proprietor or single-member LLC                  <input type="checkbox"/> C Corporation                  <input type="checkbox"/> S Corporation                  <input type="checkbox"/> Partnership                  <input type="checkbox"/> Trust/estate         </p> <p> <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____         </p> <p><b>Note:</b> Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is <b>not</b> disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.</p> <p> <input type="checkbox"/> Other (see instructions) ▶ _____         </p>	<p><b>4</b> Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):</p> <p>Exempt payee code (if any) _____</p> <p>Exemption from FATCA reporting code (if any) _____</p> <p style="font-size: small;">(Applies to accounts maintained outside the U.S.)</p>
	<p><b>5</b> Address (number, street, and apt. or suite no.) See instructions.</p> <hr/> <p><b>6</b> City, state, and ZIP code</p> <hr/> <p><b>7</b> List account number(s) here (optional)</p>	<p>Requester's name and address (optional)</p> <hr/>

## Part I Taxpayer Identification Number (TIN)

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

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

<b>Social security number</b>									
-				-					
<b>or</b>									
<b>Employer identification number</b>									
-									

## Part II Certification

Under penalties of perjury, I certify that:

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

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

<b>Sign Here</b>	Signature of U.S. person ▶	Date ▶
------------------	----------------------------	--------

## General Instructions

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

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

### Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-DIV (dividends or interest earned or paid)

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

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

*If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.*

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
2. Certify that you are not subject to backup withholding, or
3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and
4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting*, later, for further information.

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

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

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

**Special rules for partnerships.** Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

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

**Foreign person.** If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, *Withholding of Tax on Nonresident Aliens and Foreign Entities*).

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

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

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.
2. The treaty article addressing the income.
3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.
4. The type and amount of income that qualifies for the exemption from tax.
5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

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

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

## Backup Withholding

**What is backup withholding?** Persons making certain payments to you must under certain conditions withhold and pay to the IRS 28% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

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

**Payments you receive will be subject to backup withholding if:**

1. You do not furnish your TIN to the requester,
2. You do not certify your TIN when required (see the instructions for Part II for details),
3. The IRS tells the requester that you furnished an incorrect TIN,
4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or
5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

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

Also see *Special rules for partnerships*, earlier.

## What is FATCA Reporting?

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

## Updating Your Information

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

## Penalties

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

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

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

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

## Specific Instructions

### Line 1

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

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

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

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

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or “doing business as” (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C corporation, or S corporation.** Enter the entity’s name as shown on the entity’s tax return on line 1 and any business, trade, or DBA name on line 2.

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

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

### Line 2

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

### Line 3

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

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

### Line 4, Exemptions

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

#### Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys’ fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

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

- 1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)
- 2—The United States or any of its agencies or instrumentalities
- 3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities
- 4—A foreign government or any of its political subdivisions, agencies, or instrumentalities
- 5—A corporation
- 6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession
- 7—A futures commission merchant registered with the Commodity Futures Trading Commission
- 8—A real estate investment trust
- 9—An entity registered at all times during the tax year under the Investment Company Act of 1940
- 10—A common trust fund operated by a bank under section 584(a)
- 11—A financial institution
- 12—A middleman known in the investment community as a nominee or custodian
- 13—A trust exempt from tax under section 664 or described in section 4947

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

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

<sup>1</sup> See Form 1099-MISC, Miscellaneous Income, and its instructions.

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

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

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

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

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

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

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

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

G—A real estate investment trust

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

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

J—A bank as defined in section 581

K—A broker

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

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

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

## Line 5

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

## Line 6

Enter your city, state, and ZIP code.

## Part I. Taxpayer Identification Number (TIN)

**Enter your TIN in the appropriate box.** If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

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

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

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

**How to get a TIN.** If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at [www.SSA.gov](http://www.SSA.gov). You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at [www.irs.gov/Businesses](http://www.irs.gov/Businesses) and clicking on Employer Identification Number (EIN) under Starting a Business. Go to [www.irs.gov/Forms](http://www.irs.gov/Forms) to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to [www.irs.gov/OrderForms](http://www.irs.gov/OrderForms) to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

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

**Note:** Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

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

## Part II. Certification

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

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

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

**1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983.**

You must give your correct TIN, but you do not have to sign the certification.

**2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983.**

You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

**3. Real estate transactions.**

You must sign the certification. You may cross out item 2 of the certification.

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

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

**What Name and Number To Give the Requester**

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

For this type of account:	Give name and EIN of:
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

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

<sup>2</sup> Circle the minor's name and furnish the minor's SSN.

<sup>3</sup> You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

<sup>4</sup> List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships*, earlier.

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

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

**Secure Your Tax Records From Identity Theft**

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

To reduce your risk:

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

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

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

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

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

**Protect yourself from suspicious emails or phishing schemes.**

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

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

If you receive an unsolicited email claiming to be from the IRS, forward this message to [phishing@irs.gov](mailto:phishing@irs.gov). You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at [spam@uce.gov](mailto:spam@uce.gov) or report them at [www.ftc.gov/complaint](http://www.ftc.gov/complaint). You can contact the FTC at [www.ftc.gov/idtheft](http://www.ftc.gov/idtheft) or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see [www.IdentityTheft.gov](http://www.IdentityTheft.gov) and Pub. 5027.

Visit [www.irs.gov/IdentityTheft](http://www.irs.gov/IdentityTheft) to learn more about identity theft and how to reduce your risk.

## Privacy Act Notice

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



**NON-COLLUSIVE AFFIDAVIT**

BIDDER is the ,  
(Owner, Partner, Officer, Representative or Agent)

BIDDER is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

Such Bid is genuine and is not a collusive or sham Bid;

Neither the said BIDDER nor any of its officers, partners, owners, agents, representative, employees or parties in interest, including this affidavit, have in any way colluded, conspired, connived or agreed, directly or indirectly, with any other BIDDER, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted; or to refrain from bidding in connection with such Contract; or have in any manner, directly or indirectly, sought by agreement or collusion, or communications, or conference with any BIDDER, firm, or person to fix the price or prices in the attached Bid or any other BIDDER, or to fix any overhead, profit, or cost element of the Bid Price or the Bid Price of any other BIDDER, or to secure through any collusion conspiracy, connivance, or unlawful agreement any advantage against (Recipient), or any person interested in the proposed Contract;

The price of items quoted in the attached Bid are fair and proper and are not tainted by collusion, conspiracy, connivance, or unlawful agreement on the part of the BIDDER or any other of its agents, representatives, owners, employees or parties in interest, including this affidavit.

Printed Name/Signature

Title

Name of Company



**SWORN STATEMENT  
ON PUBLIC ENTITY CRIMES  
UNDER FLORIDA STATUTES CHAPTER 287.133(3)(a).**

1. This sworn statement is submitted  (name of entity submitting sworn statement) whose business address is  and (if applicable) its Federal Employer Identification Number (FEIN) is . (If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement: .)
  
2. My name is  and my  
(Please print name of individual signing)  
relationship to the entity named above is .
  
3. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid, proposal, reply, or contract for goods or services, any lease for real property, or any contract for the construction or repair of a public building or public work, involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.
  
4. I understand that a "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.
  
5. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:
  1. A predecessor or successor of a person convicted of a public entity crime: or
  2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The Cityship by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.
  
6. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes, means any natural person or any entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts let by a public entity, or which otherwise transacts or applies to transact business with a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders,

employees, members, and agents who are active in management of an entity.

7. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. **(Please indicate which statement applies.)**

A) Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.

B) The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989, AND **(Please indicate which additional statement applies.)**

B1) There has been a proceeding concerning the conviction before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. **(Please attach a copy of the final order.)**

B2) The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. **(Please attach a copy of the final order.)**

B3) The person or affiliate has not been placed on the convicted vendor list. **(Please describe any action taken by or pending with the Department of General Services.)**

Bidder's Name/Signature

Company

Date



## LOCAL VENDOR PREFERENCE CERTIFICATION

### SECTION 1 GENERAL TERM

#### LOCAL PREFERENCE

The evaluation of competitive bids is subject to section 35.36 of the City's Procurement Procedures which, except where contrary to federal and state law, or any other funding source requirements, provides that preference be given to local businesses. To satisfy this requirement, the vendor shall affirm in writing its compliance with either of the following objective criteria as of the bid or proposal submission date stated in the solicitation. A local business shall be defined as:

1. "Local Pembroke Pines Vendor" shall mean a business entity which has maintained a permanent place of business with full-time employees within the City limits for a minimum of one (1) year prior to the date of issuance of a bid or proposal solicitation. The permanent place of business may not be a post office box. The business location must actually distribute goods or services from that location. In addition, the business must have a current business tax receipt from the City of Pembroke Pines.

**OR;**

2. "Local Broward County Vendor" shall mean or business entity which has maintained a permanent place of business with full-time employees within the Broward County limits for a minimum of one (1) year prior to the date of issuance of a bid or proposal solicitation. The permanent place of business may not be a post office box. The business location must actually distribute goods or services from that location. In addition, the business must have a current business tax receipt from the Broward County or the city within Broward County where the business resides.

A preference of five percent (5%) of the total evaluation point, or five percent (5%) of the total price, shall be given to the **Local Pembroke Pines Vendor(s)**; A preference of two and a half percent (2.5%) of the total evaluation point for local, or two and a half percent (2.5%) of the total price, shall be given to the **Local Broward County Vendor(s)**.

#### COMPARISON OF QUALIFICATIONS

The preferences established in no way prohibit the right of the City to compare quality of supplies or services for purchase and to compare qualifications, character, responsibility and fitness of all persons, firms or corporations submitting bids or proposals. Further, the preference established in no way prohibit the right of the city from giving any other preference permitted by law instead of the preferences granted, nor prohibit the city to select the bid or proposal which is the most responsible and in the best interests of the city.

### SECTION 2 AFFIRMATION

#### LOCAL PREFERENCE CERTIFICATION:

- Place a check mark here only if affirming bidder meets requirements above as a Local Pembroke Pines Vendor.  
In addition, the business must attach a current business tax receipt from the City of Pembroke Pines along with any previous business tax receipts to indicate that the business entity has maintained a permanent place of business for a minimum of one (1) year.
- Place a check mark here only if affirming bidder meets requirements above as a Local Broward County Vendor.  
In addition, the business must attach a current business tax receipt from the Broward County or the city within Broward County where the business resides along with any previous business tax receipts to indicate that the business entity has maintained a permanent place of business for a minimum of one (1) year.
- Place a check mark here only if affirming bidder does not meet the requirements above as a Local Vendor.

**Failure to complete this certification at this time (by checking either of the boxes above) shall render the vendor ineligible for Local Preference. This form must be completed by/for the proposer; the proposer WILL NOT qualify for Local Vendor Preference based on their sub-contractors' qualifications.**

COMPANY NAME:

PRINTED NAME / AUTHORIZED SIGNATURE:



## VETERAN OWNED SMALL BUSINESS (VOSB) PREFERENCE CERTIFICATION

### SECTION 1 GENERAL TERM

#### VETERAN OWNED SMALL BUSINESS (VOSB) PREFERENCE

The evaluation of competitive bids is subject to section 35.37 of the City's Procurement Procedures which, except where contrary to federal and state law, or any other funding source requirements, provides that preference be given to veteran owned small businesses. To satisfy this requirement, the vendor shall affirm in writing its compliance with the following objective criteria as of the bid or proposal submission date stated in the solicitation. A veteran owned small business shall be defined as:

1. "Veteran Owned Small Business" shall mean a business entity which has received a "Determination Letter" from the United States Department of Veteran Affairs Center for Verification and Evaluation notifying the business that they have been approved as a Veteran Owned Small Business (VOSB).

A preference of two and a half percent (2.5%) of the total evaluation point, or two and a half percent (2.5%) of the total price, shall be given to the **Veteran Owned Small Business (VOSB)**. This shall mean that if a **VOSB** submits a bid/quote that is within 2.5% of the lowest price submitted by any vendor, the **VOSB** shall have an option to submit another bid which is at least 1% lower than the lowest responsive bid/quote. If the **VOSB** submits a bid which is at least 1% lower than that lowest responsive bid/quote, then the award will go to the **VOSB**. If not, the award will be made to the vendor that submits the lowest responsive bid/quote. If the lowest responsive and responsible bidder IS a "**Local Pembroke Pines Vendor**" (**LPPV**) or a "**Local Broward County Vendor**" (**LBCV**) as established in Section 35.36 of the City's Code of Ordinances, entitled "Local Vendor Preference", then the award will be made to that vendor and no other bidders will be given an opportunity to submit additional bids as described herein.

If there is a **LPPV**, a **LBCV**, and a **VOSB** participating in the same bid solicitation and all three vendors qualify to submit a second bid, the **LPPV** will be given first option. If the **LPPV** cannot beat the lowest bid received by at least 1%, an opportunity will be given to the **LBCV**. If the **LBCV** cannot beat the lowest bid by at least 1%, an opportunity will be given to the **VOSB**. If the **VOSB** cannot beat the lowest bid by at least 1%, then the bid will be awarded to the lowest bidder.

If multiple **VOSBs** submit bids/quotes which are within 2.5% of the lowest bid/quote and there are no **LPPV** or **LBCV** as described in Section 35.36 of the City's Code of Ordinance, entitled "Local Vendor Preference", then all **VOSBs** will be asked to submit a **Best and Final Offer (BAFO)**. The award will be made to the **VOSB** submitting the lowest **BAFO** providing that that **BAFO** is at least 1% lower than the lowest bid/quote received in the original solicitation. If no **VOSB** can beat the lowest bid/quote by at least 1%, then the award will be made to the lowest responsive bidder.

#### COMPARISON OF QUALIFICATIONS

The preferences established in no way prohibit the right of the City to compare quality of supplies or services for purchase and to compare qualifications, character, responsibility and fitness of all persons, firms or corporations submitting bids or proposals. Further, the preference established in no way prohibit the right of the city from giving any other preference permitted by law instead of the preferences granted, nor prohibit the city to select the bid or proposal which is the most responsible and in the best interests of the city.

### SECTION 2 AFFIRMATION

#### VETERAN OWNED SMALL BUSINESS (VOSB) PREFERENCE CERTIFICATION:

- Place a check mark here only if affirming bidder meets requirements above as a Veteran Owned Small Business.  
In addition, the bidder must attach the "Determination Letter" from the U.S. Dept. of Veteran Affairs Center.

- Place a check mark here only if affirming bidder does not meet the requirements above as a VOSB.

**Failure to complete this certification at this time (by checking either of the boxes above) shall render the vendor ineligible for VOSB Preference. This form must be completed by/for the proposer; the proposer WILL NOT qualify for VOSB Preference based on their sub-contractors' qualifications.**

COMPANY NAME:

PRINTED NAME / AUTHORIZED SIGNATURE:



## EQUAL BENEFITS CERTIFICATION FORM FOR DOMESTIC PARTNERS AND ALL MARRIED COUPLES

Except where federal or state law mandates to the contrary, a Contractor awarded a Contract pursuant to a competitive solicitation shall provide benefits to Domestic Partners and spouses of its employees, irrespective of gender, on the same basis as it provides benefits to employees' spouses in traditional marriages.

The Contractor shall provide the City and/or the City Manager or his/her designee, access to its records for the purpose of audits and/or investigations to ascertain compliance with the provisions of this section, and upon request shall provide evidence that the Contractor is in compliance with the provisions of this section upon each new bid, contract renewal, or when the City Manager has received a complaint or has reason to believe the Contractor may not be in compliance with the provisions of this section. Records shall include but not be limited to providing the City and/or the City Manager or his/her designee with certified copies of the Contractor's records pertaining to its benefits policies and its employment policies and practices.

The Contractor must conspicuously make available to all employees and applicants for employment the following statement:

**“During the performance of a contract with the City of Pembroke Pines, Florida, the Contractor will provide Equal Benefits to its employees with spouses, as defined by Section 35.39 of the City’s Code of Ordinances, and its employees with Domestic Partners and all Married Couples”.**

The posted statement must also include a City contact telephone number and email address which will be provided to each contractor when a covered contract is executed.

### SECTION 1 DEFINITIONS

- 1. Benefits** means the following plan, program or policy provided or offered by a contractor to its employees as part of the employer's total compensation package which may include but is not limited to sick leave, bereavement leave, family medical leave, and health benefits.
- 2. Cash Equivalent** mean the amount of money paid to an employee with a domestic partner or spouse in lieu of providing benefits to the employee's domestic partner or spouse. The cash equivalent is equal to the employer's direct expense of providing benefits to an employee for his or her spouse from a traditional marriage.
- 3. Covered Contract** means a contract between the City and a contractor awarded subsequent to the date when this section becomes effective valued at over \$25,000 or the threshold amount required for competitive bids as required in section 35.18(A) of the Procurement Code.
- 4. Domestic Partner** shall mean any two (2) adults of the same or different sex who have registered as domestic partners with a governmental body pursuant to state or local law authorizing such registration, or with an internal registry maintained by the employer of at least one of the domestic partners. A contractor may institute an internal registry to allow for the provision of equal benefits to employees with domestic partners who do not register their partnerships pursuant to a governmental body authorizing such registration, or who are located in a jurisdiction where no such governmental domestic partnership registry exists. A contractor that institutes such registry shall not impose criteria for registration that are more stringent than those required for domestic partnership registration by the City of Pembroke Pines.
- 5. Equal benefits** means the equality of benefits between employees with spouses and/or dependents of spouses and employees with domestic partners and/or dependents of domestic partners, and/or between spouses of employees and/or dependents of spouses and domestic partners of employees and/or dependents of domestic partners.

6. **Spouse** means one member of a married pair legally married under the laws of any state within the United States of America or any other jurisdiction under which such marriage is legally recognized, irrespective of gender.

7. **Traditional marriage** means a marriage between one man and one woman.

## SECTION 2 CERTIFICATION OF CONTRACTOR

The firm providing a response, by virtue of the signature below, certifies that it is aware of the requirements of Section 35.39 "City Contractors providing Equal Benefits for Domestic Partners and all Married Couples" of the City's Code of Ordinances, and certifies the following (**Check only one box below**):

- A. Contractor currently complies with the requirements of this section; or
- B. Contractor will comply with the conditions of this section at the time of contract award; or
- C. Contractor will not comply with the conditions of this section at the time of contract award: or
- D. Contractor does not comply with the conditions of this section because of the following allowable exemption (**Check only one box below**):

1. The Contractor does not provide benefits to employees' spouses in traditional marriages;

2. The Contractor provides an employee the cash equivalent of benefits because the Contractor is unable to provide benefits to employees' Domestic Partners or spouses despite making reasonable efforts to provide them. To meet this exception, the Contractor shall provide a notarized affidavit that it has made reasonable efforts to provide such benefits. The affidavit shall state the efforts taken to provide such benefits and the amount of the cash equivalent. Cash equivalent means the amount of money paid to an employee with a Domestic Partner or spouse rather than providing benefits to the employee's Domestic Partner or spouse. The cash equivalent is equal to the employer's direct expense of providing benefits to an employee's spouse;

3. The Contractor is a religious organization, association, society, or any non-profit charitable or educational institution or organization operated supervised or controlled by or in conjunction with a religious organization, association, or society;

4. The Contractor is a governmental agency;

**The certification shall be signed by an authorized officer of the Contractor. Failure to provide such certification (by checking the appropriate boxes above along with completing the information below) shall result in a Contractor being deemed non-responsive.**

COMPANY NAME:

AUTHORIZED OFFICER NAME / SIGNATURE:



**VENDOR DRUG-FREE WORKPLACE CERTIFICATION FORM**

**SECTION 1 GENERAL TERM**

Preference may be given to vendors submitting a certification with their bid/proposal certifying they have a drug-free workplace in accordance with Section 287.087, Florida Statutes. This requirement affects all public entities of the State and becomes effective January 1, 1991. The special condition is as follows:

**IDENTICAL TIE BIDS** - Preference may be given to businesses with drug-free workplace programs. Whenever two or more bids that are equal with respect to price, quality, and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drugfree 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. In order to have a drug-free workplace program, a business shall:

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

**SECTION 2 AFFIRMATION**

Place a check mark here only if affirming bidder **complies fully** with the above requirements for a Drug-Free Workplace.

Place a check mark here only if affirming bidder **does not** meet the requirements for a Drug-Free Workplace.

**Failure to complete this certification at this time (by checking either of the boxes above) shall render the vendor ineligible for Drug-Free Workplace Preference. This form must be completed by/for the proposer; the proposer WILL NOT qualify for Drug-Free Workplace Preference based on their sub-contractors’ qualifications.**

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Authorized Signer Name

\_\_\_\_\_  
Company Name



**PROPOSER’S QUALIFICATIONS STATEMENT**

PROPOSER shall furnish the following information. Failure to comply with this requirement will render Bid non-responsive and shall cause its rejection. Additional sheets shall be attached as required.

PROPOSER'S Name and Principal Address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contact Person’s Name and Title: \_\_\_\_\_

Contact Person’s E-mail Address: \_\_\_\_\_

PROPOSER'S Telephone and Fax Number: \_\_\_\_\_

PROPOSER’S License Number: \_\_\_\_\_  
**(Please attach certificate of status, competency, and/or state registration.)**

PROPOSER’S Federal Identification Number: \_\_\_\_\_

Number of years your organization has been in business \_\_\_\_\_

State the number of years your firm has been in business under your present business name \_\_\_\_\_

State the number of years your firm has been in business in the work specific to this solicitation:  
\_\_\_\_\_

Names and titles of all officers, partners or individuals doing business under trade name:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The business is a:      Sole Proprietorship                   Partnership                   Corporation

IF USING A FICTITIOUS NAME, SUBMIT EVIDENCE OF COMPLIANCE WITH FLORIDA FICTITIOUS NAME STATUTE. (ATTACH IN PROPOSER EXHIBIT SECTION)



---

Under what former name has your business operated? Include a description of the business. Failure to include such information shall be deemed to be intentional misrepresentation by the City and shall render the proposer RFP submittals non-responsive.

---

---

---

At what address was that business located?

---

---

---

Name, address, and telephone number of surety company and agent who will provide the required bonds on this contract:

---

---

---

Have you ever failed to complete work awarded to you. If so, when, where and why?

---

---

Have you personally inspected the proposed WORK and do you have a complete plan for its performance?

---



Will you subcontract any part of this WORK? If so, give details including a list of each subcontractor(s) that will perform work in excess of ten percent (10%) of the contract amount and the work that will be performed by each subcontractor(s).

---

---

The foregoing list of subcontractor(s) may not be amended after award of the contract without the prior written approval of the Contract Administrator, whose approval shall not be reasonably withheld.

List and describe all bankruptcy petitions (voluntary or involuntary) which have been filed by or against the Proposer, its parent or subsidiaries or predecessor organizations during the past five (5) years. Include in the description the disposition of each such petition.

---

---

---

List and describe all successful Bond claims made to your surety (ies) during the last five (5) years. The list and descriptions should include claims against the bond of the Proposer and its predecessor organization(s).

---

---

List all claims, arbitrations, administrative hearings and lawsuits brought by or against the Proposer or its predecessor organizations(s) during the last (10) years. The list shall include all case names; case, arbitration or hearing identification numbers; the name of the project over which the dispute arose; and a description of the subject matter of the dispute.

---

---

---



List and describe all criminal proceedings or hearings concerning business related offenses in which the Proposer, its principals or officers or predecessor organization(s) were defendants.

---

---

---

Has the Proposer, its principals, officers or predecessor organization(s) been CONVICTED OF A Public Entity Crime, debarred or suspended from bidding by any government entity? If so, provide details.

---

---

---

Are you an  Original provider  sales representative  distributor,  broker,  manufacturer  other, of the commodities/services proposed upon? If other than the original provider, explain below.

---

---

---

Have you ever been debarred or suspended from doing business with any governmental agency? If yes, please explain:

---

---

---

---



Describe the firm's local experience/nature of service with contracts of similar size and complexity, in the previous three (3) years:

---

---

---

---

The PROPOSER acknowledges and understands that the information contained in response to this Qualification Statement shall be relied upon by CITY in awarding the contract and such information is warranted by PROPOSER to be true. The discovery of any omission or misstatement that materially affects the PROPOSER'S qualifications to perform under the contract shall cause the CITY to reject the Bid, and if after the award, to cancel and terminate the award and/or contract.

---

(Company Name)

---

(Printed Name/Signature)

**ACORD CERTIFICATE OF LIABILITY INSURANCE** DATE (MM/DD[YY])

PRODUCER   INSURED <div style="border: 1px solid black; padding: 10px; text-align: center; font-size: 24px; font-weight: bold;">YOUR COMPANY NAME HERE</div>	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.  <div style="text-align: center; border: 1px solid black; padding: 5px; font-weight: bold;">INSURERS AFFORDING COVERAGE</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%; border: 1px solid black;">INSURER A:</td> <td rowspan="5" style="border: 1px solid black; text-align: center; vertical-align: middle; font-size: 24px; font-weight: bold;">Companies providing coverage</td> </tr> <tr><td style="border: 1px solid black;">INSURER B.</td></tr> <tr><td style="border: 1px solid black;">INSURER C.</td></tr> <tr><td style="border: 1px solid black;">INSURER D.</td></tr> <tr><td style="border: 1px solid black;">INSURER E.</td></tr> </table>	INSURER A:	Companies providing coverage	INSURER B.	INSURER C.	INSURER D.	INSURER E.
INSURER A:	Companies providing coverage						
INSURER B.							
INSURER C.							
INSURER D.							
INSURER E.							

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

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DDIYY)	POLICY EXPIRATION DATE (MM/DDIYY)	LIMITS								
	<b>GENERAL LIABILITY</b> <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input checked="" type="checkbox"/> CLAIMS MADE <input type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> policy <input type="checkbox"/> project <input type="checkbox"/> loc	Must Include General Liability			EACH OCCURRENCE    \$ FIRE DAMAGE (Any one fire)    \$ MED EXP (Any one person)    \$ PERSONAL & ADV INJURY    \$ GENERAL AGGREGATE    \$ PRODUCTS - COMP/OP AGG    \$								
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS	SAMPLE CERTIFICATE											
	<b>GARAGE LIABILITY</b> <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT    \$ OTHER THAN EA ACC    \$ AUTO ONLY:    AGG    \$								
	<b>EXCESS LIABILITY</b> OCCUR <input type="checkbox"/> CLAIMS MADE  <input type="checkbox"/> DEDUCTIBLE <input type="checkbox"/> RETENTION \$				EACH OCCURRENCE    \$ AGGREGATE    \$ \$ \$ \$								
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b>				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">WC STATUTORY LIMITS</td> <td style="width: 40%;">OTHER</td> </tr> <tr> <td>E.L. EACH ACCIDENT</td> <td>\$</td> </tr> <tr> <td>E.L. DISEASE - EA EMPLOYEE</td> <td>\$</td> </tr> <tr> <td>E.L. DISEASE - POLICY LIMIT</td> <td>\$</td> </tr> </table>	WC STATUTORY LIMITS	OTHER	E.L. EACH ACCIDENT	\$	E.L. DISEASE - EA EMPLOYEE	\$	E.L. DISEASE - POLICY LIMIT	\$
WC STATUTORY LIMITS	OTHER												
E.L. EACH ACCIDENT	\$												
E.L. DISEASE - EA EMPLOYEE	\$												
E.L. DISEASE - POLICY LIMIT	\$												
	OTHER												

Certificate must contain wording similar to what appears below

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCL <div style="border: 1px solid black; padding: 10px; text-align: center; background-color: yellow; font-weight: bold; font-size: 18px;">                     "THE CERTIFICATE HOLDER IS NAMED AS ADDITIONALLY INSURED WITH REGARD TO GENERAL LIABILITY"                 </div>
--

CERTIFICATE HOLDER <div style="border: 1px solid black; padding: 5px; font-weight: bold;">City of Pembroke Pines 601 City Center Way Pembroke Pines FL 33025</div>	ADDITIONAL INSURED; INSURER LETTER:  CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE, THIS CERTIFICATE SHALL BE VOID AND THE POLICY CANCELLED WITH ALL 30 DAYS WRITTEN LEFT.  AUTHORIZED REPRESENTATIVE
---	--

City Must Be Named as Certificate Holder



## AGREEMENT

**THIS IS AN AGREEMENT**, dated the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between:

**THE CITY OF PEMBROKE PINES**, a municipal corporation of the State of Florida with a business address of 10100 Pines Boulevard, Pembroke Pines, Florida 33026 hereinafter referred to as "CITY",

and

[**VENDOR NAME**], a company authorized to do business in the State of Florida, with a business address of [**VENDOR ADDRESS**], hereinafter referred to as "CONTRACTOR".

### WITNESSETH:

In consideration of the mutual terms and conditions, promises, covenants and payments hereinafter set forth, CITY and CONTRACTOR agree as follows:

#### **ARTICLE 1** **PREAMBLE**

In order to establish the background, context and form of reference for this Agreement, and to generally express the objectives and intentions of the respective parties herein, the following statements, representations, and explanations shall be accepted as predicates for the undertakings and commitments included within the provisions which follow, and may be relied upon by the parties as essential elements of the mutual considerations upon which this Agreement is based.

1.1 On [**DATE**], the CITY advertised its notice to bidders of the CITY's desire to hire a firm to [**DESCRIPTION OF PROJECT**] as more particularly described in **Exhibit "A"** attached hereto and by this reference made a part hereof, for the said bid entitled:

[**BID NUMBER**]  
[**BID TITLE**]

1.2 On [**DATE**], the bids were opened at the offices of the City Clerk.

1.3 On [**DATE**], the CITY awarded the bid to CONTRACTOR and authorized the proper CITY officials to negotiate and enter into an agreement with CONTRACTOR to render the services more particularly described herein below.

1.4 Negotiations pertaining to the services to be performed by the CONTRACTOR were undertaken and this Agreement incorporates the results of such negotiation.



## **ARTICLE 2**

### **SERVICES AND RESPONSIBILITIES**

2.1 CONTRACTOR hereby agrees to perform the services for the [BRIEF EXPLANATION OF PROJECT], as more particularly described in Exhibit "A" attached hereto and by this reference made a part hereof, ("Property") in accordance with the Scope of Services outlined in the specifications, "[BID NUMBER]," attached hereto and made a part hereof as Exhibit "A" and CONTRACTOR's response thereto, attached hereto and made a part hereof as Composite Exhibit "B". CONTRACTOR agrees to do everything required by this Agreement, the Sealed Bid Package, Addenda to this Agreement, and Commission award complete with proposal form.

2.2 CONTRACTOR shall furnish all services, labor, equipment, and materials necessary and as may be required in the performance of this Agreement, except as otherwise specifically provided for herein, and all work performed under this Agreement shall be done in a professional manner.

2.3 CONTRACTOR shall supervise the work force to ensure that all workers conduct themselves and perform their work in a safe and professional manner. CONTRACTOR shall comply with all OSHA safety rules and regulations in the operation of equipment and in the performance of the work. CONTRACTOR shall at all times have a competent field supervisor on the job site to enforce these policies and procedures at the CONTRACTOR's expense.

2.4 CONTRACTOR shall provide CITY with seventy-two (72) hours written notice prior to the beginning of work under this Agreement and prior to any schedule change with the exception of changes caused by inclement weather.

2.5 CONTRACTOR hereby represents to CITY, with full knowledge that CITY is relying upon these representations when entering into this Agreement with CONTRACTOR, that CONTRACTOR has the professional expertise, experience and manpower to perform the services to be provided by CONTRACTOR pursuant to the terms of this Agreement.

2.6 CONTRACTOR hereby represents to CITY that CONTRACTOR is properly licensed by the applicable federal, state, and local agencies to provide the services under this Agreement. Furthermore, CONTRACTOR agrees to maintain such licenses during the term of this Agreement. If CONTRACTOR's license is revoked, suspended, or terminated for any reason by any governmental agency, CONTRACTOR shall notify the CITY immediately.

2.7 CONTRACTOR shall comply with any and all Federal, State, and local laws and regulations now in effect, or hereinafter enacted during the term of this Agreement, which are applicable to CONTRACTOR, its employees, agents or subcontractors, if any, with respect to the work and services described herein. A violation of any federal, state, or local law or regulation may be cause for breach, allowing the CITY to terminate this Agreement.

## **ARTICLE 3**

### **TIME OF COMMENCEMENT AND SUBSTANTIAL COMPLETION**



3.1 The work to be performed under this Agreement shall be commenced after CITY execution of the Agreement and not later than ten (10) days after the date that CONTRACTOR receives CITY's Notice to Proceed. The work shall be completed within [INSERT RELEVANT TIME FRAME] days from issuance of CITY's Notice to Proceed, subject to any permitted extensions of time under the Contract Documents. For the purposes of this Agreement, completion shall mean the issuance of final permit.

3.2 During the pre-construction portion of the work hereunder, the parties agree to work diligently and in good faith in performing their obligations hereunder, so that all required permits for the construction portion of the work may be obtained. In the event that any delays in the pre-construction or construction portion of the work occur, despite the diligent efforts of the parties hereto, and such delays are the result of force majeure or are otherwise outside of the control of either party hereto, then the parties shall agree on an equitable extension of the time for substantial completion hereunder and any resulting increase in general condition costs.

3.3 In the event that CONTRACTOR abandons this Agreement or causes it to be terminated, he shall indemnify CITY against any loss pertaining to this termination up to a maximum of the full contracted fee amount. All finished or unfinished documents, data, studies, surveys, and reports prepared by CONTRACTOR shall become the property of CITY and shall be delivered by CONTRACTOR to CITY.

#### **ARTICLE 4** **COMPENSATION AND METHOD OF PAYMENT**

4.1 CITY agrees to compensate CONTRACTOR for all services performed by CONTRACTOR upon issuance of final inspection approval / monthly for work that has been completed, inspected and properly invoiced AN AMOUNT NOT TO EXCEED [WRITTEN AMOUNT] DOLLARS (\$[NUMERICAL AMOUNT]), which includes a [NUMERICAL PERCENTAGE]% owner's contingency fee of [WRITTEN AMOUNT] DOLLARS (\$[NUMERICAL AMOUNT]).

4.1.1 This contingency or allowance authorizes the City to execute change orders up to the amount of the contingency without the need to obtain additional Commission approval. **It is hereby understood and agreed that the vendor shall not expend any dollars in connection with the Owner's Contingency without the expressed prior approval of the City's authorized representative.** Any Owner's Contingency funds that have not been utilized at the end of the project will remain with the Owner, the contractor shall only be paid for the proposed project cost as approved by the City Commission along with any Owner Contingency expenses that were approved by the City's authorized representative.

4.1.2 The total compensation amount may not be exceeded without a written amendment to this Agreement. A retainage of ten percent (10%) will be deducted from monthly payments until fifty percent (50%) of the project is complete. Retainage will be reduced to five percent (5%) thereafter. Retainage monies will be released upon satisfactory completion and final inspection of the work. Invoices must bear the project name, project number, bid number and purchase order number. CITY has up to thirty (30) days to review, approve and pay all invoices after receipt. CONTRACTOR shall invoice CITY and provide a written request to CITY to commence the one (1) year warranty period.



All necessary Releases and Affidavits and approval of Final Payments shall be processed before the warranty period begins. All payments shall be governed by the Florida Prompt Payment Act, as set forth in Part VII, Chapter 218, Florida Statutes.

**4.2 Method of Billing and Payment.**

4.2.1 The CITY shall within thirty (30) days, from the date the City's Public Service Director approves the Application for Payment, pay the CONTRACTOR the amount approved by the City Public Services Director or his or her assignees.

4.2.2 Payment will be made to CONTRACTOR at:

[NAME OF CONTRACT]  
[CONTRACTOR ADDRESS LINE 1]  
[CONTRACTOR ADDRESS LINE 2]

**ARTICLE 5  
WAIVER OF LIENS**

5.1 Prior to final payment of the Contract Sum, a final waiver of lien shall be submitted by all suppliers, subcontractors, and/or contractors who worked on the project that is the subject of this Agreement. Payment of the invoice and acceptance of such payment by CONTRACTOR shall release CITY from all claims of liability by CONTRACTOR in connection with this Agreement.

**ARTICLE 6  
WARRANTY**

6.1 CONTRACTOR warrants the work against defect for a period of one (1) year from the date of completion of work. In the event that defect occurs during this time, CONTRACTOR shall perform such steps as required to remedy the defects. CONTRACTOR shall be responsible for any damages caused by defect to affected area or to interior structure. The one (1) year warranty period does not begin until substantial completion of the entire project, and the subsequent release of any Performance or Payment Bonds, which may be required by the original bid document.

**ARTICLE 7  
CHANGES IN SCOPE OF WORK**

7.1 CITY or CONTRACTOR may request changes that would increase, decrease, or otherwise modify the Scope of Services, as described in **Exhibit "A,"** to be provided under this Agreement as described in Article 2 of this Agreement. These changes will affect the monthly compensation accordingly. Such changes or additional services must be in accordance with the provisions of the Code of Ordinances of the CITY, and must be contained in a written amendment, executed by the parties hereto, with the same formality, equality and dignity herewith prior to any deviation from the terms of this Agreement, including the initiation of any additional or extra work.



7.2 In no event will the CONTRACTOR be compensated for any work which has not been described in a separate written agreement executed by the parties hereto.

## **ARTICLE 8** **INDEMNIFICATION**

8.1 Pursuant to 725.06, Florida Statutes, the parties agree that one hundred percent (100%) of the total compensation paid to CONTRACTOR for the Work under this Agreement shall constitute specific consideration to CONTRACTOR for the indemnification to be provided under this Agreement. CONTRACTOR shall indemnify and hold harmless the CITY, its trustees, elected and appointed officers, agents, servants, assigns, employees, consultants, separate contractors, any of their subcontractors, sub-subcontractors, agents and employees from and against claims, demands, or causes of action whatsoever, and the resulting losses, damages, costs and expenses, including but not limited to attorneys' fees, including paralegal expenses, liabilities, damages, orders, judgments, or decrees, sustained by the CITY arising out of or resulting from performance of the Work or the failure of the CONTRACTOR to take out and maintain insurance as required under this Agreement.

8.2 Upon completion of all Services, obligations and duties provided for in this Agreement, or in the event of termination of this Agreement for any reason, the terms and conditions of this Article shall survive indefinitely.

8.3 CITY reserves the right to select its own legal counsel to conduct any defense in any such proceeding and all costs and fees associated therewith shall be the responsibility of CONTRACTOR.

8.4 Nothing contained herein is intended nor shall be construed to waive City's rights and immunities under the common law or §768.28, Florida Statutes, as may be amended from time to time.

## **ARTICLE 9** **INSURANCE**

9.1 The CONTRACTOR shall indemnify and hold harmless the CITY and its officers, employees, agents and instrumentalities from any and all liability, losses or damages, including attorneys' fees and costs of defense, which the CITY or its officers, employees, agents or instrumentalities may incur as a result of claims, demands, suits, causes of actions or proceedings of any kind or nature arising out of, relating to or resulting from the performance of this Agreement by the CONTRACTOR or its employees, agents, servants, partners principals or subcontractors. The CONTRACTOR shall pay all claims and losses in connection therewith and shall investigate and defend all claims, suits or actions of any kind or nature in the name of the CITY, where applicable, including appellate proceedings, and shall pay all costs, judgments, and attorney's fees which may issue thereon. The CONTRACTOR expressly understands and agrees that any insurance protection required by this Agreement or otherwise provided by the CONTRACTOR shall in no way limit the responsibility to indemnify, keep and save harmless and defend the CITY or its officers, employees, agents and instrumentalities as herein provided.



9.2 CONTRACTOR shall not commence work under this Agreement until it has obtained all insurance required under this paragraph and such insurance has been approved by the Risk Manager of the CITY nor shall the CONTRACTOR allow any subcontractor to commence work on his subcontract until all similar such insurance required of the subcontractor has been obtained and similarly approved.

9.3 Certificates of Insurance, reflecting evidence of the required insurance, shall be filed with the City's Risk Manager prior to the commencement of this Agreement. Policies shall be issued by companies authorized to do business under the laws of the State of Florida. The insurance company shall be rated no less than "A" as to management, and no less than "Class VI" as to financial strength according to the latest edition of Best's Insurance Guide published by A.M. Best Company.

9.4 Policies shall be endorsed to provide the CITY thirty (30) days notice of cancellation or the CONTRACTOR shall obtain written agreement from its Agent to provide the CITY thirty (30) days notice of cancellation.

9.5 Insurance shall be in force until all obligations required to be fulfilled under the terms of the Agreement are satisfactorily completed as evidenced by the formal acceptance by the CITY. In the event the insurance certificate provided indicates that the insurance shall terminate and lapse during the period of this Agreement, then in that event, the CONTRACTOR shall furnish, at least forty-five (45) days prior to the expiration of the date of such insurance, a renewed certificate of insurance as proof that equal and like coverage for the balance of the period of the Agreement and extension thereunder is in effect. The CONTRACTOR shall not commence nor continue to provide any services pursuant to this Agreement unless all required insurance remains in full force and effect. CONTRACTOR shall be liable to CITY for any lapses in service resulting from a gap in insurance coverage.

## 9.6 REQUIRED INSURANCE

9.6.1 Comprehensive General Liability Insurance written on an occurrence basis including, but not limited to: coverage for bodily injury and property damage, personal & advertising injury, products & completed operations, and contractual liability. Coverage must be written on an occurrence basis, with limits of liability no less than:

1. Each Occurrence Limit - \$1,000,000
2. Fire Damage Limit (Damage to rented premises) - \$100,000
3. Personal & Advertising Injury Limit - \$1,000,000
4. General Aggregate Limit - \$2,000,000
5. Products & Completed Operations Aggregate Limit - \$2,000,000

Products & Completed Operations Coverage shall be maintained for two (2) years after the final payment under this contract.



**The City of Pembroke Pines must be shown as an additional insured with respect to this coverage.**

9.6.2 Worker's Compensation and Employers Liability Insurance covering all employees, and/or volunteers of the CONTRACTOR engaged in the performance of the scope of work associated with this Agreement. In the case any work is sublet, the CONTRACTOR shall require the subcontractors similarly to provide Workers Compensation Insurance for all the latter's employees unless such employees are covered by the protection afforded by the CONTRACTOR. Coverage for the CONTRACTOR and his subcontractors shall be in accordance with applicable state and/or federal laws that may apply to Workers' Compensation Insurance with limits of liability no less than:

1. Workers' Compensation: Coverage A – Statutory
2. Employers Liability: Coverage B \$500,000 Each Accident  
\$500,000 Disease – Policy Limit  
\$500,000 Disease – Each Employee

If CONTRACTOR claims to be exempt from this requirement, CONTRACTOR shall provide CITY proof of such exemption along with a written request for CITY to exempt CONTRACTOR, written on CONTRACTOR letterhead.

9.6.3 Comprehensive Auto Liability Insurance covering all owned, non-owned and hired vehicles used in connection with the performance of work under this Agreement, with a combined single limit of liability for bodily injury and property damage no less than:

1. Any Auto (Symbol 1)  
Combined Single Limit (Each Accident) - \$1,000,000
2. Hired Autos (Symbol 8)  
Combined Single Limit (Each Accident) - \$1,000,000
3. Non-Owned Autos (Symbol 9)  
Combined Single Limit (Each Accident) - \$1,000,000

9.6.4 Professional Liability/Errors & Omissions Insurance, when applicable, with a limit of liability no less than \$1,000,000 per wrongful act. This coverage shall be maintained for a period of no less than two (2) years after final payment of the contract.

9.6.5 Sexual Abuse may not be excluded from any policy.

**9.7 REQUIRED ENDORSEMENTS**

- 9.7.1 The City of Pembroke Pines shall be named as an Additional Insured on each of the General Liability policies required herein
- 9.7.2 Waiver of all Rights of Subrogation against the CITY
- 9.7.3 30 Day Notice of Cancellation or Non-Renewal to the CITY
- 9.7.4 CONTRACTORS' policies shall be Primary & Non-Contributory



9.7.5 All policies shall contain a “severability of interest” or “cross liability” liability clause without obligation for premium payment of the CITY

9.7.6 The City of Pembroke Pines shall be named as a Loss Payee on all Property and/or Inland Marine Policies as their interest may appear.

9.8 CONTRACTOR shall name the CITY, as an additional insured on each of the General Liability policies required herein and shall hold the CITY, its agents, officers and employees harmless on account of claims for damages to persons, property or premises arising out of the services provided hereunder.

9.9 Any insurance required of the CONTRACTOR pursuant to this Agreement must also be required by any subcontractor in the same limits and with all requirements as provided herein, including naming the CITY as an additional insured, in any work that is subcontracted unless such subcontractor is covered by the protection afforded by the CONTRACTOR and provided proof of such coverage is provided to CITY. The CONTRACTOR and any subcontractors shall maintain such policies during the term of this Agreement.

9.10 The City reserves the right to require any other additional types of insurance coverage and/or higher limits of liability it deems necessary based on the nature of work being performed under this Contract.

#### **ARTICLE 10**

#### **NON-DISCRIMINATION & EQUAL OPPORTUNITY EMPLOYMENT**

10.1 During the performance of the Agreement, neither CONTRACTOR nor its subcontractors shall discriminate against any employee or applicant for employment because of race, religion, color, gender, national origin, sex, age, marital status, political affiliation, familial status, sexual orientation, or disability if qualified. CONTRACTOR will take affirmative action to ensure that employees are treated during employment, without regard to their race, religion, color, gender, national origin, sex, age, marital status, political affiliation, familial status, sexual orientation, or disability if qualified. Such actions must include, but not be limited to, the following: employment, promotion; demotion or transfer; recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. CONTRACTOR shall agree to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause. CONTRACTOR further agrees that he/she/it will ensure that subcontractors, if any, will be made aware of and will comply with this nondiscrimination clause.

#### **ARTICLE 11**

#### **INDEPENDENT CONTRACTOR**

11.1 This Agreement does not create an employee/employer relationship between the parties. It is the intent of the parties that the CONTRACTOR is an independent contractor under this Agreement and not the CITY's employee for all purposes, including but not limited to, the application of the Fair Labor Standards Act minimum wage and overtime payments, Federal Insurance Contribution Act,



the Social Security Act, the Federal Unemployment Tax Act, the provisions of the Internal Revenue Code, the State Workers' Compensation Act, and the State unemployment insurance law. The CONTRACTOR shall retain sole and absolute discretion in the judgment of the manner and means of carrying out CONTRACTOR's activities and responsibilities hereunder provided, further that administrative procedures applicable to services rendered under this Agreement shall be those of CONTRACTOR, which policies of CONTRACTOR shall not conflict with CITY, State, H.U.D., or United States policies, rules or regulations relating to the use of CONTRACTOR's Funds provided for herein. The CONTRACTOR agrees that it is a separate and independent enterprise from the CITY, that it has full opportunity to find other business, that it has made its own investment in its business, and that it will utilize a high level of skill necessary to perform the work. This Agreement shall not be construed as creating any joint employment relationship between the CONTRACTOR and the CITY and the CITY will not be liable for any obligation incurred by CONTRACTOR, including but not limited to unpaid minimum wages and/or overtime premiums.

## **ARTICLE 12** **TERMINATION**

12.1 *Termination for Convenience:* This Agreement may be terminated by CITY for convenience, upon seven (7) business days of written notice by the terminating party to the other party for such termination in which event CONTRACTOR shall be paid its compensation for services performed to termination date, including services reasonably related to termination. In the event that CONTRACTOR abandons this Agreement or causes it to be terminated, CONTRACTOR shall indemnify CITY against loss pertaining to this termination.

12.2 *Default by CONTRACTOR:* In addition to all other remedies available to CITY, this Agreement shall be subject to cancellation by CITY for cause, should CONTRACTOR neglect or fail to perform or observe any of the terms, provisions, conditions, or requirements herein contained, if such neglect or failure shall continue for a period of thirty (30) days after receipt by CONTRACTOR of written notice of such neglect or failure.

## **ARTICLE 13** **UNCONTROLLABLE FORCES**

13.1 Neither CITY nor CONTRACTOR shall be considered to be in default of this Agreement if delays in or failure of performance shall be due to Uncontrollable Forces, the effect of which, by the exercise of reasonable diligence, the non-performing party could not avoid. The term "Uncontrollable Forces" shall mean any event which results in the prevention or delay of performance by a party of its obligations under this Agreement and which is beyond the reasonable control of the nonperforming party. It includes, but is not limited to fire, flood, earthquakes, storms, lightning, epidemic, war, riot, civil disturbance, sabotage, and governmental actions.

13.2 Neither party shall, however, be excused from performance if nonperformance is due to forces, which are preventable, removable, or remediable, and which the nonperforming party could have, with the exercise of reasonable diligence, prevented, removed, or remedied with reasonable dispatch. The nonperforming party shall, within a reasonable time of being prevented or delayed from performance by an uncontrollable force, give written notice to the other party describing the circumstances and uncontrollable forces preventing continued performance of the obligations of this



Agreement.

**ARTICLE 14**  
**AGREEMENT SUBJECT TO FUNDING**

14.1 This agreement shall remain in full force and effect only as long as the expenditures provided for in the Agreement have been appropriated by the City Commission of the City of Pembroke Pines in the annual budget for each fiscal year of this Agreement, and is subject to termination based on lack of funding.

**ARTICLE 15**  
**VENUE**

15.1 This Agreement shall be governed by the laws of the State of Florida as now and hereafter in force. The venue for actions arising out of this agreement shall be in Broward County, Florida.

**ARTICLE 16**  
**SIGNATORY AUTHORITY**

16.1 CONTRACTOR shall provide CITY with copies of requisite documentation evidencing that the signator for CONTRACTOR has the authority to enter into this Agreement.

**ARTICLE 17**  
**MERGER; AMENDMENT**

17.1 This Agreement constitutes the entire Agreement between CONTRACTOR and CITY, and negotiations and oral understandings between the parties are merged herein. This Agreement can be supplemented or amended only by a written document executed by both CONTRACTOR and CITY with the same formality and equal dignity herewith.

**ARTICLE 18**  
**DEFAULT OF CONTRACT & REMEDIES**

18.1.1 **Damages.** CITY reserves the right to recover any ascertainable actual damages incurred as a result of the failure of CONTRACTOR to perform in accordance with the requirements of this Agreement, or for losses sustained by CITY resultant from CONTRACTOR's failure to perform in accordance with the requirements of this Agreement.

18.1.2 **Liquidated Damages.** As a breach of the service provided by this Agreement would cause serious and substantial damage to CITY Property, and the nature of this Agreement would render it impracticable or extremely difficult to fix the actual damage sustained by CITY by such breach, it is agreed that, in case of breach of service wherein CONTRACTOR fails to maintain the Property, leaving the said property in disrepair, CITY may elect to collect liquidated damages for each such breach, and CONTRACTOR will pay CITY as liquidated damages, and not as penalty, ONE HUNDRED DOLLARS (\$100.00) for every day of such malfunction. This sum is the agreed upon amount by which CITY will be damaged by the breach of such service. An election to seek



such remedies shall not be construed as a waiver of any legal remedies CITY may have as to any subsequent breach of service under this Agreement.

**18.1.3 Correction of Work.** If, in the judgment of CITY, work provided by CONTRACTOR does not conform to the requirements of this Agreement, or if the work exhibits poor workmanship, CITY reserves the right to require that CONTRACTOR correct all deficiencies in the work to bring the work into conformance without additional cost to CITY, and / or replace any personnel who fail to perform in accordance with the requirements of this Agreement. CITY shall be the sole judge of non-conformance and the quality of workmanship.

**18.2 Default of Contract.** The occurrence of any one or more of the following events shall constitute a default and breach of this Agreement by CONTRACTOR:

18.2.1. The abandonment of the Property by CONTRACTOR for a period of more than seven (7) business days.

18.2.2 The abandonment, unnecessary delay, refusal of, or failure to comply with any of the terms of this Agreement or neglect, or refusal to comply with the instructions of the Public Services Director relative thereto.

18.2.3. The failure by CONTRACTOR to observe or perform any of the terms, covenants, or conditions of this Agreement to be observed or performed by CONTRACTOR, where such failure shall continue for a period of seven (7) days after written notice thereof by CITY to CONTRACTOR; provided, however, that if the nature of CONTRACTOR's default is such that more than seven (7) days are reasonably required for its cure, then CONTRACTOR shall not be deemed to be in default if CONTRACTOR commences such cure within said seven (7) day period and thereafter diligently prosecutes such cure to completion.

18.2.4. The assignment and/or transfer of this Agreement or execution or attachment thereon by CONTRACTOR or any other party in a manner not expressly permitted hereunder.

18.2.5. The making by CONTRACTOR of any general assignment or general arrangement for the benefit of creditors, or the filing by or against CONTRACTOR of a petition to have CONTRACTOR adjudged a bankruptcy, or a petition for reorganization or arrangement under any law relating to bankruptcy (unless, in the case of a petition filed against CONTRACTOR, the same is dismissed within sixty (60) days); or the appointment of a trustee or a receiver to take possession of substantially all of CONTRACTOR's assets, or for CONTRACTOR's interest in this Agreement, where possession is not restored to CONTRACTOR within thirty (30) days; for attachment, execution or other judicial seizure of substantially all of CONTRACTOR's assets, or for CONTRACTOR's interest in this Agreement, where such seizure is not discharged within thirty (30) days.

**18.3 Remedies in Default.** In case of default by CONTRACTOR, CITY shall notify CONTRACTOR, in writing, of such abandonment, delay, refusal, failure, neglect, or default and direct him to comply with all provisions of the Agreement. If the abandonment, delay, refusal, failure, neglect or default is not cured within seven (7) days of when notice was sent by CITY, CITY may



declare a default of the Agreement and notify CONTRACTOR of such declaration of default and terminate the Agreement.

18.3.1. Upon such declaration of default, all payments remaining due CONTRACTOR at the time of default, less all sums due CITY for damages suffered, or expenses incurred by reason of default, shall be due and payable to CITY.

18.3.2. CITY may complete the Agreement, or any part thereof, either by day labor or re-letting a contract for the same, and procure the equipment and the facilities necessary for the completion of the Agreement, and charge the cost of same to CONTRACTOR and/or the Surety together with the costs incident thereto to such default.

18.3.3. In the event CITY completes the Agreement at a lesser cost than would have been payable to CONTRACTOR under this Agreement, if the same had been fulfilled by CONTRACTOR, CITY shall retain such differences. Should such cost to CITY be greater, CONTRACTOR shall pay the amount of such excess to the CITY.

18.3.4 Notwithstanding the other provisions in this Section, CITY reserves the right to terminate the Agreement at any time, whenever the service provided by CONTRACTOR fails to meet reasonable standards of the trade after CITY gives written notice to the CONTRACTOR of the deficiencies as set forth in the written notice within fourteen calendar (14) days of the receipt by CONTRACTOR of such notice from CITY.

## **ARTICLE 19** **BANKRUPTCY**

19.1 It is agreed that if CONTRACTOR is adjudged bankrupt, either voluntarily or involuntarily, then this Agreement shall terminate effective on the date and at the time the bankruptcy petition is filed.

## **ARTICLE 20** **DISPUTE RESOLUTION**

20.1 **Arbitration.** In addition to any other remedy provided hereunder, CITY, at its option, may use arbitration to resolve any controversy or claim arising out of or relating to this Agreement if arbitration is elected by CITY. Any controversy or claim arising out of or relating to this Agreement, or breach thereof, may be settled by arbitration in accordance with the rules of the American Arbitration Association and judgment upon the award rendered by the arbitrators may be entered into by any court having jurisdiction thereof. In the event arbitration is elected by CITY, such controversy or claim shall be submitted to one arbitrator selected from the National Panel of The American Arbitration Association.

### 20.2 **Operations During Dispute.**

20.2.1 In the event that a dispute, if any, arises between CITY and CONTRACTOR relating to this Agreement, performance or compensation hereunder, CONTRACTOR shall continue to render



service in full compliance with all terms and conditions of this Agreement as interpreted by CITY regardless of such dispute.

20.2.2 CONTRACTOR expressly recognizes the paramount right and duty of CITY to provide adequate maintenance of CITY's Property, and further agrees, in consideration for the execution of this Agreement, that in the event of such a dispute, if any, it will not seek injunctive relief in any court, but will negotiate with CITY for an adjustment on the matter or matters in dispute and, upon failure of said negotiations to resolve the dispute, may present the matter to a court of competent jurisdiction in an appropriate suit therefore instituted by it or by CITY.

## **ARTICLE 21**

### **PUBLIC RECORDS**

21.1 The City of Pembroke Pines is public agency subject to Chapter 119, Florida Statutes. The CONTRACTOR shall comply with Florida's Public Records Law. Specifically, the CONTRACTOR shall:

21.1.1 Keep and maintain public records required by the CITY to perform the service;

21.1.2 Upon request from the CITY's custodian of public records, provide the CITY with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in chapter 119, Fla. Stat., or as otherwise provided by law;

21.1.3 Ensure that public records that are exempt or that are confidential and exempt from public record disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and, following completion of the contract, CONTRACTOR shall destroy all copies of such confidential and exempt records remaining in its possession after the CONTRACTOR transfers the records in its possession to the CITY; and

21.1.4 Upon completion of the contract, CONTRACTOR shall transfer to the CITY, at no cost to the CITY, all public records in CONTRACTOR's possession. All records stored electronically by the CONTRACTOR 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.

21.2 The failure of Contractor to comply with the provisions set forth in this Article shall constitute a Default and Breach of this Agreement and the CITY shall enforce the Default in accordance with the provisions set forth in **Article 18**.

**IF THE CONTRACTOR HAS QUESTIONS REGARDING THE  
APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO**



**THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT**

**CITY CLERK  
10100 PINES BOULEVARD, 5<sup>th</sup> FLOOR  
PEMBROKE PINES, FL 33026  
(954) 450-1050  
[mgraham@ppines.com](mailto:mgraham@ppines.com)**

**ARTICLE 22  
MISCELLANEOUS**

22.1 **Ownership of Documents.** Reports, surveys, studies, and other data provided in connection with this Agreement are and shall remain the property of CITY, whether or not the project for which they are made is completed.

22.2 **Legal Representation.** It is acknowledged that each party to this agreement had the opportunity to be represented by counsel in the preparation of this Agreement, and accordingly, the rule that a contract shall be interpreted strictly against the party preparing same shall not apply herein due to the joint contributions of both parties.

22.3 **Records.** CONTRACTOR shall keep such records and accounts and require any and all subcontractors to keep records and accounts as may be necessary in order to record complete and correct entries as to personnel hours charged to this engagement, and any expenses for which CONTRACTOR expects to be reimbursed. Such books and records will be available at all reasonable times for examination and audit by CITY and shall be kept for a period of ten (10) years after the completion of all work to be performed pursuant to this Agreement. Incomplete or incorrect entries in such books and records will be grounds for disallowance by CITY of any fees or expenses based upon such entries.

22.4 **Assignments; Amendments.** This Agreement, and any interests herein, shall not be assigned, transferred or otherwise encumbered, under any circumstances, by CONTRACTOR without the prior written consent of CITY. For purposes of this Agreement, any change of ownership of CONTRACTOR shall constitute an assignment which requires CITY approval. However, this Agreement shall run to the benefit of CITY and its successors and assigns.

22.5 **No Contingent Fees.** CONTRACTOR warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for CONTRACTOR to solicit or secure this Agreement, and that it has not paid or agreed to pay any person, company, corporation, individual or firm, other than a bona fide employee working solely for CONTRACTOR any fee,





22.10 **Severability.** If any provision of this Agreement or application thereof to any person or situation shall to any extent, be held invalid or unenforceable, the remainder of this Agreement, and the application of such provisions to persons or situations other than those as to which it shall have been held invalid or unenforceable, shall not be affected thereby, and shall continue in full force and effect, and be enforced to the fullest extent permitted by law.

22.11 **Extent of Agreement.** This Agreement represents the entire and integrated agreement between CITY and CONTRACTOR and supersedes all prior negotiations, representations or agreements, either written or oral.

22.12 **Waiver.** Failure of CITY to insist upon strict performance of any provision or condition of this Agreement, or to execute any right therein contained, shall not be constructed as a waiver or relinquishment for the future of any such provision, condition, or right, but the same shall remain in full force and effect.

22.13 **Attorney's Fees.** In the event that either party brings suit for enforcement of this Agreement, each party shall bear its own attorney's fees and court costs, except as otherwise provided under the indemnification provisions set forth herein above.

22.14 **Protection of City Property.** At all times during the performance of this Agreement, CONTRACTOR shall protect CITY's property from all damage whatsoever on account of the work being carried on under this Agreement.

**THE REMAINDER OF THIS PAGE**

**HAS BEEN INTENTIONALLY LEFT BLANK**





**REFERENCES FORM**

Provide specific examples of similar contracts. References should be should be capable of explaining and confirming your firm’s capacity to successfully complete the scope of work outlined herein. **This form should be duplicated for each reference and any additional information that would be helpful can be attached.**

**Reference Contact Information:**

Name of Firm, City, County or Agency: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Title: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

**Project Information:**

Name of Contractor Performing the work: \_\_\_\_\_

Name and location of the project: \_\_\_\_\_

Nature of the firm’s responsibility on the project: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Project duration: \_\_\_\_\_ Completion (Anticipated) Date: \_\_\_\_\_

Size of project: \_\_\_\_\_ Cost of project: \_\_\_\_\_

Work for which staff was responsible: \_\_\_\_\_

Contract Type: \_\_\_\_\_

The results/deliverables of the project: \_\_\_\_\_



**REFERENCES FORM**

Provide specific examples of similar contracts. References should be should be capable of explaining and confirming your firm's capacity to successfully complete the scope of work outlined herein. **This form should be duplicated for each reference and any additional information that would be helpful can be attached.**

**Reference Contact Information:**

Name of Firm, City, County or Agency: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Title: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

**Project Information:**

Name of Contractor Performing the work: \_\_\_\_\_

Name and location of the project: \_\_\_\_\_

Nature of the firm's responsibility on the project: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Project duration: \_\_\_\_\_ Completion (Anticipated) Date: \_\_\_\_\_

Size of project: \_\_\_\_\_ Cost of project: \_\_\_\_\_

Work for which staff was responsible: \_\_\_\_\_

Contract Type: \_\_\_\_\_

The results/deliverables of the project: \_\_\_\_\_



**REFERENCES FORM**

Provide specific examples of similar contracts. References should be should be capable of explaining and confirming your firm's capacity to successfully complete the scope of work outlined herein. **This form should be duplicated for each reference and any additional information that would be helpful can be attached.**

**Reference Contact Information:**

Name of Firm, City, County or Agency: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Title: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

**Project Information:**

Name of Contractor Performing the work: \_\_\_\_\_

Name and location of the project: \_\_\_\_\_

Nature of the firm's responsibility on the project: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Project duration: \_\_\_\_\_ Completion (Anticipated) Date: \_\_\_\_\_

Size of project: \_\_\_\_\_ Cost of project: \_\_\_\_\_

Work for which staff was responsible: \_\_\_\_\_

Contract Type: \_\_\_\_\_

The results/deliverables of the project: \_\_\_\_\_



**REFERENCES FORM**

Provide specific examples of similar contracts. References should be should be capable of explaining and confirming your firm's capacity to successfully complete the scope of work outlined herein. **This form should be duplicated for each reference and any additional information that would be helpful can be attached.**

**Reference Contact Information:**

Name of Firm, City, County or Agency: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Title: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

**Project Information:**

Name of Contractor Performing the work: \_\_\_\_\_

Name and location of the project: \_\_\_\_\_

Nature of the firm's responsibility on the project: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Project duration: \_\_\_\_\_ Completion (Anticipated) Date: \_\_\_\_\_

Size of project: \_\_\_\_\_ Cost of project: \_\_\_\_\_

Work for which staff was responsible: \_\_\_\_\_

Contract Type: \_\_\_\_\_

The results/deliverables of the project: \_\_\_\_\_



**REFERENCES FORM**

Provide specific examples of similar contracts. References should be should be capable of explaining and confirming your firm's capacity to successfully complete the scope of work outlined herein. **This form should be duplicated for each reference and any additional information that would be helpful can be attached.**

**Reference Contact Information:**

Name of Firm, City, County or Agency: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Title: \_\_\_\_\_

E-Mail Address: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

**Project Information:**

Name of Contractor Performing the work: \_\_\_\_\_

Name and location of the project: \_\_\_\_\_

Nature of the firm's responsibility on the project: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Project duration: \_\_\_\_\_ Completion (Anticipated) Date: \_\_\_\_\_

Size of project: \_\_\_\_\_ Cost of project: \_\_\_\_\_

Work for which staff was responsible: \_\_\_\_\_

Contract Type: \_\_\_\_\_

The results/deliverables of the project: \_\_\_\_\_



### Mandatory Pre-Bid/Site Visit Confirmation Form

**The scanned form, signed by both the Contractor and City Representatives must be uploaded in order for the bid to be considered complete.**

\_\_\_\_\_, who is a representative of  
(Printed name of Contractor’s representative)

\_\_\_\_\_ PERSONALLY came and appeared  
(Contractor’s Company)

before me and affirms that they have completed the mandatory pre-bid/site visit on this the

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_ as required by:

**Solicitation #:** \_\_\_\_\_

**Solicitation Title:** \_\_\_\_\_

\_\_\_\_\_  
(Contractor Representative’s Printed Name)

\_\_\_\_\_  
(City Representative’s Printed Name)

\_\_\_\_\_  
(Contractor Representative’s Signature)

\_\_\_\_\_  
(City Representative’s Signature)

\_\_\_\_\_  
(Contractor’s Company)

\_\_\_\_\_  
(City Representative’s Department)

\_\_\_\_\_  
(Contractor’s Phone Number)

\_\_\_\_\_  
(City Representative’s Phone Number)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Date)

The City requires all questions on the “ the BidSync website. Such request must be received by the “Question Due Date,” questions received after the “Question Due Date” shall not be answered. Interpretations or clarifications in response to such questions will be issued via BidSync. The issuance of a response via BidSync is considered an Addendum and shall be the only official method whereby such an interpretation or clarification will be made.



# City of Pembroke Pines



## FINAL/PARTIAL RELEASE OF LIEN

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, for and in consideration of the payment of the sum of \$ [Payment Amount] and other valuable consideration, paid by **City of Pembroke Pines**, receipt of which is hereby acknowledge, hereby releases and quit claims to the said [Contractor Name] its successors and assigns, and

**City of Pembroke Pines**

The owner, all liens, lien rights, claims and demands of any kind whatsoever, which the undersigned now has or might have against the building on premises legally described as:

**[Description]**  
**PO #: [PO #]**

**Invoice #: [Invoice #]**

On account of labor performed and/or material furnished for the construction of any improvements thereon. That all labor and materials used by the undersigned in the erection of said improvements have been fully paid for:

Witnesses:

**CONTRACTOR**  
**[NAME OF CONTRACTOR]**

\_\_\_\_\_

BY: \_\_\_\_\_

Print Name

Print Name: \_\_\_\_\_

\_\_\_\_\_

Title: \_\_\_\_\_

Print Name

STATE OF FLORIDA     )  
  ) ss:  
COUNTY OF BROWARD )

ON THIS \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, before me, the undersigned notary public, personally appeared [Contractor's Representative] as [Job Title] of [Name of Contractor], personally known to me, or who has produced \_\_\_\_\_ as identification, and is the person who subscribed to the foregoing instrument and who acknowledged that (s)he executed the same and that (s)he was duly authorized to do so.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires:

\_\_\_\_\_  
Print or Type Name



City of Pembroke Pines

**VENDOR CERTIFICATION REGARDING**  
**SCRUTINIZED COMPANIZED LIST**

Respondent Vendor Name: \_\_\_\_\_

Vendor FEIN: \_\_\_\_\_

Vendor's Authorized Representative Name and Title: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Section 287.135, Florida Statutes, prohibits agencies from contracting with companies, for goods or services of \$1 million or more, that are ineligible under Section 287.135(2), Florida Statutes. This requirement is not applicable to federally funded contracts.

As the person authorized to sign on behalf of Respondent, I hereby certify that the company identified above in the section entitled "Respondent Vendor Name" is not ineligible under Section 287.135(2), Florida Statutes. I understand that pursuant to section 287.135, Florida Statutes, the submission of a false certification may subject company to civil penalties, attorney's fees, and/or costs.

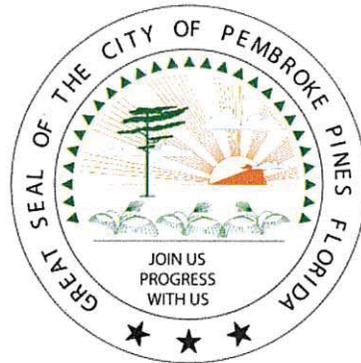
Certified By: \_\_\_\_\_,

who is authorized to sign on behalf of the above referenced company.

Authorized Signature Print Name and Title: \_\_\_\_\_

Date: \_\_\_\_\_

# CITY OF PEMBROKE PINES



---

## PINES VILLAGE WATER MAIN REPLACEMENT PHASE I

---

**City of Pembroke Pines Bid No. PSUT-18-05**

### TECHNICAL SPECIFICATIONS

**Prepared by:**



**Calvin, Giordano & Associates, Inc.**  
EXCEPTIONAL SOLUTIONS™

**JUNE, 2018**

**Calvin, Giordano & Associates, Inc.**  
**Approved for Bidding**

**By:** *Carl A. Keiser*

**Date:** *6/6/18*

THIS PAGE LEFT INTENTIONALLY BLANK

## TABLE OF CONTENTS

### TECHNICAL SPECIFICATIONS

#### DIVISION 1 - GENERAL REQUIREMENTS

01010	Summary of Work
01012	Measurement and Payment
01015	General Requirements
01021	Owner Allowances
01045	Cutting and Patching
01046	Modifications to Existing Structures, Piping & Equipment
01050	Field Engineering and Surveying
01090	References
01152	Applications for Payment
01200	Project Meetings
01310	Construction Schedules
01340	Shop Drawings, Working Drawings, and Samples
01370	Schedule of Values
01380	Construction Photographs
01381	Audio/Video Preconstruction Record
01400	Quality Control
01410	Materials and Installation Testing
01505	Control of Work
01510	Temporary Utilities
01530	Existing Utilities
01531	Protection of Existing Property
01540	Security
01550	Site Access and Storage
01570	Traffic Regulation
01600	Material and Equipment
01630	Substitutions
01700	Contract Closeout
01710	Cleaning
01720	Project Record Documents
01730	Operating and Maintenance Data
01740	Warranties and Bonds

#### DIVISION 2 - SITEWORK

02210	Finish Grading
02221	Trenching, Bedding, and Backfill for Pipe
02276	Stormwater Pollution Prevention
02341	Horizontal Directional Drilling (HDD) with (HDPE) Pipe
02513	Asphaltic Concrete Paving

**DIVISION 15 – MECHANICAL**

- 15010 Testing Piping Systems
- 15060 HDPE Pipe
- 15062 Ductile Iron Pipe and Fittings
- 15065 Polyvinyl Chloride (PVC) Water Main Pipe
- 15100 Valves and Appurtenances

## SECTION 01010

## SUMMARY OF WORK

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. This section includes general descriptions of the Contractor use of site, location of Work, description of Work, Work sequence, owner occupancy, and Work by others.

## 1.02 RELATED SECTIONS

- A. Section 01015 – General Requirements
- B. Section 01025 – Measurement and Payment
- C. Section 01505 – Control of Work
- D. Other Sections as applicable.

## 1.03 REFERENCES (NOT USED)

## 1.04 CONTRACTOR USE OF SITE

- A. The Contractor shall limit his area of Work to remain within those properties and easements as depicted in the Drawings or as approved in writing by the Owner.
- B. Contractors' use of lands other than those depicted in the Drawings shall require written approval from the land owner and be at the Contractor's risk and cost.

## 1.05 LOCATION OF WORK

- A. The project is located in Pembroke Pines, Florida, and the project limits are Pines Boulevard to the north, SW 9<sup>th</sup> Street to the south, SW 72<sup>nd</sup> Avenue to the West, and SW 67<sup>th</sup> Avenue to the east.

## 1.06 DESCRIPTION OF WORK

The following is a general list of the Work included. It is not intended to be complete. Consult the contract drawings and specifications for all contract requirements.

- A. The Work includes approximately 20,000 linear feet of new PVC water main, replacement of existing water meters, relocation of backyard water meters to the front of properties, and private plumbing to reconnect residential services.

## 1.07 WORK SEQUENCE

- A. Construct new water main and branch services.
- B. Test and certify new main and place into service.

- C. Construct new water meters in the front of the properties.
- D. Construct new services from new meter to existing private connections.
- E. Reconnect residences to new services.
- F. Tag existing water meters and return to the City.
- G. Restore sidewalks and backyard meter box pits.

1.08 OWNER OCCUPANCY

- A. Cooperate with Owner to minimize conflict, and to facilitate Residences and Owner's operations.
- B. Schedule the Work to accommodate this requirement.

1.09 WORK BY OTHERS

- A. The Contractor is advised that Work by others may take place during the duration of the contract time. It shall be the Contractor's responsibility to coordinate and schedule all Work as not to delay or hinder his Work or the Work by others.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

## SECTION 01012

## MEASUREMENT AND PAYMENT

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. This Section includes administrative and procedural requirements for determining payment for Work completed and ready for payment under the Unit Price Contract where the Unit Price Bid Form is utilized in the Applications for Payment.

## 1.02 RELATED SECTIONS

- A. Section 01370 – Schedule of Values
- B. Other Sections as applicable

## 1.03 REFERENCES

- A. Manual of Uniform Traffic Control Devices (MUTCD)
- B. FDOT Standard Specification for Road and Bridge Construction (Standard Specifications)
- C. FDOT Design Standards for Design, Construction, Maintenance and Utility Operations in the State Highway System (Standard Indexes)
- D. Broward County Public Works and Transportation Department, Highway Construction and Engineering Division Minimum Standards
- E. City of Pembroke Pines Public Works Engineering Standards

## 1.04 GENERAL REQUIREMENTS

- A. Prices shall include all costs required for the completed, in-place construction of the specified unit of Work. This may include but not be limited to, materials and delivery; cost of installation; incidentals; labor including social security, insurance, and other required fringe benefits; workman's compensation insurance; bond premiums; rental of equipment and machinery; taxes; testing; surveys; incidental expenses; and supervision.
- B. Installation, acceptance, and payment shall be in accordance with this section.
- C. The Owner reserves the right to reject the Contractor's measurement of completed Work that involves use of established unit prices, and to have this Work measured by an independent surveyor acceptable to the Contractor at the Owner's expense.
- D. The Owner reserves the right to reject the Contractor's proposed unit prices if they are not in line with current industry prices for the particular Work.

- E. Contract Sum adjustments will be by Change Order on basis of net accumulative change for each unit price category.
  - 1. Except as otherwise specified, unit prices shall apply to both deductive and additive variations of quantities.
  - 2. Lump sum and unit prices in the Agreement shall remain in effect until date of final completion of the entire Work.
- F. Partial payment for material and equipment properly stored and protected will be made in accordance with requirements of the General Conditions.
- G. Abbreviations:
  - 1. Acre - AC
  - 2. Allowance - AL
  - 3. Cubic Yard - CY
  - 4. Each - EA
  - 5. Furnish and Install - F & I
  - 6. Gallons - GA
  - 7. Gross Mile - GM
  - 8. Linear Feet - LF
  - 9. Lump Sum - LS
  - 10. Million Gallons - MG
  - 11. Net Mile - NM
  - 12. Square Foot - SF
  - 13. Square Yard - SY
  - 14. Ton - TN

#### 1.05 MEASUREMENT AND PAYMENT

- A. Payment shall constitute full compensation and will be made as indicated in the General Conditions.
- B. The quantity approved for payment shall be either:
  - 1. Percentage of the Lump Sum Price - A percentage of the Lump Sum Price equivalent to the percentage of the project completion as determined by the Engineer as of the date of the pay request submitted. The percent completion of the project shall be based on the percent of the total project actually constructed and not on the percent of the Contract price completed.
  - 2. Measured Quantities - The actual quantities in-place and accepted as measured by the Engineer on the date of the pay request submitted in the units specified in the bid form or schedule of values.

#### 1.06 PROTECTION

- A. Where pavement, pipes, valves, appurtenances, trees, shrubbery, fences, other property or structures are in proximity to the Work, adequate protection shall be provided. Such protection is considered incidental to construction and shall not be assigned to any pay item.

#### 1.07 RESTORATION

- A. Where pavement, pipes, valves, structures, appurtenances, trees, shrubbery, fences, other property or structures not designated as pay items, have been damaged, removed or disturbed by the Contractor, whether deliberately or through failure to carry out the requirements of the Contract Documents, state laws, municipal ordinances or the specific direction of the Engineer, or through failure to employ usual and reasonable safeguards, such property and surface structures shall be replaced or repaired at the expense of the Contractor to a condition equal to that before Work began within a time frame approved by the Engineer. Such restoration is considered incidental to construction and shall not be assigned to any pay item.

#### 1.08 EXPLORATORY EXCAVATIONS

- A. Depths to existing utilities as shown on the drawings are approximate only. The Contractor shall verify the exact locations and depths of all utilities shown, and the Contractor shall make exploratory excavations of all utilities that may interfere with the Work. All such exploratory excavations shall be performed as soon as practicable after award of the contract and, in any event, a sufficient time in advance of construction to avoid possible delays to the Contractor's Work. When such exploratory excavations show the utility location as shown to be in error, the Contractor shall so notify the Engineer immediately. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the utility. Excavations shall be considered incidental to the cost of construction and shall be conducted at the Contractor's expense.

#### 1.09 TESTING, SURVEY AND RECORD DRAWINGS

- A. All survey layout and record drawings shall be considered incidental to the cost of construction as defined in individual line items and shall include all calculations and field Work required, in order to establish all horizontal and vertical controls, set all stakes needed, such as grade stakes, offset stakes, reference point stakes, slopes stakes, and other reference marks or points necessary to provide lines and grades for construction and as-building of all roadway, utility construction and miscellaneous items.
- B. All testing shall be considered incidental to the cost of construction as defined in individual line items and shall include all field testing and laboratory Work including reports as required by the plans and specifications and agencies having jurisdiction over the project.

### 1.10 DEWATERING AND CONTAMINATED SITES

- A. Attention is drawn to the proximity of this project to known contamination sites within 0.50 miles of the Work area as recorded by Broward County Pollution Prevention, Remediation and Air Quality Division. If the Contractor deems it necessary to dewater, the Contractor is required to obtain a dewatering permit from Broward County Pollution Prevention, Remediation and Air Quality Division and adhere to any required groundwater well monitoring, sampling, cofferdams, or any other applicable permit conditions. This is in addition to a dewatering permit, if required, by SFWMD.
- B. This effort shall be considered incidental to the Contractor's cost of construction and price for each applicable bid item.

### 1.11 PERMITTING ALLOWANCE

- A. Payment for Permitting Allowance shall be made at the amount that will be determined at the time of permitting by the Contractor. The figure included as an allowance will be adjusted to the actual amount with approval from the Owner and Engineer by Change Order.

## PART 2 - PRODUCTS (NOT APPLICABLE)

## PART 3 - EXECUTION

### 3.01 GENERAL REQUIREMENTS - BID ITEM NO. 1.01

- A. Payment shall be made as a percentage of the Lump Sum Price.
- B. The Lump Sum Price shall include the cost of bonds, insurance, licenses and all administrative costs not specifically identified in other bid items.
- C. The Lump Sum Price shall exclude the cost of construction material and installation.

### 3.02 MOBILIZATION AND DEMOBILIZATION – BID ITEM NO. 1.02

- A. Payment shall be made as a percentage of the Lump Sum Price.
- B. The Lump Sum Price shall include compensation for all labor, materials, equipment and all other incidentals required for all temporary facilities, transportation, communications, office, maintenance, project signs, and any other pre- or post-construction expenses necessary for the start or cessation of the Work, not specifically identified in the costs of the Work.
- C. The Lump Sum Price shall exclude the cost of construction material and installation.
- D. No further payment shall be made for remobilization unless all of the Work is suspended by the Engineer for a period in excess of three months and through no fault to the Contractor.

- E. The Lump Sum Price shall not exceed two percent (2%) of the contract price.

3.03 STORMWATER POLLUTION PREVENTION – BID ITEM NO. 1.03

- A. Payment shall be made as a percentage of the Lump Sum Price.
- B. The Lump Sum Price shall include full compensation for all equipment, materials, supplies, and labor necessary to prepare, obtain permit approval from the Florida Department of Environmental Protection, and implement the prevention, control, and abatement of erosion and water pollution. Work shall include but not be limited to mulching, sand bagging, slope drains, sediment basins, berms, baled hay or straw, silt fences and staked turbidity barriers, rock bags, filter fabric, artificial coverings and other items relating to the construction/removal and routine maintenance, including mowing, or the prevention, control and abatement of erosion and water pollution plan.

3.04 MAINTENANCE OF TRAFFIC - BID ITEM NO. 1.04

- A. Payment shall be made as a percentage of the Lump Sum Price.
- B. The Lump Sum Price shall include compensation for required labor, materials, all necessary temporary pavement markings and signing for vehicles and pedestrians, temporary pavement, temporary business signage, professional fees, and equipment necessary to provide traffic control for two way traffic at all times in accordance with the plans and specifications.
- C. MOT permits and approvals from the applicable regulatory agencies, including but not limited to FDOT, Broward County Highway Construction and Engineering Division, and the City of Pembroke Pines, are the responsibility of the contractor. All MOT plans are to be sealed by a Florida Registered Engineer holding a current FDOT MOT certificate.
- D. MOT shall include both vehicular and pedestrian requirements.
- E. Temporary pavement markings and signage shall be provided wherever existing has been damaged, removed, or is no longer visible. The temporary shall be maintained until final markings are installed after asphalt resurfacing.
- F. Payment item for Maintenance of Traffic shall not exceed two percent (2%) of the contract price.

3.05 C-900 PVC WATER MAIN – BID ITEM NOS. 2.01 – 2.03

- A. Price and payment shall be by linear foot installed, backfilled, compacted, and placed into service. Price and payment will be full compensation for all materials and work and testing associated with the installation of 6", 8", and 12" C-900 water main piping including dewatering, temporary bracing of existing adjacent structures, fittings, couplings, restrained DIP sleeves, restraints, deflections under existing utilities, all excavation and for all backfilling materials and compaction; and disposal of surplus materials and existing underground utility locations. Price and payment shall include restraining the pipe as required. Price and payment shall include depth of

main to be 3' to 6' of cover. Price and payment will be full compensation for all work, including hauling the pipe to the new location as necessary; any cleaning that might be required. When utility or landscaping pipe is removed and the new pipe is constructed in approximately the same location, the cost of excavating and removing the old pipe or landscaping and their legal disposal will be included in the Contract unit priced for the new pipe. When the new water main pipe crosses under an existing clay sanitary main or crosses over by 12 inches or less, a 20' section of the sanitary main shall be replaced with DIP. Prices and payment includes the complete restoration of the surface disturbed by the construction, including but not limited to pavement restoration, sidewalk restoration, curb restoration, pavement marking and signage restoration, swale restoration, driveways restoration, landscape restoration, header curb, fences, and brick paver restoration, etc.

- B. If exploratory excavations demonstrate that the new water main can cross above existing utilities with acceptable cover, Contractor may use one full pipe length to cross above the existing utility upon approval by the Engineer.
- C. Price shall also include the cost of labor, equipment, and material to demuck or remove and properly dispose of any unsuitable soils, such as organics, and to import and install clean fill.

### 3.06 8" DIP WATER MAIN – BID ITEM NO. 2.04

- A. Price and payment shall be by linear foot installed, backfilled, compacted, and placed into service. Price and payment will be full compensation for all materials and work and testing associated with the installation of 8" DIP water main piping including dewatering, temporary bracing of existing adjacent structures, fittings, couplings, restrained DIP sleeves, restraints, deflections under existing utilities, all excavation and for all backfilling materials and compaction; and disposal of surplus materials and existing underground utility locations. Price and payment shall include restraining the pipe as required. Price and payment shall include depth of main to be 3' to 6' of cover. Price and payment will be full compensation for all work, including hauling the pipe to the new location as necessary; any cleaning that might be required. When utility or landscaping pipe is removed and the new pipe is constructed in approximately the same location, the cost of excavating and removing the old pipe or landscaping and their legal disposal will be included in the Contract unit priced for the new pipe. When the new water main pipe crosses under an existing clay sanitary main or crosses over by 12 inches or less, a 20' section of the sanitary main shall be replaced with DIP. Prices and payment includes the complete restoration of the surface disturbed by the construction, including but not limited to pavement restoration, sidewalk restoration, curb restoration, pavement marking and signage restoration, swale restoration, driveways restoration, landscape restoration, header curb, fences, and brick paver restoration, etc.
- B. If exploratory excavations demonstrate that the new water main can cross above existing utilities with acceptable cover, Contractor may use one full pipe length of DIP to cross above the existing utility upon approval by the Engineer.
- C. Price shall also include the cost of labor, equipment, and material to demuck or remove and properly dispose of any unsuitable soils, such as organics, and to import and install clean fill.

### 3.07 DIP FITTINGS – BID ITEM NOS. 2.05 – 2.18

- A. Payment shall be made at the Unit Price for each DIP fitting named in the Contract Drawings including materials, labor, and equipment. Full compensation for furnishing and installing the DIP fittings shall include temporary bracing of existing adjacent structures, locating and protecting existing utilities, disposal of surplus materials, existing underground utility locations, any cleaning that may be required, excavation, backfilling and compaction, proper trench restoration, connecting to existing water mains, joint restraints, gaskets, washers, nuts, bolts, painting, priming, coating, field engineering, testing, and surveying. Price and payment shall also include the complete restoration of the surface disturbed by the construction, including but not limited to: pavement restoration, sidewalk restoration, curb restoration, pavement marking and signage restoration, swale restoration, driveways restoration, landscape restoration, curbing, and brick paver restoration.
- B. Price shall also include the cost of labor, equipment, and material to demuck or remove and properly dispose of any unsuitable soils, such as organics, and to import and install clean fill.

### 3.08 GATE VALVES – BID ITEM NOS. 2.19 – 2.21

- A. Payment shall be made at the Unit Price for each Gate Valve including materials, labor, and equipment. Full compensation for furnishing and installing the Gate Valves shall include temporary bracing of existing adjacent structures, locating and protecting existing utilities, disposal of surplus materials, existing underground utility locations, any cleaning that may be required, excavation, backfilling and compaction, proper trench restoration, connecting to existing water mains, valve boxes, risers, joint restraints, gaskets, washers, nuts, bolts, painting, priming, coating, field engineering, testing, and surveying. Price and payment shall also include the complete restoration of the surface disturbed by the construction, including but not limited to: pavement restoration, sidewalk restoration, curb restoration, pavement marking and signage restoration, swale restoration, driveways restoration, landscape restoration, curbing, and brick paver restoration.
- B. Price shall also include the cost of labor, equipment, and material to demuck or remove and properly dispose of any unsuitable soils, such as organics, and to import and install clean fill.

### 3.09 CUT-IN AND CONNECT TO EXISTING ACP WATER MAIN – BID NO. 2.22

- A. Payment by each unit. Price and payment will be full compensation for all material, work and testing necessary for the cut-in and connection of the new fitting to the existing asbestos cement pipe, including but not limited to excavation, dewatering, temporary bracing of existing adjacent structures, backfilling, bedding, restoration, and other appurtenances as detailed on the plans and specifications including cutting and removal of existing pipe as necessary to install the plug, and removal, transport and disposal of removed pipe material in accordance with local, state, and federal regulations. Price and payment shall include restraining the pipe as required, the new DIP pipe, fittings, restrained DIP sleeves, and HYMAX Coupling as indicated in the Contract Drawings.

### 3.10 CUT-IN AND CONNECT TO EXISTING NON-ACP WATER MAIN – BID NO. 2.23

- A. Payment by each unit. Price and payment will be full compensation for all material, work and testing necessary for the cut-in and connection of the new fitting to the existing non-ACP water main, including but not limited to excavation, dewatering, temporary bracing of existing adjacent structures, backfilling, bedding, restoration, and other appurtenances as detailed on the plans and specifications including cutting and removal of existing pipe as necessary to install the plug, and removal, transport and disposal of removed pipe material in accordance with local, state, and federal regulations. Price and payment shall include restraining the pipe as required, restrained DIP sleeves, and any new pipe or fittings needed to connect to the existing water main.

### 3.11 CUT-IN AND CONNECT TO EXISTING GSP WITH POLY TUBING – BID ITEM NO. 2.24

- A. Payment by each unit. Price and payment shall include compensation for all labor, materials, and equipment required to install, cut-in, and connect the polyethylene tubing to the existing galvanized steel pipe as detailed on the Contract Drawings including, but not limited to, excavation, dewatering, temporary bracing of existing adjacent structures, backfilling, bedding, restoration, threaded plugs/caps, corporation stops, valves, polyethylene pipe and any other fittings required to establish the connection.

### 3.12 DIP POINT REPAIRS – BID ITEM NO. 2.25

- A. Payment by each unit. Price and payment will be full compensation for all material, work necessary for the point repairs and connection of the new Hymax couplings or restrained DIP sleeves and the new ductile iron pipe to the existing pipe, including but not limited to excavation, dewatering, temporary bracing of existing adjacent structures, backfilling, compacting, bedding, restoration, and other appurtenances as detailed on the plans and specifications including cutting and removal of existing pipe as necessary and removal, transport, and disposal of removed pipe material in accordance with local, state, and federal regulations. Price and payment shall include restraining the pipe as required, the new ductile iron pipe, fittings, connection adapters, and Hymax couplings as indicated in the Contract Drawings. Restoration shall include the entire surface disturbed by construction including driveways, asphalt, sod, landscape, and irrigation.
- B. This bid item shall only be used on AC pipe, as needed, where crossing an existing AC pipe with new water main causes a break or damage to the existing pipe. Broken or damaged AC pipe shall be replaced immediately to avoid extended interruption of service to the users. Contractor shall still be required to shore and take proper care when excavating near existing AC pipe to avoid such occurrences.

### 3.13 FIRE HYDRANT ASSEMBLIES – BID ITEM NO. 2.26

- A. Payment for Fire Hydrant Assemblies shall be made at the Contractor's Unit Price per each fire hydrant assembly installed and accepted. The Unit Price shall include compensation for all labor, materials, and equipment required to install the fire hydrant assembly in accordance with the plans and specifications. Fittings, DIP pipe, field engineering, testing, and surveying shall also be included in the Unit Price.

- B. Price shall also include the cost of labor, equipment, and material to demuck or remove and properly dispose of any unsuitable soils, such as organics, and to import and install clean fill.
- 3.14 REMOVE EXISTING FIRE HYDRANT ASSEMBLIES – BID ITEM NO. 2.27
- A. Payment for existing fire hydrant assembly removed and disposed shall be made at the Contractor's Unit Price per each fire hydrant assembly removed and disposed. The Contract Unit Price shall include compensation for all labor, materials, and testing required to relocate and dispose in accordance with the plans and specifications.
  - B. Payment shall be made for fire hydrant assembly remove and dispose by authorization of the Engineer. Any fire hydrant that is damaged incidental to construction or defective shall be replaced at the Contractor's expense.
- 3.15 BACTERIOLOGICAL SAMPLE POINTS – BID ITEM NO. 2.28
- A. Payment shall be made at the Contractor's Unit Price for each Bacteriological Sample Point including all material, labor, and equipment required to install, sample, test, and remove after successful results in accordance with the Contract Documents.
- 3.16 WATER SERVICES (FROM NEW MAIN TO NEW METERS) – BID ITEM NOS. 2.29 – 2.32
- A. Price and payment shall be made at the Contractor's Unit Price for each Water Service furnished, installed, and tested including flushing, installing and connecting to a new meter and box, installing service taps and saddles on the new water main, PVC sleeves, valves, couplings, fittings, and restoring the disturbed surface such as asphalt, concrete, pavers, sidewalk, or sod.
- 3.17 METER BOX ASSEMBLIES – BID ITEMS NOS. 2.33 – 2.34
- A. Price and payment shall be made at the Contractor's Unit Price for each Meter Box Assembly furnished, installed, and tested including installing and connecting to new poly service lines, new meter boxes, new meters, antennas, dual check valves, angle stops, shutoff valves, couplings, fittings, pea rock, and restoring the disturbed surface such as asphalt, concrete, pavers, sidewalk, or sod. Meter Box Assembly shall include all other appurtenances as detailed in the drawing details for water meters and boxes.
- 3.18 2" BLOW OFF ASSEMBLY – BID ITEM NO. 2.35
- A. Payment by each unit. Includes all work, materials, and testing necessary for the installation of a 2" manual blow off assembly including, but not limited to, a restrained cap/plug with 2" threaded tap, valves, valve boxes, traffic bearing valve box and cover, 2" stainless steel piping, fittings, bedding stone, concrete collars, and all other appurtenances not specifically mentioned in other bid items.

## 3.19 CAP, GROUT, AND ABANDON EXISTING WATER MAIN (4" OR LARGER) – BID ITEM NO. 2.36

- A. Payment by linear foot. Includes all materials, labor, and equipment necessary to cap, grout, and abandon existing water main, including but not limited to: excavation, removal of existing pipe where necessary to separate pipe to remain in service, plugs, caps, grout, backfill, compaction, trench restoration, transport and disposal of any materials which have been removed in accordance with local, state and federal regulations. Price and payment shall also include the complete restoration of the surface disturbed by the construction, including but not limited to: pavement restoration, sidewalk restoration, curb restoration, pavement marking and signage restoration, swale restoration, driveways restoration, landscape restoration, curbing, and brick paver restoration.
- B. Abandoning, grouting, and removal of asbestos cement pipe shall be in accordance with local, state, and federal regulations.

## 3.20 CAP AND ABANDON EXISTING WATER MAIN (3" OR SMALLER) – BID NO. 2.37

- A. Payment by each unit. Includes all work, materials and testing necessary to abandon and cap existing water main, including but not limited to excavation, dewatering, and removal of existing pipe where necessary to separate existing pipe from pipe to remain in services, plug and cap, backfill, bedding, transport and disposal of any materials, which have been removed in accordance with local, state and federal regulations.
- B. Abandoning, capping, and removal of asbestos cement pipe shall be in accordance with local, state, and federal regulations.

## 3.21 REMOVE EXISTING WATER METER AND RESTORATION – BID ITEM NO. 2.38

- A. Payment by each unit. Price shall include all labor, material, and equipment required to remove and decommission the existing water meters, valves, fittings, and service lines. Contractor shall remove each existing meter and deliver to the City Utility Department. Contractor shall tag each existing meter with the house address and the new meter number prior to delivering to the City.
- B. Price shall also include filling the meter box pit, properly compacting, and restoring with sand, topsoil mix, and sod. Where existing meters are located in sidewalks, Contractor shall backfill and compact. Sidewalk replacement shall be covered in a separate bid item.

## 3.22 SIDEWALK REPLACEMENT (4'X5' SECTIONS) – BID ITEM NO. 2.39

- A. Payment by each unit. Price shall include all labor, material, and equipment required to construct new sidewalk sections with proper base and subgrade. These sections shall include existing sidewalk sections where an existing water meter was removed and also areas as determined by the City and Engineer at the time of construction. Price shall also include, but not be limited to, the complete restoration of the surface disturbed by the construction, including but not limited to pavement restoration, adjacent sidewalk restoration, curb restoration, pavement marking and signage restoration, swale restoration, driveways restoration, and landscape restoration.

3.23 1" SINGLE POLY SERVICE (FROM NEW METER TO EXISTING SERVICE OR HOUSE CONNECTION) – BID ITEM NO. 3.01

- A. Payment by each unit. Price shall include all labor, material, and equipment required to construct new 1" polyethylene service lines from the new meters up to the house connection point right before the rigid pipe rises out of the ground and enters the building. Contractor shall perform a site inspection prior to bid to familiarize themselves with the Work required. Private property Work shall be performed by a licensed plumbing contractor. Price shall also include, but not be limited to, fittings, couplings as needed to connect to the existing galvanized steel pipe (if required due to obstructions at the house connection) and complete restoration of the disturbed area on the private properties such as fences, driveways, and sod. Contractor may elect to perform trenchless installations of the 1" poly service, such as horizontal directional drilling, where there are accessibility issues or where extensive restoration would be required for open trench installation.

3.24 3/4" SINGLE BRASS HOUSE CONNECTION (INCLUDING PRESSURE VALVE) – BID ITEM NO. 3.02

- A. Payment by each unit. Price shall include all labor, material, and equipment required to construct new aboveground house service connection. Contractor shall perform a site inspection prior to bid to familiarize themselves with the Work required. Private property Work shall be performed by a licensed plumbing contractor. Price shall also include, but not be limited to, rigid piping, fittings, couplings as needed to connect to the existing aboveground house connection, pressure relief valves, ball valves, cutting and restoring stucco/concrete to allow room for new appurtenances, as needed, and complete restoration of the disturbed areas on the private properties such as paint, walls, stucco, concrete, fences, driveways, and sod.

3.25 PAVEMENT MARKINGS – THERMOPLASTIC – BID ITEM NOS. 4.01 – 4.07

- A. Payment for these line items shall be made at the Contractor's Unit Price.
- B. The Contractor's Unit Price shall include full compensation for all supervision, labor, equipment, and materials required to complete the Work in accordance with the plans and specifications. This unit pricing includes Retro-Reflective Pavement Markers (BiDir, Yellow/Yellow), Retro-Reflective Pavement Markers, (BiDir., White/Red), Retro-Reflective Pavement Markers, (BiDir., Blue/Blue); Thermoplastic, Standard, White, Solid, 6"; Thermoplastic, Standard, White, Solid, 12"; Thermoplastic, Standard, White, Solid, 24"; Thermoplastic, Standard, White, Skip, 6"; Thermoplastic, Standard, White, Skip; Thermoplastic, Standard, White, Skip; Thermoplastic, Standard, White, Messages; Preformed Tape, Standard, White, Message; Preformed Tape, Standard, White, Arrow; Thermoplastic, Standard, Yellow, Solid, 6"; Thermoplastic, Standard, Double Yellow, Solid, 6"; Thermoplastic, Standard, Yellow, Skip, 6"; painted school messages. The unit price also includes temporary paint for all thermoplastic markings.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

SECTION 01015  
GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section provides for miscellaneous provisions applicable to the Work.

1.02 RELATED SECTIONS

- A. Section 01090 – References
- B. Section 01310 – Construction Schedules
- C. Section 01340 – Shop Drawings, Working Drawings, and Samples
- D. Section 01530 – Existing Utilities
- E. Section 01570 – Traffic Regulation
- F. Section 01720 – Project Record Documents
- G. Section 15010 – Testing Piping Systems
- H. Other Sections as applicable.

1.03 TERMINOLOGY

- A. Throughout the Contract Documents, the following definitions apply:
  - 1. Owner - The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
  - 2. 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.

1.04 SAFETY

- A. All Work shall be done in a safe manner and in strict compliance with all requirements of the Federal Occupational Safety and Health Act (OSHA), The Florida Trench Safety Act and all other State and local safety and health regulations.

- B. The Contractor shall comply promptly with such safety regulations as may be prescribed by the Owner or the local authorities having jurisdiction and shall, when so directed, properly correct any unsafe conditions created by, or unsafe practices on the part of, his employees. In the event of the Contractor's failure to comply, the Owner may take the necessary measures to correct the conditions or practices complained of, and all costs thereof will be deducted from any monies due. Failure of the Owner to direct the correction of unsafe conditions or practices shall not relieve the Contractor of his responsibilities.
- C. The Contractor shall provide, erect, and maintain as necessary, strong and suitable barricades, danger signs, and warning lights for the protection of the public in accordance with Section 01570 – Traffic Regulation.

#### 1.05 APPLICABLE CODES

- A. The Contractor shall comply with the applicable standards codes and specifications governing the Contract Documents whether City, County, State or Federal. The Contractor is obligated to notify the Owner and Engineer of any deficiency contained in the Contract Documents immediately upon discovery. Where conflicts exist in such, the more stringent shall govern.

#### 1.06 APPLICABLE PERMITS AND LICENSES

- A. The Contractor shall abide by all permit conditions, whether, general, specific, limited, or otherwise. A copy of all applicable permits and licenses, with the exception of municipal permits obtained by the Contractor, are attached hereto, and made a part of the Contract Documents.

#### 1.07 PUBLIC BID DISCLOSURE ACT 218.80 FS

- A. All the local governmental entity permits or fees are to be disclosed, including, but not limited to, all license fees, permit fees, impact fees, or inspection fees, payable by the contractor to the unit of government that issued the bidding documents or other governmental agency,
- B. The following permits are required for this project: City of Pembroke Pines Building Department, Florida Department of Environmental Protection, and, if dewatering is required, SFWMD and BCEPGMD. The cost for these permits is accounted for in the Permitting Allowance of found in the Bid Form.

#### PART 2 - PRODUCTS (NOT USED)

#### PART 3 - EXECUTION

##### 3.01 PRE-CONSTRUCTION RESPONSIBILITIES

- A. Upon receipt of the Notice-To-Proceed, the Contractor shall arrange for a Pre-Construction meeting. The meeting shall be held with a minimum of one weeks'

notice and shall include the Engineer, the Owner, and Representatives for all affected utility companies.

### 3.02 TEMPORARY UTILITIES

- A. The Contractor shall be responsible to arrange for and supply all temporary utilities including, but not limited to, water, sewer, and electricity.
- B. The cost of temporary utilities shall be considered incidental to the cost of the Work and is therefore included in the Bid.

### 3.03 UNDERGROUND LOCATING SERVICE

- A. Prior to underground construction, the Contractor is required by the Underground Facility Damage Prevention and Safety Act, Chapter 556 FS to contact Sunshine 811, for the location of underground utilities.

### 3.04 HURRICANE PREPAREDNESS PLAN

- A. Should the performance of the Work occur during Hurricane Season, within thirty 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. The plan shall detail these measures with specific action items defining responsible personnel.

### 3.05 INCLEMENT WEATHER

- A. In the event of inclement weather, or whenever Engineer shall direct; Contractor will cause Subcontractors to protect carefully the Work and materials against damage or injury from the weather. If, in the opinion of the Engineer, any portion of Work or materials shall have been damaged or injured by reason of failure on the part of Contractor or any Subcontractor to so protect the Work, such Work and materials shall be removed and replaced at the expense of the Contractor.
- B. PROTECTION OF WORK AND MATERIAL
  - C. During the progress of the Work and up to the date of final payment, the Contractor shall be solely responsible for the care and protection of all Work and materials covered by the Contract.
  - D. All Work and materials shall be protected against damage, injury or loss from any cause whatsoever, and the Contractor shall make good any such damage or loss at his own expense. Protection measures shall be subject to the approval of the Owner and Engineer.

### 3.06 CONTRACTOR USE OF PREMISES

- A. Contractor shall have limited use of the premises for construction operations, including limited use of the site. The Contractor's use of the premises is further limited to the Owner's right to perform construction operations with its own forces or to employ separate Contractors on portions of the project.

- B. The Contractor shall be responsible for coordinating his daily activities in conjunction with any Contractors presently working within the vicinity of this project.
- C. Confine operations to areas within rights-of-way and easements.
- D. Keep existing driveways and entrances serving the premises clear and available to the Owner, Residents and the Owner's employees at all times.
  - 1. Do not use these areas for parking or storage of materials.
  - 2. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

### 3.07 ENVIRONMENTAL PROTECTION

- A. Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted, or that other undesirable effects might result.
  - 1. Adjustment of existing utilities
- B. The Contractor shall raise or lower all manholes, valve boxes, etc. to finished grade. The cost of these adjustments shall be considered incidental to the cost of the Work and is therefore included in the Bid.

### 3.08 EXISTING IRRIGATION

- A. All existing irrigation systems within the area of the Work shall be restored to original condition or better and adjusted to finished grade. The cost of repairs and/or adjustment to existing irrigation shall be considered incidental to the cost of the Work and is therefore included in the Bid.

### 3.09 DEMOLITION

- A. Limits of demolition which may be shown in the Contract Documents are general in nature. Actual limits of demolition shall be as determined by the field conditions in conformance with the requirements of the Work.
- B. All sidewalks within the limits of construction which are not ADA compliant (cross-slopes which exceed 2% and/or running slopes which exceed 5% and/or changes in level of ¼" or greater) shall be demolished and reconstructed to meet these requirements.
- C. When sidewalk tie-ins exist outside the limits of construction which are not ADA compliant, the Contractor shall replace those sections as directed by the Owner.

END OF SECTION

## SECTION 01021

## OWNER ALLOWANCES

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. This Section provides for administrative procedures for the Contractors utilization of monetary amounts for Owner Allowances when contained in the Contract Price or Total Base Bid.
- B. The 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.
- C. The Contractor agrees that an Allowance, if any, is for the sole use of Owner to cover unanticipated or undetermined costs.
- D. All Owner Allowances which remain unused, in whole or in part, remain the property of the Owner.

## 1.02 RELATED SECTIONS

- A. Bid Form
- B. Section 01012 – Measurement and Payment
- C. Section 01152 – Application for Payment
- D. Section 01310 – Construction Schedules
- E. Section 01340 – Shop Drawings, Working Drawings, and Samples
- F. Other Sections as Applicable.

## 1.03 SCHEDULE OF ALLOWANCES

- A. Refer to the Bid Form.

## 1.04 PROCEDURES FOR ADMINISTRATION OF ALLOWANCES.

- A. Funds will only be drawn from Owner Allowances by Change Order.
- B. Costs shall be as represented in the Unit Price Schedule.
- C. Payment shall be as represented in Section 01012 – Measurement for Payment.

#### 1.05 COSTS INCLUDED IN PERMITTING ALLOWANCES

- A. Cost of the permit application fee determined by the Agency at the time of the Contractor's submittal. All other costs associated with obtaining the required permits shall be the responsibility of the Contractor.

#### 1.06 COSTS INCLUDED IN OTHER ALLOWANCES

- A. Cost of materials to Contractor, less applicable trade discounts.
- B. Delivery to site, products handling at site, including unloading, uncrating, and storage.
- C. Applicable taxes unless covered by Owner Furnished Equipment agreement.
- D. Protection of products from elements and from damage.
- E. All labor, insurance, payroll, bonding, equipment rental, expenses for the installation and finishing necessary for a complete working system or product.
- F. Other expenses required to complete installation.
- G. Contractor field and home office overhead and profit.

#### 1.07 CONTRACTOR RESPONSIBILITIES

- A. Promptly notify Engineer of any reasonable objections from supplier.
- B. On notification of selection, execute purchase agreement with designated supplier.
- C. Arrange for process shop drawings, product data, and samples.
- D. Arrange for delivery. Promptly inspect products upon delivery for completeness, damage, and defects. Submit claims for transportation damage.
- E. Install, adjust, and finish products.
- F. Provide warranties for products and installation.

#### 1.08 CORRELATION WITH CONTRACTOR SUBMITTALS

- A. Schedule shop drawings, product data, samples, and delivery dates, in Progress Schedule for products selected under allowances.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 01045

## CUTTING AND PATCHING

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Contractor shall be responsible for all cutting, fitting and patching required to complete the Work or to:
  - 1. Make its several parts fit together properly.
  - 2. Uncover portions of the Work to provide for installation of ill-timed Work.
  - 3. Remove and replace defective Work.
  - 4. Remove and replace Work not conforming to requirements of Contract Documents.
  - 5. Remove samples of installed Work as specified for testing.
  - 6. Investigate subsurface conditions or utilities.

## 1.02 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01015 – General Requirements
- C. Other Sections as applicable.

## 1.03 SUBMITTALS

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

5. Description of proposed Work:
    - a. Scope of cutting, patching, alteration, or excavation.
    - b. Trades who will execute the Work.
    - c. Products proposed to be used.
    - d. Extent of refinishing to be redone.
  6. Alternatives to cutting and patching.
  7. Cost proposal, when applicable.
  8. Written permission of any separate contractor whose Work will be affected.
- C. Submit written notice to the Engineer designating the date and the time Work will be uncovered.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

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

## PART 3 - EXECUTION

### 3.01 INSPECTION

- A. Inspect existing conditions of Project, including elements subject to damage or to movement during cutting or patching.
- B. After uncovering Work, inspect conditions affecting installation of Products, or performance of Work.
- C. Report unsatisfactory or questionable conditions to the Engineer in writing; do not proceed with Work until the Engineer has provided further instructions.

### 3.02 PREPARATION

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

### 3.03 PERFORMANCE

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

- B. Execute cutting methods which will prevent settlement or damage to other Work.
- C. Employ original Installer or Fabricator to perform cutting and patching for:
  - 1. Weather-exposed or moisture-resistant surfaces.
  - 2. Sight-exposed finished surfaces.
- D. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes.
- E. Restore Work which has been cut or removed; install new products to provide completed Work in accord with requirements of Contract Documents.
- F. Fit Work airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.
- G. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes:
  - 1. For continuous surfaces, refinish to nearest intersection.
  - 2. For an assembly, refinish entire unit.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 01046

## MODIFICATIONS TO EXISTING STRUCTURES, PIPING, AND EQUIPMENT

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Furnish all labor, materials, equipment and incidentals required to modify, alter, and convert existing structures as shown or specified and as required for the installation of new mechanical equipment, piping, and appurtenances. Existing piping and equipment shall be removed, salvaged, abandoned, or dismantled as necessary for the performance of the Work.

## 1.02 RELATED SECTIONS

- A. Section 01045 – Cutting and Patching
- B. Section 01310 – Construction Schedules
- C. Other Sections as applicable.

## PART 2 - PRODUCTS (NOT USED)

## PART 3 - EXECUTION

## 3.01 GENERAL

- A. The Contractor shall cut, repair, reuse, excavate, demolish, or otherwise remove parts of the existing structures or appurtenances, as indicated on the Drawings or specified herein or necessary for the performance of the Work.
- B. The above Work shall include the cutting of grooves and chases in existing masonry to permit the proper bonding of new masonry to old, repainting of existing masonry, the drilling of holes into bolts, or other appurtenances, and the cutting of holes in masonry for the installation of pipe, conduits, and other appurtenances. The Work shall include all necessary cutting and bending of reinforcing steel, structural steel, or miscellaneous metal Work found embedded in the existing structures.
- C. Blasting with explosives will not be permitted to complete any Work under this Contract.
- D. Care shall be taken not to damage any part of existing buildings, foundations, and exterior structures both below and above ground.

- E. No existing structure, equipment, or appurtenance shall be shifted, cut, removed, or otherwise altered except with the express approval of and to the extent approved by the Engineer.
- F. When removing materials or portions of existing structures and when making openings in walls and partitions, the Contractor shall take all precautions and use all necessary barriers and other protective devices so as not to damage the structures or contents by falling or flying debris and not to damage the structures from excavation or undermining of existing structural supports, beams, footings, columns or any structural member.
- G. Materials and equipment removed in the course of making alterations and additions shall remain the property of the Owner, except that items not salvageable, as determined by the Engineer and the Owner shall become the property of the Contractor to be disposed of by him off the site of the Work at his own place of disposal. The Contractor shall assist the Owner in loading and hauling of salvageable materials within the municipal limits of the project.
- H. All Work of altering existing structures shall be done at such time and in such manner as will comply with the approved time schedule. So far as possible before any part of the Work is started, all tools, equipment, and materials shall be assembled and made ready so that the Work can be completed without delay.
- I. All workmanship and new materials involved in constructing the alterations shall conform to the General Specifications for the classes of Work insofar as such specifications are applicable.
- J. All cutting of existing masonry or other material to provide suitable bonding to new Work shall be done in a manner to meet the requirements of the respective section of these specifications covering the new Work. When not covered, the Work shall be carried on in the manner and to extent directed by the Engineer.
- K. Where holes in existing masonry are required to be sealed, unless otherwise herein specified, they shall be sealed with cement mortar or concrete. The sides of the openings shall be provided with keyed joints and shall be suitably roughened to furnish a good bond and make a watertight joint. All loose or unsound material adjacent to the opening shall be removed and, if necessary, replaced with new material. The method of placing the mortar seal shall provide a suitable means of releasing entrapped air.
- L. Surfaces of seals visible in the completed Work shall be made to match as nearly as possible the adjacent surfaces.
- M. Non-shrink grout shall be used for setting wall castings, sleeves, leveling pump bases, doweling anchors into existing concrete and elsewhere as shown.
- N. Operating equipment shall be thoroughly cleaned and then lubricated and greased for protection during prolonged storage.

- O. The Contractor shall provide flumes, hoses, piping, etc. to divert or provide suitable plugs, bulkheads or other means to hold back the flow of wastewater, water or other liquids, all as required in the performance of the Work under this Contract.

### 3.02 SALVAGE

- A. Any existing equipment or material, including but not limited to, motors, electrical components or controls, pipes, fittings, couplings, etc., which is removed or replaced as a result of construction under this project may be designated as salvage by the Engineer or Owner, and, if so, shall be removed or excavated, if necessary, and delivered to the Owner at a location directed by the Owner. Any equipment or material not worthy of salvaging, as directed by the Owner, shall be disposed of by the Contractor at a suitable location.

### 3.03 CONNECTING TO EXISTING PIPING AND EQUIPMENT

- A. The Contractor shall verify exact location, dimensions, material, alignment, joint, etc. of existing piping and equipment prior to making the connections called out in the Drawings. The verifications shall be performed with adequate time to correct any potential alignment or other problems prior to the actual time of connection.
- B. The Contractor shall dismantle and remove all existing equipment, piping and other appurtenances required, he shall cut existing pipelines for the purpose of making connections thereto. Anchor bolts for equipment and structural steel removed shall be cut off one inch below the concrete surface.
- C. At the time that a new connection is made to an existing pipeline, additional new piping, extending to and including the most convenient new valve, shall be installed.
- D. Where necessary or required for the purpose of making connections, the Contractor shall cut existing pipe lines in a manner to provide an approved joint. Where required, he shall weld beads, flanges or provide Dresser Couplings, all as specified and required.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 01050

## FIELD ENGINEERING AND SURVEYING

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Provide and pay for field Engineering and surveying services required for Project as follows:
  - 1. Surveying Work required for the lay-out and execution of Work.
  - 2. Surveying Work required to identify and maintain existing control points, bench marks, and property line corners.
  - 3. Surveying Work required to verify existing utility locations.
  - 4. Surveying Work as required to create Project Record Documents.
  - 5. Civil, structural, or other professional Engineering services specified, or required to execute the Contractor's construction methods.
  - 6. Testing, sampling, calibrating, and training services specified, or required to execute the Contractor's construction methods including soils, concrete, material, etc.

## 1.02 RELATED SECTIONS

- A. Section 01012 – Measurement and Payment
- B. Section 01410 – Materials and Installation Testing
- C. Section 01720 – Project Record Documents
- D. Other Sections as applicable.

## 1.03 QUALIFICATIONS OF PROFESSIONAL

- A. Florida Registered Professional Surveyor and Mapper, acceptable to the Owner and the Engineer.

## 1.04 SURVEY REFERENCE POINTS

- A. Horizontal and vertical control points for the Project are to be established by the Contractor.
- B. Locate and protect control points prior to starting Work, and preserve all permanent reference points during construction.
  - 1. Make no changes or relocations without prior written notice to the Engineer.
  - 2. Report to the Engineer when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.

3. Require surveyor to replace project control points which may be lost or destroyed.
  - a. Establish replacements based on original survey control.

#### 1.05 PROJECT SURVEY REQUIREMENTS

- A. Establish a minimum of two temporary bench marks on site, referenced to data by survey control points.
  1. Record locations, with horizontal and vertical data, on Project Record Documents.
- B. Establish lines and levels, locate and lay out, by instrumentation and similar appropriate means:
  1. Site Improvements
    - a. Line and grade of pipe and structure installation; top of pipe, invert, slope, etc.
    - b. Grading for fill and topsoil placement, roadway sub-base and base installation.
  2. Controlling lines and levels required for all trades.
- C. From time to time, verify layouts by same methods.

#### 1.06 RECORDS

- A. Maintain a complete, accurate log of all control and survey Work as it progresses in accordance with Section 01720.

#### 1.07 SUBMITTALS

- A. Submit name and address of Professional Surveyor and Mapper or Professional Engineer to the Engineer.
- B. On request of the Engineer, submit documentation to verify accuracy of field engineering Work.
- C. Submit certificate signed by registered surveyor certifying that elevations and locations of improvements are in conformance, or non-conformance, with Contract Documents.
- D. Submit Project Record Documents in accordance with Section 01720.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 01090

## REFERENCES

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Applicable Publications: Whenever in these specifications references are made to published specifications, codes, standards, or other requirements, it shall be understood that wherever no date is specified, only the latest specifications, standards, or requirements of the respective issuing agencies which have been published as of the date that the Work is advertised for bids, shall apply; except to the extent that said standards or requirements may be in conflict with applicable laws, ordinances, or governing codes. No requirements set forth herein or shown on the drawings shall be waived because of any provision of, or omission from, said standards or requirements.
- B. Specialists, Assignments: In certain instances, specification text requires (or implies) that specific Work is to be assigned to specialists or expert entities, who must be engaged for the performance of that Work. Such assignments shall be recognized as special requirements over which the Contractor has no choice or option. These assignments shall not be interpreted so as to conflict with the enforcement of building codes and similar regulations governing the Work; also they are not intended to interfere with local union jurisdiction settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of Work is recognized as "expert" for the indicated construction processes or operations. The final responsibility for fulfillment of the entire set of contract requirements remains with the Contractor.

## 1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Without limiting the generality of other requirements of the specifications, all Work specified herein shall conform to or exceed the requirements of the following documents to the extent that the provisions of such documents are not in conflict with the requirements of these Specifications nor the applicable codes.
- B. References herein to "Building Code" or "Code" shall mean the Florida Building Code. The latest edition of the code as approved and used at the local agency having jurisdiction, shall apply to the Work herein, including, all addenda, modifications, amendments, or other lawful changes thereto.
- C. In case of conflicts between codes, reference standards, drawings and other Contract Documents, the most stringent requirements shall govern. All conflicts shall be brought to the attention of the Engineer for clarifications and directions prior to ordering or providing any materials or labor. The Contractor shall bid the most stringent requirements.

- D. Applicable Standard: The Contractor shall construct all Work in accordance with the requirements of the Contract Documents, building codes, and referenced standards specified herein.
- E. References herein to "OSHA Regulations for Construction" shall mean Title 29, Part 1926, Construction Safety and Health Regulations, Code of Federal Regulations, including all changes and amendments thereto.
- F. References herein to "OSHA Standards" shall mean Title 29, Part 1910, Occupational Safety and Health Standards, Code of Federal Regulations (OSHA), including all changes and amendments thereto.

### 1.03 ABBREVIATION

- A. Wherever in these specifications references are made to the standards, specifications, or other published data of the various national, regional, or local organizations, such organizations may be referred to by their acronyms or abbreviation only. As a guide to the user of these specifications, the following acronyms and abbreviations which may appear in these specifications shall have the meanings indicated herein.

### 1.04 ABBREVIATIONS AND ACRONYMS

- A. Abbreviations and acronyms contained in the Contract Documents may include, but not be limited to, the following:
 

AAMA	Architectural Aluminum Manufacturer's Association
AAR	Association of American Railroads
AASHTO	American Association of the State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
ACPPA	American Concrete Pressure Pipe Association
AFBMA	Anti-Friction Bearing Manufacturer's Association, Inc.
AGA	American Gas Association
AGC	Associated General Contractors
AGMA	American Gear Manufacturer's Association
AHAM	Association of Home Appliance Manufacturers
AI	The Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Movement and Control Association
ANS	American Nuclear Society
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
API	American Petroleum Institute
APWA	American Public Works Association

AREA	American Railway Engineering Association
ASA	Acoustical Society of America
ASAE	American Society of Agricultural Engineers
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
ASLE	American Society of Lubricating Engineers
ASME	American Society of Mechanical Engineers
ASPE	American Society of Plumbing Engineers
ASQC	American Society for Quality Control
ASSE	American Society of Sanitary Engineers
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Association
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BBC	Basic Building Code, Building Officials and Code Administrators International
BHMA	Builders Hardware Manufacturers Association
CBM	Certified Ballast Manufacturers
CEMA	Conveyors Equipment Manufacturers Association
CGA	Compressed Gas Association
CLPCA	California Lathing and Plastering Contractors Association
CLFMI	Chain Link Fence Manufacturers Institute
CMA	Concrete Masonry Association
CRSI	Concrete Reinforcing Steel Institute
CSI	Construction Specifications Institute
DCDMA	Diamond Core Drill Manufacturers Association
DIPRA	Ductile Iron Pipe Research Association
EIA	Electronic Industries Association
ETL	Electrical Test Laboratories
HI	Hydraulic Institute
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
IME	Institute of Makers of Explosives
IP	Institute of Petroleum (London)
IPC	Institute of Printed Circuits
IPCEA	Insulated Power Cable Engineers Association
ISA	Instrument Society of America
ISO	International Organization for Standardization
ITE	Institute of Traffic Engineers
MBMA	Metal Building Manufacturers Association
MPTA	Mechanical Power Transmission Association
MTI	Marine Testing Institute
NAAM	National Association of Architectural Metal Manufacturers
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards
NCCLS	National Committee for Clinical Laboratory Standards
NEC	National Electric Code

NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NGLI	National Grease Lubricating Institute
NMA	National Microfilm Association
NRCA	National Roofing Contractors Association
NWMA	National Woodwork Manufacturers Association
NWWA	National Water Well Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PCI	Precast Concrete Institute
PDI	Plumbing and Drainage Institute
RIS	Redwood Inspection Service
RVIA	Recreational Vehicle Industry Association
RWMA	Resistance Welder Manufacturers Association
SAE	Society of Automotive Engineers
SAMA	Scientific Apparatus Makers Association
SBC	Southern Building Code Congress International, Inc. (SBCCI)
SIS	Swedish Standards Association
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SPR	Simplified Practice Recommendation
SSBC	Southern Standard Building Code, Southern Building Code Congress
SSPC	Steel Structures Painting Council
SSPWC	Standard Specifications for Public Works Construction
TAPPI	Technical Association of the Pulp and Paper Industry
TFI	The Fertilizer Institute
UBC	Uniform Building Code
UL	Underwriters Laboratories, Inc.
USGS	United States Geological Survey
WCLIB	West Coast Lumber Inspection Bureau
WCRSI	Western Concrete Reinforcing Steel Institute
WIC	Woodwork Institute of California
WPCF	Water Pollution Control Federation
WRI	Wire Reinforcement Institute, Inc.
WWPA	Western Wood Products Association

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

## SECTION 01152

## APPLICATIONS FOR PAYMENT

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Submit Applications for Payment to the Engineer in accordance with the schedule established by Conditions of the Agreement between Owner and Contractor and the Contract Documents.

## PART 2 - RELATED SECTIONS

- A. Section 01050 – Field Engineering and Surveying
- B. Section 01310 – Construction Schedules
- C. Section 01370 – Schedule of Values
- D. Section 01380 – Construction Photographs
- E. Section 01700 – Contract Close Out
- F. Section 01720 – Project Record Documents

## 2.02 FORMAT AND DATA REQUIRED

- A. Submit applications typed on forms provided by the Owner (or forms provided by Contractor and agreed to by Owner), Application for Payment, with itemized data typed on 8 1/2 inch x 11 inch white paper and continuation sheets.
- B. Payment forms shall show significant detail to substantiate request. Additional detail may be required by the Engineer.

## 2.03 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 Contract firm.

- B. Continuation Sheets:
1. Fill in total list of 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.
    - a. Round off values to nearest dollar, or as specified.
  3. List each Change Order Number, and description, as for an original component item or Work.

#### 2.04 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

- A. When the Owner or the Engineer requires substantiating data, Contractor shall submit suitable information, with a cover letter identifying:
1. Project
  2. Application number and date
  3. Detailed list of enclosures
  4. For stored products:
    - a. Item number and identification as shown on application.
    - b. Description of specific material.
    - c. Copy of material invoice.
    - d. Address of location where item is stored
    - e. Photographs of item (if requested)
- B. Submit one copy of data cover letter for each copy of application.
- C. As a prerequisite for payment, Contractor is to submit the following:
1. A "Surety Acknowledgment of Payment Request" letter showing amount of progress payment which the Contractor is requesting,
  2. Updated record drawings for review by the Engineer,
  3. Updated construction schedule for review by the Engineer,
  4. Construction photographs.

#### 2.05 PREPARATION OF APPLICATION FOR FINAL PAYMENT

- A. Fill in Application form as specified for progress payments.
- B. Provide final completion documentation for the final statement of accounting as specified in Section 01700 - Contract Closeout.

- C. Submit final record drawings.

2.06 SUBMITTAL PROCEDURE

- A. Submit Applications for Payment to the Engineer at the times stipulated in the Agreement.
- B. Number: Five copies of each Application.
- C. When the Engineer finds Application properly completed and correct, he will transmit certificate of payment to Owner, with copy to Contractor.

PART 3 - PRODUCTS (NOT USED)

PART 4 - EXECUTION (NOT USED)

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 01200

## PROJECT MEETINGS

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. The Engineer shall schedule and administer a preconstruction meeting, periodic progress meetings, and specially called meetings throughout the progress of Work. The Engineer shall:
1. Prepare agenda for meetings.
  2. Make physical arrangements for meetings.
  3. Preside at meetings.
  4. Record in writing the minutes; include significant proceedings and decisions.
  5. Record the meeting with an audio recording device.
  6. Reproduce and distribute copies of minutes within five working days after each meeting:
    - a. To participants in the meeting.
    - b. To parties affected by decisions made at the meeting.
- B. Representatives of Contractor, subcontractors, and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
- C. The Contractor shall attend meetings to assure that Work is executed consistent with Contract Documents and construction schedules.

## 1.02 RELATED SECTIONS

- A. Section 01310 – Construction Schedules.
- B. Section 01340 – Shop Drawings, Working Drawings, and Samples.
- C. Section 01720 – Project Record Documents.
- D. Other Sections as applicable.

## 1.03 PRECONSTRUCTION MEETING

- A. Schedule a preconstruction meeting no later than 14 days after date of Notice-To-Proceed.
- B. Location: A central site, convenient for all parties designated by the Owner.

- C. Attendance:
1. Owner's Representative.
  2. Engineer and his Professional Consultants.
  3. Resident Project Representative.
  4. Contractor's Superintendent.
  5. Major Subcontractors.
  6. Major Suppliers.
  7. Utilities.
  8. Others as appropriate.
- D. Suggested Agenda:
1. Distribution and discussion of:
    - a. List of major subcontractors and suppliers.
    - b. Projected Construction Schedule.
  2. Critical Work sequencing/critical path scheduling.
  3. Major equipment deliveries and priorities.
  4. Project Coordination.
    - a. Designation of responsible personnel.
  5. Procedures and processing of:
    - a. Field decisions.
    - b. Proposal requests.
    - c. Submittals.
    - d. Change Orders.
    - e. Applications for Payments.
  6. Adequacy of Distribution of Contract Documents.
  7. Procedures for maintaining Record Documents.
  8. Use of Premises:
    - a. Office, Work, and Storage Areas.
    - b. Owner's Requirements.
  9. Construction facilities, controls, and construction aids.
  10. Temporary Utilities.

## 1.04 PROGRESS MEETINGS

- A. Schedule regular periodic meetings. The progress meetings will be held as required by progress of the Work or as required by the Engineer or the Owner.
- B. Hold called meetings as required by progress of the Work.
- C. Location of the meetings: Office of the Owner or Engineer.
- D. Attendance:
  - 1. Engineer, and his professional consultants as needed.
  - 2. Subcontractors as appropriate to the agenda.
  - 3. Suppliers as appropriate to the agenda.
  - 4. Others as appropriate.
- E. Suggested Agenda:
  - 1. Review, approval of minutes of previous meeting.
  - 2. Review of Work progress since previous meeting.
  - 3. Field observations, problems, and conflicts.
  - 4. Problems which impede Construction Schedule.
  - 5. Review of off site fabrication, delivery schedule.
  - 6. Corrective measures and procedures to regain projected schedule.
  - 7. Revisions to Construction Schedule.
  - 8. Progress, schedule, during succeeding Work period.
  - 9. Coordination of schedules.
  - 10. Review submittal schedules; expedite as required.
  - 11. Maintenance of quality standards.
  - 12. Pending changes and substitutions.
  - 13. Review proposed changes for:
    - a. Effect on Construction Schedule and on a completion date.
    - b. Effect on other contracts of the Project.
  - 14. Other business.
  - 15. Construction schedule.
  - 16. Critical/long lead items.
- F. The Contractor is to attend progress meetings and is to study previous meeting minutes and current agenda items, in order to be prepared to discuss pertinent topics such as deliveries of materials and equipment, progress of Work, etc.

- G. The Contractor is to provide a current submittal log and construction schedule at each progress meeting in accordance with Section 01310 and Section 01340.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

## SECTION 01310

## CONSTRUCTION SCHEDULES

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Promptly after Award of the Contract and within 14 days after the effective date of the Agreement, prepare and submit to the Engineer an estimated construction progress schedules for the Work, with sub-schedules of related activities which are essential to its progress.
- B. Submit revised progress schedules on a monthly basis.
- C. No partial payments shall be approved by the Engineer until there is an approved up to date construction progress schedule on hand.
- 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's schedule.

## 1.02 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01152 – Applications for Payment
- C. Section 01200 – Project Meetings
- D. Section 01340 – Shop Drawings, Working Drawings, and Samples
- E. Other Sections as applicable.

## 1.03 FORM OF SCHEDULES

- A. Prepare schedules for submittal each month with pay request. The form of the schedule is to be Microsoft Project or approved equal. The Schedule is to indicate Work completed to date and additions to or deletions from the schedule.
  - 1. Provide separate horizontal bar for each trade or operation within each structure or item.
  - 2. Horizontal time scale: In weeks from start of construction and identify the first Work day of each month.
  - 3. Scale and spacing: To allow space for notations and future revisions.
- B. Format of listings: The chronological order of the start of each item of Work for each structure.

- C. Identification of listings: By major specification section numbers as applicable and structure.

#### 1.04 CONTENT OF SCHEDULES

##### A. Construction Progress Schedule:

1. Show the complete sequence of construction by activity.
2. Show the dates for the beginning of, and completion of, each major element of construction in no more than a two-week increment scale. Specifically list, but not limited to:
  - a. Shop Drawing Review
  - b. Receiving Materials
  - c. Pipeline Installations
  - d. Testing
  - e. Restoration
  - f. Startup
  - g. Record Drawings
  - h. Permit Close-out
  - i. Punch List
  - j. Owner Activities, Including Inspections
3. Show projected percentage of completion for each item, as of the first of each month.
4. Show projected dollar cash flow requirements for each month of construction.
5. Use of float suppression techniques such as preferential sequencing or logic, special lead/lag logic restraints, and extended activity times are prohibited, and use of float time disclosed or implied by use of alternate float-suppression techniques shall be shared to proportionate benefit of the Owner and Contractor.
6. Pursuant to above float-sharing requirement, no time extensions will be granted nor delay damages paid until a delay occurs which (i) impacts Project's critical path, (ii) consumes available float or contingency time, and (iii) extends Work beyond contract completion date.
7. If the Contractor provides an accepted schedule with an early completion date, the Owner reserves the right to reduce the duration of the Work to match the early completion date by issuing a deductive Change Order at no change in Contract Price.

- B. Submittal Schedule for Shop Drawings and Samples in accordance with Section 01340. Must show:
  - 1. The dates for Contractor's submittals.
  - 2. The dates for submittals will be required for Owner furnished products, if applicable.
  - 3. The dates approved submittals will be required from the Engineer.
- C. A list of all long lead items (equipment, materials, etc.).

#### 1.05 PROGRESS REVISIONS

- A. Indicate progress of each activity to date of submission.
- B. Show changes occurring since previous submission of schedule:
  - 1. Major changes in scope.
  - 2. Activities modified since previous submission.
  - 3. Revised projections of progress and completion.
  - 4. Other identifiable changes.
- C. Provide a narrative report as needed to define:
  - 1. Problem areas, anticipated delays, and the impact on the schedule.
  - 2. Corrective action recommended, and its effect.
  - 3. The effect of changes on schedules of other prime contractors.

#### 1.06 SUBMISSIONS

- A. Submit initial schedules to the Engineer within 14 days after the effective date of the Agreement.
  - 1. The Engineer will review schedules and return review copy within 21 days after receipt.
  - 2. If required, resubmit within 7 days after return of review copy.
- B. Submit a minimum of five (5) copies of revised monthly progress schedules with that month's application for payment.

#### 1.07 DISTRIBUTION

- A. Distribute copies of reviewed schedules to:
  - 1. Owner (Two copies)
  - 2. Engineer (Two copies)
  - 3. Job Site File (One copy)
  - 4. Subcontractors (As needed)

5. Other Concerned Parties (As needed)
- B. Instruct recipients to report promptly to the Contractor, in writing, any problems anticipated by the projections shown in the schedule.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

## SECTION 01340

## SHOP DRAWINGS, WORKING DRAWINGS, AND SAMPLES

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- 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 article called data), and material samples (hereinafter in this article 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 five (5) copies of shop drawings or other data to the Engineer.
- C. Within thirty (30) calendar days after the effective date of the Agreement, the Contractor shall submit to the Engineer a complete list of preliminary data for which Shop Drawings are to be submitted. Included in this list shall be the names of all proposed manufacturers furnishing specific items. Review of this list by the Engineer shall in no way expressed or implied relieve the Contractor from submitting complete Shop Drawings and providing materials, equipment, etc., fully in accordance with the Specifications. This procedure is required in order to expedite final review of Shop Drawings.
- D. The contractor is to maintain an accurate updated submittal log and will bring this log to each scheduled progress meeting with the Owner and Engineer. This log should include the following items:
  - 1. Submittal-Description and Number assigned.
  - 2. Date to Engineer.
  - 3. Date returned to Contractor (from Engineer).
  - 4. Status of Submittal (Approved/Resubmit/Rejected).
  - 5. Date of Resubmittal and Return (as applicable).
  - 6. Date material released (for fabrication).
  - 7. Projected date of fabrication.
  - 8. Projected date of delivery to site.
  - 9. Status of O & M submittal.

## 1.02 RELATED SECTIONS

- A. Section 01310 - Construction Schedules
- B. Section 01720 - Project Record Documents

- C. Section 01730 - Operating and Maintenance Data
- D. Other Sections as applicable.

### 1.03 CONTRACTOR'S RESPONSIBILITY

- A. It is the duty of the Contractor to check all drawings, data, and samples prepared by or for him before submitting them to the Engineer for review. Each and every copy of the Drawings and data shall bear Contractor's stamp will be returned to the Contractor for conformance with this requirement. Shop drawings shall indicate any deviations in the submittal from requirements of the Contract Documents.
- B. Determine and verify:
  - 1. Field measurements
  - 2. Field construction criteria
  - 3. Catalog numbers and similar data
  - 4. Conformance and Specifications
- C. The Contractor shall furnish the Engineer a schedule of Shop Drawing submittals fixing the respective dates for the submission of shop and working drawings, the beginning of manufacture, testing, and installation of materials, supplies, and equipment. This schedule shall indicate those that are critical to the progress schedule.
- D. Designate in the construction schedule, or in a separate coordinated schedule, the dates for submission and the dates that reviewed Shop Drawings, Working Drawings, and Samples will be needed.
- E. The Contractor shall not begin any of the Work covered by a drawing, data, or a sample returned for correction until a revision or correction thereof has been reviewed and returned to him, approved by the Engineer.
- F. The Contractor shall submit to the Engineer all shop drawings, working drawings and samples sufficiently in advance of construction requirements and shall account for Engineers Shop Drawing review time accordingly.
- G. The Contractor shall submit two (2) copies of descriptive or product data submittals to complement shop drawings for the Engineer plus the number of copies which the Contractor requires. The Engineer will retain two (2) sets. All blueprint shop drawings shall be submitted with one (1) set of reproducible and four (4) sets of print. The Engineer will review the drawings and return to the Contractor the set of marked-up drawings with appropriate review comments.
- 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 the review and Approval by Engineer of the necessary Shop Drawings.

## 1.04 ENGINEER'S REVIEW OF SHOP DRAWINGS

- A. The Engineer's review of drawings, data and samples submitted by the Contractor will cover only general conformity to the Specifications, external connections, and dimensions which affect the installation. The Engineer's review and exception if any, will not constitute an approval of dimensions, quantities, and details of the material, equipment, device, or item shown.
- B. The review of drawings and schedules will be general, and shall not be construed:
  - 1. As permitting any departure from the Contract requirements;
  - 2. As relieving the Contractor of responsibility for any errors, including details, dimensions, and materials;
  - 3. As approving departures from details furnished by the Engineer, except as otherwise provided herein.
- C. If the drawings or schedule as submitted describe variations and/or show a departure from the Contract requirements which Engineers finds to be in the interest of the Owner and to be minor as not to involve a change in the Contract Price or time for performance, the Engineer may return the reviewed drawings without noting an exception.
- D. When reviewed by the Engineer, each of the Shop Drawings will be identified as having received such review being so stamped and dated. Shop Drawings stamped "REJECTED" and with required corrections shown will be returned to the Contractor for correction and resubmittal.
- E. Resubmittals will be handled in the same manner as the first submittals. On resubmittals, the Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, to revisions other than the corrections requested by the Engineer on previous submissions. The Contractor shall make any corrections required by the Engineer.
- F. If the Contractor considers any correction indicated on the drawings to constitute a change to the Contract Drawings or Specifications, the Contractor shall give written notice thereof to the Engineer.
- G. The Engineer will review one submittal and one re-submittal after which cost of review will be borne by the Contractor. The cost of Engineering shall be equal to the Engineer's charges to the Owner under the terms of the Engineer's agreement with the Owner.
- 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. No partial submittals will be reviewed. Submittals not complete will be returned to the Contractor, and will not be considered "Rejected" until resubmitted.

- J. The Engineer shall return Shop Drawing submittals to the Contractor within twenty-one (21) days calendar days from the date the Engineer receives them.

#### 1.05 SHOP DRAWINGS

- A. When used in the Contract Documents, the term "Shop Drawings" shall be considered to mean Contractor's plans 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, and wiring and control diagrams. Cuts, catalogs, pamphlets, descriptive literature, and performance and test data, shall be considered only as supportive to required Shop Drawings as defined above.
- B. Drawings and schedules shall be checked and coordinated with Work of all trades involved, before they are submitted for review by the Engineer and shall bear the Contractor's stamp of approval as evidence of such checking and coordination. Drawings or schedules submitted without this stamp of approval shall be returned to the Contractor for resubmission.
- C. Each Shop Drawing, shall have a blank area 3 1/2 inches by 3 1/2 inches, located adjacent to the title block. The title block shall display the following:
1. Number and title of the drawing.
  2. Date of drawing or revision.
  3. Name of project building or facility.
  4. Name of contractor and subcontractor submitting drawing.
  5. Clear identification of contents and location of Work.
  6. Specification title and number.
- D. If drawings 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. 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.
- E. Data on materials and equipment include, without limitation, materials and equipment lists, catalog data sheets, cuts, performance curves, diagrams, materials of construction and similar descriptive material. Materials and equipment lists shall give, for each item thereon, the name and location of the supplier or manufacturer, trade name, catalog reference, size, finish, and all other pertinent data.
- F. For all mechanical and electrical equipment furnished, the Contractor shall provide a list including the equipment name, address and telephone number of the manufacturer's representative and a service company so that service and spare parts can be readily obtained. In addition, a maintenance and lubrication schedule for each piece of equipment shall be submitted along with each shop drawing submittal.

- G. All manufacturers or equipment supplier who proposes to furnish equipment or products shall submit an installation list to the Engineer along with the required shop drawings. The installation list shall include at least five installations where identical equipment has been installed and has been in operation for a period of at least five (5) years.
- H. Only the Engineer will utilize the color "red" in marking Shop Drawing submittals.
- I. Before final payment is made, the Contractor shall furnish to Engineer two (2) sets of record shop drawings all clearly revised, complete and up to date showing the permanent construction as actually made for all reinforcing and structural steel, miscellaneous metals, process and mechanical equipment, piping, electrical system and instrumentation system.

#### 1.06 WORKING DRAWINGS

- A. When used in the Contract Documents, the term "working drawings" shall be considered to mean the Contractor's plans for temporary structures such as temporary bulkheads, support of open cut excavation, support of utilities, ground water control systems, forming and false-Work; for underpinning; and for such other Work as may be required for construction, but does not become an integral part of the project.
- B. Copies of working drawings as noted in subparagraph 1.06A above, shall be submitted to the Engineer where required by the Contract Documents or requested by the Engineer, and shall be submitted at least thirty (30) calendar days (unless otherwise specified by the Engineer) in advance of their being required for Work.
- C. Working drawings shall be signed by a Registered Professional Engineer, currently licensed to practice in the State of Florida and shall convey, or be accompanied by, calculation 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, which 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. The Contractor assumes all risks of error; the Owner and Engineer shall have no responsibility therefore.

#### 1.07 SAMPLES

- A. The Contractor shall furnish, for the approval 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. The Contractor shall prepay all shipping charges on samples. Materials or equipment for which samples are required shall not be used in Work until approved by the Engineer.
- B. Samples shall be of sufficient size and quantity to clearly illustrate:
  - 1. Functional characteristics of the product, with integrally related parts and attachment devices.

2. Full range of color, texture, and pattern.
  3. A minimum of two samples of each item shall be submitted.
- C. Each sample shall have a label indicating
1. Name of Project
  2. Name of Contractor and Subcontractor
  3. Material or Equipment Represented
  4. Place of Origin
  5. Name of Producer and Brand (if any)
  6. Location in Project
- (Samples of finished materials shall have additional marking that will identify them under the finished schedules.)
- D. The Contractor shall prepare a transmittal letter in triplicate for each shipment of samples containing the information required in subparagraph 1.07B above. He shall enclose a copy of this letter with the shipment and send a copy of this letter to the Engineer. Approval of a sample shall be only for the characteristics or use named in such approval and shall not be construed to change or modify any Contract requirements.
- E. Approved samples not destroyed in testing shall be sent to the Engineer or stored at the site of the Work. Approved samples of the hardware in good condition will be marked for identification and may be used in the Work. Materials and equipment incorporated in Work shall match the approved samples. Samples which failed testing or were not approved will be returned to the Contractor at his expense, if so requested at time of submission.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

## SECTION 01370

## SCHEDULE OF VALUES

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Submit to the Engineer a Schedule of Values allocated to the various portions of the Work, within 14 days after the effective date of the Agreement.
- B. The Contractors Schedule of Values shall include all items listed in Section 01012 – Measurement and Payment.
- C. Once approved, the Schedule of Values shall be used as the basis for the Contractor's Applications for Payment.

## 1.02 RELATED SECTIONS

- A. Section 01012 - Measurement and Payment
- B. Section 01152 - Applications for Payment
- C. Other Sections as applicable.

## 1.03 FORM AND CONTENT OF SCHEDULE OF VALUES

- A. Present schedule on an 8-1/2 inch x 11 inch white paper; Contractor's standard forms and automated printout will be considered for approval by the Engineer upon Contractor's request. Identify schedule with:
  - 1. Title of Project and location
  - 2. Engineer and Project number
  - 3. Name and Address of Contractor
  - 4. Contract designation
  - 5. Date of submission
- B. Schedule shall list the installed value of the component parts to include individual equipment, piping, electrical, paving, of the Work (as required) in sufficient detail to serve as a basis for computing values for progress payments during construction and for additions and deletions to the Work.
- C. For the various portions of the Work:
  - 1. Each item shall include a directly proportional amount of the Contractor's overhead and profit.
- D. The sum of all values listed in the schedule shall equal the total Contract Sum.

1.04 ENGINEERS APPROVAL

- A. The Schedule of Values is subject to the Engineer's approval.
  - 1. Additional line item detail may be required.
  - 2. Supporting information may be required.
  - 3. Additional comparison trade bids may be required.

PART 2 - PRODUCTS (NOT USED)

PART 3 - PRODUCTS (NOT USED)

END OF SECTION

## SECTION 01380

## CONSTRUCTION PHOTOGRAPHS

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. The Contractor shall employ a professional photographer to take digital construction record photographs for pre-construction conditions periodically during course of Work and post-construction.

## 1.02 RELATED SECTIONS

- A. Section 01381 - Audio/Video Preconstruction Record
- B. Section 01720 - Project Record Documents

## 1.03 PHOTOGRAPHY REQUIRED

- A. View and Quantities Required:
  - 1. Take a minimum of 24 images of the site and adjacent property at the following intervals:
    - a. Pre-construction
    - b. Monthly, or other interval, at the cut-off date in accordance with Applications for Payment.
    - c. At construction events or discoveries as directed by the Owner or Engineer.
    - d. At post-construction.
- B. Aerial photography shall be required in addition to ground level images for items out of sight of ground level photography.
- C. Photograph from locations to adequately illustrate condition of construction and state of progress.
- D. At successive periods of photography, take at least one photograph from the same overall view as previously.
- E. Consult with the Owner and Engineer at each period of photography for instructions concerning views required.

## PART 2 - PRODUCTS

### 2.01 CAMERA REQUIREMENT

- A. A Digital Single Lens Reflex (DLSR) is required.
- B. Point and shoot, mobile phones and disposal cameras are not acceptable.

### 2.02 PHOTOGRAPHS

- A. The minimum file size is 6.0 megapixels per image.
- B. All images shall be color and in RGB format.
- C. Acceptable file formats include:
  - 1. Tagged Information File Format (TIFF)
  - 2. Joint Photographic Experts Group 2000 (JPEG2000)
  - 3. Digital Negative (DGN)
- D. Unacceptable file formats include:
  - 1. Bitmap (BMP)
  - 2. Graphics Interchange Format (GIFF)
  - 3. Portable Network Graphic (PNG)
  - 4. RAW format.

### 2.03 METADATA

- A. Each image must contain descriptive metadata as follows:
  - 1. Name of Project
  - 2. Orientation of View
  - 3. Date and time of image
  - 4. Name and address of photographer
  - 5. Photographer's numbered identification of image.
  - 6. Meaningful and descriptive filenames unique to each image.

### 2.04 COPYRIGHT

- A. No copyrighted photographs will be accepted.

### 2.05 EDITING

- A. Images shall not be edited in any way.

2.06 TECHNIQUE

- A. Factual presentation
- B. Magnification commensurate with the level of detail required.
- C. Correct image and focus
  - 1. High resolution and sharpness
  - 2. Maximum depth-of-field
  - 3. Minimum distortion

2.07 DELIVERY OF IMAGES

- A. Deliver electronic image file to the Owner and Engineer to accompany each Application for Payment or as directed.
- B. Electronic file storage media shall be a durable, commercial quality USB memory device of sufficient capacity to store the intended contents.
- C. Electronic file storage media shall be labeled and identified by project title and project number.
- D. The photographer shall keep electronic copies for a minimum of two years from Owner acceptance.

PART 3 - EXECUTION (NOT USED)

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 01381

## AUDIO/VIDEO PRE-CONSTRUCTION RECORD

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. The Contractor shall provide a continuous color video with audio of the entire project prior to construction and at Owner acceptance.

## 1.02 RELATED SECTIONS

- A. Section 01380 - Construction Photographs

## 1.03 SCHEDULE REQUIRED

- A. Video recordings shall not be made more than 30 days prior to construction. No construction shall begin prior to review and approval of the videos by the Engineer and the Owner.
- B. Videos not conforming to the Specifications shall be resubmitted at no additional charge.

## 1.04 PROFESSIONAL VIDEOGRAPHERS

- A. The Contractor shall engage the services of a professional videographer. The color audio-visual tapes shall be prepared by a responsible commercial firm known to be skilled and regularly engaged in the business of pre-construction color audio-visual documentation.

## PART 2 - PRODUCTS

## 2.01 GENERAL

- A. The finished product shall be a bright, sharp, clear picture free of distortion and show in sufficient detail acceptable to the Owner and Engineer.
- B. All videos shall be color and in RGB format.
- C. The Contractor shall furnish to the Engineer and the Owner two (2) copies each of the electronic file, which becomes a project record document.
- D. Electronic file storage media shall be a durable, commercial quality USB memory device or compact disc of sufficient capacity to store the intended contents.
- E. Electronic file storage media shall be labeled and identified by project title and project number.

- F. The videographer shall keep electronic copies for a minimum of two years from Owner acceptance.

## 2.02 METADATA

- A. Each video must contain descriptive metadata as follows:
  1. Name of Project
  2. Direction and road names
  3. Date and time of image
  4. Name and address of videographer
  5. Meaningful and descriptive filenames unique to each image.

## 2.03 COPYRIGHT

- A. No copyrighted videos will be accepted.

## 2.04 EDITING

- A. Videos shall not be edited in any way.

## PART 3 - EXECUTION

- A. The video recording shall show all surface features located within the construction zone. These features shall include, but not be limited to, roadways, sidewalks, outside of houses (front and sides), driveways, culverts, walls, fences, and landscaping.
- B. Where station numbering is used, coverage shall begin at the lowest station number and be continuous until the highest station number is reached. Otherwise, the entire length of the project shall be documented including each plan sheet.
- C. Provide magnification (zoom) where appropriate to properly display details germane to the subject matter.
- D. Maintain camera speed slow enough to achieve detail acceptable to the Owner and Engineer.
  1. Videos with unacceptable camera speed will not be accepted.
  2. Videographer shall be responsible to meet all traffic laws at the time of video including all necessary and appropriate safety measures.

END OF SECTION

## SECTION 01400

## QUALITY CONTROL

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. This Section describes the Contractors minimum responsibilities in meeting the quality requirements of the Contract Documents.

## 1.02 RELATED SECTIONS

- A. Section 01050 – Field Engineering and Surveying
- B. Section 01410 – Materials and Installation Testing
- C. Section 02200 – Earthwork
- D. Other Sections as applicable.

## 1.03 OBSERVATION AT PLACE OF MANUFACTURE

- A. Unless otherwise specified, all products, materials, and time and equipment shall be subject to observation by the Owner and the Engineer at the place of manufacture.
- B. The presence of the Owner and/or the Engineer at the place of manufacture however, shall not relieve the Contractor of the responsibility for furnishing products, materials, and equipment which comply with all requirements of the Contract Documents. Compliance is a duty of the Contractor.
- C. The Contractor shall advise the Owner and Engineer promptly upon placing orders for materials and equipment so that arrangements may be made, if desired, for observation before shipment from the place of manufacture.
- D. 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 Contractor 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.

## 1.04 SAMPLING AND TESTING

- A. Unless otherwise specified, all sampling and testing shall be in accordance with the methods prescribed in the current standards of the ASTM, as applicable to the class and nature of the article or materials considered.

- B. The Owner and the Engineer reserve the right to use any generally accepted system of sampling and testing which will insure the quality of the workmanship is in full accord with the Contract Documents.
- C. Any waiver by the Owner or Engineer of any specific testing or other quality assurance measures, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the specified testing or other quality assurance requirements as originally specified, and whether or not such guarantee is accompanied by a performance bond to assure execution of any necessary corrective or remedial Work, shall not be construed as a waiver of any requirements.
- D. The Owner and Engineer reserve the right to make independent investigations and tests at any time.
- E. Failure of any portion of the Work to meet any of the requirements of the Contract Document shall be reasonable cause for the Owner or Engineer to require the removal or correction and reconstruction of any such Work at the cost of the Contractor.

#### 1.05 SITE INVESTIGATION AND CONTROL

- A. The Contractor shall verify all dimensions in the field and shall check field conditions continuously during construction. The Contractor shall be solely responsible for any inaccuracies built into the Work due to its failure to comply with this requirement.
- B. The Contractor shall inspect related and appurtenant Work, and shall report in writing to the Owner and Engineer any conditions that will prevent proper completion of the Work. Failure to report any such conditions shall constitute acceptance of all site conditions, and any required removal, repair, or replacement caused by unsuitable conditions shall be performed by the Contractor at its cost.

#### 1.06 OBSERVATION AND TESTING

- A. The Work or actions of the testing laboratory shall in no way relieve the Contractor of its obligations under the Contract. The laboratory testing Work will include such observations and testing required by the Owner or Engineer. The testing laboratory will have no authority to change the requirements of the Contract Documents, nor perform, accept or approve any of the Contractor's Work.
- B. The Contractor shall allow the Owner and Engineer ample time and opportunity for field observation and testing materials and equipment to be used in the Work.
- C. The Contractor shall at all times furnish the Owner and the Engineer facilities, including labor, and allow proper time for inspecting and testing materials, equipment, and workmanship.
- D. The Contractor must anticipate that possible delays may occur in the execution of its Work due to the necessity of materials and equipment being inspected and accepted for use.

- E. The Contractor shall furnish, at its own expense, all samples of materials required by the Owner or Engineer for testing, and shall make its own arrangements for providing water, electric power, or fuel for the various observations and tests of structures and equipment.

#### 1.07 RIGHT OF REJECTION

- A. The Owner and Engineer, shall have the right, at all times and places, to reject any articles or materials to be furnished hereunder which, in any respect, fail to meet the requirements of the Contract Documents, regardless of whether the defects in such articles or materials are detected at the point of manufacture or after completion of the Work at the site.
- B. If the Owner or its representative, through an oversight or otherwise, has accepted materials or Work which is defective or which is contrary to the Contract Documents, such materials, no matter in what stage or condition of manufacture, delivery, or erection, may be subsequently rejected.
- C. The Contractor shall promptly remove rejected articles or materials from the site of the Work after notification of rejection. All costs of removal and replacement of rejected articles or materials as specified herein shall be borne by the Contractor.

#### PART 2 - PRODUCTS (NOT USED)

#### PART 3 - EXECUTION

##### 3.01 BUOYANCY

- A. The Contractor shall be completely responsible for any tanks, pipelines, manholes, foundations or similar improvements that may become buoyant during the construction operations due to groundwater levels. Should there be any possibility of buoyancy, the Contractor shall take the necessary steps to prevent damage due to floating or flooding, and shall repair, or replace said improvements at no additional cost.

##### 3.02 DEVIATION FROM SPECIFICATIONS

- A. If any part of a submittal deviates from the plans and specifications, it is up to the Contractor to indicate such deviation—in writing—to the Engineer, for determination as to acceptance of the deviation. If no deviation is submitted, it is assumed that the Contractor has fully and completely followed the plans and specifications, and that any discrepancy discovered during construction shall be corrected completely at the expense of the Contractor.

##### 3.03 AMERICANS WITH DISABILITIES ACT (ADA)

- A. The Contractor shall make every effort to ensure all concrete Work including, but not limited to accessible sidewalks, routes, ramps and curb ramps is compliant with the ADA and Florida Building Code Accessibility.

- B. Prior to and during concrete placement, the contractor shall verify the formwork for compliance. Any and all concrete Work which is not compliant shall be removed and replaced at no cost to the Owner.

END OF SECTION

## SECTION 01410

## MATERIALS AND INSTALLATION TESTING

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Contractor shall employ and pay for the services of an independent testing laboratory, approved by the Engineer, to perform materials and installation testing of the type and frequency specified in the Contract Documents including, but not limited to, Geotechnical Testing Services and concrete testing.
- B. Geotechnical Testing Services shall include, but not be limited to, periodic site inspections, soil proctor tests, soil classification tests and soil densities or compaction tests.
- C. The Engineer may, at any time, elect to have materials and equipment tested for conformity with the Contract Documents.
- D. Contractor shall include cost of testing in the Contract Price.
- E. Piping pressure test and bacteriological testing shall be in accordance with the applicable Section.

## 1.02 RELATED SECTIONS

- A. Section 01050 – Field Engineering and Surveying
- B. Section 02200 – Earthwork
- C. Section 15010 – Testing Piping Systems
- D. Other Sections as applicable.

## 1.03 REFERENCES

- A. FDOT Design Standards.
- B. FDOT Standard Specifications for Road and Bridge Construction.
- C. Broward County Traffic Engineering Division (BCTED) Minimum Standards and the BCTED Pavement Markings & Signs Detail Sheet.

## 1.04 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

## PART 2 - PRODUCTS (NOT USED)

## PART 3 - EXECUTION

### 3.01 CONTRACTOR'S RESPONSIBILITIES

- A. Provide all testing required by the Contract Documents as well as laws, ordinances, rules, regulations, orders, or approvals of public authorities.
- B. Employment of the laboratory shall in no way relieve Contractor's obligations to perform the Work of the Contract.
- C. Cooperate with laboratory personnel, and provide access to Work and to Manufacturer's operations.
- D. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.
- E. Provide to the laboratory the preliminary design mix proposed to be used for concrete and other materials mixes which require control by the testing laboratory.
- F. 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
- G. Notify laboratory sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.
  1. When tests or inspections cannot be performed after such notice, reimburse Owner for laboratory personnel and travel expenses incurred due to Contractor's negligence.
- H. 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.
- I. If the Owner requests tests in addition to those specified in the contract, and if the test results indicate the material or equipment complies with the Contract Documents, the Owner shall pay for the cost of the testing laboratory. If the tests and any subsequent retests indicate the materials and equipment fail to meet the requirements of the Contract Documents, the Contractor may pay for the laboratory

costs directly to the testing firm or the total of such costs shall be deducted from any payments due the Contractor.

- J. The Contractor shall pay costs for additional trips to the project by the agency when scheduled times for tests and inspections are canceled and agency is not notified sufficiently in advance of cancellation to avoid the trip.

### 3.02 TESTING

- A. The following types of tests and test frequencies are required. Copies of all reports are to be sent to the Engineer immediately upon availability.
  - 1. Density tests for trench backfill at a minimum rate of one (1) test per 6" lift per 100 feet of trench, unless otherwise directed by the Engineer.
  - 2. Density tests for subgrade compaction at a minimum rate of three (3) tests in 100 feet of roadway, unless otherwise directed by the Engineer.
  - 3. Density tests for limerock base at a minimum rate of three (3) tests per day on each course of completed compacted base, unless otherwise directed by the Engineer.
  - 4. Density test for roadway crossings at the rate of one test per lane per lift of compacted material, beginning one foot above the normal water table.
- B. If in the opinion of the Engineer, suitable compaction has not been achieved around structures, density tests may be required.
- C. Concrete compressive strength at the rate of three (3) cylinders per the lesser of 50 cubic yards or per day.
- D. Should any test indicate that any portion of the materials or workmanship does not comply with these Specifications; a retest shall be performed at the Contractor's expense. If the retest confirms the first test, that portion of the Work shall be removed and replaced or reworked and retested at no additional cost to the Owner until satisfactory compliance is attained.
- E. Testing in the County right-of-way shall meet the requirements of the Florida Department of Transportation.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 01505

## CONTROL OF WORK

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. The Contractor shall furnish personnel and equipment which will be efficient, appropriate and a quantity large enough to secure a satisfactory quality of Work and a rate of progress which will insure the completion of the Work within the time stipulated in the Proposal. If at any time such personnel appear to the Engineer to be inefficient, inappropriate, or insufficient for securing the quality of Work required or for producing the rate of progress aforesaid, he may order the Contractor to increase the efficiency, change the character or increase the personnel and equipment, and the Contractor shall conform to such order. Failure of the Engineer to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the Work and rate of progress required.

## 1.02 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01015 – General Requirements
- C. Other Sections as applicable.

## 1.03 PIPE LOCATIONS

- A. Pipeline shall be located substantially as indicated on the Drawings, but the Engineer reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons.

## 1.04 OBSTRUCTIONS

- A. The attention of the Contractor is drawn to the fact that during digging at the Project site, the possibility exists of the Contractor encountering various water, sewer, gas, telephone, electrical, or other lines not shown on the Drawings. The Contractor shall exercise extreme care before and during digging to locate and flag these lines so as to avoid damage to the existing lines. Should damage occur to an existing line, The Contractor shall repair the line at no cost to the Owner.
- B. The Contractor shall protect all existing utilities and improvements not designated for removal and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation, all in accordance with requirements of the Contract Documents.

- C. The Contractor shall verify the exact locations and depths of all utilities shown and the Contractor shall make exploratory excavations of all utilities that may interfere with the Work. All such exploratory excavations shall be performed as soon as practicable after award of the contract and, in any event, a sufficient time in advance of construction to avoid possible delays to the Contractor's Work. When such exploratory excavations show the utility location as shown to be in error, the Contractor shall so notify the Engineer.
- D. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the utility. Test pits shall be dug at the Contractor's expense, as directed.
- E. The Contractor shall protect all Underground Utilities and other improvements which 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 that will be encountered in its construction operations, and to see that such utilities or other improvements are adequately protected from damage due to such operations. The Contractor shall take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.
- F. In case it shall be necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon request of the Contractor, be notified by the Owner to move such property within a specified reasonable time. When utility lines that are to be removed are encountered within the area of operations, the Contractor shall notify the Engineer a sufficient time in advance for the necessary measures to be taken to prevent interruption of service.
- G. Where the proper completion of the Work requires the temporary or permanent removal and/or relocation of an existing utility or other improvement which is indicated, the Contractor shall remove and, without unnecessary delay, temporarily replace or relocate such utility or improvement in a manner satisfactory to the Engineer and the owner of the facility. In all cases of such temporary removal or relocation, restoration to 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 locations and to as good or better condition than found prior to removal.
- H. Existing utility lines that are indicated or the locations of which are made known to the Contractor prior to excavation and that are to be retained, and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired or replaced by the Contractor at the Contractor's expense. Sewer laterals are included.
- I. All repairs to a damaged utility or improvement are subject to inspection and approval by an authorized representative of the utility or improvement owner before being concealed by backfill or other Work.
- J. All power, telephone or the communication cable ducts, gas and water mains, irrigation lines, sewer lines, storm drain lines, poles, and overhead power and

communication wires and any other cables encountered along the line of the Work shall remain continuously in service during all the operations under the Contract, unless other arrangements satisfactory to the Engineer are made with the owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, or wire or cable. The Contractor shall be responsible for and shall repair all damage due to its operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.

#### 1.05 OPEN EXCAVATIONS

- A. All open excavations shall be adequately safeguarded by providing temporary barricades, caution signs, lights, and other means to prevent accidents to persons, and damage to property. The Contractor shall, at his own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen. Bridges provided for access to private property during construction shall be removed when no longer required. The length of open trench will be controlled by the particular surrounding conditions, but shall always be confined to the limits prescribed by the Engineer. If the excavation becomes a hazard, or if it excessively restricts traffic at any point, the Engineer may require special construction procedures such as limiting the length of open trench or prohibiting stacking excavated material in the street, and requiring that the trenches shall not remain open overnight.
- B. The Contractor shall take precautions to prevent injury to the public due to open trenches. All trenches, excavated material, equipment, or other obstacles which could be dangerous to the public shall be well lighted at night.

#### 1.06 TEST PITS

- A. Test pits for the purpose of locating underground pipeline or structures in advance of the construction shall be excavated and backfilled by the Contractor at his cost at the direction of the Engineer. Test pits shall be backfilled immediately after their purpose has been satisfied and the surface restored and maintained in a manner satisfactory to the Engineers.

#### 1.07 UTILITY CROSSINGS

- A. It is intended that wherever existing utilities such as 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 Engineer or the Owner this procedure is not feasible he may direct the use of fittings.

#### 1.08 SANITATION

- A. Toilet Facilities - Fixed or portable chemical toilets shall be provided wherever needed for the use of employees. Toilets at construction job sites shall conform to the requirements of Part 1926 of the OSHA Standards for Construction.

- B. Sanitary and Other Organic Wastes - The Contractor shall establish a regular daily collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided by the Contractor or organic material wastes from any other source related to the Contractor's operations shall be disposed of away from the site in a manner satisfactory to the Engineer and in accordance with all laws and regulations pertaining thereto.

#### 1.09 RELOCATIONS

- A. The Contractor shall be responsible for the relocation of structures, including but not limited to light 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 for the project and shall not result in any additional cost to the Owner.

#### PART 2 - PRODUCTS (NOT USED)

#### PART 3 - EXECUTION

##### 3.01 COOPERATION WITHIN THIS CONTRACT

- A. All firms or persons authorized to perform any Work under this Contract shall cooperate with the General Contractor and his subcontractors or trades, and shall assist in incorporating the Work of other trades where necessary or required.
- B. Cutting and patching, drilling and fitting shall be carried out where required by the trade or subcontractor having jurisdiction, unless otherwise indicated herein or directed by the Engineer.

##### 3.02 PROTECTION OF CONSTRUCTION AND EQUIPMENT

- A. All newly constructed Work shall be carefully protected from injury in any way. No wheeling or walking or placing of heavy loads on it shall be allowed and all portions injured shall be reconstructed by the Contractor at his own expense.
- B. Further, the Contractor shall take all necessary precaution to prevent damage to any structure due to water pressure during and after construction and until such structure is accepted and taken over by the Owner.

##### 3.03 PRIVATE LAND

- A. The Contractor shall not enter or occupy private land outside of easements, except by written permission of the land owner.

##### 3.04 RESTORATION

- A. Temporary restoration shall be completed within five days of pipe installation. Temporary restoration shall include all driveways, sidewalks, and roadways. They shall be swept clean and be maintained free of dirt and dust. All areas disturbed by

the construction activities shall be restored to proper grade, cleaned up, including the removal of debris, trash, and deleterious materials. All construction materials, supplies, or equipment, including piles of debris shall be removed from the area. All temporarily restored areas shall be maintained by the Contractor. These areas shall be kept clean and neat, free of dust and dirt, until final restoration operations are completed. The Contractor is responsible to utilize dust abatement operations in the temporarily restored areas as required, to the satisfaction of the Engineer.

- B. Wherever sidewalks or private roads have been removed for purposes of construction, the Contractor shall place suitable temporary sidewalks or roadways promptly after backfilling and shall maintain them in satisfactory condition for the period of time fixed by the authorities having jurisdiction over the affected portions before proceeding with the final restoration or, if no such period of times is so fixed, the Contractor shall maintain said temporary sidewalks or roadways until the final restoration thereof has been made.
- C. Final restoration shall be completed within thirty days of pipe acceptance. Final restoration shall include the completion of all required pavement replacement of roadways, driveways, curbs, gutters, sidewalks and other existing improvements disturbed by the construction; final grading, placement of sod, pavement marking, etc., all complete and finished, acceptable to the Engineer.
- D. In order to obtain a satisfactory junction with adjacent surfaces, the Contractor shall saw cut back and trim the edge so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with the adjacent undisturbed pavement.
- E. The Contractor shall test an installed section of pipeline within five calendar days from completion of the pipeline. A section of pipe is defined as a pipe section which can be isolated by valves for appurtenances is satisfactorily completed, the Contractor shall provide the Engineer with a "Schedule of Existing Facilities Restoration" which will be reviewed and be acceptable to the Engineer. The schedule shall show the existing facilities to be restored and schedule of beginning and completion dates for each item of restoration. The Work for completing the final restoration of existing facilities for a tested section of Work shall be completed within 30 days of acceptance of the pipeline testing.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 01510

## TEMPORARY UTILITIES

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Furnish, install and maintain temporary utilities required for construction, remove on completion of Work.
- B. Pay all fees associated with temporary utilities including water consumption charges.

## 1.02 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Other Sections as applicable.

## 1.03 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 County Health Department and Environmental Regulations.

## PART 2 - PRODUCTS

## 2.01 MATERIALS

- 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, 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.
- B. Install circuit and branch wiring, with the area distribution boxes located so that power and lighting is available throughout the construction by the use of construction type power cords.
- C. Provide adequate artificial lighting for all areas of Work when natural light is not adequate to Work, and all areas accessible to the public.

### 2.03 TEMPORARY WATER

- A. Arrange with the water utility provider to provide water for construction purposes.
- B. Install branch piping with taps located so that water is available throughout the construction by the use of hoses.
- C. Install at each and every connection to the Owner water supply a backflow preventer meeting the requirements of ANSI A40.6 and AWWA C511. Contractor shall be required to meter and pay for all water used.

### 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.

### 3.02 REMOVAL

- A. Completely remove temporary materials and equipment when their use is no longer required.
- B. Clean and repair damage caused by temporary installations or use of temporary facilities.
- C. Restore permanent facilities used for temporary services to specified condition.

END OF SECTION

## SECTION 01530

## EXISTING UTILITIES

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. This Section provides for specifications related to construction in the vicinity of existing utilities.

## 1.02 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01015 – General Requirements
- C. Other Sections as applicable.

## 1.03 CONTRACTOR RESPONSIBILITIES

- A. The term existing utilities shall be deemed to refer to both publicly-owned and privately-owned utilities including, but not limited to, electric power and lighting, telephone, water, gas, storm drains, process lines, sanitary sewers, and all appurtenant structures.
- B. Prior to underground construction, the Contractor is required by the Underground Facility Damage Prevention and Safety Act, Chapter 556 FS to contact Sunshine 811, for the location of underground utilities.
- C. Where existing utilities and structures are indicated in the Contract Documents, it shall be understood that all of the existing utilities and structures affecting the Work may not be shown and that the locations of those shown are approximate only. It shall be the responsibility of the Contractor to ascertain the actual extent and exact location of existing utilities and structures. In every instance, the Contractor shall notify the proper authority having jurisdiction and obtain all necessary directions and approvals before performing any Work in the vicinity of existing utilities.

## 1.04 NOTIFICATION OF UTILITY OWNER

- A. Prior to any excavation in the vicinity of any existing underground facilities, including all water, sewer, storm drain, gas, petroleum products, or other pipelines; all buried electric power, communications, or television cables; all traffic signal and street lighting facilities; and all roadway and state highway rights-of-way the Contractor shall notify the respective authorities representing the owners or agencies responsible for such facilities not less than three days nor more than seven days prior to excavation so that a representative may be present during such excavation.

## 1.05 RIGHT-OF-WAY'S

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

## PART 2 - PRODUCTS (NOT USED)

## PART 3 - EXECUTION

### 3.01 TEMPORARY CONNECTIONS

- A. The Work shall be carried out in a manner to prevent disruption of existing services and to avoid damage to the existing utilities. Temporary connections shall be provided, as required, to insure no interruption of existing services. Any damage resulting from the Work of this Contract shall be promptly repaired by the Contractor at his own expense in a manner approved by the Engineer and further subject to the requirements of any authority having jurisdiction. Where it is required by the authority having jurisdiction that they perform their own repairs or have them done by others, the Contractor shall be responsible for all costs thereof.

### 3.02 UTILITY SUPPORT

- A. Where excavations by the Contractor require any utility lines or appurtenant structures to be temporarily supported and otherwise protected during the construction Work, such support and protection shall be provided by the Contractor. All such Work shall be performed in a manner satisfactory to the respective authority having jurisdiction over such Work.

### 3.03 UTILITY CROSSINGS

- A. It is intended that wherever existing utilities such as water, chemical, electrical, or other service lines must be crossed, deflection of the pipe within limits recommended by the pipe manufacturer and the required minimum 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 a utility crossing as detailed on the Drawings. All existing utilities shall be pothole located prior to construction of conflicting piping.

### 3.04 ADVANCE INVESTIGATIONS

- A. The Contractor shall be responsible for uncovering and exposing existing utilities sufficiently in advance of pipe laying operations to confirm elevation, size, material, and clearance separation(s). If, upon excavation, an existing utility is found to be in conflict with the proposed construction or be of a size or material different from what is shown on the plans, the Contractor shall immediately notify the Engineer, who will in turn prepare a recommendation. Failure of the Contractor to perform the advance investigation shall not relieve it of any claims for delay or damages.

### 3.05 UNFORESEEN UTILITIES

- A. The attention of the Contractor is drawn to the fact that during excavation, the possibility exists of encountering water, sewer, petroleum, gas, telephone, electrical, or other utilities not shown on the Drawings. The Contractor is responsible for obtaining utility locations from the utility owners or utility locating company. The Contractor shall exercise extreme care before and during digging to locate and flag these lines so as to avoid damage to the existing lines. Should damage occur to an existing line, the Contractor shall repair the line at the no cost to the Owner.

### 3.06 CONNECTIONS TO EXISTING SYSTEMS

- A. The Contractor shall perform all Work necessary to locate, excavate, and prepare for connections to the terminus of the existing mains all as shown on the Drawings or where directed by the Owner. The cost of this Work and the cost for the actual connection to the existing mains shall be included in the bid price and shall not result in any additional cost to the Owner.

### 3.07 MAINTENANCE OF EXISTING STORM WATER FACILITIES OPERATION

- A. The Contractor shall take notice that existing storm water pump station is operated in the construction area. It is the responsibility of the Contractor to contact the Owner's utility operator and ascertain the extent of any specific service area.
- B. The Contractor shall fully cooperate at all times with the Owner in order to maintain the operation of the existing facilities with the least amount of interference and interruption possible. Continuous service, public health, and safety considerations shall exceed all others and the Contractor's schedule, plans, and Work shall at all times be subject to alteration and revision, if necessary, for the above considerations.
- C. The Engineer and Owner reserve the right to require the Contractor to Work 24 hours per day in all cases where, in their opinion, interference with operation of the system may result.
- D. In no case will the Contractor be permitted to interfere with the existing system until all materials, supplies, equipment, tools, and incidentals necessary to complete the interfering portion of the Work are on the site, or a temporary by-pass system is effectively in place. All existing utilities shall be pothole located prior to construction of conflicting piping.
- E. The Contractor shall provide emergency storm drainage pumping as specified in the Contract Documents.

## 3.08 RESTORATION OF PAVEMENT

- A. General: All paved areas including concrete, asphaltic concrete, berms cut or damaged during construction shall be replaced with similar materials and of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents. All pavements which are subject to partial removal shall be neatly saw-cut in straight lines.
- B. Temporary Resurfacing: Wherever required by the public authorities having jurisdiction, the Contractor shall place temporary surfacing promptly after backfilling and shall maintain such surfacing for the period of time fixed by said authorities before proceeding with the final restoration of improvements.
- C. Permanent Resurfacing: In order to obtain a satisfactory junction with adjacent surfaces, the Contractor shall saw-cut back and trim the edge so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement.

END OF SECTION

## SECTION 01531

## PROTECTION OF EXISTING PROPERTY

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. The Contractor shall be responsible for the preservation and protection of property adjacent to the Work site against damage or injury as a result of his operations under this project. Any damage or injury occurring on account of any act, omission or neglect on the part of the Contractor shall be restored in a proper and satisfactory manner or replaced by and at the expense of the Contractor to an equal or superior condition than previously existed.
- B. In the event of any claims for damage or alleged damage to property as a result of Work, the Contractor shall be responsible for all costs in connection with the settlement of or defense against such claims. Prior to commencement of Work in the vicinity of property adjacent to the Work site, the Contractor, at his own expense, shall take such surveys as may be necessary to establish the existing condition of the property. Before final payment can be made, the Contractor shall furnish satisfactory evidence that all claims for damage have been legally settled or sufficient funds to cover such claims have been placed in escrow, or that an adequate bond to cover such claims has been obtained.

## 1.01 RELATED SECTIONS

- A. Section 01015 – General Requirements
- B. Section 01570 – Traffic Regulation
- C. Other Sections as applicable.

## 1.02 PRESERVATION AND RESTORATION

- A. Contractor shall be responsible for the preservation and protection of property adjacent to the Work site against damage or injury as a result of his operations under this project. Any damage or injury occurring on account of any act, omission or neglect on the part of the Contractor shall be restored in a proper and satisfactory manner or replaced by and at the expense of the Contractor to an equal or superior condition than previously existed.

## 1.03 ADJACENT PROPERTY OWNER NOTIFICATION

- A. The Contractor shall prepare a written notice to property owners adjacent to the project Work site notifying them of the schedule of Work affecting them and anticipated inconveniences they may expect. The notice shall meet the approval of the Engineer and be delivered to property owners at least 72 hours prior to construction adjacent to their property. This notice shall indicate the Work to be

performed, the time it will take to perform the Work, and the time when the water service to the property owner will be disrupted.

#### 1.04 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 will 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 notification shall be sufficiently in advance of construction so that there will be no delay due to waiting for survey points to be satisfactorily referenced for restoration. All survey markers or points disturbed by the Contractor without proper authorization by the Engineer will be accurately restored by the Owner at the Contractor's expense after all street or roadway resurfacing has been completed.

#### 1.05 BARRICADES, WARNING SIGNS AND LIGHTS

- A. In addition to the requirements of Section 01570 – Traffic Regulation, the Contractor shall provide, erect, and maintain as necessary, strong and suitable barricades, danger signs, and warning lights for the preservation and protection of property adjacent to the Work site. All barricades and obstructions along public roads shall be illuminated at night and all lights for this purpose shall be kept burning from sunset to sunrise.

#### 1.06 TREES AND LANDSCAPING PROTECTION

- A. General: The Contractor shall exercise all necessary precautions so as not to damage or destroy any trees or landscaping in or near the project site, and shall not trim or remove any trees or landscaping unless such trees or landscaping have been approved for trimming or removal by the jurisdictional agency or owner. All existing trees or landscaping which are damaged during construction shall be replaced by the Contractor or a certified tree/landscaping company to the satisfaction of the owner.
- B. Replacement: The Contractor shall immediately notify the jurisdictional agency or owner if any tree or landscaping is damaged by the Contractor's operations. If, in the opinion of the jurisdictional agency or owner, the damage is such that replacement is necessary, the Contractor shall replace the tree or landscaping at its own expense. The tree or landscaping shall be of a like size and variety as the tree or landscaping damaged, or, if of a smaller size, the Contractor shall pay any compensatory payment.
- C. All permit fees associated with the removal and replacement of trees and landscaping damaged or destroyed shall be the responsibility of the Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 01540

## SECURITY

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. This Section provides for requirements of security, entry control, personnel identification, and miscellaneous restrictions.

## 1.02 RELATED SECTIONS

- A. Section 01010 - Summary of Work
- B. Other Sections as applicable.

## 1.03 SECURITY PROGRAM

- A. Protect Work, existing premises and Owner's operations from theft, vandalism, and unauthorized entry.
- B. Initiate program in coordination with Owner's existing security system at job mobilization.
- C. Maintain program throughout construction period until Owner occupancy as directed by Engineer.

## 1.04 ENTRY CONTROL

- A. Restrict entrance of persons and vehicles into project site and existing facilities.
- B. Allow entrance only to authorized persons with proper identification.
- C. Maintain log of workmen and visitors, make available to Owner on request.
- D. Coordinate access of Owner's personnel to site in coordination with Owner's security forces.

## 1.05 PERSONNEL IDENTIFICATION

- A. All personnel shall wear clothing bearing the company information of which they are employed.
- B. Provide additional security as required by the Owner.
- C. Become familiar with Owner and Engineer representatives and restrict access to job site to these representatives.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

## SECTION 01550

## SITE ACCESS AND STORAGE

## PART 1 - GENERAL

## 1.01 GENERAL

- A. This section provides general specifications for the contractors' mobilization, demobilization, access to the site and limitations on storage or lay-down area.

## 1.02 RELATED SECTIONS

- A. Section 01015 – General Requirements
- B. Section 01505 – Control of Work
- C. Other Sections as applicable.

## 1.03 REFERENCES

- A. FDOT Standard Specifications for Road and Bridge Construction
- B. FDOT Design Standards
- C. Broward County Traffic Engineering Division (BCTED) Minimum Standards
- D. Standards and Specifications of the local municipality
- E. The requirements of the Owner

## 1.04 HIGHWAY LIMITATIONS

- A. The Contractor shall make his own investigation of the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to the site of the Work.

## 1.05 CONTRACTOR'S WORK AND STORAGE AREA

- A. Contractor's Work and storage area plan shall be submitted for Owners approval no later than 30 days after NTP.
  - 1. Owner approval of the Work are and storage plan is required prior to commencement.
  - 2. The limits of the Contractor's staging area and other applicable restrictions shall be subject to the local municipality.
- B. The Contractor shall make his own arrangements and pay for any necessary off-site storage or shop areas necessary for the proper execution of the Work.

## PART 2 - PRODUCTS (NOT USED)

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. The Contractor shall set up construction facilities in a neat and orderly manner within designated areas and shall confine operations to Work and storage areas.

### 3.02 RESTORATION

- A. All areas disturbed by the construction activities shall be restored to proper grade, cleaned up, including the removal of debris, trash, and deleterious materials.
- B. Temporary restoration shall include all driveways, sidewalks, and roadways. They shall be swept clean and be maintained free of dirt and dust.
- C. All construction materials, supplies, or equipment, including piles of debris shall be removed from the area.
- D. All temporarily restored areas shall be maintained by the Contractor. These areas shall be kept clean and neat, free of dust and dirt, until final restoration operations are completed.
- E. Temporary restoration shall be completed within five days of pipe installation or as specified.
- F. The Contractor is responsible to utilize dust abatement operations in the temporarily restored areas as required, to the satisfaction of the Engineer.
- G. Final restoration shall be completed within 30 days of pipe acceptance. Final restoration shall include the completion of all required pavement replacement of roadways, driveways, curbs, gutters, sidewalks and other existing improvements disturbed by the construction; final grading, placement of sod, pavement marking, etc., all complete and finished, acceptable to the Engineer.
- H. In order to obtain a satisfactory junction with adjacent surfaces, the Contractor shall saw cut back and trim the edge so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with the adjacent undisturbed pavement.

### 3.03 DEMOBILIZATION

- A. At the completion of Work the Contractor shall remove its personnel, equipment, and temporary facilities from the site in a timely manner. The Contractor shall also be responsible for transporting all unused materials belonging to the Owner to a

place of storage on site designated by the Owner and for removing from the site and disposing of all other materials and debris resulting from the construction. It shall then return all areas used for its activities to a condition as recorded in the pre-construction video or better.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 01570

## TRAFFIC REGULATION

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. The Work to be performed under this section shall include furnishing all materials and labor necessary to regulate vehicular and pedestrian traffic.
- B. Provide, operate, and maintain equipment, services, and personnel, with traffic control and protective devices, as required to expedite vehicular traffic flow around the construction area.
- C. Remove temporary equipment and facilities when no longer required, restore grounds to original, or to specified conditions.

## 1.02 RELATED SECTIONS

- A. Section 01015 – General Requirements
- B. Section 01505 – Control of Work
- C. Other Sections as applicable.

## 1.03 REFERENCES

- A. The Work under this Contract shall be in strict accordance with the following codes and standards.
  - 1. The applicable municipality
  - 2. Broward County Traffic Engineering Division
  - 3. Florida Department of Transportation Design Standards and Specifications
  - 4. OSHA Safety and Health Standards for Construction.
  - 5. Federal Highway Administration Manual of Uniform Traffic Control Devices for Streets and Highways (MUTCD)
  - 6. Federal Highway Administration Traffic Controls for Street and Highway Construction and Maintenance Operations

## PART 2 - PRODUCTS (NOT USED)

## PART 3 - EXECUTION

### 3.01 MAINTENANCE OF TRAFFIC

- A. For the maintenance and protection of vehicular and pedestrian traffic in public or private streets and ways, the Contractor shall provide, place, and maintain all necessary barricades, traffic cones, warning signs, lights and other safety devices in accordance with the requirements of the "Manual of Uniform Traffic Control Devices, Part VI - Traffic Controls for Street and Highway Construction and Maintenance Operations," published by U.S. Department of Transportation, Federal Highway Administration (ANSI D6.1).
- B. The Contractor shall provide a Maintenance of Traffic Plan, sealed by a Professional Engineer registered in the State of Florida holding a current FDOT MOT certificate. The plan, and subsequent revisions, must be approved by the Broward County and/or the Florida Department of Transportation and the applicable local municipality.
- C. The Contractor shall take all necessary precautions for the protection of the Work and the safety of the public. All barricades and obstructions shall be illuminated at night, and all lights shall be kept burning from sunset until sunrise. The Contractor shall station such guards or flaggers and shall conform to such special safety regulations relating to traffic control as may be required by the public authorities within their respective jurisdictions. All signs, signals, and barricades shall conform to the requirements of OSHA and Subpart G, Part 1926, of the OSHA Safety and Health Standards for Construction.
- D. The Contractor shall remove traffic control devices when no longer needed, shall repair all damage caused by installation of the devices, and shall remove post settings and backfill the resulting holes to match grade.

### 3.02 CORRECTIONS

- A. Upon notification by the owner either verbally or in writing, the contractor shall correct any noted deficiencies within one hour.
- B. Inspection of all traffic control items shall be accomplished at least twice per day. One of these inspections shall be at the end of the Work day or at night.

### 3.03 TRAFFIC AND VEHICULAR ACCESS:

- A. Emergency Vehicles: No single family residence, multi-family residence, apartment, commercial building, or place of employment shall be without access to emergency vehicles for a period longer than three hours. The Contractor shall notify in writing the Engineer, the police, fire and other emergency departments and agencies when and where Work is to be accomplished that will affect their operations at least two days in advance of such Work.

- B. Commercial Properties: Access to commercial property shall not be blocked for a period of more than 30 minutes during the time such properties are open for business.
- C. Residential Property: Access to residential property shall not be blocked for a period of more than 4 hours.

#### 3.04 ROAD CLOSURE

- A. No roads shall be blocked to traffic without adequate detour facilities for a period of more than 30 minutes or as directed by the governing authority.
- B. At least seven days prior to a proposed road closure, the contractor shall submit to the Owner a complete traffic control plan. This plan shall include the following minimum information:
  - 1. Sketch of Work site and all area roads, streets, and mark driveways.
  - 2. Proposed detour route.
  - 3. All necessary traffic control devices to be used.
  - 4. Emergency contractor contact person name and phone to be available 24 hours a day.
  - 5. Estimated times/dates of road closure.

#### 3.05 CONSTRUCTION IN OTHER THAN STATE HIGHWAY RIGHT-OF-WAY:

- A. Construction within right-of-way other than State highway shall be made in full compliance with all requirements of the Florida Department of Transportation and to the satisfaction of the local governing bodies. All necessary barricades, detours, lights and other protective measures shall be provided for the protection of both pedestrian and vehicular traffic.
- B. The Contractor shall provide and maintain such other warning signs and barricades in areas of and around their respective Work as may be required for the safety of all those employed in the Work or those visiting the site.

#### 3.06 FLAGMEN

- A. Provide qualified and suitably equipped flagmen when construction operations encroach on traffic lanes, as required for regulation of traffic.

#### 3.07 FLARES AND LIGHTS

- A. Provide lights as required to clearly delineate traffic lanes and to guide traffic as required.
- B. Provide lights for use by flagmen in directing traffic.
- C. Provide illumination of critical traffic and parking areas as required.

3.08 CONSTRUCTION PARKING CONTROL

- A. Control vehicular parking to preclude interference with public traffic or parking, access by emergency vehicles, Owner's operations, or construction operations.
- B. Monitor parking of construction personnel's private vehicles.
- C. Maintain free vehicular access to and through parking areas and driveways.
- D. Prohibit parking on or adjacent to access roads, or in non-designated areas.

END OF SECTION

## SECTION 01600

## MATERIAL AND EQUIPMENT

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Material and equipment incorporated into the Work.
  - 1. Conform to applicable specifications and standards.
  - 2. Comply with size, make, and type and qualify 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 part of duplicate units to standard sizes and gauges, to be interchangeable.
    - c. Two or more items of the same kind shall be identical, by the same manufacturer.
    - d. Products shall be suitable for service conditions.
    - e. Equipment capacities, sizes, and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
  - 4. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

## 1.02 RELATED SECTIONS

- A. Section 01340 - Shop Drawings, Working Drawings, and Samples
- B. Section 01630 - Substitutions
- C. Section 01720 - Project Record Documents
- D. Other Sections as applicable.

## 1.03 APPROVAL OF MATERIALS

- A. Only new materials and equipment shall be incorporated in the Work. 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 without prior approval of the Engineer.

- B. Within 30 days after the effective date of the Agreement, the Contractor shall submit to the Engineer, data relating to materials and equipment he proposes to furnish for the Work. Such data shall be in sufficient detail to enable the Engineer to identify the particular product and to form an opinion as to its conformity to the specifications.
- C. 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 progress of the Work, the Contractor shall submit samples of materials for such special tests as may be necessary to demonstrate that they conform to the specifications. Such samples shall be furnished, stored, packed, and shipped as directed at the Contractor's expense. Except as otherwise noted, the Owner will make arrangements for and pay for the tests.
- D. The Contractor shall submit data and samples sufficiently early to permit Work. Any delay of approval resulting from the Contractor's failure to submit samples or data promptly shall not be used as a basis of claim against the Owner or the Engineer.
- E. In order to demonstrate the proficiency of workmen or to facilitate the choice among several textures, types, finishes, and surfaces, the Contractor shall provide such samples of workmanship or finish as may be required.
- F. The materials and equipment used on the Work shall correspond to the approved samples or other data.

#### 1.04 MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION

- A. When Contract Documents require that installation of Work shall comply with manufacturer's printed instruction, obtain, and distribute copies of such instructions to parties involved in the installation, including 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.

#### 1.05 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 upon 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.

#### 1.06 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, electrical and instrumentation equipment, and special equipment to be incorporated into this project. Storage of equipment shall be performed to allow easy access and be in strict accordance with the "instructions for storage" of each equipment supplier and manufacturer including weather/humidity protection, connection of heaters, placing of storage lubricants in equipment, blocking, or skid storage, etc. Corroded, damaged, or deteriorated equipment and parts shall be replaced before acceptance of the project.
- 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 weather-tight 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, to 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, off the ground, and shall be kept completely dry at all times. All structural and miscellaneous steel and reinforcing steel shall be stored off the ground, or otherwise, to prevent accumulations of dirt or grease, and to minimize rusting. Brick, block, and similar masonry products shall be handled and stored in a manner to reduce breakage, chipping, cracking, and spalling to a minimum.

- E. Moving parts shall be rotated a minimum of once weekly to insure proper lubrications, and to avoid metal-to-metal "welding". Upon installation of the equipment, the Contractor shall start the equipment, at least half-load, once weekly, for an adequate period of time to ensure that the equipment does not deteriorate from lack of use. 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 specific conditions, and free from damage or deterioration.
- G. Contractor shall be responsible for protection after installation by providing substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations.
- H. The Contractor shall be responsible for all materials, 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.

#### 1.07 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 STORAGE AND HANDLING OF EQUIPMENT ON SITE

- A. Because of the long period allowed for construction, special attention shall be given to the storage and handling of equipment on site. As a minimum, the procedure outlined below shall be followed.
  - 1. Equipment shall not be shipped until approved by the Engineer. The intent of this requirement is to reduce on-site storage time prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one month prior to installation without written authorization from the Engineer, unless upon arrival it is to be stored as specified in Paragraph 1.06. Operation and maintenance data, as described

in Paragraph 1.08 of Section 01730 shall be submitted to the Engineer for review prior to shipment of equipment.

2. All equipment having moving parts, such as gears, electric motors, etc. and/or instruments, shall be stored in a temperature and humidity controlled building approved by the Engineer, until such time as the equipment is to be installed.
3. All equipment shall be stored fully lubricated with oil, grease, etc. unless otherwise instructed by the manufacturer.
4. Manufacturer's storage instructions shall be carefully studied by the Contractor and reviewed with the Engineer by him. These instructions shall be carefully followed and a written record of this kept by the Contractor.
5. Moving parts shall be rotated a minimum of once weekly to insure proper lubrication, and to avoid metal-to-metal "welding". Upon installation of the equipment, the Contractor shall start the equipment, at least half-load, once weekly for an adequate period of time to ensure that the equipment does not deteriorate from lack of use.
6. Lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. Mechanical equipment to be used in the Work, if stored for longer than ninety (90) days, shall have the bearings cleaned, flushed, and lubricated prior to testing and start up, at no extra cost to the Owner.
7. Prior to acceptance of the equipment, the Contractor shall have the manufacturer inspect the equipment and certify that its condition has not been detrimentally affected by the long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in a condition equal to that of equipment that has been shipped, installed, tested, and accepted in a minimum time period. As such, the manufacturer will guarantee the equipment equally in both instances. If such a certification is not given, the equipment shall be judged to be defective. It shall be removed and replaced at the Contractor's expense.

#### 1.09 WARRANTY

- A. For all major pieces of equipment, submit a warranty from the equipment manufacturer as specified in Section 01740.

#### 1.10 SPARE PARTS

- A. Spare parts for certain equipment provided under Division 11 through 16 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.

### 1.11 LUBRICANTS

- A. During testing and prior to acceptance, the Contractor shall furnish all lubricants necessary for the proper lubrication of all equipment furnished under this Contract.

### 1.12 GREASE, OIL AND FUEL

- A. All grease, oil, and fuel required for testing of equipment shall be furnished with the respective equipment. The Owner shall be furnished with a year's supply of required lubricants including grease and oil of the type recommended by the manufacturer with each item of the equipment supplied under Division 11 through 16.
- B. The Contractor shall be responsible for changing the oil in all drives and intermediate drives of each mechanical equipment after initial break-in of the equipment, which in no event shall be any longer than three weeks of operation.

### 1.13 PROTECTION AGAINST ELECTROLYSIS

- A. Where dissimilar metals are used in conjunction with each other, suitable insulation shall be provided between adjoining surfaces so as to eliminate direct contact and any resultant electrolysis. The insulation shall be bituminous impregnated felt, heavy bituminous coatings, nonmetallic separators or washers, or other acceptable materials.

### 1.14 FASTENERS

- A. All necessary bolts, anchor bolts, nuts, washers, plates and bolt sleeves shall be furnished by the Contractor. Bolts shall have suitable washers and, where so required, their nuts shall be hexagonal.
- B. All bolts, anchor bolts, nuts, washers, plates, and bolt sleeves shall be Type 316 stainless steel unless otherwise specifically indicated or specified.
- C. Fasteners of dis-similar metals shall be provided with nylon spacer washers.
- D. Unless otherwise specified, stud, tap, and machine bolts shall be of the best quality refined bar iron. Hexagonal nuts of the same quality of metal as the bolts shall be used.

## PART 2 - PRODUCTS (NOT USED)

## PART 3 - EXECUTION

### 3.01 EQUIPMENT, TESTING, AND INSPECTION

- A. Regardless of the number of days specified in the individual sections for the manufacturer's representative to be present on the site for inspection and testing, if the equipment fails to perform as specified, then the representative shall remain on site until the malfunction is corrected.

- B. The cost for the additional days shall not be added to the cost for the Owner, but shall be to the account of the Contractor.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 01630

## SUBSTITUTIONS

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Furnish and install products specified and named in their respective Specifications or on the Drawings unless substitution is allowed.
- B. For products specified only by reference standard, select product meeting that standard, by any manufacturer.
- C. For products specified by naming several products or manufacturers, select any one of those products and manufacturers names which complies with their respective Specifications.
- D. For products specified by naming only one or more products or manufacturers and stating "or equal", submit a request as for substitutions, for any product or manufacturer which is not specifically named.
- E. Requests for any substitutions not submitted in accordance with the instructions herein will be denied.

## 1.02 RELATED SECTIONS

- A. Section 01340 – Shop Drawings, Working Drawings, and Samples
- B. Other Sections as Applicable

## 1.03 PRODUCTS LIST

- A. Within 30 days after award of Contract, submit to Engineer five copies of complete list of major Products which are proposed for installation.
- B. Product selection is governed by the Contract Documents and governing regulations, not by previous project experience.
  - 1. Where a single or multiple products or manufacturers are named, provide one of the products indicated or submit a request for substitution for any product or manufacturer not named unless no substitutions are permitted
  - 2. Where the Specifications only require compliance with performance requirements, an imposed code, standard or regulation, select a product that complies with the requirements, standards, codes or regulations specified.
  - 3. Manufacturers named in a Specification section are those manufacturers considered capable of manufacturing products conforming to the specified requirements. The naming of a particular manufacturer does not imply acceptance or approval of just any standard product of that manufacturer.

- C. Tabulate Products by specification section number and title.
- D. For products specified only by reference standards, list for each such Product:
  - 1. Name and address of manufacturer.
  - 2. Trade Name.
  - 3. Model or catalog designation.
  - 4. Manufacturer's data:
    - a. Reference standards.
    - b. Performance test data.

#### 1.04 SUBSTITUTION SUBMITTAL REQUIREMENTS

- A. For convenience in designation in the Contract Documents, materials to be incorporated in the Work may be designated under a trade name or the name of a manufacturer and its catalog information. The use of alternative material which is equal in quality and of the required characteristics for the purpose intended will be permitted, subject to the following requirements:
  - 1. The burden of proof as to the quality and suitability of such alternative equipment, products, or other materials shall be upon the Contractor.
  - 2. The Engineer will be the sole judge as to the comparative quality and suitability of such alternative equipment, products, or other materials and its decisions shall be final.
  - 3. Base Bid requirements outlined in the Bid Form.
- B. The Contractor may offer any material, process, or equipment which it considers equivalent to that indicated. Unless otherwise authorized in writing by the ENGINEER, the substantiation of offers of equivalency must be submitted within 30 days after execution of the Agreement. The Contractor, at its sole expense, shall furnish data concerning items it has offered as equivalent to those specified. The Contractor shall have the material as required by the Engineer to determine that the quality, strength, physical, chemical, or other characteristics, including durability, finish, efficiency, dimensions, service, and suitability are such that the items will fulfill its intended function. Installation and use of a substitute item shall not be made until accepted by the Engineer. If a substitute offered by the Contractor is found to be not equal to the specified material, the Contractor shall furnish and install the specified material.
- C. The Contractor's attention is further directed to the requirement that failure to submit data substantiating a request for the substitution of an "or equal" item within said 30-day period after the execution of the Agreement, shall be deemed to mean that the Contractor intends to furnish one of the specific brand-named products named in the specification, and the Contractor does hereby waive all rights to offer or use substitute products in each such case. Wherever a proposed substitute product has not been submitted within said 30-day period, or wherever the submission of a proposed substitute product fails to meet the requirements of the specifications and an acceptable resubmittal is not received by the Engineer

within said 30-day period, the Contractor shall furnish only one of the products originally-named in the Contract Documents.

- D. Within a period of 30 days after award of Contract, Engineer will consider formal requests from the Contractor for substitution of specified products.
- E. After the end of that period, the request will be considered only in case of product unavailability or other conditions beyond the control of the Contractor.
- F. Submit a separate request for each substitution. Support each request with:
  - 1. Complete data substantiating compliance of the proposed substitution with requirements stated in the Contract Documents:
    - a. Product identification, including manufacturer's name and address.
    - b. Manufacturer's literature; identify:
      - 1) Product description.
      - 2) Reference standards.
      - 3) Performance and test data.
    - c. Samples, as applicable.
    - d. Name and address of similar projects on which product has been used, and the date of each installation.
  - 2. Itemized comparison of the proposed substitution with product specified; List significant variations.
  - 3. Comparison of the qualities of the proposed substitution with that specified.
  - 4. Changes required in other elements of the Work because of the substitution.
  - 5. Availability of maintenance service, and source of replacement materials.
  - 6. Data relating to changes in the construction schedule.
  - 7. Any effect of the substitution on separate contracts.
  - 8. List of changes required in other Work or products.
  - 9. Accurate cost data comparing proposed substitution with product specified.
  - 10. Designation of required license fees or royalties.
  - 11. Designation of availability of maintenance services, and sources of replacement materials.
  - 12. Cost data is complete and includes related costs under his Contract, but not:
    - a. Cost data comparing the proposed substitution with the product specified.
    - b. Any required license fees or royalties.
    - c. Engineer's costs of redesign or revision of Contract Documents.

13. Substitute products shall not be ordered or installed without written acceptance of Engineer.

- G. Do not imply or indicate substitutions on shop drawings or product data submittals without a separate formal request.
- H. Only one request for substitution for each product will be considering. If not accepted, Contractor shall provide specified product.

#### 1.05 SUBSTITUTIONS WILL NOT BE CONSIDERED FOR ACCEPTANCE WHEN:

- A. They are indicated or implied on Shop Drawings or product data submittals without a formal request from Contractor.
- B. The manufacture of the product substitution does not meet the Qualifications as stated in the specifications as determined by the Engineer.
- C. They are requested directly by a subcontractor or supplier.
- D. No data is provided relating to changes in construction schedule.
- E. There is any effect of substitution on separate contracts.
- F. Changes are required in other Work or products.
- G. There is no accurate cost data comparing proposed substitution with product specified.
- H. There are required license fees or royalties above and beyond the specified vendor.
- I. Availability of maintenance services, sources of replacement materials does not equal that provided by the specified vendor.
- J. Acceptance will require substantial revision of Contract Documents.

#### 1.06 CONTRACTOR'S REPRESENTATION

- A. A request for a substitution constitutes a representative that Contractor:
  1. He has investigated proposed product and has determined that it is equal to or superior in all respects to that specified.
  2. He will provide the same warranties or bonds for substitution as for product specified.
  3. He will coordinate installation of accepted substitution into the Work, and will make such changes as may be required for the Work to be complete in all respects.
  4. He waives claims for additional costs caused by substitution which may subsequently become apparent.

1.07 ENGINEER DUTIES

1. Review Contractor's requests for substitutions in accordance the Shop Drawing review requirements.
2. Notify Contractor, in writing, of decision to accept or reject requested substitution.
3. The Engineer shall be the judge of the acceptability of the proposed substitution.

1.08 SUBSTITUTION SUBMITTAL REQUIREMENTS – “NO SUBSTITUTIONS PERMITTED”

- A. Contractor may not request a substitute item or vendor/manufacturer for which the specifications indicate “No Substitutions Permitted”.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 01700

## CONTRACT CLOSEOUT

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Administrative and procedural requirements for project closeout.
  - 1. Inspection procedures.
  - 2. Project Record Document submittal.
  - 3. Final cleaning.
- B. Warranty and bond submittal.
- C. Closeout submittals, warranties, and bonds required for specific products of Work.

## 1.02 RELATED SECTIONS

- A. Section 01310 – Construction Schedules
- B. Section 01370 – Schedule of Values
- C. Section 01380 – Construction Photographs
- D. Section 01710 – Cleaning
- E. Section 01720 – Project Record Documents
- F. Section 01740 – Warranties and Bonds
- G. Other Sections as applicable.

## 1.03 SUBSTANTIAL COMPLETION

- A. Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
  - 1. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
  - 2. Advise Owner of pending insurance change-over requirements.
  - 3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.
  - 4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates, and similar releases.

5. Submit record drawings, maintenance manuals, and similar final record information.
  6. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
- B. When the Contractor considers the Work to be substantially complete, he shall submit a written notice to the Engineer that the Work, or designated portion of the Work, is complete and ready for inspection.
- C. Within a reasonable time of receipt of a request for inspection, the Engineer will either proceed with inspection or advise the Contractor of unfulfilled requirements. When the Engineer and Owner concur that the Work, or designated portion of the Work, is substantially complete, the Engineer will prepare the Certificate of Substantial Completion following inspection.
- D. Should the Engineer determine that the Work is not substantially complete, he will advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
1. The Engineer will repeat inspection when requested and assured that the Work has been substantially completed.
  2. Results of the completed inspection will form the basis of requirements for final acceptance.

#### 1.04 FINAL COMPLETION

- A. When Contractor considers the Work to be complete, he shall submit written certification to the Engineer that the Work is completed and ready for final inspection. Include the following:
1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
  2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
  3. Submit a certified copy of the Engineer's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, the list has been endorsed and dated by the Engineer.
  4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion, or when the Owner took possession of and responsibility for corresponding elements of the Work.
  5. Submit consent of surety to final payment.
  6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

- B. The Engineer will inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the - Engineer.
  - 1. Upon completion of inspection, the Engineer will prepare a certificate of final acceptance, or advise the Contractor of Work that is incomplete, or of obligations that have not been fulfilled but are required for final acceptance.
  - 2. If necessary, re-inspection process will be repeated.
- C. Refer to Section 01720 - Project Record Documents.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 01710

## CLEANING

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Execute cleaning, during progress of the Work, and at completion of the Work, as required by General Conditions.

## 1.02 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01505 – Control of Work
- C. Section 01550 – Site Access and Storage
- D. Other Sections as applicable.

## 1.03 DISPOSAL REQUIREMENTS

- A. Do not dispose of any unsuitable fill, hazardous or organic material onsite. All such material shall be disposed of in a legal manner by the Contractor, the cost of which shall be included in the Bid.
- B. Conduct cleaning and disposal operations to comply with applicable codes, ordinances, regulations, and anti-pollution laws.

## PART 2 - PRODUCTS

## 2.01 MATERIALS

- A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.
- B. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.
- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

## PART 3 - EXECUTION

### 3.01 DURING CONSTRUCTION

- A. The Contractor shall keep the area of the Work and other areas utilized or impacted by construction in a neat and clean condition, free from any accumulation of rubbish. The Contractor shall dispose of all rubbish and waste materials of any nature occurring at the Work site, and shall establish regular intervals of collection and disposal of such materials and waste. The Contractor shall also keep its haul roads free from dirt, rubbish, and unnecessary obstructions resulting from its operations.
- B. Disposal of all rubbish and surplus materials shall be off the site of construction in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws, and to the particular requirements of Part 1926 of the OSHA Safety and Health Standards for Construction.
- C. Provide on-site containers for the collection of waste materials, debris, and rubbish as required.

### 3.02 DUST ABATEMENT

- A. The Contractor shall furnish all labor, equipment, and means required and shall carry out effective measures wherever and as often as necessary to prevent its operation from producing dust in amounts damaging to property, cultivated vegetation, or domestic animals, or causing a nuisance to persons living in or occupying buildings in the vicinity. Means for the control of dust shall include, but not be limited to, sweeping and water trucks. The Contractor shall be responsible for any damage resulting from any dust originating from its operations. The dust abatement measures shall be continued until the Contractor is relieved of further responsibility by the Engineer.

### 3.03 FINAL CLEANING

- A. Remove temporary protection and facilities installed for protection of the Work during construction.
- B. Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
- C. Where extra materials of value remaining after completion of associated Work have become the Owner's property, arrange for disposition of these materials as directed.

END OF SECTION

## SECTION 01720

## PROJECT RECORD DOCUMENTS

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. This Section includes the requirements for maintaining, recording and submitting Project Record Documents including, but not limited to,
  - 1. Record Drawings or As-Built Drawings
  - 2. Record Specifications and other Contract Documents
  - 3. Record Samples, Shop Drawings or Record Product Data

## 1.02 RELATED SECTIONS

- A. Section 01050 – Field Engineering and Surveying
- B. Section 01152 – Applications for Payment
- C. Section 01340 – Shop Drawings, Working Drawings, and Samples
- D. Section 01700 – Project Closeout
- E. Other Sections as applicable.

## 1.03 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Maintain at the site for the Owner and Engineers review one record copy of:
  - 1. Drawings
  - 2. Specifications
  - 3. Addenda
  - 4. Change Orders and other Modifications to the Contract
  - 5. Engineer's Field Orders or Written Instructions
  - 6. Approved Shop Drawings, Working Drawings, and Samples
  - 7. Field Test Reports
  - 8. Construction Photographs
- B. Store Record Documents in the Contractor's field office apart from documents used for construction.
- C. File Record Documents in accordance with the CSI format number system utilized in the Contract Documents.

- D. Maintain Record Documents in a clean, dry, legible condition and in good order. Do not use Record Documents for construction purposes.
- E. Make Record Documents available at all times for inspection by the Engineer.
- F. As a prerequisite for monthly progress payments, the Contractor is to exhibit the currently updated Record Documents for review by the Engineer and the Owner.

#### 1.04 RECORDING

- A. Record Drawings:
  1. Maintain a clean, undamaged set of prints of Contract Drawings to serve as the project Record Drawings.
  2. Label each sheet "RECORD DRAWING" in neat large printed letters with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.
  3. The Record Drawings shall be presented at the same scale as the Contract Drawings.
  4. The Record Drawings shall correctly and accurately show all changes from the Contract Drawings made during construction. This shall include a revised graphical representation overlaid on the original design layout.
  5. All information shall be verified and certified by an independent Professional Surveyor and Mapper registered in the State of Florida.
  6. All vertical information shall be provided in the datum indicated in the Contract Drawings.
  7. Horizontal and vertical locations referenced to base-line or permanent surface improvements.
  8. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross reference at the corresponding location on the Record Drawings.
  9. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
  10. Mark new information that was not shown on Contract Drawings or Shop Drawings.
  11. Note related Change Order numbers where applicable.
  12. Organize Record Drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates, and other identification on the cover of each set.
  13. Do not use Record Drawings for construction purposes.
  14. Record information concurrently with construction progress.
- B. The Record Drawings shall be neat and legible including the following:
  1. Above ground piping and equipment:

- a. All equipment locations, dimensions, and elevations as indicated in the Contract Drawings.
  - b. All building and tank locations, dimensions, and elevations as indicated in the Contract Drawings.
  - c. All above ground piping size, material, class, lengths, dimensions, and elevations as indicated in the Contract Drawings.
  - d. Horizontal locations of piping, fittings, valves, and appurtenances.
  - e. Elevations of the top of pipe, fittings, valves and appurtenances as indicated in the Contract Drawings and at 50' maximum increments
  - f. All changes from the original design including a revised graphical representation overlaid on the original design layout.
2. Underground pressure pipe including potable water mains, sanitary sewer force mains, drainage force mains, and the like:
- a. All piping size, material, class, lengths, dimensions, bury depth, and elevations as indicated in the Contract Drawings.
  - b. Horizontal locations of piping, fittings, valves, and appurtenances.
  - c. Elevations of the top of pipe, fittings, valves, and appurtenances.
  - d. Elevations as indicated in the Contract Drawings and at 50' maximum increments
  - e. Lengths of restrained pipe.
  - f. Water service locations.
  - g. Meter sizes.
  - h. All changes from the original design including a revised graphical representation overlaid on the original design layout.
3. Gravity sanitary sewer:
- a. All piping size, material, class, lengths, slopes, dimensions, and elevations as indicated in the Contract Drawings.
  - b. Horizontal locations of manholes.
  - c. Rim, invert, and size of all manholes.
  - d. Service terminal end locations.
  - e. Wet well construction including diameter, bottom, invert, and float elevations.

- f. All changes to piping from the original design including a revised graphical representation overlaid on the original design layout.
4. Stormwater Drainage:
- a. All piping size, material, class, lengths, dimensions, and elevations as indicated in the Contract Drawings.
  - b. Horizontal locations of manholes and catch basins.
  - c. Rim, invert, bottom elevations, and size of all manholes and catch basins.
  - d. All surface elevations indicated on the Contract Drawings including, but not limited to, swales, berms, yards, sidewalks, and the like.
  - e. Horizontal location and elevation of all storm water retention or detention areas.
  - f. All changes from the original design including a revised graphical representation overlaid on the original design layout.
5. Limerock base:
- a. Upon completion of all underground utilities and limerock base, and before placement of asphalt, provide the following for Engineer review:
    - 1) Finished limerock base elevations taken at the location of finished asphalt elevations as indicated in the Contract Drawings.
    - 2) Additional elevations as required by the Engineer, including, but not limited to:
      - (a) Finished limerock base at centerline, edge of median and edge of pavement.
      - (b) Back of sidewalk or right of way.
      - (c) Bottom of swale or flow line of gutter.
      - (d) Top of curb.
      - (e) High points, low points and grade breaks.
      - (f) Intersections.
6. Electrical, instrumentation, and controls:
- a. Horizontal location of all electrical equipment and control cabinetry.
  - b. Elevations of the bottom of all electrical and control panels.
  - c. Horizontal location and elevation of all conduits including conduit size, route and wire size.
  - d. Horizontal location of all light poles and junction boxes.

7. Miscellaneous:
  - a. Horizontal location and elevation of all concrete slabs.
  - b. Horizontal location, size, and material of all fencing.
  - c. Location size and material of all existing utilities encountered during construction whether indicated on the Contract Drawings or not.
  - d. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
  - e. Depths of various elements of foundation in relation to finish first floor datum.
  - f. Field changes of dimensions and details.
  - g. Details not on original contract drawings.
  
- C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction.
  1. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.
  2. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation.
  3. Note related record drawing information and Product Data.
  4. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
  5. Changes made by field order or by Change Order.
  
- D. Record Product Data (Shop Drawings): Maintain one copy of each Product Data submittal.
  1. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations.
  2. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation.
  3. Note related Change Orders and mark-up of record drawings and Specifications.
  
- E. Record Sample Submitted: Immediately prior to the date or dates of Substantial Completion, the Contractor will meet at the site with the Engineer and the Owner to

determine which of the submitted Samples that have been maintained during progress of the Work are to be transmitted to the Owner for record purposes. Comply with delivery to the Owner's Sample storage area.

- F. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work.

#### 1.05 SUBMITTAL

- A. Project Record Documents, demonstrating construction progress, shall be submitted with each Application for Payment.
- B. Interim Project Record Drawings shall be submitted at significant project milestones including:
  - 1. Construction of wet well or other structures.
  - 2. Construction of catch basins, manholes, pipes, and appurtenances.
  - 3. As required by the Engineer.
- C. Project Record Documents, demonstrating construction completion shall be submitted with the balance of Closeout documents at the conclusion of construction including:
  - 1. Three sets of signed and sealed sets of prints.
  - 2. One compact disc copy of record drawings in PDF and AutoCAD format.
- D. Accompany submittals with transmittal letter in duplicate, containing:
  - 1. Date
  - 2. Project Title and Number
  - 3. Contractor's Name and Address
  - 4. Title and Number of each Record Document
  - 5. Signature of Contractor or his Authorized Representative

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

## SECTION 01730

## OPERATING AND MAINTENANCE DATA

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Compile product data and related information appropriate for Owner's maintenance and operation of products furnished under Contract.
  - 1. Prepare operating and maintenance data as specified in this Section and as referenced in other pertinent sections of Specifications.
- B. Instruct Owner's personnel in maintenance of products and in operation of equipment and systems.

## 1.02 RELATED SECTIONS

- A. Section 01340 – Shop Drawings, Working Drawings, and Samples
- B. Section 01700 – Contract Closeout
- C. Section 01720 – Project Record Documents
- D. Section 01740 – Warranties and Bonds
- E. Other Sections as applicable.

## 1.03 QUALITY ASSURANCE

- A. Preparation of data shall be done by personnel:
  - 1. Trained and experienced in maintenance and operation of described products.
  - 2. Familiar with requirements of this Section.
  - 3. Skilled as technical writers to the extent required to communicate essential data.
  - 4. Skilled as draftsman competent to prepare required drawings.

## 1.04 FORM OF SUBMITTALS

- A. Prepare data in form of an instructional manual for use by Owner's personnel.
- B. Format
  - 1. Size: 8 1/2 inches x 11 inches
  - 2. Paper: 20 pound minimum, white, for typed pages.

3. Text: Manufacturer's printed data, or neatly typewritten.
4. Drawings:
  - a. Provide reinforced punched binder tab, bind in with text.
  - b. Reduce larger drawings and fold to size of text pages, but not larger than 11 inches x 17 inches.
5. Provide fly-leaf for each separate product, or each piece of operating equipment.
  - a. Provide types description of product, and major component parts of equipment.
  - b. Provide indexed tabs.
6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:
  - a. Title of Project
  - b. Identity of separate structure as applicable.
  - c. Identity of general subject matter covered in this manual.

C. Binders

1. Commercial quality three-ring binders with durable and cleanable plastic covers.
2. Maximum ring diameter shall be 2 inches.
3. When multiple binders are used, correlate the data into related consistent groupings.

1.05 CONTENT OF MANUAL

- A. Neatly typewritten Table of Contents for each volume, arranged in systematic order.
1. Contractor, name of responsible principal, address, and telephone number.
  2. A list of each product required to be included, indexed to content of the volume.
  3. List, with each product, name, address, and telephone number of:
    - a. Subcontractor of installer
    - b. Maintenance contractor, as appropriate
    - c. Identify area of responsibility of each
    - d. Local source of supply for parts and replacement.
  4. Identify each product name and other identifying symbols as set forth in Contract Documents.

- B. Product Data
  - 1. Include only those sheets which are pertinent to the specific product.
  - 2. Annotate each sheet to:
    - a. Clearly identify specific product or part installed.
    - b. Clearly identify data applicable to installation.
    - c. Delete references to inapplicable information.
- C. Drawings
  - 1. Supplement product data with drawings as necessary to clearly illustrate:
    - a. Relations of component parts of equipment and systems.
    - b. Control and flow diagrams.
  - 2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
  - 3. Do not use Project Record Documents as maintenance drawing.
- D. Written text, as required to supplement product data for the particular installation:
  - 1. Organize in consistent format under separate headings for different procedures.
  - 2. Provide logical sequence of instructions of each procedure.
- E. Copy of each warranty, bond, and service contract issued:
  - 1. Provide information sheet for Owner's personnel, give:
    - a. Proper procedures in event of failure.
    - b. Instances which might affect validity of warranties or bonds

#### 1.06 MANUAL FOR MATERIALS AND FINISHES

- A. Submit five copies of complete manual in final form.
- B. Content for architectural products, applied materials and finishes
  - 1. Manufacturer's data, giving full information on products.
    - a. Catalog number, size, and composition.
    - b. Color and texture designations.
    - c. Information required for re-ordering special-manufactured products.
  - 2. Instructions for care and maintenance.
    - a. Manufacturer's recommendation for types of cleaning agents and methods.

- b. Cautions against cleaning agents and methods which are detrimental to product.
    - c. Recommended schedule for cleaning and maintenance.
  - 3. Content, for moisture-protection and weather-exposed products
  - 4. Manufacturer's data, giving full information on products
    - a. Applicable standards.
    - b. Chemical composition.
    - c. Details of installation.
  - 5. Instructions for inspection, maintenance, and repair.
- C. Additional requirements for maintenance data: Respective sections of Specifications.
- D. Provide complete information for products specified.

#### 1.07 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit five copies of complete manual in final form.
- B. Content, for each unit of equipment and system, as appropriate:
  - 1. Description of unit and component parts.
    - a. Function, normal operating characteristics and limiting conditions
    - b. Performance curves, Engineering data and tests
    - c. Complete nomenclature and commercial number of replaceable parts
  - 2. Operating procedures
    - a. Start-up, break-in, routine and normal operating instructions
    - b. Regulation, control, stopping, shut-down and emergency instructions
    - c. Summer and winter operating instructions
    - d. Special operating instructions
  - 3. Maintenance Procedures
    - a. Routine operations
    - b. Guide to "trouble-shooting"

- c. Disassembly, repair and reassembly
    - d. Alignment, adjusting and checking
  - 4. Servicing and lubrication schedule
    - a. List of lubricants required
  - 5. Manufacturer's printed operating and maintenance instructions
  - 6. Description of sequence of operation by control manufacturer
  - 7. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance
    - a. Predicted list of parts subject to wear
    - b. Items recommended to be stocked as spare parts
  - 8. As-installed control diagrams by controls manufacturer
  - 9. Each contractor's coordination drawings
    - a. As-installed color coded piping diagrams
  - 10. Charts of valve tag numbers, with location and function of each valve
  - 11. List of original manufacturer's spare parts, manufacturer's current prices and recommended quantities to be maintained in storage
  - 12. Other data as required under pertinent sections of specifications
- C. Contents, for each electric and electronic system, as appropriate
  - 1. Description of system and component parts
    - a. Function, normal operating characteristics, and limiting conditions
    - b. Performance curves, Engineering data and tests
    - c. Complete nomenclature and commercial number of replaceable parts
  - 2. Circuit directories of panel-boards
    - a. Electrical service
    - b. Controls
  - 3. As-installed color coded wiring diagrams
  - 4. Operating procedures:
    - a. Routine and normal operating instructions
    - b. Sequences required
    - c. Special operating instructions

5. Maintenance procedures
  - a. Routine operations
  - b. Guide to "trouble-shooting"
  - c. Disassembly, repair and reassembly
  - d. Adjustment and checking
6. Manufacturer's printed operating and maintenance instructions
7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
8. Other data as required under pertinent sections of specifications
- D. Prepare and include additional data when the need for such data becomes apparent during instruction of Owner's personnel.
- E. Additional requirements for operating and maintenance data: Respective sections of Specifications.
- F. Provide complete information for product specified.

#### 1.08 SUBMITTAL SCHEDULE

- A. Submit two copies of preliminary draft of proposed formats and outlines of contents of Operation and Maintenance Manuals within 30 days after Notice-To-Proceed.
  1. The Engineer will review the preliminary draft and return one copy with comments.
- B. Submit two copies of completed data in final form no later than 30 days following the Engineer's review of the last shop drawing and submittal specified under Section 01340.
  1. One copy will be returned with comments to be incorporated into final copies.
- C. Submit specified number of copies of approved data in final form directly to the offices of the Engineer within 30 calendar days of product shipment to the project site and preferably within 30 days after the reviewed copy is received.
- D. Submit six copies of addendum to the operation and maintenance manuals as applicable and certificates within 30 days after final inspection and plant start-up test.
- E. Final Operation and Maintenance submittals shall be in large three-ring binders organized by specification Section and plainly marked.

#### 1.09 INSTRUCTION OF OWNER'S PERSONNEL

- A. Prior to final inspection or acceptance, fully instruct Owner's designated operating and maintenance personnel in operation, adjustment, and maintenance of products, equipment, and systems.

- B. Operating and maintenance manual shall constitute the basis of instruction.
  - 1. Review contents of manual with personnel in full detail to explain all aspects of operations and maintenance.

1.10 ENGINEER'S O & M CHECKLIST

- A. The Engineer will review Operation and Maintenance Manuals submittals on operating equipment for conformance with the requirements of this Section. The review will generally be based upon the O&M Review Checklist (presented on the pages at the end of this section for the benefit of the Contractor and his suppliers).

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

## O & M REVIEW CHECKLIST

EQUIPMENT SUBMITTED \_\_\_\_\_ DATE OF SUBMITTAL \_\_\_\_\_

MANUFACTURER \_\_\_\_\_ DEGREE OF APPROVAL \_\_\_\_\_

SPECIFICATION SECTION \_\_\_\_\_ DRAWING NUMBER \_\_\_\_\_

- \_\_\_\_\_ Is the submittal correct for model/series/configuration originally submitted with shop drawings?
- \_\_\_\_\_ Is the binding correct with assigned color/printing etc.?  
(Pertains to final three volumes)
- \_\_\_\_\_ Is the submittal properly indexed?
- \_\_\_\_\_ Does the submittal pertain only to equipment being furnished?
- \_\_\_\_\_ Is the submittal easily understood and instructively arranged?
- \_\_\_\_\_ Does the submittal include start-up, shutdown and troubleshooting procedures?
- \_\_\_\_\_ Are sufficient drawings and schematics included to supplement written descriptions?
- \_\_\_\_\_ Is the listing of name plate data for each piece of supplied equipment provided and attached?
- \_\_\_\_\_ Are all submitted "C" and "D" size drawings printed on paper that is 11 inches high and folded to 8 1/2 inches wide?
- \_\_\_\_\_ Is proper and complete instruction for servicing included?
- \_\_\_\_\_ Is there a suggested operating log sheet for equipment?
- \_\_\_\_\_ Is schedule for lubrication provided?
- \_\_\_\_\_ Is there a recommended preventative maintenance schedule?
- \_\_\_\_\_ Are necessary safety precautions clearly indicated where they relate to the equipment?
- \_\_\_\_\_ Is the Area Representative information provided, i.e., Name, Address, Telephone Number?
- \_\_\_\_\_ Are specified spare parts indicated and listed?

The following are the points of rejection requiring resubmittal by Contractor:

---



---



---

END OF SECTION

## SECTION 01740

## WARRANTIES AND BONDS

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Compile warranties and bonds as specified in the Contract Documents.
- B. Co-execute submittals when so specified.
- C. Review submittals to verify compliance with Contract Documents.
- D. Submit to the Engineer for review and transmittal to Owner.

## 1.02 RELATED SECTIONS

- A. Section 01700 – Contract Closeout
- B. Other Sections as applicable.

## 1.03 SUBMITTAL REQUIREMENTS

- A. Assemble warranties, bond, service, and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.
- B. Number of original signed copies required: two (2) each.
- C. Table of Contents: neatly typed, in orderly sequence. Provide complete information for each item.
  - 1. Product or Work item
  - 2. Firm, with name of principal, address and telephone number
  - 3. Scope
  - 4. Date of beginning of Warranty, bond or service and maintenance contract
  - 5. Duration of warranty, bond or service maintenance contract
  - 6. Provide information for Owner's personnel:
    - a. Proper procedure in case of failure
    - b. Instances which might affect the validity of warranty or bond
  - 7. Contractor, name of responsible principal, address and telephone number

## 1.04 FORM OF SUBMITTALS

- A. Prepare in duplicate packets

- B. Format:
  - 1. Size 8 1/2 inches x 11 inches, punch sheets for standard 3-post binder
  - 2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS". List:
    - a. Title of Project
    - b. Name of Contractor
- C. Binders: Commercial quality, three-post (3) binder, with durable and cleanable plastic covers and maximum post width of 2 inches.

#### 1.05 WARRANTY SUBMITTAL REQUIREMENTS

- A. For all equipment, submit a one-year warranty from the equipment manufacturer, unless otherwise specified. The manufacturer's warranty period shall be concurrent with the Contractor's for one year commencing at the time of acceptance by the Owner.
- B. The Contractor shall be responsible for obtaining certificates for equipment warranty for all major equipment and which has a 1 HP motor or which lists for more than \$1,000. The Engineer reserves the right to request warranties for equipment not classified as major. The Contractor shall still warrant equipment not considered to be "major" in the Contractor's one-year warranty period even though certificates of warranty may not be required.
- C. In the event that the equipment manufacturer or supplier is unwilling to provide a one-year warranty commencing at the time of Owner acceptance, the Contractor shall obtain from the manufacturer a two (2) year warranty commencing at the time of equipment delivery to the job site. This two-year (2) warranty from the manufacturer shall not relieve the Contractor of the one-year warranty starting at the time of Owner acceptance of the equipment.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

## SECTION 02210

## FINISH GRADING

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Provide all labor, materials, necessary equipment or services to complete the Finish Grading work, as indicated on the Contract Documents.

## 1.02 RELATED SECTIONS

- A. Other Sections as applicable.

## 1.03 SITE INSPECTION

- A. The Contractor shall visit the site and acquaint himself with all existing conditions. The Contractor shall be responsible for his own subsurface investigations, as necessary, to satisfy requirements of this Section. All subsurface investigations shall be performed only under time schedules and arrangements approved in advance by the Engineer or Owner's Representative.

## 1.04 EXISTING CONTOURS

- A. The existing elevations shown on the drawings are approximate only. The contractor is responsible for grading to meet existing elevations as required.
- B. The contours and elevations established under contract will be the finished grades shown. The Contractor under this Contract shall perform the work for construction using the finished grades previously established and making whatever corrections and/or repairs to grades to make them consistent with the requirements of the drawings and specifications.

## 1.05 UTILITIES

- A. Before starting site operations verify that the earlier contractors have disconnected all temporary utilities which might interfere with the fine grading work.
- B. Locate all existing, active utility lines traversing the site and determine the requirements for their protection. Preserve in operating condition all active utilities adjacent to or transversing the site that are designated to remain.
- C. Observe rules and regulations governing respective utilities in working under requirements of this section. Adequately protect utilities from damage, remove or relocate as indicated, specified or required. Remove, plug or cap inactive or abandoned utilities encountered in excavation. Record location of active utilities.

## 1.06 QUALITY ASSURANCE

- A. Requirements of all applicable building codes and other public agencies having jurisdiction upon the work.
- B. Primary emphasis should be given to the aesthetic appearance and functioning of berming and swales, as directed by the Engineer or Owner's Representative. The Contractor shall employ skilled personnel and any necessary equipment to ensure that finish grading is smooth, aesthetically pleasing, drains well, and is ideal for receiving sod and plant materials.
- C. As-build survey drawings of all finished grading are to be submitted to the Engineer for review prior to landscape installation or agency certifications.

## PART 2 - MATERIALS

### 2.01 TOP SOIL

- A. Refer to Related Sections for material specifications.
- B. In areas to receive turf, rough grade shall be a minimum of 2 inches below finished grades.
- C. Rough grade fill is to be fine, compacted, satisfactory fill material, with no rocks larger than 2-inches.
- D. Both surface and subsurface, both before and after fill operations, shall be checked to confirm that percolation/compaction levels meet the needs of the proposed planting for that area.

## PART 3 - EXECUTION

### 3.01 EXCAVATION

- A. Excavate where necessary to obtain subgrades, percolation, and surface drainage as required.
- B. All unsatisfactory soil materials are to be removed and replaced with satisfactory soil materials.
- C. Remove entirely any existing obstructions after approval by the Engineer's or Owner's Representative.
- D. Remove from site and dispose of debris and excavated material not required.

### 3.02 GRADING

- A. The Contractor shall establish finished grades as shown on the Engineers grading plans, and as directed by Engineer and/or Owner's Representative, including areas where the existing grade has been disturbed by other work.

- B. Finished grading shall be smooth, aesthetically pleasing, drain well and ready to receive sod and other plant material to full satisfaction of Engineer and Owner's Representative.
- C. Finish grading accuracy is to be within 1/10 foot of specified elevations.
- D. Finish grading is to be performed using hand raking throughout and shall remove all objectionable material and rocks greater than 1 inch in diameter.
- E. A finish grading inspection is required prior to sod placement.

### 3.03 COMPACTION

- A. Compact each layer of fill in designated areas with approved equipment.
  - 1. In landscaped areas, compaction shall not exceed 85% of maximum density and no less than 75%.
  - 2. In landscaped areas which are sloped at 1:4 or steeper, compaction shall not exceed 90% of maximum density and no less than 85%.
- B. No backfill shall be placed against any masonry or other exposed building surface until permission has been given by the Owner's Representative, and in no case until the masonry has been in place seven days.
- C. Compaction in limited areas shall be obtained by the use of mechanical tampers or approved hand tampers. When hand tampers are used, the materials shall be deposited in layers not more than four inches thick. The hand tampers used shall be suitable for this purpose and shall have a face area of not more than 100 square inches. Special precautions shall be taken to prevent any wedging action against masonry, or other exposed building surfaces.

### 3.04 CORRECTION OF GRADE

- A. Bring to required grade levels areas where settlement, erosion, or other grade changes occur. Adjust grades as required to carry drainage away from buildings and to prevent ponding around the buildings and on pavements.
- B. All soil surfaces shall have sufficient percolation and surface drainage to support grasses and plant material.
- C. Contractor shall be responsible for stabilizing grades by approved methods prior to landscaping, and shall be responsible for correction of grades as mentioned above, and cleanup of any wash outs or erosion.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 02221

## TRENCHING, BEDDING, AND BACKFILL FOR PIPE

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Furnish labor, materials, equipment, and incidentals necessary to perform all excavation, backfill, fill, grading, and slope protection required to complete the piping work shown on the Drawings and specified herein. The work shall include, but not necessarily be limited to, manholes, vaults, duct conduit, pipe, roadways, paving, bedding, backfilling, fill, required borrow; grading, disposal of surplus and unsuitable materials, and all related work such as sheeting, bracing, and dewatering

## 1.02 RELATED SECTIONS

- A. Section 01340 – Shop Drawings, Working Drawings and Samples
- B. Other Sections as applicable.

## 1.03 REFERENCES

- A. FDOT Standard Specifications for Road and Bridge Construction
- B. FDOT Design Standards
- C. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
- D. AASTHO M-145 - Standard Specification for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes

## 1.04 JOB CONDITIONS

- A. The Contractor shall examine the site and review the available test borings or undertake his own soil borings prior to submitting his bid, taking into consideration all conditions that may affect his work. The Owner and Engineer will not assume responsibility for variations of sub-soil quality or conditions at locations other than places shown and at the time the available test borings were made.
- B. Existing Utilities: Locate existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.
  - 1. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult the Engineer and the Owner of such piping or utility immediately for directions.
  - 2. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.
  - 3. Demolish and completely remove from site existing underground utilities indicated on the drawings to be removed.
- C. Protection of Persons and Property: Contractor shall barricade open excavations occurring as part of this work and post with warning lights. Operate warning lights as recommended by authorities having jurisdiction.

1. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

#### 1.05 SUBMITTALS

- A. The Contractor shall furnish the Engineer, for approval, a certificate of origin and compliance with specifications for any fill material obtained from off-site sources.
- B. At the discretion of the Engineer, the Contractor shall furnish the Engineer, for approval, a representative sample of fill material obtained from on-site sources weighing approximately 50 pounds, at least 14 calendar days prior to the date of anticipated use of such material.
- C. At the discretion of the Engineer, for each material obtained from off-site sources, the Contractor shall notify the Engineer of the source of the material and shall furnish the Engineer, for approval, a representative sample weighing approximately 50 pounds, at least 14 calendar days prior to the date of anticipated use of such material.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS

- A. Satisfactory Soil Materials: ASTM D2487 soil classification groups GW, GP, SW, and SP.
- B. Unsatisfactory Soil Materials: ASTM D2487 soil classification groups GM, GC, SM, SC, CL, ML, OL, CH, MH, OH and PT.
- C. Satisfactory and unsatisfactory soil materials for roadway embankment, including pipe trench backfill under roadways, shall meet the requirements as defined in AASHTO M-145 soil classification groups and FDOT index 505.
- D. Satisfactory materials encountered during excavation, may be stored in segregated stockpiles for reuse. All material which, in the opinion of the Engineer, is not suitable for reuse shall be spoiled as specified herein for legal disposal at the cost of the Contractor as unsuitable materials.
- E. Sub-base material
  1. Refer to roadway section and/or specifications.
- F. Select or Structural Fill or backfill
  1. Select or structural fill material shall be a satisfactory soil material, well graded, consisting of a minimum of 60 percent clean medium fine grain sized quartz sand, free of organic, deleterious and/or compressible percent clean medium fine grain sized quartz sand, free of organic, deleterious and/or compressed material. Rock in excess of 1 inches in diameter shall not be permitted.
- G. Common Fill
  1. Common fill material shall be a satisfactory soil material containing no more than 20 percent by weight finer than No. 200 mesh sieve. It shall be free from organic matter, muck, marl, and rock exceeding 2 1/2 inches in diameter.

- H. Course Aggregate
  - 1. Course aggregate, or gravel, shall be used for rock bedding, drainage rock or as otherwise depicted in the Drawings. Unless otherwise noted, course aggregate shall consist of washed and graded crushed limerock meeting FDOT specification 901, size number 57 or approved equal.
- I. Sand
  - 1. Where specified, sand, clean sand, silica sand, or other nomenclature shall refer to silica sand meeting FDOT specification 902-2.
- J. Satisfactory soil materials shall free of muck, clay, rock, or gravel larger than 2-1/2 inches in any dimension, debris, trash, waste, frozen materials, broken concrete, masonry, rubble, vegetable or other similar materials or deleterious matter. Materials of this nature encountered during the excavation which, in the opinion of the Engineer, is not suitable for reuse shall be stockpiled for disposal as unsuitable materials.
- K. Material substitutions may be permitted if accompanied by a geotechnical engineers report substantiating the proposed substitution which is approved by the Engineer and is at no cost to the Owner.

### PART 3 - EXECUTION

#### 3.01 GENERAL

- A. All excavation, backfill, and grading necessary to complete the work shall be made by the Contractor and the cost thereof shall be included in the Contract price.
- B. Material shall be furnished as required from off-site sources and hauled to site.
- C. The Contractor shall take all necessary precautions to maintain the work area in a safe and workable condition.
- D. The Contractor shall protect his work at all times by flagging, marking, lighting and barricading. It shall also be the Contractor's responsibility to preserve and protect all above and underground structures, pipe lines, conduits, cables, drains, or utilities which are existing at the time he encounters them. Failure of the Drawings to show the existence of these obstructions shall not relieve the Contractor from this responsibility. The cost of repair of damage which occurs to these obstructions during or as a result of construction shall be borne by the Contractor without additional cost to the Owners.

#### 3.02 DEWATERING

- A. The bottom of the excavations shall be firm and dry and in all respects acceptable to the Engineer.
- B. Prevent surface water and sub-surface or ground water from flowing into excavations. Do not allow water to accumulate in excavations.
- C. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.
- D. The Contractor shall obtain all dewatering permits as required from agencies having jurisdiction

### 3.03 TRENCH EXCAVATION

- A. Excavation for all trenches required for the installation of pipes shall be made to the depths indicated on the Drawings. Excavate trench to provide minimum of 30-inch clear cover over the pipe bell unless otherwise noted on the Drawings. Excavate in such manner and to such widths as will give suitable room for laying the pipe within the trenches, for bracing and supporting and for pumping and drainage facilities. The trench width at the top of the pipe shall not exceed the allowable as determined by the depth of cut and indicated on the Drawings.
- B. Rock shall be removed to a minimum 8-inches clearance around the bottom and sides of all the pipe or ducts being laid.
- C. Where pipe is to be laid in limerock bedding or encased in concrete, the trench may be excavated by machinery to or just below the designated subgrade provided that the material remaining in the bottom of the trench remains undisturbed.
- D. Where the pipes or ducts are to be laid directly on the trench bottom the lower part of the trenches shall not be excavated to the trench bottom by machinery. The last of the material being excavated shall be done manually in such a manner that will give a flat bottom true to grade so that pipe can evenly and uniformly supported along its entire length on undisturbed material or bedding rock. Bell holes shall be made as required manually so that there is no bearing surface on the bells and pipes are supported along the barrel only.
- E. The bottom of the excavations shall be firm and dry and in all respects acceptable to the Engineer. Excavate any organic soil material from the bottom of the trench and replace with rock bedding, at least 6 inches thick.

### 3.04 TRENCH PROTECTION

- A. The Contractor shall perform trench excavations in accordance with applicable trench safety standards and is responsible to determine any safety or safety related standards that apply to the Project. The Owner and Engineer are not responsible to review and/or assess safety precautions, programs and costs, and the means, methods, techniques or technique adequacy, reasonableness of cost, sequences, and procedures of any safety precaution, including, but not limited to, compliance with any and all requirements of Florida Trench Safety Act.
- B. The Contractor shall construct and maintain sheeting and bracing as required to support the sides of excavations, to prevent any movement which could in any way diminish the width of the excavation below that necessary for proper construction, and to protect adjacent structures, existing piping, and foundation material from disturbance, undermining, or other damage. Care shall be taken to prevent voids outside of the sheeting, but if voids form, they shall be immediately filled and compacted.
- C. For pipe trench sheeting, no sheeting is to be withdrawn if driven below mid-diameter of any pipe, and no wood sheeting shall be cut off at a level lower than 1 foot above the top of any pipe unless otherwise directed by the Engineer. If during the progress of the work the Engineer decides that additional wood sheeting should be left in place, he may direct the Contractor in writing. If steel sheeting is used for trench sheeting, removal shall be as specified above, unless written approval is given by the Engineer for an alternate method of removal.

- D. All sheeting and bracing not left in place, shall be carefully removed in such a manner as not to endanger the construction or other structures, utilities, existing piping, or property. All voids left or caused by withdrawal of sheeting shall immediately be refilled with sand or rammed with tools especially adapted to that purpose, by watering or otherwise as may be directed.
- E. The right of the Engineer to order sheeting and bracing left in place shall not be construed as creating any obligation on his part to issue such orders, and his failure to exercise his right to do so shall not relieve the Contractor from liability for damages to persons or property occurring from or upon the work occasioned by negligence or otherwise growing out of a failure on the part of the Contractor to leave in place sufficient sheeting and bracing to prevent any caving or moving of the ground.

### 3.05 PIPE INTERFERENCES AND ENCASEMENT

- A. The contractor shall abide by the following schedule of criteria concerning interferences with other utilities.
  - 1. In no case shall there be less than 0.5 feet between any two pipe lines and structures.
- B. The Engineer shall have full authority to direct the placement of the various pipes and structures in order to facilitate construction, expedite completion and to avoid conflicts.

### 3.06 BACKFILLING

- A. Do not backfill trenches until tests and inspections have been made and backfilling authorized by Engineer.
- B. Perform backfill in lifts and compact as specified in the Drawings.
- C. Backfilling over pipes shall begin as soon as practical after the pipe has been laid, jointed, and inspected and the trench filled with suitable compacted material to the mid-diameter of the pipe.
- D. Backfilling over ducts shall begin not less than three days after placing concrete encasement.
- E. All backfilling shall be prosecuted expeditiously as detailed on the Drawings.
- F. Any space remaining between the pipe and sides of the trench shall be packed full by hand shovel with selected earth and thoroughly compacted with a tamper as fast as placed, up to a level of one foot above the top of pipe.
- G. The filling shall be carried up evenly on both sides with at least one man tamping for each man shoveling material into the trench.
- H. The Contractor shall take all precautions necessary to maintain the bedding in a compacted state and to prevent washing, erosion or loosening of this bed.
- I. In areas where unsuitable soil is discovered in the pipe bedding, the unsuitable soil shall be removed and stockpiled for disposal by the contractor. Suitable soils shall be substituted at a depth as directed by the Engineer. If gravel is required by the Engineer as suitable bedding, the gravel shall be wrapped in filter fabric prior to backfill operations.

- J. Gravel bedding shall not be used under any circumstances as a drain for ground water.
- K. In locations where pipes pass through building walls, the Contractor shall take the following precautions to consolidate the refill up to an elevation of at least 1 foot above the bottom of the pipes:
  1. Place structural fill in such areas for a distance of not less than 3 feet either side of the centerline of the pipe in level layers not exceeding 6-inches in depth.
  2. Wet each layer to the extent directed and thoroughly compact each layer with a power tamper to the satisfaction of the Engineer.

### 3.07 COMPACTION

- A. Perform compaction and compaction tests as specified in the Drawings.
- B. Hydraulic compaction shall be permitted if accompanied by a geotechnical engineers report substantiating the proposed methods. The geotechnical engineers report shall be submitted to the Engineer prior to any work and shall be at no cost to the Owner.

### 3.08 GRADING

- A. Grading shall be performed at such places as are indicated on the Drawings, to the lines, grades, and elevations shown or as directed by the Engineer and shall be made in such manner that the requirements for formation of embankments can be followed. All unacceptable material encountered, of whatever nature within the limits indicated, shall be removed and disposed of as directed. During the process of excavation, the grade shall be maintained in such condition that it will be well drained at all times. When directed, temporary drains and drainage ditches shall be installed to intercept or divert surface water which may affect the prosecution or condition of the work.
- B. If at the time of excavation it is not possible to place any material in its proper section of the permanent structure, it shall be stockpiled in approved areas for later use. No extras will be considered for the stockpiling or double handling of excavated material.
- C. The right is reserved to make minute adjustments or revisions in lines or grades if found necessary as the work progresses, due to discrepancies on the Drawings or in order to obtain satisfactory construction.
- D. Stones or rock fragments larger than 2 1/2 inches in their greatest dimensions will not be permitted in the top 6 inches of the subgrade line of all fills or embankments.
- E. All fill slopes shall be uniformly dressed to the slope, cross-section and alignment shown on the Drawings, or as directed by the Engineer.
- F. In cut, all loose or protruding rocks on the back slopes shall be barred loose or otherwise removed to line or finished grade of slope. All cut and fill slopes shall be uniformly dressed to the slope, cross-section and alignment shown on the Drawings or as specified by the Engineer.
- G. No grading is to be done in areas where there are existing pipe lines that may be uncovered or damaged until such lines which must be maintained are relocated, or where lines are to be abandoned, all required valves are closed and drains plugged at manholes.

- H. The Contractor shall replace all pavement cut or otherwise damaged during the progress of the work as specified elsewhere herein or as shown on the Drawings.

### 3.09 DISPOSAL OF UNSUITABLE AND SURPLUS MATERIAL

- A. All surplus and unsuitable excavated material shall be disposed of at the Contractor's cost in one of the following ways as directed by the Engineer.
  - 1. Transport to soil storage area on Owner's property and stockpile or spread as directed by the Engineer.
  - 2. Transport from Owner's property and legally dispose of. Any permit required for the hauling and disposing of this material beyond Owner's property shall be obtained prior to commencing hauling operations. Copies of all required permits shall be provided to the Engineer.
- B. Suitable excavated material may be used for fill if it meets the specifications for common fill and is approved by the Engineer. Excavated material so approved may be neatly stockpiled at the site where designated by the Engineer provided there is an area available where it will not interfere with the operation of the facility nor inconvenience traffic or adjoining property owners.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 02276

## STORMWATER POLLUTION PREVENTION

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Implementation of the Stormwater Pollution Prevention Plan.
- B. Permitting as required through the Florida Department of Environmental Protection (FDEP) - Florida's National Pollutant Discharge Elimination System (NPDES) program for construction activities.
- C. Designing, providing, maintaining, and removing temporary erosion and sedimentation controls and/or Best Management Practices as necessary.
- D. Temporary erosion controls may include, but are not limited to, mulching, netting, and watering, on site surfaces and spoil and borrow area surfaces and providing interceptor ditches at ends of berms and at those locations that will ensure erosion during construction will be either eliminated or maintained within acceptable limits as established by the Owner.
- E. Temporary sedimentation controls include, but are not limited to, silt dams, traps, barriers, booms/curtains, and appurtenances at the foot of sloped surfaces and other areas that will ensure sedimentation pollution will be either eliminated or maintained within acceptable limits as established by the Owner.

## 1.01 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01015 – General Requirements
- C. Other Sections as applicable.

## 1.02 REQUIRMENTS

- A. Obtain a Generic Permit for Stormwater Discharge from Large and Small Construction Activities (CGP). From the Florida Department of Environmental Protection (FDEP) for all construction disturbances in size greater than one (1) acre.
  - 1. Disturbance includes clearing, grading, and excavating.
  - 2. Projects which disturb less than one (1) acre will not require a CGP but will require the appropriate Best Management Practices and directed by the Owner, Engineer or governing authorities.

- B. Implement and maintain a Stormwater Pollution Prevention Plan (SWPPP).
  - 1. The Contractor is the entity that owns and operates the project and has authority to ensure compliance and is therefore considered the “Operator”.
  - 2. Neither the Owner nor the Engineer is responsible to specify, implement, or maintain the SWPPP plan.
- C. Submit a CGP Notice of Intent (NOI) and the commencement of Construction.
- D. Submit reporting forms throughout the duration of Construction.
- E. Submit a CGP Notice of Termination (NOT) to discontinue permit coverage. An NOT may be submitted only when the site meets the eligibility requirements for termination specified in the CGP.
- F. For additional information on the NPDES Stormwater Program including all regulations and forms cited in the brochure visit: [www.dep.state.fl.us/water/stormwater/npdes/](http://www.dep.state.fl.us/water/stormwater/npdes/).

## PART 2 - PRODUCTS

### 2.01 EROSION CONTROL

- A. Mulch: FDOT type per Section 981-3.2, Green Mulch
- B. Netting: Fabricated of material acceptable to the Owner.
- C. Other means as necessary and approved by FDEP and the Owner.

### 2.02 SEDIMENTATION CONTROL

- A. Bales: Clean, seed free cereal hay type
- B. Netting: Fabricated of material acceptable to the Owner
- C. Filter stone: Crushed stone conforming to Florida Department of Transportation specifications.
- D. Other means as necessary and approved by FDEP and the Owner.

## PART 3 - EXECUTION

### 3.01 EROSION CONTROL

- A. Minimum procedures for mulching and netting are:
  - 1. Apply mulch loosely to a thickness of between 3/4 inch and 1 1/2 inches.

2. Apply netting over mulched areas on sloped surfaces.

3.02 SEDIMENTATION CONTROL

- A. Install and maintain silt dams, traps and barriers, and booms/curtains as shown on the approved schedule. Hay bales and fabric that deteriorates and filter stone that becomes dislodged shall be replaced as required.

3.03 PERFORMANCE

- A. Should any of the temporary erosion and sediment control measures employed by the Contractor fail to produce results that comply with the requirements of the Owner, Contractor shall immediately take any and all necessary steps to correct the deficiency at his own expense.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 02341

## HORIZONTAL DIRECTIONAL DRILLING (HDD) WITH (HDPE) PIPE

## PART 1 - GENERAL

## 1.01 SECTION INCLUDES

- A. Furnish all labor, materials and equipment required to install HDPE pipe using directional drilling method of installation, all in accordance with the requirements of the Contract Documents. The pipe size, type, and length shall be as specified in the Drawings. Work included shall include and not be limited to proper installation, testing, restoration of underground utilities and environmental protection and restoration.
- B. The directional drill shall be accomplished by first drilling a pilot hole then enlarging the pilot hole to sufficient size to accommodate the specified HDPE pipe and finally pulling the pipe back through the enlarged hole. All drilling shall be performed to proper industry standards.

## 1.02 RELATED SECTIONS

- A. Section 01015 – General Requirements
- B. Section 01340 – Shop Drawings, Working Drawings and Samples
- C. Section 01720 – Project Record Documents.
- D. Section 15060 – HDPE Pipe
- E. Other Sections as applicable.

## 1.03 REFERENCES

- A. ASTM F 1962 – Use of Maxi-Horizontal Directional Drilling for Placement of Polyethylene Pipe or Conduit Under Obstacles, Including River Crossings.
- B. Plastic Pipe Institute (PPI) – TR-46 – Guidelines for the Use of Mini-Horizontal Directional Drilling for Placement of High Density Polyethylene Pipe.

## 1.04 LOCATIONS

- A. Locations shall be determined by the Contractor prior to bid through site investigation.

## 1.05 SUBMITTALS

- A. Shop Drawings: Submit shop drawings in accordance with the requirements of Section 01340 - Submittals and the following supplemental requirements:
  - 1. Directional drilling Contractor's qualifications and experience.
  - 2. Work Plan: Prior to beginning work, the Contractor must submit to the Engineer for approval a work plan detailing the procedure, schedule and location of entry and exit pits to be used to execute the project. The work plan must include:

- a. Description of all equipment to be used, down-hole tools, list of personnel and their qualifications and experience (including backup personnel in the event that an individual is unavailable), list of Sub Contractors, schedule of work activity, safety plan (including MSDS of any potentially hazardous substances to be used), an environmental protection plan,
- b. Contingency plans for possible problems.
- c. Drilling operations addressing:
  - 1) Procedures for pilot hole drilling and reaming. Procedures for tracking and controlling the drilling head location.
  - 2) Procedures for preparing as-builts.
  - 3) Drilling fluid management plan.
  - 4) Spoils handling and disposal plan.
  - 5) Pipe storage and handling, addressing means and methods for protecting pipe and ensuring temperature control in accordance with the Contractor's installation calculations.
  - 6) Pipeline assembly and installation, addressing: Procedures for pipe joining, pipeline pullback, and pullback monitoring.
  - 7) Prevention of inadvertent fluid losses and spills, and contingencies for rapid containment and cleanup, addressing: Measures to mitigate risk of inadvertent fluid returns to surface. Procedures for monitoring and controlling drilling fluid flows and pressures. Equipment, resources, and procedures for identifying, containing, and cleaning up fluid losses and spills.
  - 8) Quality control and testing procedures.
- d. Traffic control plans for entry and exit pit sites, prepared by a Florida Registered Engineer, ready for submittal by Contractor for procurement of City and/or County Maintenance of Traffic/Right of way permit.
- e. Plans for mitigating the potential for inadvertent drilling fluid losses to surface, and for rapidly identifying and cleaning up spills near the investigation borings located along the project alignment. Investigation boreholes along the alignment have been backfilled. The Contractor's work plans shall address the risk that all investigation boreholes may contribute to the risk of drill fluid loss.
- f. Contingency plan for rapidly identifying, locating, and containing any drilling fluid returns.
- g. The Contractor shall submit a contingency plan to address procedures to be employed in the event any of the listed items occur.
  - 1) Utility strike, obstruction, or inability to advance drill pipe.
  - 2) Excessive deviation from proposed line and grade, as described within this Section.
  - 3) Inability to move pipe through borehole during pullback.
  - 4) Settlement or heave of roadways and structures within 50 feet of the alignment

3. Work plan should be comprehensive, realistic and based on actual working conditions for this particular project. Plan should document the thoughtful planning required to successfully complete the project.
4. Material: Specifications on material to be used shall be submitted to Engineer. Material shall include the pipe, fittings, and any other item which is to be an installed component of the project.
5. Equipment: 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, mud system, mud motors (if applicable), down-hole tools, guidance system, and rig safety systems. Calibration records for guidance equipment shall be included. Specifications for any drilling fluid additives that Contractor intends to use or might use shall be submitted.

#### 1.06 QUALITY ASSURANCE

- A. All directional drilling operations shall be done by a qualified directional drilling Underground Licensed Contractor or Subcontractor who has self-performed using own forces for a minimum of (5) horizontal directional drilling projects in the last three (3) years involving work of a similar nature and scope to the work required of this project.
- B. Notify Engineer and Owner a minimum of three (7) days in advance of the start of work contained in this Section.
- C. All work shall be performed in the presence of the Owner or Engineer.

#### PART 2 - PRODUCTS

##### 2.01 HIGH DENSITY POLYETHYLENE (HDPE) PIPE

- A. Section 15060 – HDPE Pipe

##### 2.02 DIRECTIONAL DRILLING EQUIPMENT REQUIREMENTS

- A. General: The directional drilling equipment shall consist of a directional drilling rig of sufficient capacity to perform the bore and pull back the pipe, a drilling fluid mixing and delivery system of sufficient capacity to successfully complete the installation, an optional drilling fluid recycling system to remove solids from the drilling fluid so that the fluid can be reused, a magnetic guidance system or walk over system to accurately guide boring operations, a vacuum truck of sufficient capacity to handle the drilling fluid volume, trained and competent personnel to operate the system. All equipment shall be in good, safe operating condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of this project.
- B. Drilling Rig: The directional drilling machine shall consist of a hydraulically powered system to rotate, push and pull hollow drill pipe into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill (bore) head. The machine shall be anchored to the ground to withstand the pulling, pushing and rotating pressure required to complete the installation. The hydraulic power system shall be self-contained with sufficient pressure and volume to power drilling operations. Hydraulic system shall be free of leaks. Rig shall have a system

to monitor maximum pull-back pressure during pull-back operations. There shall be a system to detect electrical current from the drill string and an audible alarm which automatically sounds when an electrical current is detected.

- C. Drill Head: The drill head shall be steerable by changing its rotation and shall provide the necessary cutting surfaces and drilling fluid jets.
- D. Mud Motors (if required): Mud motors shall be of adequate power to turn the required drilling tools.
- E. Drill Pipe: Shall be constructed of high quality 4130 seamless tubing, grade D or better, with threaded box and pins. Tool joints should be hardened to 32-36 RC.

### 2.03 GUIDANCE SYSTEM

- A. General: A Magnetic Guidance System (MGS) probe or proven gyroscopic probe and interface shall be used to provide a continuous and accurate determination of the location of the drill head during the drilling operation. The guidance shall be capable of tracking at all depths up to one hundred feet and in any soil condition, including hard rock. It shall enable the driller to guide the drill head by providing immediate information on the tool face, azimuth (horizontal direction), and inclination (vertical direction). The guidance system shall be accurate to and calibrate to manufactures specifications of the vertical depth of the borehole at sensing position at depths up to ten feet and accurate to 2-feet horizontally.
- B. Components: The Contractor shall supply all components and materials to install, operate, and maintain the guidance system.
- C. The Guidance System shall be of a proven type such as Share Well TruTracker MGS, or other proven guidance system, and shall be set up and operated by personnel trained and experienced with this system with a minimum of 3 years of experience. The operator shall be aware of any geo-magnetic anomalies and shall consider such influences in the operation of the guidance system.

### 2.04 DRILLING FLUID (MUD) SYSTEM

- A. Mixing System: A self-contained, closed, drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid composed of bentonite clay, potable water and appropriate additives. Mixing system shall be able to “molecularly shear” individual bentonite particles from the dry powder to avoid clumping and ensure thorough mixing. The drilling fluid reservoir tank shall be a minimum of 500 gallons. Mixing system shall continually agitate the drilling fluid during drilling operations.
- B. Drilling Fluids: Drilling fluid shall be composed of clean water and bentonite clay. The water shall be from an authorized source with a pH of 8.5 - 10. Water of a lower pH or with excessive calcium shall be treated with the appropriate amount of sodium carbonate or equal. No additional material may be used in drilling fluid without prior approval from Engineer. The bentonite mixture used shall have the minimum viscosities as measured by a March Funnel. The following viscosities are provided as a guide:
  1. Rock, Clay - 60 sec.
  2. Hard Clay - 40 sec.
  3. Soft Clay - 45 sec.

4. Sandy Clay - 90 sec.
  5. Stable Sand - 80 sec.
  6. Loose Sand - 110 sec.
  7. Wet Sand - 110 sec.
  8. These viscosities may be varied to best fit the soil conditions encountered, as approved by the Engineer.
- C. Delivery System: The mud pumping system shall have a capacity capable of delivering the drilling fluid at a constant minimum pressure. The delivery system shall have filters in-line to prevent solids from being pumped into the drill pipe. Connections between the pump and drill pipe shall be relatively leak-free. Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and conveyed to the drilling fluid recycling system or shall be removed by vacuum trucks or other methods acceptable to Engineer. A berm or other suitable means of containment, minimum of 12 inches high, shall be maintained around drill rigs, drilling fluid mixing system, entry and exit pits and drilling fluid recycling system to prevent spills into the surrounding environment. Pumps and or vacuum truck(s) of sufficient size shall be in place to convey excess drilling fluid from containment areas to storage and recycling facilities or disposal.
- D. Drilling Fluid Recycling System: The drilling fluid recycling system, if used, shall separate sand, dirt and other solids from the drilling fluid and render the drilling fluid reusable. Spoil separated from the drilling fluid will be stockpiled for later use or disposal.

## 2.05 OTHER EQUIPMENT

- A. Pipe Rollers: Pipe rollers shall be of sufficient size to fully support the weight of the pipe while being hydrostatically tested and during pullback operations. Sufficient number of rollers shall be used to prevent excess sagging of pipe.
- B. Pipe Rammers: Hydraulic or pneumatic pipe rammers may only be used if necessary and with the authorization of Engineer.
- C. Restrictions: Other devices or utility placement systems for providing horizontal thrust other than those previously defined in the preceding sections shall not be used unless approved by the Engineer prior to commencement of the work. Consideration for approval will be made on an individual basis for each specified location. The proposed device or system will be evaluated prior to, approval or rejection on its potential ability to complete the utility placement satisfactorily without undue stoppage and to maintain line and grade within the tolerances prescribed by the particular conditions of the project.

## 2.06 PERSONNEL REQUIREMENTS

- A. All personnel shall be fully trained in their respective duties as part of the directional drilling crew and in safety. Each person must have at least two years directional drilling experience. The Owner shall have sole authority to determine the adequacy of representative projects.
- B. A competent and experienced supervisor representing the Contractor and Drilling Subcontractor shall be present at all times during the actual drilling operations. A responsible representative who is thoroughly familiar with the equipment and type

work to be performed must be in direct charge and control of the operation at all times. In all cases, the supervisor must be continually present at the job site during the actual Directional Bore operation. The Contractor and Subcontractor shall have a sufficient number of competent workers on the job at all times to insure the Directional Bore is made in a timely and satisfactory manner.

- C. Personnel who are unqualified, incompetent or otherwise not suitable for the performance of this project shall be removed from the jobsite and replaced with a suitable person.
- D. All HDPE fusion equipment operators shall be qualified to perform pipe joining using the means, methods and equipment employed by the Contractor. Fusion equipment operators shall have current, formal training on all fusion equipment employed the project. Training received more than two years prior to operation of the fusion equipment shall not be considered current. The Contractor shall submit written certification of training provided by the fusion equipment manufacturer.

### PART 3 - EXECUTION

#### 3.01 GENERAL REQUIREMENTS

- A. The Engineer must be notified 48 hours in advance of starting work. The Directional Bore shall not begin until the Engineer is present at the job site and agrees that proper preparations for the operation have been made. The Engineer approval for beginning the installation shall in no way relieve the Contractor of the ultimate responsibility for the satisfactory completion of the work as authorized under the Contract. It shall be the responsibility of Engineer to provide inspection personnel at such times as appropriate without causing undue hardship by reason of delay to the Contractor.
- B. All work under this specification affecting the Broward County Engineering Department (BCED), the South Florida Water Management District (SFWMD), or the Florida Department of Transportation (FDOT) property, right-of-way, or facilities shall be carried out to the full satisfaction of the BCED, the SFWMD, or FDOT authorized representative. The Contractor shall fully inform himself of all requirements of the SFWMD or FDOT as pertains to the specific project and shall coordinate with these representatives and conduct all his work accordingly.
- C. All equipment used by the Contractor on Owner's property and rights-of-way may be inspected by the Owner or the Owner's Representatives and shall not be used if considered unsatisfactory by Owner or Owner's Representatives.
- D. The Contractor shall be fully responsible for all damages arising from his failure to comply with the regulations and the requirements of these Specifications.

#### 3.02 DIRECTIONAL DRILLING OPERATION

- A. The Contractor shall provide all material, equipment, and facilities required for directional drilling. Proper alignment and elevation of the bore hole shall be consistently maintained throughout the directional drilling operation. The method used to make the directional drilling shall conform to the requirements of all applicable permits. Copies of all permits will be supplied to the Contractor by the Owner.

- B. Entire drill path shall be accurately surveyed with entry and exit stakes placed in the appropriate locations within the areas indicated on drawings. If Contractor is using a magnetic guidance system, drill path must be surveyed prior to construction for any surface magnetic variations or anomalies by which may interfere with the Contractor prior to commencement guidance system. This pre-construction magnetic interference survey shall be submitted for Engineers review. The cost of alternative guidance systems shall not be considered as additional cost to the bid.
- C. The Contractor shall coordinate utilities locations with Sunshine State One-Call of Florida, Inc., (#811 or web site [www.callsunshine.com](http://www.callsunshine.com)). Once the locate service has field marked all utilities, the Contractor shall verify each utility (including any service laterals, i.e. water, sewer, cable, gas, electric, phone, etc.) and those within each paved area. Verification may be performed utilizing Ground Penetrating Radar, hand dig, or vacuum excavation. Prior to initiating drilling, the Contractor shall record on the drawings both the horizontal and vertical location of the utilities off of a predetermined baseline. The Contractor shall utilize the Ground Penetrating Radar over the projected bore path whether utilities are located in the horizontal drill pathway or not, in order to reduce the opportunity of conflicting with any unforeseen obstructions.
- D. Contractor shall place silt fence between all drilling operations and any drainage, wetland, waterway or other area designated for such protection by contract documents, state, federal and 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. Contractor shall adhere to all applicable environmental regulations. Fuel may not be stored in bulk containers within 200 feet of any water body or wetland.
- E. Readings shall be recorded after advancement of each successive drill pipe, and the readings plotted on a scaled drawing of 1-inch=20-feet, both vertical and horizontal. Access to all recorded readings and plan and profile information shall be made available to the Engineer, or field representative, at all times.
- F. A complete list of all drilling fluid additives and mixtures to be used in the directional operation will be submitted to the Engineer, along with their respective Material Safety Data Sheets. All drilling fluids and loose cuttings shall be contained in pits or holding tanks for recycling or disposal, no fluids shall be allowed to enter any unapproved areas or natural waterways. Upon completion of the directional drill project, the drilling mud and cuttings shall be disposed of by the Contractor in accordance with applicable regulations.
- G. HDPE pipe shall be installed with a maximum of 36 inches of cover and at the separation distances indicated by the drawings. Upon Engineer's approval, the Contractor will be allowed to exceed 36 inches of cover.
- H. Pilot hole shall be drilled on bore path with no deviations greater than 5% of depth over a length of 100 feet. In the event that pilot does deviate from bore path more than 5% of depth in 100 feet, Contractor will notify Engineer and Engineer may require Contractor to pull-back and re-drill from the location along bore path before the deviation. In the event that a drilling fluid fracture, inadvertent returns or returns loss occurs during pilot hole drilling operations, Contractor shall cease drilling, wait at least 30 minutes, inject a quantity of drilling fluid with a viscosity exceeding 120 seconds as measured by a Marsh funnel and the wait another 30

minutes. If mud fracture or returns loss continues, Contractor will cease operations and notify Engineer. Engineer and Contractor will discuss additional options and work will then proceed accordingly.

- I. Upon completion of the pilot hole phase of the operation, a complete set of as-built records shall be submitted in duplicate to the Owner. These records shall include copies of the plan and profile drawing, as well as directional survey reports as recorded during the drilling operation.
- J. Upon approval of the pilot hole location the hole opening or enlarging phase of the installation shall begin. The bore holed diameter shall be increased to accommodate the pullback operation of the required size of HDPE pipe. The type of hole opener or back reamer to be utilized in this phase shall be determined by the types of subsurface soil conditions that have been encountered during the pilot hole drilling operation. Reaming operations shall be conducted to enlarge the pilot hole after the acceptance of the pilot bore. The Contractor must ream bore hole to a size at least 25% greater than the pipe diameter, and must not attempt to ream at one time, more than what the equipment is designed to safely handle.
- K. The open borehole may be stabilized by means of bentonite drilling slurry being pumped through the inside diameter of the drill pipe and through openings in the reamer. The slurry will also serve as an agent to carry the loose cuttings to the surface through the annulus of the borehole. These cuttings and bentonite slurry are to be contained at the exit or entry side of the directional bore in pits or holding tanks. The slurry may be recycled at this time for reuse in the hole opening operation, or it shall be disposed of by the Contractor in accordance with applicable regulations.
- L. The HDPE pipe shall be joined together according to manufacturer's specifications and be supported over roadways and other obstacles as required, by the use of pipe rollers or comparable equipment, in preparation of pullback through the enlarged borehole. A pulling eye will be attached to the product pipe which in turn will be attached to a swivel on the end of the drill pipe. This will allow for a straight, smooth pull of the product pipe as it enters and passes through the borehole toward the drill rig and original entrance hole of the directional bore. The product pipe will be elevated to the approximate angle of exit and supported by means of a sideboom with roller arm, or similar equipment, to allow for a "free stress" situation as the pipe is pulled into the exit hole toward the drill rig. The product pullback phase of the-directional operation shall be carried out in a continuous manner until the pipe reaches the original entry side of the bore.
- M. Drilling pits shown on the plans are for reference only. If actual pit dimensions exceed the dimensions shown on the plans, the Contractor shall be responsible for complete restoration of the pit area to the original condition including all fill, sub-base, limerock base, asphalt, concrete, landscaping, etc.

### 3.03 PIPE HANDLING

- A. Care shall be taken during transportation of the pipe such that it will not be cut, kinked or otherwise damaged.
- B. Ropes, fabric or rubber protected slings and straps shall be used when handling pipes. Chains, cables or hooks inserted into the pipe ends shall not be used. Two slings spread apart shall be used for lifting each length of pipe. Pipe or fittings shall not be dropped onto rocky or unprepared ground.

- C. Pipes shall be stored on level ground, preferably turf or sand, free of sharp objects which could damage the pipe. Stacking of the pipe shall be limited to a height that will not cause excessive deformation of the bottom layers of pipes under anticipated temperature conditions. Where necessary due to ground conditions the pipe shall be stored on wooden sleepers, spaced suitably and of such width as not to allow deformation of the pipe at the point of contact with the sleeper or between supports.
- D. The handling of the joined pipe line shall be in such a manner that the pipe is not damaged by dragging it over sharp and cutting objects. Slings for handling the pipeline shall not be positioned at butt fused joints. Sections of the pipes with deep cuts and gouges shall be removed and the ends of the pipeline rejoined.
- E. Pipe shall be welded/fused together in one length, if space permits. Pipe may be placed on pipe rollers before pulling into bore hole to minimize damage to the pipe. It is critical that all original oxidized pipe surfaces be removed in order for fusion to take place. The scraping process requires that approximately .10" of the outer "skin" be removed in order to penetrate the oxidation and contamination barrier. Oxidized pipe surface simply will not bond.
- F. ACCEPTABILITY OF DAMAGED PIPE: Cuts or gouges that reduce the wall thickness by more than 10% is not acceptable and must be cut out and discarded.
- G. BUTT FUSION LOG: Each butt fusion shall be recorded and logged by an electronic monitoring device (McElroy Datalogger or approved equal is required) affixed to the fusion machine. Joint data shall be submitted as part of the As-Recorded information, in accordance with this specification.
- H. BUTT FUSION TESTING: When requested by an inspector, butt fusion testing will be performed. The test fusion shall be allowed to cool completely, and then fusion test coupons shall be cut out.
- I. MECHANICAL JOINING: Polyethylene pipe and fittings may be joined to other materials by means of flanged connections (flange adapters, electrofused couplings, and back-up rings) or mechanical couplings designed for joining polyethylene pipe or for joining polyethylene pipe to another material. Mechanical couplings shall be fully pressure rated and fully thrust restrained such that when installed in accordance with manufacturer's recommendations, a longitudinal load applied to the mechanical coupling will cause the pipe to yield before the mechanical coupling disjoins. External joint restraints shall not be used in lieu of fully restrained mechanical couplings.
- J. Contractor shall have the ability to electrofuse couplings to the pipe at an 11.25 deg angle in the pit to allow installation of the 11.25 deg elbows on the end of the pipe.

#### 3.04 TESTING PIPE

- A. Cleaning and flushing are to be done by the Contractor in accordance with AWWA/ANSI C651.
- B. Directional drilled pipe shall be tested by Contractor prior to and after pullback. This testing is to be included in the contract price. The pressure shall be maintained at 150 psi for at least two hours. The test pump and water supply shall be arranged to allow accurate measurement of the water required to maintain the test pressure. Any material showing seepage or the slightest leakage shall be replaced as directed by the Owner at no additional expense to the Owner.

- C. The manufacturer's recommendations on pipe stretch allowances, allowable make-up water, and duration of test pressure shall be observed.
- D. Pipeline shall be tested in sections, end to end or 1,800 feet whichever distance is smaller.

### 3.05 SITE RESTORATION

- A. Following drilling operations, Contractor will de-mobilize equipment and restore the work site to original conditions. All excavations will be backfilled and compacted in accordance with the plans.
- B. Surface restoration shall be completed in accordance with the Specifications.
- C. The Contractor shall be responsible for complete restoration of the drilling pit areas to the original condition including all fill, sub-base, limerock base, asphalt, concrete, landscaping, etc.
- D. Disposal of fluids is the responsibility of the Contractor. Disposal of fluids shall be done in a manner that is in compliance with all permits and applicable federal, state, or local environmental regulations. The bentonite drilling slurry may be recycled for reuse in the hole opening operation, or shall be hauled by the Contractor to an approved location or landfill for proper disposal. Contractor shall thoroughly clean entire area of any fluid residue upon completion of installation, and replace any and all plants and sod damaged, discolored or stained by drilling fluids.

### 3.06 RECORD KEEPING AND AS-BUILTS

- A. Contractor shall maintain a daily project log of drilling operations and a guidance system log with a copy given to Engineer at completion of project.
- B. The MGS data shall be recorded every 25 feet during the actual crossing operation. The Contractor shall furnish "As-Built" plan and profile drawings based on these recordings showing the actual location horizontally and vertically of the installation, and all utility facilities found during the installation. The MGS data shall be certified accurate by the Contractor to the capability of the MGS System.
- C. As-built drawings shall be completed by a professional surveyor.

## PART 4 - ENVIRONMENTAL AND SAFETY CONCERNS

### 4.01 GENERAL REQUIREMENTS

- A. The horizontal directional drilling operation is to be operated in a manner to eliminate the discharge of water, drilling mud and cuttings to the adjacent creek or land areas involved during the construction process. The Contractor shall provide equipment and procedures to maximize the recirculation or reuse of drilling mud to minimize waste. All excavated pits used in the drilling operations shall be lined by the Contractor with heavy duty plastic sheeting with sealed joints to prevent the migration of drilling fluids and/or ground water.
- B. The Contractor shall visit the site and must be aware of all structures and site limitations at the directional drill crossing and provide the Engineer with a drilling plan outlining procedures to prevent drilling fluid from adversely affecting the surrounding area.

- C. The general work areas on the entry and exit sides of the crossing shall be enclosed by a berm to contain unplanned spills or discharge.
- D. Waste cuttings and drilling mud shall be processed through a solids control plant comprised as a minimum of sumps, pumps, tanks, de-salter/de-sander, centrifuges, material handlers, and haulers all in a quantity sufficient to perform the cleaning/separating operation without interference with the drilling program. The cuttings and excess drilling fluids shall be dewatered and dried by the Contractor to the extent necessary for disposal in offsite landfills. Water from the dewatering process shall be treated by the Contractor to meet permit requirements and disposed of locally. The cuttings and water for disposal are subject to being sampled and tested. The construction site and adjacent areas will be checked frequently for signs of unplanned leaks or seeps.
- E. Equipment (graders, shovels, etc.) and materials (such as groundsheets, hay bales, booms, and absorbent pads) for cleanup and contingencies shall be provided in sufficient quantities by the Contractor and maintained at all sites for use in the event of inadvertent leaks, seeps, or spills.
- F. Waste drilling mud and cuttings shall be dewatered, dried, and stock piled such that it can be loaded by a front-end loader, transferred to a truck and hauled offsite to a suitable legal disposal site. The maximum allowed water content of these solids is 50% of weight.
- G. Due to a limited storage space at the worksites, dewatering and disposal work shall be concurrent with drilling operations. Treatment of water shall satisfy regulatory agencies before it is discharged.
- H. Contractor shall place silt fence between all drilling operations and any drainage, wetland, waterway, or other areas designated for such protection by contract documents, state, federal, and 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. Contractor shall adhere to all applicable environmental regulations. Fuel or oil may not be stored in bulk containers within 200' of any water body or wetland.
- I. Contractor shall adhere to all applicable state, federal, and local safety regulations and all operations shall be conducted in a safe manner. Safety meetings shall be conducted at least weekly with a written record of attendance and topic submitted to the Engineer.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 02430

## SODDING

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Provide all labor, materials, necessary equipment and services to complete the turfgrass Sodding work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".

## 1.02 RELATED SECTIONS

- A. Section 02200 – Earthwork
- B. Section 02210 – Finish Grading
- C. Section 02400 – Landscaping
- D. Section 02410 – Shrub and Tree Relocation
- E. Section 02420 – Soil Preparation and Soil Mixes
- F. Section 02450 – Tree and Plant Protection
- G. Other Sections as applicable.

## 1.03 QUALITY ASSURANCE

- A. Standards: Federal Specifications (FS) 0-F-241c (1), Fertilizers, Mixed, Commercial.
- B. Requirements or Regulatory Agencies: Conform to the requirements of the State Department of Agriculture.

## 1.04 SUBMITTALS

- A. Growers Certifications:
  - 1. Turfgrass Sod species and location of field from which turfgrass sod is cut.
  - 2. Compliance with state and federal quarantine restrictions. Manufacturer's certification of fertilizer and herbicide composition.
  - 3. All Contractors' licenses and or certifications for the uses and or application of herbicides, pesticides and fertilizers per the State, County and governing municipality.

## 1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver turfgrass sod on pallets.
- B. Protect root system from exposure to wind or sun.
- C. Protect turfgrass sod against dehydration, contamination, and heating during transportation and delivery. Such protection shall encompass the entire period during which the turfgrass sod is in transit, being handled, or in temporary storage. Evidence of inadequate protection against drying out shall be cause for rejection.
- D. Do not deliver more turfgrass sod than can be installed within 24 hours.

- E. Keep stored turfgrass sod moist and under shade, or covered with moistened burlap.
- F. Do not break, tear, stretch, or drop turfgrass sod. The Landscape Architect may reject sod that has been damaged by poor handling.
- G. Unless otherwise authorized by Landscape Architect, the Contractor shall notify the Landscape Architect at least 48 hours in advance of anticipated delivery date of the turfgrass sod. A legible copy of the invoice showing species and variety of the turfgrass sod included for each shipment shall be submitted to the Landscape Architect for approval.

#### 1.06 JOB CONDITIONS

- A. Begin installation of turfgrass sod after preceding related work is accepted.
- B. Environmental Requirements:
  - 1. Install turfgrass sod during months acceptable to the Landscape Architect.
  - 2. Do not install turfgrass sod on saturated soil.
- C. Protection: Erect signs and barriers against vehicular traffic on areas prepared for sod.

#### 1.07 GUARANTEE

- A. Guarantee turfgrass sod for period of twelve months after date of Final Approval.
- B. Replacement turfgrass sod under this guarantee shall be guaranteed for twelve months from the date of installation.
- C. Repair damage to other plants during turfgrass sod replacement at no cost to the Owner.

### PART 2 - PRODUCTS

#### 2.01 TURFGRASS SOD

- A. Turfgrass Sod Species: Refer to species indicated on approved landscape plans.
  - 1. Turfgrass Producers International Grade: Premium Grade Turfgrass Sod.
- B. All turfgrass sod shall conform to the following requirements:
  - 1. Furnish in pads that are not stretched, broken, or torn.
    - a. Turfgrass Sod pads shall be 18x24 inches in size (plus or minus 5%) with a 1-1/2 inch thickness (excluding top growth and thatch). Broken and torn or uneven ends will not be accepted.
  - 2. Uniformly mowed height when harvested:
    - a. Turfgrass Sod - 2 inches in height.
  - 3. Thatch: Maximum 1/2 inch uncompressed.
  - 4. Inspected and found free of diseases, nematodes, pests, and pest larvae, by entomologist of State of Florida Department of Agriculture.
  - 5. Weeds:

- a. Free of horse grass, nut grass or other objectionable weeds or weed seeds.

6. Uniform in green color, leaf texture, and density.

## 2.02 WATER

- A. Free of substances harmful to plant growth, objectionable odor or staining agents.

## 2.03 FERTILIZER

- A. FS 0-F-241c(1), Grade A or B.
- B. The Chemical designation for slow release granular fertilizer with minor trace elements in addition to 12% Nitrogen, 8% Phosphorous, and 8% Potassium (Lesco or approved equal) shall have at least 50% of the nitrogen from a non-water-soluble organic source for all plantings except on lake banks.
- C. Apply and distribute by methods and rates as recommended by manufacturer.
- D. All State, County, and Municipal governmental regulations must be met including any licensing or certification requirements for uses and/or applications.

## 2.04 HERBICIDES

- A. As recommended by the State of Florida Department of Agriculture.
- B. Post-emergent Herbicide: Roundup as manufactured by Monsanto Corp. or approved equal.
- C. Pre-emergent Herbicide: Ron Star or approved equal.
- D. When next to an aquatic water body, an approved aquatic herbicide or approved equal must be utilized that will meet the State, County or Municipal requirements.
- E. All State, County and municipal governmental regulations must be met including any licensing or certification requirements for uses or applications.

## PART 3 - EXECUTION

### 3.01 INSPECTION

- A. Verify that excavation for turfgrass sod is 4 inches below finish grade and approved Planting/Top Soil Mix to depth of 2 or more inches for turfgrass sod (2 inches) to meet finish grade.
- B. Water dry soil to depth of 6 inches 48 hours before turfgrass sodding.

### 3.02 INSTALLATION

- A. All areas to be turfgrass sodded shall receive finish grading per Section 02210.
- B. Transplant turfgrass sod within 48 hours after harvesting.
- C. Turfgrass Sod coverage must provide 100% coverage at Final Approval.
- D. Begin turfgrass sodding at bottom of slopes. When installing turfgrass sod adjacent to a water body, install turfgrass sod to the waterline.
- E. Lay first row of turfgrass sod in straight line with long dimension of pads parallel to slope contours.

- F. Butt side and end joints. Ensure that joints are tight, thereby eliminating the need to patch and/or top-dress to eliminate gaps.
- G. Stagger end joints in adjacent rows.
- H. Do not stretch or overlap rows.
- I. Water turfgrass sod immediately after transplanting.
- J. Top dressing for turfgrass sodded areas may be clean sand(sterilized), mined from fresh water sources. Sand mined from salt water is unacceptable. Sand shall be free from construction debris, weeds, turfgrass sod, biodegradable materials, noxious pests and diseases and other deleterious materials.

### 3.03 LAWN ESTABLISHMENT

- A. Maintenance of sodded areas shall begin immediately after so installation and shall continue until final approval. Maintenance shall consist of protecting, watering, weeding, cutting, fertilizing, repairing eroded area and re-sodding dead and or damaged turfgrass sod.
- B. Watering:
  - 1. Keep turfgrass sod moist during first week after planting.
  - 2. After first week, supplement rainfall to produce a total of 2 inches per day until final acceptance.
  - 3. It is the contractors' responsibility to water all plant material.
- C. Mowing:
  - 1. Maintain turfgrass sod between 2 inches and 2-1/2 inches in height. When turfgrass sod reaches 3 inches in height, mow to 2 inches in height.
  - 2. Do not cut off more than 40% of grass leaf in single mowing.
  - 3. Remove all turfgrass sod clippings throughout.
- D. Re-turfgrass sod areas which in the opinion of the Landscape Architect is required to establish a uniform stand of turfgrass sod.
- E. Weed Eradication:
  - 1. Apply specified or approved equal post-emergent herbicide per manufacture's rate and method of application to all areas to receive sod.
  - 2. Apply specified or approved equal pre-emergent herbicide before sodding and between second and third mowing, per manufacturer's rate and method of applications.
  - 3. Verify that the herbicide and applicant technique will not damage sod prior to application, and replace all damaged sod and any other landscaping due to herbicide at no cost to the owner.
- F. Fertilizer: Apply fertilizer uniformly at manufacturer's recommended rate 30 days after turfgrass sodding and at three-month intervals thereafter. Water in to avoid "burning" or damaging turfgrass sod.
- G. Establishment period shall extend until final acceptance by the Owner according to the conditions of the Contract.

3.04 CLEANING

- A. Immediately clean spills from paved and finished surface areas.
- B. Remove debris and excess materials from project site.
- C. Dispose of protective barricades and warning signs at termination of lawn establishments.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 02513

## ASPHALTIC CONCRETE PAVING

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Furnish all labor, materials, equipment and incidentals required and place asphaltic concrete pavement in accordance with the elevations and typical sections as depicted in the Drawings and specified herein.

## 1.02 RELATED SECTIONS

- A. Section 01340 – Shop Drawings, Working Drawings, and Samples
- B. Section 01410 – Materials and Installation Testing
- C. Other Sections as applicable

## 1.03 REFERENCES

- A. The Work under this Contract shall be in strict accordance with the following codes and standards.
  - 1. The applicable municipality,
  - 2. Broward County Traffic Engineering Division,
  - 3. Florida Department of Transportation Specifications (FDOT),
  - 4. OSHA Safety and Health Standards for Construction.

## 1.04 SUBMITTALS

- A. Submit mix design for approval in accordance with Section 01340.

## PART 2 - PRODUCTS

## 2.01 MATERIALS

- A. Asphaltic concrete pavement shall conform to the following FDOT Standard Specifications:
  - 1. Section 160 – Stabilization.
  - 2. Section 200 – Limerock base.
  - 3. Section 300 – Prime and tack coats.
  - 4. Section 331 (2000) – Type S Asphalt.
- B. The materials of the asphaltic concrete surface shall conform the applicable sections of FDOT Standard Specifications for Asphaltic Concrete with the following exception:
  - 1. Recycled asphalt may not be used for the final course.

## PART 3 - EXECUTION

## 3.01 INSTALLATION

- A. All asphalt installation shall be in accordance with FDOT Standard Specification 330 – Hot Mix Asphalt General Construction Requirements.
- B. All soft and yielding material and other portions of the subgrade which will not compact readily shall be removed and replaced with suitable material and the whole subgrade brought to line and grade and to a foundation of uniform compaction and supporting power. The cost of removing and replacing unsuitable material shall be included in the bid for the paving.
- C. The subgrade, in both cut and fill sections, shall be compacted to a density and LBR as indicated in the Drawings. Unless the subgrade material at the time of compacting contains sufficient moisture to permit proper compaction it shall be moistened as necessary and then compacted. Subgrade material containing excess moisture shall be permitted to dry to the proper consistency before being compacted. The subgrade shall be shaped prior to making the density tests. The required density shall be maintained until the base or pavement has been laid or until the aggregate materials for the base or pavement course have been spread in place.
- D. The minimum compacted thickness of the limerock base shall be as depicted in the Drawings applied in four-inch maximum layers of equal depth unless otherwise depicted in the Drawings. The width of the limerock base shall be wider than the pavement as depicted in the Drawings.
- E. Before the prime coat is applied, all loose material, dust, dirt or other foreign material which might prevent bond with existing surface shall be moved to the shoulders to the full width of the base by means of revolving brooms, mechanical sweepers, blowers, supplemented by hand sweeping or other approved methods. The glazed finish shall have been removed from the base. The prime coat shall be applied by a pressure distributor so that approximately 0.1 gallons per square yard is applied uniformly and thoroughly to a clean surface.
- F. Prior to the application of the surface course, all loose material, dust, dirt and all foreign material which might prevent proper bond with the existing surface shall be removed to the full width of the repair by means of approved mechanical sweepers and supplemented by hand sweeping if required.
- G. Apply bituminous tack coat at a rate between 0.02 and 0.10 gallons per square yard. Bituminous material shall be heated as per manufacturers' recommendations.
- H. All manhole castings, valve boxes or other utility castings within the area to be surfaced shall be adjusted to the proposed surface elevation by the Contractor. The work shall be accomplished in such a manner as to leave the casting fixed permanently in its correct position.

## 3.02 PAVEMENT REPAIR

- A. All damage to pavement as a result of the work (construction or maintenance) under this contract shall be repaired according to the plans and specifications at the Contractor's cost. Pavement shall be repaired to match the original surface material and original grade; however, the asphalt concrete thickness shall not be less than 1

inch. The repair shall include the preparation of the subgrade, the placing and compacting of the limerock base, the preparation and priming of the base, the placing and maintaining of the surface treatment, all as specified herein and as shown on the Drawings.

- B. The width of all repairs shall extend at least 12 inches beyond the limit of the damage or as shown on the Drawings. The edge of the pavement to be left in place shall be saw cut to a true edge and should provide a clean edge to abut the repair. The line of the repair shall be reasonably uniform with no unnecessary irregularities.

### 3.03 TESTING

- A. Refer to Section 01410 – Materials and Installation Testing.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 09900

## PROTECTIVE COATINGS

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. This Section covers the work required to provide all labor, materials, equipment and incidentals to perform all of the necessary surface preparation and painting required to complete this contract in its entirety.
- B. It is the intent of these Specifications to paint all concrete, exposed miscellaneous metal, pipe, fittings, valves, equipment, and all other work required to be painted unless otherwise specified. Minor items omitted in the schedule of work shall be included in the work of this Section where they come within the general intent of the specifications as stated herein.
- C. The following surfaces or items are "NOT" required to be coated:
  - 1. Aluminum: gratings, checkered plates, hatches, handrails, toe boards, stairways and walkways
  - 2. Stainless steel, brass, bronze, and aluminum other than exposed tubing
  - 3. Piping embedded in concrete
  - 4. Ducts, pipes and other miscellaneous items covered with insulation or plastic coated
  - 5. Concealed surfaces of pipe or crawl spaces
  - 6. Finish hardware
  - 7. Nonferrous architectural metals, unless specifically noted otherwise
  - 8. Packing glands and other adjustable parts and nameplates of mechanical equipment
  - 9. Exterior concrete slabs and equipment

## 1.02 RELATED SECTIONS

- A. Other Sections as applicable.

## 1.03 ABBREVIATIONS

The abbreviations and definitions listed below, when used in this Section, shall have the following meanings:

ANSI	American National Standards Institute
ASTM	American Society of Testing Materials
AWWA	American Water Works Association
DFT	Dry Film Thickness
FPP	Fiberglass Reinforced Plastic
HCl	Hydrochloric Acid
MDFT	Minimum Dry Film Thickness
MDFTPC	Minimum Dry Film Thickness Per Coat
mil	Thousandths of an Inch
MIL-P	Military Specification - paint
NACE	National Association of Corrosion Engineers
NSF	National Sanitary Foundation
OSHA	Occupational Safety and Health Act
SFPG	Square Feet Per Gallon
SFPGPC	Square Feet Per Gallon Per Coat
SP	Surface Preparation
SSPC	The Society for Protective Coatings

#### 1.04 SUBMITTALS

- A. Submittals will be made with the coating system data sheet included at the end of this section.
- B. The following shall be submitted for each proposed coating system: manufacturer's specifications, surface prepared details, application procedures, technical data sheets, and dry film thickness or coverage.
- C. Unless otherwise specified, hereinafter and before any painting work is started prepare with type of paint and application specified, and on similar substrate, to which paint is to be finally applied, samples not less than 8" in size.
- D. Furnish additional samples as required until colors, finishes, and textures are acceptable. Retain accepted samples to be used as the quality standard for final finishes.
- E. Before proceeding with the work under this Section, finish one complete space or item of each color scheme required showing selected colors, finishes and textures are acceptable. Retain accepted samples to be used as the quality standard for final finishes.
- F. Schedule of Painting Operations: The Contractor shall submit for review a complete schedule of painting operations 30 days from the notice to proceed.

#### 1.05 QUALITY ASSURANCE

- A. The paint manufacturer shall provide a representative to visit the job site at intervals during surface preparation and painting may be required for product application quality assurance and to determine compliance with manufacturer's instructions and these Specifications, and may be necessary to resolve field problems attributable to, or associated with, the manufacturer's products furnished under this Contract.

- B. A site visit report shall be prepared and submitted by paint manufacturer's representative documenting compliance with the manufacturer's recommended applications.

#### 1.06 INSPECTION

- A. The Contractor shall give the Engineer a minimum of three days advance notice of the completion of any surface preparation work or start of coating application work.
- B. Before application of the prime coat and each succeeding coat, all surfaces to be painted shall be inspected by the Engineer. Any and all defects or deficiencies shall be corrected by the Contractor before application of any subsequent coating.
- C. Coating applications shall be checked for required MDFT as per these specifications. All coated surfaces failing to meet the MDFT requirements shall be rejected.
- D. For all coatings subject to immersion, full cure must be obtained for the completed system. Consult the coatings manufacturer's written instructions for these requirements. The coatings shall not be immersed for any purpose until completion of the curing cycle.
- E. Inspection by the Engineer of the waiver of inspection of any particular portion of the work shall not be construed to relieve the Contractor of his responsibility to perform the work in accordance with these specifications.

#### 1.07 PAINT DELIVERY AND STORAGE

- A. All materials shall be new and shall be delivered to the project site in unopened containers that plainly show, at the time of use, the designated name, date of manufacturer, color, and name of manufacturer. Paints shall be stored in a suitable protected area that is heated or cooled as required to maintain temperatures within the range recommended by the paint manufacturer.

#### 1.08 PROJECT SITE CONDITIONS

- A. The local agency having jurisdiction may require observance and conformance with EPA Volatile Organic Compound (VOC) restrictions. EPA limits the content of VOC's in painting materials to 2.5 lb/gallon. Information regarding the VOC content of proposed paints will be required during submittals.

#### 1.09 WARRANTY

- A. Contractor shall warrant to the Owner and guarantee the work under this Section against defective workmanship and materials for a period of two years commencing on the date of Final Acceptance of the Work. This warranty does not alleviate the Contractor or supplier of implied or other specified or written warranties for long term product quality.

## PART 2 - PRODUCTS

## 2.01 GENERAL

- A. Products containing lead will not be allowed. Oil shall be pure boiled linseed oil.

## 2.02 PAINT MATERIALS

- A. Products shall be as manufactured by Tnemec Company, Inc., Kerneos Aluminate Technologies or approved equals.
- B. The following paint products are by Tnemec Company, Inc. and Kerneous, as applicable, and are used for the basis of establishing the desired quality expected for the project.

<u>Product Type</u>	<u>Company</u>	<u>Product Name</u>
Coal Tar Epoxy	Tnemec	Series 46H-413 HB TnemeTar
Cycloaliphatic Epoxy (Non Potable)	Tnemec	Series 104 H.S. Epoxy
MIO/ZINC MCU	Tnemec	Series 1 Omnithane
Polyamide Epoxy	Tnemec	Series 66HS Epoxoline
Aliphatic Polyurethane	Tnemec	Series 1095 EnduraShield
Modified MCU	Tnemec	Series 446 PermaShield MCU
Styrenated Acrylate	Tnemec	Series 156 EnviroCrete
Mortar	Kerneos	Sewpercoat PG

## 2.03 COLORS

- A. Provide as selected by the Owner.
- B. Formulate with colorants free of lead, lead compounds, or other materials which might be affected by presence of hydrogen sulfide or other gas likely to be present at the project.
- C. Proprietary identification of colors is for identification only. Any authorized manufacturer may supply matches.

## 2.04 TESTING GAUGES

- A. Furnish a magnetic type dry film thickness gauge, to test coating thickness specified in mils, as manufactured by:
1. Nordson Corp., Anaheim, CA, Mikrotest
  2. Or equal
- B. Furnish an electrical holiday detector, low voltage, wet sponge type to test finish coat, except zinc primer, high-build elastomeric coatings, and galvanizing, for holidays and discontinuities as manufactured by:

1. Tinker and Razor, San Gabriel, CA, Model M-1
  2. Or equal
- C. Furnish a high voltage holiday detector for elastomeric coatings in excess of 25 mils dry film thickness. Unit to be recommended by the coatings manufacturer.

### PART 3 - EXECUTION

#### 3.01 PROTECTION OF SURFACES NOT TO BE PAINTED

- A. Mask or otherwise protect hardware, lighting fixtures, switch plates, aluminum surfaces, machined surfaces, couplings, shafts, bearings, nameplates, and other surfaces not intended to be painted which cannot be removed.
- B. Provide drop cloths to prevent paint materials from falling on or marring adjacent surfaces.
- C. Protect working parts of mechanical and electrical equipment from damage during surface preparation and painting processes. Openings in motors shall be masked to prevent paint and other materials from entering motors.

#### 3.02 ENVIROMENTAL CONDITIONS

- A. Coatings shall not be applied in temperature exceeding the manufacturer's recommended maximum and minimum allowable, nor under adverse conditions such as dust, smoke-laden atmosphere, damp or humid weather.

#### 3.03 SAFETY

- A. Coating shall be performed in strict accordance with the safety recommendations of the coating manufacturer; with the safety recommendations of the National Association of Corrosion Engineers contained in the publication, Manual for Painter Safety; federal, state, and local agencies having jurisdiction.
- B. Ultimate responsibility for safety is Contractor's.

#### 3.04 PREPARATION OF SURFACES

- A. All surfaces to be coated shall be prepared as specified herein and shall be dry and clean before coating. Specific surface preparation shall be specified for the individual coating systems.
- B. Steel shall be blasted unless otherwise specified. Blasting shall be done with a centrifugal wheel or compressed air blasting equipment, using proper abrasives to attain an average profile depth of 1.5 mils.

Do not re-use sand or flint abrasives. Short abrasives must be thoroughly clean of contamination before re-use. Blow dust and grit from surface with clean, dry air. Coat within 8 hours or before rust contamination occurs.

- C. All concrete shall have cured for 28 days.

## 3.05 COATING SYSTEM INDEX

- A. The following is a general index to the coating system description described herein:

System No.	Title
1	Exterior of New Concrete
2	Interior of New Valve Vaults, Air Release Structures
3	Exposed Metal Highly Corrosive
4	Submerged Metal - Domestic Sewage
5	Exposed Metal and DIP - Moderate Corrosive Conditions
6	Concrete Lining – Pump Station Wetwell, and Manhole
7	Exterior Above Grade UV Exposed Concrete

## 3.06 COATING SYSTEMS

- A. System No. 1 Exterior of New Concrete Structures, Valve Vault, Wet Well

Surface Preparation:	All curing oils, form oils, laitance, soluble salts, and loose concrete must be removed. Concrete must be dry and thoroughly clean before coatings.
Prime Coat:	None required.
Top Coat:	Coal tar epoxy at 8.0 mils DFT per coat.
MDFT:	16 mils DFT for two-coat system. Allow minimum of 24 hours drying time between coats.

- B. System No. 2 – Interior of New Valve Vaults, Air Release Structures

Surface Preparation:	Concrete: All curing oils, form oils, laitance, soluble salts, and loose concrete must be removed in accordance with SSPC-SP13 (Surface Preparation of Concrete). Concrete must be dry and thoroughly clean before coatings. Concrete shall be cured 28 days, brush off blast. Refer to the Manufacturer's Product Data Sheet for ICRI CSP Requirement.
Filler/Surfacer:	Concrete substrate surface with cracks and/or voids greater than ½" in depth or width or areas where underlying aggregate has been exposed shall be patched with filler and surfacer. Material shall be applied in accordance with the manufacturer's application instructions.
Prime Coat:	Tnemec Series 104 HB Epoxy, 8.0 – 10.0 mils DFT.
Top Coat:	Tnemec Series 104 HB Epoxy, 8.0 – 10.0 mils DFT.
MDFT:	Minimum 12.0 mils MDFT cycloaliphatic epoxy system. Time between coats and method of application shall be as per manufacturer's written instructions.
Color:	First Coat – Beige Second Coat – Gray

- C. System No. 3 – Exposed Metal – Highly Corrosive
- Surface Preparation: Abrasive blast clean to an SSPC-SP10 (near white metal).
- Prime Coat: Series 1 Omnithane at 2.5 – 3.5 mils DFT.
- Intermediate Coat: Series 446-1223 Red PermaShield MCU at 6.0 – 8.0 mils DFT.
- Top Coat: Series 446-1222 Gray PermaShield MCU at 6.0 – 8.0 mils DFT.
- MDFT: 14.5 mils DFT for three-coat system.
- Color: As selected by Owner from manufacturer’s standard available colors.
- D. System No. 4 – Submerged Metal – Domestic Sewage, Pump Station Wet Well Piping
- Surface Preparation: Abrasive blast or centrifugal wheel blast, SSPC-SP5.
- Prime Coat: Series 1 Omnithane at 2.5 – 3.5 mils DFT.
- Intermediate Coat: Series 446-1223 Red PermaShield MCU at 6.0 – 8.0 mils DFT.
- Top Coat: Series 446-1222 Gray PermaShield MCU at 6.0 – 8.0 mils DFT.
- MDFT: 14.5 mils DFT for three-coat system.
- Color: As selected by Owner from manufacturer’s standard available colors.
- E. System No. 5 – Exposed Metal and DIP – Moderate Corrosive Conditions, Valve Pit Piping and Valves, and Canal Crossings
- Surface Preparation: Abrasive blast or centrifugal wheel blast, SSPC-SP6 (commercial blast).
- Prime Coat: Series 1 Omnithane at 2.5 – 3.5 mils DFT.
- Intermediate Coat: Series 66HS Epoxoline at 4.0 – 6.0 mils DFT.
- Top Coat: Series 1095 EnduraShield at 3.0 – 5.0 mils DFT.
- MDFT: 9.5 mils DFT for three coats.
- F. System No. 6 –Concrete Lining – Pump Station Wet Well, and Manholes
- Surface Preparation: All curing oils, form oils, laitance, soluble salts, and loose concrete must be removed. Concrete must be saturated with water prior to application of the lining materials.
- Inflow Prevention: Existing manholes may need rapid setting crystalline enhanced hydraulic cement product specifically formulated for infiltration control that shall be used to stop minor flows. The material shall have the following strength requirements:  
Compressive Strength (ASTM C597B) 600 psi (24 hours) 1,000 psi (7 days) and Bond Strength (ASTM C321) 30 psi (1 hour), 80 psi (1 day).
- Lining: See section 03769 Sewage Pump Station Structure and Manhole Rehabilitation.

Curing: If environment is not moist enough for natural curing, the Contractor may be required to apply a curing compound per the requirements of ASTM C309.

G. System No. 7 – Exterior of Above Grade UV Exposed Concrete

Surface Preparation: Concrete: All curing oils, form oils, laitance, soluble salts, and loose concrete must be removed. Concrete must be dry and thoroughly clean before coatings.

Prime Coat: Series 156 Acrylate at 4.0 – 6.0 mils DFT.

Top Coat: Series 156 Acrylate at 4.0 – 6.0 mils DFT.

MDFT: Minimum 8.0 mils of DFT for two-coat Acrylate system. Time between coats and method of application shall be as per manufacturer's written instructions.

Color: As selected by Owner from manufacturer's standard available colors.

3.07 UNIDENTIFIED SURFACES

- A. Any surfaces not specifically named in the schedule and not specifically accepted shall be prepared, primed, and coated in the manner and with material consistent with these Specifications. The Engineer shall select which of the manufacturer's products, whether the type is indicated herein or not, shall be used for such unnamed surfaces. The painting shall be done within the scope of the contract.

3.08 WORKMANSHIP

- A. On metal surfaces apply each coat of paint at the rate specified by the manufacturer to achieve the minimum dry mil thickness required. If material has thickened or must be diluted for application by spray gun, the coating shall be built up to the same film thickness achieved with undiluted material. One gallon of paint as originally furnished by the manufacturer shall not cover a greater area when applied by spray gun than when applied unthinned by the application of an additional coat(s). On masonry, application rates will vary according to surface texture; however, in no case shall the manufacturer's stated coverage rate be exceeded. On porous surfaces, it shall be the painter's responsibility to achieve a protective and decorative finish either by decreasing the coverage rate or applying additional coats of paint.
- B. All safety equipment shall be painted in accordance with OSHA Standards as approved.
- C. Materials shall be mixed in proper containers of adequate capacity. All materials shall be thoroughly stirred before use and shall be kept stirred while using. No unauthorized thinners or other materials shall be added to any paint.
- D. Only skilled painters shall be used on the work and specialists shall be employed where required.

- E. Steel members, metal castings, mechanical and electrical equipment and other metals which are shop primed before deliver at the site will not require a prime coat on the job. All piping and other bare metals to be painted shall receive one coat of primer before exposure to the weather, and this prime coat shall be the first coat as specified in the painting schedule.
- F. Finish surfaces shall not show brush marks or other irregularities. Undercoats shall be thoroughly and uniformly sanded with No. 00 sandpaper or equal to remove defects and provide a smooth, even surface.
- G. Before final acceptance of the work, all damaged surfaces of coating shall be cleaned and repainted as directed by the Engineer.

### 3.09 APPLICATION SCHEDULE

- A. System No. 1 – Exterior of New Concrete – This system shall be used on the exterior of all new pre-cast concrete valve vaults, manholes, and constructed wetwell.
- B. System No. 2 – Interior of New Valve Vaults and Air Release Structures – This system shall be used in the interior of all new concrete valve vaults. Pre-cast concrete shall be coated prior to installation. Coating shall extend through the pre-cast joints.
- C. System No 3 – Exposed Metal – Highly Corrosive – This system shall be used on all metal surfaces exposed to weather including equipment, conduits, piping, exposed metal frames and elsewhere as scheduled. Galvanized piping and aluminum hatches do not require painting.
- D. System No. 4 – Submerged Metal – Domestic Sewage, Pump Station Wet Well Piping This system shall be used for wet well piping, wet well ferrous metals.
- E. System No. 5 – Exposed Metal and DIP – Moderate Corrosive Conditions, Valve Pit Piping and Valves, and Canal Pipe Crossings – This system shall be used for interior and exterior piping, structural steel, and interior dry pit metals.
- F. System No. 6 –Concrete Lining – Pump Station Wet Well, and Manholes – This system shall be used in wet well and manholes. Existing manholes to be rehabilitated as specified.
- G. System No. 7 – Exterior above Grade UV Exposed Concrete – This system shall be used on the headworks structure area as specified in the contract drawings.

### 3.10 CLEANUP

- A. It shall be the responsibility of the Contractor to collect and dispose of property, all waste materials from the site in accordance with all requirements of the federal, state, and local environment protection agencies.
- B. At completion of the work, remove all paint where it has been spilled, splashed, splattered, sprayed, or smeared on all surfaces, including glass, light fixtures, hardware, equipments, painted and unpainted surfaces.

- C. After completion of all paintings, the Contractor shall remove from the job site all painting equipment, surplus materials and debris resulting from this work.

3.11 MANUFACTURER'S SERVICE

- A. Furnish paint manufacturer representative to visit job site at intervals during surface preparation and painting as may be required for product application quality assurance, and to determine compliance with manufacturer's instructions and these specifications, and as may be necessary to resolve field problems attributable to, or associated with, manufacturer's products furnished under this Contract.

3.12 COATING SYSTEM DATA SHEET

- A. To be included with submittal. See form on next page.

END OF SECTION

COATING SYSTEM DATA SHEET  
(to be included with submittal)

Coating System Number (From Spec): \_\_\_\_\_

Coating System Title (From Spec): \_\_\_\_\_

Coating Supplier Name & Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Local Representative Name & Address: \_\_\_\_\_

\_\_\_\_\_

Manufacturer Representative Authorized to  
Certify Proper Installation Name & Address: \_\_\_\_\_

\_\_\_\_\_

Surface Preparation: \_\_\_\_\_

\_\_\_\_\_

Coating Material (Generic)	Product Number/Name (Proprietary)	Coats/Minimum Coverage	Color

Notes:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 15010

## TESTING PIPING SYSTEMS

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Perform pressure testing of water mains and sewage force mains using Contractor's qualified personnel, or employ and pay for a qualified organization to perform specified services.

## 1.02 RELATED SECTIONS

- A. Section 15060 – HDPE Pipe
- B. Section 15062 – Ductile Iron Pipe and Fittings
- C. Section 15065 – PVC Water Main Pipe
- D. Other Sections as applicable.

## 1.01 REFERENCES

- A. AWWA C600 – Installation of Ductile-Iron Mains and their Appurtenances
- B. AWWA C605 – Underground Installation of PVC and Molecularly Oriented PVC Pressure Pipe and Fittings
- C. AWWA C651 – Disinfecting Water Mains

## 1.02 DESCRIPTION

- A. Perform testing of piping systems in accordance with the latest edition of the AWWA REFERENCES and as specified above.
- B. Provide instrument required for testing of piping systems.
  - 1. Make instruments available to Engineer to facilitate spot checks during testing.
  - 2. Retain possession of instruments; remove from site at completion of services.
- C. Provide all water required for flushing and testing. The Contractor shall obtain a construction meter from the City at current rates and pay for meter rental and all water used.
- D. Provide all necessary pumping equipment and other equipment, materials and facilities required for proper completion of the flushing and testing specified.

- E. Source and quality of water, procedure, and test equipment shall be acceptable to the Engineer. Length of tested line shall not exceed 2,000 feet.
- F. All tests shall be made in the presence of the Engineer. Notify Engineer at least 48 hours before any Work is to be inspected or tested.
- G. If inspection or test shows defects, the piping system(s) shall be repaired or replaced and inspection repeated, until such piping is acceptable to the Engineer.
- H. All pipe, fittings, valves, and joints shall be carefully examined during test. Leaky joints shall be tightened by remaking the joint.
- I. Sections of the system may be tested separately. It shall be distinctly understood that any defect which may subsequently develop in section already tested and accepted shall promptly be corrected and that section retested.
- J. Disposal of the water used for testing shall be subject to the approval of the Engineer.

### 1.03 QUALITY ASSURANCE

- A. The organization which performs the testing shall, prior to testing, provide their qualifications and demonstrate their ability to perform the services to the satisfaction of the Engineer.

### 1.04 SUBMITTALS

- A. Preliminary
  - 1. Submit three copies of documentation to confirm compliance with Quality Assurance provisions:
    - a. Organization supervisor and personnel training and qualifications.
    - b. Specimen copy of each of the report forms proposed for use.
- B. At least fifteen days prior to Contractor's request for final inspection, submit three copies of final reports on applicable reporting forms, for review.
  - 1. Each individual final reporting form must bear the signature of the person who recorded data and that of the supervisor of the reporting organization.
  - 2. Identify instruments of all types which were used and last date of calibration of each.

### 1.05 JOB CONDITIONS

- A. Prior to start of testing of piping systems, verify that required "Job Conditions" are met:
  - 1. System or system element installation is complete.
  - 2. All required materials, water, instruments, etc. are on hand.
  - 3. All other preparations are completed.

## 1.06 TESTING PROCEDURES

## A. Pressure Piping Systems

1. Water, sewer, and drainage pressure piping shall pass a hydrostatic pressure test and a leakage test as defined below before acceptance. The pressure and leakage test shall be made after all jointing operations are completed and after backfilling is completed. All concrete reaction blocks, or other bracing and restraining facilities, shall be in place at least 14 days before the initial filling of the line.
2. The pressure and leakage tests may be applied to an individual section of line isolated between the existing line valves, or may be applied to shorter sections of line at the Contractor's option. If shorter sections are tested, test plugs or bulkheads as required at the ends of the test section shall be furnished and installed by the Contractor at his expense, together with all anchors, braces, and other devices required to withstand the hydrostatic pressure on such plug or plugs, without imposing any hydraulic thrust on the pipe line or any part thereof. Pressure testing shall include water services, as well. The Contractor shall be solely responsible for any and all damage to the pipe line, and/or to any other facility, which may result from the failure of test plugs furnished by him or supports therefore, in any case.
3. Hydrostatic Tests:
  - a. The section of line to be tested shall be slowly filled with water and all air expelled from the pipe. Care shall be taken that all air valves are installed and open in the section being filled, and that the rate of filling does not exceed the venting capacity of the air valves.
  - b. Hydrostatic test pressure shall be as follows:

System	Test Pressure
Wastewater Force Main	150 psi
Potable Water Main	150psi
Other Pressure Pipe	1.5 times maximum operation pressure at the lowest elevation of the test section.

- c. After the pipe has been laid, all newly laid pipe of any valved section thereof shall be subjected to a hydrostatic pressure test.
  - 1) Test pressure shall:
    - i. Not exceed pipe or thrust-restraint design pressures.
    - ii. Be of at least 2-hour duration.
    - iii. Not vary by more than  $\pm 5$  psi (0.35 Bar) for the duration of the test.
    - iv. Not exceed twice the rated pressure of the valves or hydrants when the pressure boundary of the test section includes closed gate valves or hydrants.  
NOTE: Valves shall not be operated in either direction at differential pressures exceeding the rated pressures.

- v. Not exceed the rated pressure of the valves when the pressure boundary of the test section includes closed valves.
- 2) Each valved section of pipe shall be filled with water slowly and the specified test pressure based on the elevation of the lowest point of the line or section under test and corrected to the elevation of the test gauge shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Engineer. Valves shall not be operated in either the opening or closing direction at differential pressures above the rated pressure. The system shall be allowed to stabilize at the test pressure before conducting the leakage test.
- d. Examination: Any exposed pipe, fittings, valves, hydrants, and joints shall be examined carefully during the test. Any damaged or defective pipe fittings, valves, or hydrants that are discovered following the pressure test shall be repaired or replaced with sound material and the test shall be repeated until it is satisfactory to the Engineer.
- 1) Leakage Test
- i. A leakage test shall be conducted concurrently with the pressure test. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or valved section thereof, to maintain pressure within 5 psi (0.35 Bar) of the specified test pressure after the air in the pipeline has been expelled and the pipe has been filled with water. Leakage SHALL NOT BE MEASURED BY A DROP IN PRESSURE IN A TEST SECTION OVER A PERIOD OF TIME.
  - ii. No pipe installation will 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.

- (a) To obtain leakage in liter/hour, multiply the values in the table by 3.785.
- (b) When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0078 gal/h/in (0.0012 L/h/mm) of nominal valve size shall be allowed.
- (c) When hydrants are in the test section, the test shall be made against the closed hydrant.

- (d) Acceptance shall be determined on the basis of allowable leakage. If any test of pipe laid discloses leakage greater than that specified in Section "b" above, Contractor shall, at his own expense, locate and make repairs as necessary until the leakage is within the specified allowance.
- (e) All visible leaks are to be repaired regardless of the amount of leakage.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

- A. Prior to testing, pig and flush all piping systems with water to remove all debris in the system.
- B. No separate payment for testing shall be made.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 15060

## HIGH DENSITY POLYETHYLENE (HDPE) PIPE AND FITTINGS

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Furnish all labor, materials, equipment and incidentals required to install HDPE pressure pipe, fittings, and appurtenances as shown on the Drawings and specified herein. The products and materials specified herein are intended to be standard types of HDPE Pressure Mains (AWWA C901 and C905) and ductile iron fittings.

## 1.02 RELATED SECTIONS

- A. Section 02221 - Trenching, Beddings, and Backfill for Pipe
- B. Section 15100 - Valves and Appurtenances
- C. Other Sections as applicable.

## 1.03 REFERENCES

- A. AWWA C901 Polyethylene (PE) Pressure Pipe & Tubing - ½ Inch Through 3 Inch for Water Service.
- B. AWWA C906 Polyethylene (PE) Pressure Pipe & Fittings - 4 Inch Through 63 Inch for Water Distribution.
- C. ASTM D1238 Melt Flow Index
- D. ASTM D1505 Density of Plastics
- E. ASTM D2837 Hydrostatic Design Basis
- F. ASTM D3035 Standard Spec for PE Pipe (DR-PR) Based on Controlled Outside Diameter.
- G. ASTM D3261 Butt Heat Fusion PE Fittings for PE Pipe & Tubing
- H. ASTM D3350 Standard Specification for PE Pipe & Fittings Materials
- I. NSF/ANSI STD. #61 Drinking Water Components
- J. NSF/ANSI STD. #14 Plastic Piping Components & Related Materials

#### 1.04 QUALIFICATIONS

- A. All of the HDPE pipe and ductile-iron fittings shall be furnished by manufacturers who are fully experienced, reputable, and qualified in the manufacture of the materials to be furnished. The pipe and fittings shall be designed, constructed, and installed in accordance with AWWA Standards for HDPE Pipe and using the best practices and methods as specified herein. The pipe manufacturer shall supply a one year warranty from date of shipment of their products. All pipes and fittings shall have NSF product certification and be U.L. product certified.

#### 1.05 SUBMITTALS

- A. Submit to the Engineer within thirty (30) days after execution of the Contract a list of materials to be furnished, the names of the suppliers, and the date of delivery of materials to the site.
- B. All HDPE pipe and ductile-iron fittings to be installed under this Contract shall be inspected and tested at the foundry as required by the standard specifications to which the material is manufactured. Furnish to the Engineer in duplicate sworn certificates of such tests and their results. In addition, all HDPE pipe and ductile iron fittings to be installed under this Contract may be inspected at the foundry for compliance with these Specifications by an independent testing laboratory selected by the Owner. The manufacturer's cooperation shall be required in these inspections. The cost of foundry inspection requested by the Owner of all pipe approved for this contract will be borne by the Owner.
- C. Shop Drawings shall be submitted to the Engineer for approval and shall include dimensioning, methods and locations of supports and all pertinent technical specifications for all piping to be furnished. Shop drawings shall be prepared by the pipe manufacturer.

### PART 2 - PRODUCTS

#### 2.01 MATERIALS

- A. Materials used for the manufacture of polyethylene pipe and fittings shall be made from a PE4710 high density polyethylene resin compound meeting cell classification 345434C per ASTM D3350; and meeting Type III, Class C, Category 5, Grade P34 per ASTM D1238.
- B. High Density Polyethylene (HDPE) pipe shall comply with AWWA Specifications C901 or 906 as applicable.
- C. If rework compounds are required, only those generated in the Manufacturer's own plant from resin compounds of the same class and type from the same raw material supplier shall be used.
- D. Dimensions and workmanship shall be as specified by ASTM F714. HDPE fittings and transitions shall meet ASTM D3261. HDPE pipe shall have a minimum density

of 0.955 grams per cubic centimeter. All HDPE pipe and fittings shall have a Hydrostatic Design Basis (HDB) of 1,600 psi.

- E. HDPE pipe and accessories shall have a Standard Dimension Ratio (SDR) as indicated on the Drawings.
- F. The pipe manufacturer must certify compliance with the above requirements.

## 2.02 FITTINGS

- A. All fittings shall be ductile iron pipe (DIP) unless otherwise indicated on the Drawings.
- B. HDPE fittings:
  - 1. All molded fittings and fabricated fittings shall be fully pressure rated to match the pipe SDR pressure rating to which they are made. All fittings shall be molded or fabricated by the manufacturer. No Contractor fabricated fittings shall be used unless approved by the Engineer.
  - 2. The manufacturer of the HDPE pipe shall supply all HDPE fittings and accessories as well as any adapters and/or specials required to perform the work as shown on the Drawings and specified herein.
  - 3. All fittings shall be installed using butt-fused fittings, thermo-fused fittings/couplings, or flanged adapters and must be approved by the Engineer. No size on size wet taps shall be permitted.
- C. All transition from HDPE pipe to ductile iron or PVC shall be made per the approval of Engineer and per the HDPE pipe manufacturer's recommendations. A molded flange connector adapter within a carbon steel back-up ring assembly shall be used for pipe type transitions. Ductile iron back-up rings shall mate with cast iron flanges per ANSI B16.1. A 316 stainless steel back-up ring shall mate with a 316 stainless steel flange per ANSI B16.1
  - 1. Transition from HDPE to ductile iron fittings and valves shall be approved by Engineer before installation.
  - 2. No solid sleeves shall be allowed between such material transitions.

## 2.03 PIPE IDENTIFICATION

- A. The following shall be continuously indent printed on the pipe or spaced at intervals not exceeding 5 feet:
  - 1. Name and/or trademark of the pipe manufacturer.
  - 2. Nominal pipe size.
  - 3. Dimension ratio.

4. The letters PE followed by the polyethylene grade in accordance with ASTM D1248 followed by the hydrostatic design basis in 160's of psi, e.g., PE 3408.
5. Manufacturing standard reference, e.g., ASTM F714 or D3035, as required.
6. A production code from which the date and place of manufacture can be determined.
7. Color identification, either stripped by co-extruding longitudinal identifiable color markings or shall be solid in color and as follows:
  - a. BLUE – Potable Water
  - b. GREEN – Sanitary Sewer
  - c. LAVENDAR – IQ Cover All
  - d. BLACK - Drainage

## PART 3 - EXECUTION

### 3.01 JOINTING METHOD

- A. The pipe shall be joined with butt, heat fusion joints as outlined in ASTM D3261. All joints shall be made in strict compliance with the manufacturer's recommendations. A factory qualified joining technician as designated by the pipe manufacturer or an experienced, trained technician shall perform all heat fusion joints in the presence of the inspector.
- B. Lengths of pipe shall be assembled into suitable installation lengths by the butt-fusion process. All pipes so joined shall be made from the same class and type of raw material made by the same raw material supplier. Pipe shall be furnished in standard laying lengths not to exceed 50 feet and no shorter than 20 feet.
- C. On days butt fusions are to be made, the first fusion shall be a trail fusion in the presence of an inspector. The following shall apply:
  1. Heating plates shall be inspected for cuts and scrapes. The plate temperature shall be measured at various locations to ensure proper heating/melting per manufacturer's recommendations and approval by inspector.
  2. The fusion or test section shall be cut out after cooling completely for inspection.
  3. The test section shall be 12" or 30 times (minimum) the wall thickness in length and 1" or 1.5 times the wall thickness in width (minimum).
  4. The joint shall be visually inspected as to continuity of "beads" from the melted material, and for assurance of "cold joint" prevention (i.e. joint shall

have visible molded material between walls of pipe). Joint spacing between the walls of the two ends shall be a minimum of 1/16" to a maximum 3/16".

- D. The polyethylene flange adapters at pipe material transitions shall be backed up by stainless steel flanges conforming to ANSI B16.1 and shaped as necessary to suit the outside dimensions of the pipe. The flange adapter assemblies shall be connected with corrosion resisting bolts and nuts of Type 316 Stainless Steel. All bolts shall be tightened to the manufacturer's specified torques. Bolts shall be tightened alternatively and evenly. After installation apply a bitumastic coating to bolts and nuts.

### 3.02 INSTALLATION

- A. High Density Polyethylene (HDPE) pipe shall be installed in accordance with the instruction of the manufacturer, as shown on the drawings and as specified herein. A factory qualified joining technician as designated by the pipe manufacturer shall perform all heat fusion joints.
- B. HDPE shall be installed either by Open Trench Construction or Directional Bore Method as outlined in Section 02341 – Horizontal Directional Drilling (HDD) with (HDPE) Pipe.
- C. Care shall be taken in loading, transporting, and unloading to prevent injury to the pipe. Pipe or fitting shall not be dropped. All pipe or fitting shall be examined before installation, and no piece shall be installed which is found to be defective. Any damage to the pipe shall be repaired as directed by the Engineer. If any defective pipe is discovered after it has been installed, it shall be removed and replaced with a sound pipe in a satisfactory manner by the Contractor, at his own expense.
- D. Under no circumstances shall the pipe or accessories be dropped into the trench or forced through a directional bore upon "pull-back".
- E. Care shall be taken during transportation of the pipe such that it will not be cut, kinked, or other damaged.
- F. Ropes, fabric, or rubber protected slings and straps shall be used when handling pipes. Chains, cables, or hooks inserted into the pipe ends shall not be used. Two slings spread apart shall be used for lifting each length of pipe.
- G. Pipes shall be stored on level ground, preferable turf or sand, free of sharp objects, which could damage the pipe. Stacking of the polyethylene pipe shall be limited to a height that will not cause excessive deformation of the bottom layers of pipes under anticipated temperature conditions. Where necessary due to ground conditions, the pipe shall be stored on wooden sleepers, spaced suitably and of such width as not to allow deformation of the pipe at the point of contact with the sleeper or between supports.
- H. Pipe shall be stored on clean level ground to prevent undue scratching or gouging. The handling of the pipe shall be in such a manner that the pipe is not damaged by

dragging it over sharp and cutting objects. The maximum allowable depth of cuts, scratches, or gouges on the exterior of the pipe is 10 percent of wall thickness. The interior pipe surface shall be free of cuts, gouges, or scratches.

- I. Pipe shall be laid to lines and grade shown on the drawings with bedding and backfill as shown on the drawings.
- J. When laying is not in progress, including lunchtime, the open ends of the pipe shall be closed by fabricated plugs, or by other approved means.
- K. Sections of pipe with cuts, scratches, or gouges exceeding 10 percent of the pipe wall thickness shall be removed completely and the ends of the pipeline rejoined.
- L. The pipe shall be joined by the method of thermal butt fusion, as outlined in Part 3 – Execution, Section 3.1 Joining Method. All joints shall be made in strict compliance with the manufacturer’s recommendations.
- M. Mechanical connections of the polyethylene pipe to auxiliary equipment such as valves, pumps, and tanks shall be through flanged connections which shall consist of the following:
  - 1. A polyethylene flange shall be thermally butt-fused to the stub end of the pipe.
  - 2. A 316 stainless steel back up ring shall mate with a 316 stainless steel flange.
  - 3. 316 stainless steel bolts and nuts shall be used.
- N. Flange connections shall be provided with a full-face neoprene gasket.
- O. All HDPE pipe must be at the temperature of the surrounding soil at the time of backfilling and compaction.
- P. If a defective pipe is discovered after it has been installed, it shall be removed and replaced with a sound pipe in a satisfactory manner at no additional cost to the Owner. All pipe and fittings shall be thoroughly cleaned before installation, shall be kept clean until they are used in the work and when laid, shall conform to the lines and grades required.
- Q. Open Trench Installation:
  - 1. Specification, Section 022221 – Trenching, Bedding, and Backfilling shall apply in its entirety.
  - 2. The centerline of the pipe shall not deviate from a straight line drawn between the centers of the openings at the ends of the pipe by more than 1/16 inch per foot of length. If a piece of pipe fails to meet this requirement check for straightness, it shall be rejected and removed from the site. Laying instructions of the manufacturer shall be explicitly followed.

3. Good alignment shall be preserved during installation. Deflection of the pipe shall occur only at those places on design drawings and as approved by the Engineer. Fittings, in addition to those shown on the drawings, shall be used only if necessary or required by the Engineer.
4. Each length of the pipe shall have the assembly mark aligned with the pipe previously laid and held securely until enough backfill has been placed to hold the pipe in place. Joints shall not be “pulled” or “cramped”.
5. Precautions shall be taken to prevent flotation of the pipe in the trench.
6. When moveable trench bracing such as trench boxes, moveable sheeting, shoring or plates are used to support the sides of the trench, care shall be taken in placing and moving the boxes or supporting bracing to prevent movement of the pipe, or disturbance of the pipe bedding and the backfill. Trench boxes, moveable sheeting, shoring or plates shall not be allowed to extend below top of the pipe. As trench boxes, moveable sheeting, shoring or plates are moved, pipe bedding shall be placed to fill any voids created and the backfill shall be re-compacted to provide uniform side support for the pipe.
7. Restrained joints shall be installed where shown on the drawings or as directed by the Engineer.

R. Directional Bore Installation

1. Refer to Specification 02341 – Horizontal Directional Drilling (HDD) with (HDPE) Pipe.

### 3.03 PRESSURE AND LEAKAGE TESTS OF UNDERGROUND PRESSURE PIPING

- A. Hydrostatic pressure and leakage test shall conform to AWWA C600-10 Specification with the exception that the Contractor shall furnish all gauges, meters, pressure pumps and other equipment needed to test the line.
- B. The pressure required for the field hydrostatic pressure test shall be 150 psi. The Contractor shall provide temporary plugs and blocking necessary to maintain the required test pressure. Corporation cocks at least 3/4 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. Duration of pressure test shall be at least two hours. The cost of these items shall be included as a part of testing.
- C. The leakage test shall be a concurrent test at the maximum operating pressure as determined by the Engineer with the pressure test and shall be of not less than 2 hours duration. 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 pipelines shall be tested in such sections as may be directed by the Engineer by shutting valves or installing temporary plugs as required. The line

shall be filled with water and all air removed and the test pressure shall be maintained in the pipe for the entire 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.

- D. The amount of leakage which will be permitted shall be in accordance with AWWA C600 Standards for all pressure lines.
- E. The Contractor must submit his plans for testing to the Engineer for review at least 14 days before starting the test. The Contractor shall remove and adequately dispose of all blocking material and equipment after completion and acceptance of the field hydrostatic test, unless otherwise directed by the Engineer. Any damage to the pipe coating shall be repaired by the Contractor. Lines shall be totally free and clean prior to final acceptance.

#### 3.04 CLEANING AND FLUSHING

- A. The pipe shall be thoroughly cleaned of all foreign matter before installation. It is the responsibility to insure cleanliness of the pipe during installation and backfilling. At the conclusion of the work, the Contractor shall thoroughly clean all of the pipe, if necessary, by flushing with water or other materials which may have entered during the construction period. Debris cleaned from the lines shall be removed from the lowest outlet. If pipe is cleaned and if the groundwater level is above the pipe, or following a heavy rain the Engineer will examine the pipe for leaks. If defective pipes or joints are discovered at this time, they shall be repaired by the Contractor.

END OF SECTION

## SECTION 15062

## DUCTILE IRON PIPE AND FITTINGS

## PART 1 - GENERAL

## 1.01 SECTION INCLUDES

- A. Ductile iron pipe and fittings piping shall be installed in those locations and depths as shown on the Drawings.
- B. The equipment and materials specified herein is intended to be standard and ductile iron pipe and fittings used in transporting water and wastewater.

## 1.02 RELATED SECTIONS

- A. Section 01340 – Shop Drawings, Working Drawings and Samples
- B. Section 15010 – Testing Piping Systems
- C. Section 15100 – Valves and Appurtenances
- D. Other Sections as Applicable.

## 1.03 REFERENCES

- A. ASTM International, (ASTM)
  - 1. ASTM B 117-99(2007) – Standard Practice for Operating Salt Spray (Fog) Apparatus.
  - 2. ASTM C 413-01(2006) – Standard Test Method for Absorption of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes.
  - 3. ASTM C 868-02(2008) – Standard Test Method for Chemical Resistance of Protective Linings.
  - 4. ASTM D 149-09 – Standard Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies.
  - 5. ASTM D 870-09 – Standard Practice for Testing Water Resistance of Coatings Using Water Immersion.
  - 6. ASTM D 1653-03(2008) – Standard Test Methods for Water Vapor Transmission of Organic Coating Films.
  - 7. ASTM D 2370-98(2002) – Standard Test Method for Tensile Properties of Organic Coatings.
  - 8. ASTM D 2240-05 – Standard Test Method for Rubber Property—Durometer Hardness.

9. ASTM D2583-07 – Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.
  10. ASTM D 2794-93(2004) – Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
  11. ASTM D 4400-99(2007) – Standard Test Method for Sag Resistance of Paints Using a Multinotch Applicator.
  12. ASTM D 4060-14 – Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
  13. ASTM D 4541-09 – Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers.
  14. ASTM G 8-96(2003)e1 - Standard Test Methods for Cathodic Disbonding of Pipeline Coatings.
  15. ASTM G 210-13 – Standard Practice for Operating the Severe Wastewater Analysis Testing Apparatus (S.W.A.T.).
  16. ASTM A307 Grade B - Low-Carbon Steel Bolts for Flanged Pipe.
- B. ASTM A307 Grade B - Low-Carbon Steel Bolts for Flanged Pipe.
- C. ANSI/AWWA C10 - Cement-Mortar Lining for Ductile Iron and Gray Iron Pipe and Fittings for Water.
- D. ANSI/AWWA C105 - Polyethylene Encasement for Ductile Iron Piping for Water and Other Liquids.
- E. ANSI/AWWA C110 - Ductile Iron and Gray Iron Fittings 3 inch through 48 inch for Water and Other Liquids.
- F. ANSI/AWWA C150 - Thickness Design of Ductile Iron Pipe.
- G. ANSI/AWWA C151 - American National Standard for Ductile Iron Pipe, Centrifugally Cast.
- H. ANSI/AWWA C153 - Ductile Iron Compact and Gray Iron Fittings 3 inch through 16 inch for Water and Other Liquids.
- I. ANSI/AWWA C600 - Installation of Ductile Iron Water Mains and Their Appurtenances.
- J. ANSI/AWWA C651 - Disinfecting Water Mains.
- K. ASME/ANSI B16.1 - Cast Iron Pipe Flanges and Flanged Fittings, Class 125.
- L. ASME/ANSI B16.5 - Pipe Flanges and Flanged Fittings, Class 150 (Flat Face Flange).
- M. ASME/ANSI B16.42 - Ductile Iron Pipe flanges and Flanged Fittings, Class 150 (Flat Face Flange).

- N. Ductile Iron Pipe Research Association - Thrust Restraint Design for Ductile Iron Pipe.

#### 1.04 SUBMITTALS

- A. Submit a list of materials to be furnished, with the names of the suppliers and the date of delivery.
- B. Submit sworn certificates of foundry material and strength tests, and their results. In addition, all ductile iron pipe and fittings may be inspected at the foundry for compliance with the Specifications by an independent testing laboratory selected by the Owners. The manufacturer's cooperation shall be required in these inspections. The cost of foundry inspections requested by the Owner will be borne by the Contractor.
- C. Waiving of the inspection privileges shall not relieve the Contractor or manufacturer of the responsibility of furnishing pipe and fittings meeting the Specification.
- D. Shop Drawings shall be submitted in accordance with Section 01340 and shall include dimensioning, methods and location of supports and all other pertinent technical specifications for all pipe and fittings to be furnished. Shop drawings shall be prepared by the pipe and fittings manufacturer.
- E. Manufacturer shall furnish a laying schedule providing a location, type, and size of all pipe joints.

### PART 2 - PRODUCTS

#### 2.01 ACCEPTABLE MANUFACTURERS

- A. Ductile iron pipe and fittings shall be furnished by manufacturers who are fully experienced, reputable, and qualified in the manufacture of the materials. The pipe and fittings shall be designed, constructed, and installed in accordance with the best practices and methods and shall comply with the Specifications in all respects. Acceptable manufacturers include:
  1. American Cast Iron Pipe Company
  2. U.S. Pipe
  3. McWane Ductile

#### 2.02 COMPRESSION JOINT PIPE AND FITTINGS

- A. Pipe shall conform to ANSI/AWWA C151/A21.51 and C150/A21.50.
- B. Fittings shall conform to ANSI/AWWA C110/A21.10 & C153/A21.53.
- C. Rubber gaskets shall conform to ANSI/AWWA C111/A21.11.
- D. Thickness shall be minimum pressure Class 350 through 12" and pressure Class 300 in sizes 14" and larger.

- E. Install compression joint pipe below ground. Provide sufficient quantities of lubricant and gaskets.

#### 2.03 MECHANICAL JOINT PIPE AND FITTINGS

- A. Pipe shall conform to ANSI/AWWA A21.50/C151 and C150/A21.50.
- B. Fittings shall conform to ANSI/AWWA C110/A21.10 & C153/A21.53.
- C. Thickness shall be minimum pressure Class 350 through 12" and pressure Class 300 in sizes 14" and larger.
- D. Rubber gaskets shall conform to ANSI/AWWA C111/A21.11.
- E. Bolts for mechanical joint pipe shall be tee-head design. Nuts and bolts shall be high-strength low alloy steel.
- F. Mechanical joint pipe shall be installed below ground.
- G. Furnish with sufficient supply of accessories, ie, gaskets, bolts, and glands, as required for each joint.

#### 2.04 FLANGED JOINT PIPE AND FITTINGS

- A. Pipe and fittings shall conform to ANSI/AWWA C115/A21.15.
- B. Thickness shall be minimum pressure Class 350 through 12" and pressure Class 300 in sizes 14" and larger.
- C. Flanges and flanged fittings shall be flat face conforming to ANSI/AWWA C110/A21.10. Full face 1/8 inch thick rubber ring gaskets shall conform to ANSI/AWWA C110/A21.10.
- D. Flanges shall be ductile iron. Cast iron flanges will not be allowed.
- E. Flanged ductile iron pipe shall have factory applied screwed long hub flanges. Flanges shall be faced and drilled after being screwed on the pipe, with flanges true to 90 degrees with the pipe axis and shall be flush with end of pipe conforming to ANSI B16.1 Class 125.
- F. Bolts for flange pipe shall be low-carbon steel conforming to ASTM A307 Grade B.
- G. Flanged joints shall be used for above ground piping and exposed piping in vaults and in indoor pipe galleries.

## 2.05 GROOVED END PIPE AND FITTINGS

- A. Grooved end pipe and fittings shall be acceptable for above-ground installation.
- B. Pipe shall conform to ANSI/AWWA C606.
- C. Grooved end pipe shall be minimum thickness to conform to former Class 53.
- D. Grooved end joints shall be flexible type, radius cut grooved, conforming to AWWA C606.
- E. Grooved end fittings shall be ANSI B16.1, radius cut grooved, rigid joint, as manufactured by Victaulic Company, Gustin-Bacon, or approved equal.
- F. Grooved end pipe adapter flanges shall be ductile iron, ASTM A536, Victaulic, Gustin-Bacon, or approved equal.
- G. Bolts shall be manufactured standard.
- H. Gaskets for grooved end joints shall be manufacturer's flush-seal type specifically designed for cast surfaces. Properties shall be as designated in ASTM D 2000. Dimensions shall conform to AWWA C606. Lubricant shall be manufacturer's standard.
- I. Install in accordance with manufacturer's printed instructions. Dress cut ends of pipe for couplings and adapters as recommended.

## 2.06 LININGS AND COATINGS

- A. Pipe and fittings for potable water service shall be double thickness cement mortar lining in accordance with ANSI/AWWA C104/A21.4. Cement lining shall be Type 2 Portland Cement, a sulfate resistant cement.
- B. Pipe and fittings for wastewater service shall be ceramic epoxy lined with Protecto 401 or approved equal. The lining must be factory applied by certified installers and warrantied by the pipe manufacturer.
- C. Performance Criteria Requirements must be met:
  - a. Abrasion: (ASTM D4060-07, CS-17 wheel, 1,000 grams) – 41 mg loss. (BS EN 598:2007+A1:2009, 50,000 cycles) – 0.6 mils loss.
  - b. Adhesion: (ASTM D 4541) – Not less than 3,000 psi, DIP.
  - c. Severe Wastewater Analysis Test: (ASTM G 210-13) – Initial electrochemical impedance of 11.8 log-Z at 0.001 Hz (ohms·cm<sup>2</sup>). No blistering, cracking, checking or loss of adhesion. Not less than 88% retained impedance and no more than 1.26 ohms·cm<sup>2</sup> reduction in log-Z following 28 days exposure.
  - d. Cathodic Disbondment: ASTM G 8 (1.5 V) Classification Group A. No more than 0.00 inch (0.00 mm) disbonded equivalent circle diameter.
  - e. Chemical Resistance: (ASTM C 868-02, 25 percent sulfuric acid, 100 degrees F, 100 days – (NACE TM0174-2002, 6 months continuous immersion, 50 percent sulfuric acid, 13 percent sodium hypochlorite, 5 percent sodium hydroxide, 75 degrees F – No effect.

- f. Dielectric Strength: (ASTM D 149-09) – greater than 600 volts per mil
  - g. Hardness: (ASTM D 2240): Shore D hardness of 79.
  - h. Immersion: 140°F (60°C) De-ionized Water Immersion. No blistering, cracking or delamination of film after 5,000 hours continuous immersion.
  - i. Impact: (ASTM D 2794-04) – No visible cracking or delamination after 160 inch-pounds (18.0 J) direct impact.
  - j. Salt Spray (ASTM B 117-09): No blistering, cracking, rusting or delamination of film. No rust creepage at scribe after 1,000 hrs.
  - k. Water Absorption (ASTM C 413-01(2006) – 0.0 percent water absorption.
  - l. Water Vapor Transmission (ASTM D 1653-03(2008) Method B, Wet Cup, Condition C) – 1.25 g/m<sup>2</sup> per 24 h water vapor transmission and 0.09 perms water vapor permeance.
- D. Below ground pipe and fittings shall receive a manufacturer's standard exterior bituminous coating per AWWA C151 for ductile iron pipe, AWWA C115 for flange pipe and AWWA C110 for fittings.
  - E. Pipe and fittings exposed to view in the finished work shall not receive the standard bituminous or asphalt coat on the outside surfaces, but shall be shop primed on the outside with one coat of Tnemec Series N140 Pota-Pox Plus or Tnemec Series 20HS Pota-Pox. Should portions of the pipe inadvertently be given the outside coating of coal tar enamel instead of the rust inhibitive primer as required for exposed piping, the surfaces shall be sealed with a non-bleeding sealer coat. Sealer shall be a part of the work of this Section.
  - F. Pipe and fitting installations in corrosive soils between the limits shown on the drawings or as required by the Engineer shall be fully encased in an 8 mil polyethylene sleeve in accordance with ANSI/AWWA C105/A21.5 Method "A".

## 2.07 SPECIAL PIPE AND FITTING

- A. Long span flange pipe shall be minimum pressure Class 350. Gaskets shall be Toruseal type with O-ring or equal.
- B. Wall castings shall be of the size and types shown on the Drawings and bituminous coated.
- C. Flexible joint (ball joint or river crossing) type pipe shall comply with ANSI/AWWA C151/A21.51 and ANSI/AWWA C110/A21.10. Pipe shall provide a variable deflection of up to 15 degrees. The spherical threaded socket shall be manufactured in conformance with AWWA C110 and ANSI B2.1.

## 2.08 RESTRAINED JOINTS

- A. The location and number of restrained joints are shown on the drawings and details.
- B. Joints shall be the standard design of the pipe and fitting manufacturer and shall provide a 2:1 safety factor.

- C. Restrained joints shall be designed for a pressure class rating of 350 psi in sizes 4 inch through 12 inch and 300 psi for 14 inch through 64 inch unless shown otherwise on the drawings.
- D. Bolts and nuts for restrained joints shall be low alloy, high strength steel.
- E. Restrained joints are to meet the applicable requirements of ANSI/AWWA C110/A21.10 and shall be manufacturer's standard, Mega lug by EBAA Iron Inc. or approved equal.

### PART 3 - EXECUTION

#### 3.01 HANDLING PIPE AND FITTINGS

- 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. No piece shall be installed which is found to be defective. Any damage to the pipe coatings shall be required as directed by the Engineer.
- B. All pipe and fittings shall be subjected to a careful inspection prior to being laid or installed.
- C. If any defective pipe is discovered after it has been laid, it shall be removed and replaced with a sound pipe in a satisfactory manner at no additional expense to the Owner. 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 until they are used in the work, and when installed or laid, shall conform to the lines and grades required.

#### 3.02 LAYING PIPE AND FITTINGS

- A. Ductile iron pipe and fittings shall be installed in accordance with requirements of ANSI/AWWA C600 except as otherwise provided herein.
- 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 plugs or other approved means.
- C. Suitable excavations shall be made in the trench bottom to receive pipe with raised bells.
- D. As soon as the excavation is completed to the normal grade of the bottom of the trench, immediately place screen gravel or crushed stone (where applicable) bedding in the trench, and then the pipe shall be firmly bedded in this material to conform accurately to the line and grade indicated on the Drawings. Blocking under the pipe will not be permitted. Bedding shall conform with Type 2 condition unless otherwise specified.

- E. 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 "Tyton" type bell shall be beveled to conform to the manufactured spigot end. The lining shall remain undamaged.

### 3.03 JOINTS

- A. 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 jack or by other means. After joining the pipe, a metal feeler shall be used to make certain that the rubber gasket is correctly located.
- B. Mechanical joints at valves, fittings, and where designated on the Drawings and as specified, shall be in accordance with the "Notes on Method of Installation" under ANSI 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 bolts. Bolts shall be tight to the specified torques. Under no condition shall extension wrenches, pipe over handle or ordinary ratchet wrenches be used to secure greater leverage.
- C. Ball joints, where designated on the drawings and 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.
- D. Flanged joints shall be in accordance with ANSI 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 upon the pipe lines shall be set and jointed as indicated on the Drawings or as required by the manufacturer.
- F. Unless otherwise noted, underground piping shall be push-on joint or mechanical joint with restraints as needed and above ground or exposed piping shall be flanged.
- G. Deflected bell pipe shown on the Drawings is shown only to assistance in illustrating a preferred means of installation in specific locations, and is not intended to indicate all deflected bell 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.
- H. When it is necessary to deflect pipe from a straight line in either the vertical or horizontal plane, or where long radius curves are permitted, the amount of deflection shall not exceed 50% of the maximum deflection allowed by manufacturer.

### 3.04 RESTRAINED JOINTS

- A. Section of piping designated on the Drawings as having restrained joints or those requiring restrained joints shall be constructed using mechanical or compression joint pipe and fittings with restraining devices.
- B. 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.
- C. The minimum number of restrained joints required for resisting forces at fittings and changes in direction of pipe shall be determined from the length of restrained pipe on each side of fittings and changes in direction necessary to develop adequate resisting friction with the soil. This shall be determined in accordance with the requirements of the Ductile Iron Pipe Research Association: Thrust Restraint Design for Ductile Iron Pipe.

### 3.05 PIPE THRUST BLOCKS

- A. Concrete thrust blocks are not an acceptable alternative to restrained joints. Concrete thrust blocks may only be used on a case-by-case basis as approved by the Engineer.

### 3.06 CLEANING AND FLUSHING

- A. The pipe shall be thoroughly cleaned of all foreign matter before installation. It is the Contractor's responsibility to insure cleanliness of the pipe during installation and backfilling. At the conclusion of the work, the Contractor shall thoroughly clean the entire pipe by flushing with water or other materials which may have entered during the construction period. Debris cleaned from the lines shall be removed from the lowest outlet. If, after this cleaning, obstructions remain, they shall be removed. After the pipe is cleaned, the Engineer will examine the pipe for leaks. If defective pipes or joints are discovered at this time, they shall be repaired by the Contractor.
- B. The method required for use is the passage of a sufficient number of "pigs" through the pipeline to effect the cleaning of the system.
- C. Passage of the cleaning "pigs" through the system shall be constantly monitored, controlled. Pigs entered into the system shall be individually parked and identified so that their exiting from the system can be confirmed.
- D. The Contractor must demonstrate to the satisfaction of the proper authority(s) that this work will be performed by experienced and knowledgeable supervision and personnel who have properly, safely and effectively provided for the cleaning of comparable systems in other applications. These personnel will be required to provide acceptable procedures prior to the work being initiated, that will clearly illustrate they are capable and have the means on hand to resolve potential or real problems that may occur with the cleaning pigs in the system. The Contractor shall provide evidence of qualification by providing copies of his/her state certification or license to perform such work as herein describe. Such documentation shall be included as part of the submittal process.

- E. Report Completion: The Contractor shall provide a written report upon completion of line cleaning to outline and detail information acquired during the cleaning process about the system or to confirm existing information.
- F. Cost of pigging the pipelines shall be included in the unit price for furnishing and installing the pipe and fittings. No additional cost for pigging will be allowed.

### 3.07 PRESSURE & LEAKAGE TESTS

- A. Refer to Section 15010 – Testing Piping Systems
- B. Hydrostatic pressure and leakage test shall conform to AWWA C600, with the exception that the Contractor shall furnish all gauges, meters, pressure pumps and other equipment needed to test the line.
- C. The pressure required for the field hydrostatic pressure test shall be minimum 150 psi. The Contractor shall provide temporary plugs and blocking necessary to maintain the required test pressure. Corporation cocks at least 3/4 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. Duration of pressure test shall be at least two (2) hours. The cost of these items shall be included as a part of testing and is included in the cost to furnish and install pipe and fittings.
- D. The leakage test shall be a concurrent test, at the maximum operating pressure as determined by the Engineer, with the pressure test and shall be not less than two hours in duration. All leaks evident at the surface shall be repaired and leakage eliminated regardless of total leakage as shown by test. Lines which fail to meet tests shall be repaired and retested as necessary until test requirements are complied with. Defective materials, pipes, valves, and accessories shall be removed and replaced. The pipe lines shall be tested in such sections as may be directed by the Engineer by shutting valves or installing temporary plugs as required. The pipe shall be filled with water, all air removed and the test pressure 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 at this pressure. The amount of water required is a measure of the leakage.
- E. The amount of leakage which will be permitted shall be in accordance with AWWA C600 for all pressure lines.
- F. The Contractor must submit his plan for testing to the Engineer for review at least ten (10) days before starting the test. The Contractor shall remove and adequately dispose of all blocking material and equipment after completion and acceptance of the field hydrostatic test, unless otherwise directed by the Engineer. Any damage to the pipe coating shall be repaired by the Contractor. Lines shall be totally free and clean prior to final acceptance.

## 3.08 DISINFECTING

- A. Before being placed in service, all potable water pipelines shall be chlorinated in accordance with AWWA C651, "Standard Procedure for Disinfecting Water Mains." The procedure shall be approved by the Engineer. The location of the chlorination and sampling points will be determined by the Engineer in the field. Taps for chlorination and sampling shall be uncovered and backfilled by the Contractor as required.
- B. The general procedure for chlorination shall be first to flush all dirty or discolored water from the lines, and then introduce chlorine in approved dosages through a tap at one end, while water is being withdrawn at the other end of the line. The chlorine solution shall remain in the pipeline for at least 24 hours.
- C. Following the chlorination period, all treated water shall be flushed from the lines at their extremities and replaced with water from the distribution system. Bacteriological sampling and analysis of the replacement water shall then be made by the Engineer in full accordance with AWWA C651. The Contractor will be required to re-chlorinate, if necessary. The line shall not be placed in service until the requirements of the State and County Public Health Department are met.
- D. Special disinfecting procedures shall be used in connections to existing mains, and where the method outlined above is not practical.
- E. The Contractor shall make all arrangements necessary with the County Health Department for the collection and examination of samples of water from disinfected water mains. These samples shall be examined for compliance with Department of Health and Rehabilitative Services requirements. Sampling shall be made daily and continuously until two successive examinations are found satisfactory. If unsatisfactory, the line shall be flushed and disinfected again. The cost of sampling, flushing and disinfecting shall be included in the contract price and no additional charge shall be made to the Owner for this work.
- F. Repairs and touch-up shall be performed in accordance with the manufacture's recommended repair and touch-up procedures.
- G. All field cuts ends shall be repaired and sealed prior to the installation.

END OF SECTION

THIS PAGE LEFT INTENTIONALLY BLANK

## SECTION 15065

## POLYVINYL CHLORIDE (PVC) WATER MAIN PIPE

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Furnish labor, materials, equipment and incidentals required to install the PVC pressure mains, ductile iron fittings, and appurtenances shown on the Drawings and specified herein.

## 1.02 RELATED SECTIONS

- A. Section 02221 – Trenching, Beddings, and Backfill for Pipe
- B. Section 15062 – Ductile Iron Pipe and Fittings
- C. Section 15100 – Valves and Appurtenances
- D. Other Sections as applicable.

## 1.03 REFERENCES

- A. AWWA C900-16 Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. Through 60 In. (100 mm Through 1,500 mm)
- B. ANSI/AWWA C905 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 in. through 48 in. (350 mm through 1200 mm), for Water Transmission and Distribution.

## 1.04 QUALIFICATIONS

- A. All of the PVC pipe and ductile-iron fittings shall be furnished by manufacturers who are fully experienced, reputable, and qualified in the manufacture of the materials to be furnished. The pipe and fittings shall be designed, constructed, and installed in accordance with AWWA Standards for PVC Pipe and in accordance with the best practices and methods as specified herein. The pipe manufacturer shall supply a one-year warranty from date of shipment of their products. All pipes and fittings shall have NSF product certification and shall be U.L. product certified.

## 1.05 SUBMITTALS

- A. Within thirty (30) days after execution of the Contract, Contractor shall submit to the Engineer a list of materials to be furnished, the names of the materials suppliers, and the date of delivery of materials to the site.
- B. All PVC pipe and ductile-iron fittings to be installed under this Contract shall be inspected and tested, as required by the standard specifications, at the foundry at

which the material is manufactured. Contractor shall furnish to the Engineer, in duplicate, sworn certificates of such tests and their results. In addition, all PVC pipe and ductile iron fittings to be installed under this Contract may be inspected at the foundry for compliance with these Specifications by an independent testing laboratory selected by the City. The manufacturer's cooperation shall be required in these inspections. The cost of such foundry inspections shall be borne by the City.

- C. Shop Drawings for all piping being furnished shall be submitted to the Engineer for approval. Shop Drawings shall include dimensioning, methods and locations of supports, and all pertinent technical specifications. Shop drawings shall be prepared by the pipe manufacturer.

## PART 2 - PRODUCTS

### 2.01 ACCEPTABLE MANUFACTURERS

- A. PVC pipe shall be furnished by manufacturers who are fully experienced, reputable, and qualified in the manufacture of the materials. The pipe and fittings shall be designed, constructed, and installed in accordance with the best practices and methods and shall comply with the Specifications in all respects. Acceptable manufacturers include:
  1. JM Eagle, Inc.
  2. Diamond Plastics Corp.

### 2.02 MATERIALS

- A. The PVC mains shall be un-plasticized polyvinyl chloride (PVC) plastic pipe with integral bell containing a locked in ring and spigot joints.
- B. Pipe 4" through 12" shall meet the requirements of AWWA C900, "Polyvinyl Chloride (PVC) Pressure Pipe" and shall be Class 150 pipe meeting the requirements of DR18. Pipe 14" through 24" shall meet the requirements of AWWA C905 "PVC Water Transmission Pipe" and shall be Class 235 pipe meeting the requirements of DR-18.
- C. All pipe shall be suitable for use as a pressure conduit. Provisions must be made for expansion and contraction at each joint with an elastomeric ring. The bell shall consist of an integral wall section with a locked-in, solid cross section elastomeric ring which meets the requirements of ASTM D1869 and F-447. The bell section shall be designed to be at least as strong as the pipe wall and shall meet the requirements of AWWA C900 and C905. Sizes and dimensions shall be as shown in this specification.
- D. Standard laying lengths shall be 20 feet (+1") for all sizes. One hundred percent of the total footage of pipe of any class and size shall be furnished in standard lengths. Each standard length of pipe shall be factory tested to four times the class pressure of the pipe specified for a minimum of 5 seconds. The integral bell shall be tested with the pipe.

- E. The pipe stiffness using F/Y for PVC class water pipe is contained in the table below:  
For 4" through 12" pipe:

<b>Class</b>	<b>DR</b>	<b>F/Y (psi)</b>
100	25	129
150	18	364
200	14	815

- F. Fittings for use with PVC water main pipe shall be ductile iron as specified under Section 15062.
- G. The manufacturer shall randomly select samples of pipe and test them in accordance with ASTM D1599. All test samples shall withstand, without failure, pressures listed below when applied for 60-70 seconds. Class 100 shall have a minimum burst pressure of 535 psi at 73 F. Class 150 shall have a minimum burst pressure of 755 psi and Class 200 shall have a minimum burst pressure of 985 psi.
- H. Pipe shall withstand, without failure at 73 F, an impact of a falling missile, Type C, at the following levels, according to ASTM D2444.

<b>Pipe Size, in</b>	<b>Impact (ft/lbs)</b>
4	100
6	100
8	100
10	120
12	120
14-24	120

- I. Pipe joints to be restrained, shall be harnessed with the "Meg-A-Lug" type joint restraint system for PVC pipe. The location and number of restrained joints are shown on the drawings.

### PART 3 - EXECUTION

#### 3.01 HANDLING PVC PIPE AND FITTINGS

- A. Care shall be taken to prevent injury to the pipe during loading, transporting, and unloading. Pipe and fittings shall not be dropped. All pipe and fittings shall be examined before laying. No piece of pipe found to be defective shall be installed. Any damage to the pipe shall be cause for rejection as directed by the Engineer.
- B. If any defective pipe is discovered after it has been laid it shall be removed and replaced with a sound pipe in a satisfactory manner at no additional expense to the City. All pipe and fittings shall be thoroughly cleaned before laying, shall be kept clean until used in the work, and shall conform to the lines and grades required when installed or laid.

## 3.02 LAYING PVC PIPE AND FITTINGS

- A. PVC pipe and ductile iron fittings shall be installed in accordance with requirements of AWWA Standard Specifications, 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 spring line. 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 planned, 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 pipe cutting is required, the cutting shall be done by machines, leaving a smooth cut at right angles to the axis of the pipe. Cut ends of pipe to be used with a compression joint shall be beveled to conform to the manufactured spigot end.
- D. Joining 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 shall be cleaned and lubricated. The plain end of the pipe shall be aligned with the bell of the pipe to which it is to be joined, and pushed home with a jack or by other means.
  - 2. Mechanical joints at valves, fittings, and where designated on the drawings and as specified, shall be in accordance with the "Notes on Method of Installation" under ANSI Specification A21.11 and the instructions of the manufacturer. Joint surfaces and rubber gaskets of field-assembled joints shall be thoroughly cleaned with soapy water before tightening of the bolts. Bolts shall be tightened to the specified torques. Under no condition shall extension wrenches, pipe over handles, or ordinary ratchet wrenches be used to secure greater leverage.
- E. All valves, fittings, and other appurtenances needed upon the pipelines shall be set and jointed as indicated on the Drawings or as required by the manufacturer.
- F. Unless otherwise noted, underground fittings shall be mechanical joint with restraints as needed.
- G. If dewatering the trench is impossible due to unstable soil or groundwater conditions, the Contractor may install the PVC pipe underwater. If pipe is installed underwater, bedding and haunching materials shall be approved by the Engineer before installation. PVC pipe is buoyant when installed underwater. Therefore, the Contractor shall take all precautions necessary to prevent pipe floatation, including placing backfill material on the pipe as it is assembled or other means acceptable to the Engineer.

- H. The Contractor shall install an electronic pipe detection device (i.e., "Detecto Tape") directly above the pipe during the backfilling operations. Tape shall be placed 18" below grade above all PVC mains and services, or as recommended by manufacturer.
- I. Detector tape shall be 3" wide blue tape for water main and green tape for force main with a metallized foil core laminated between two (2) layers of plastic film. The words "CAUTION WATER LINE BURIED BELOW" or "CAUTION FORCE MAIN BURIED BELOW" shall be printed at 30" intervals along the tape.

### 3.03 PRESSURE AND LEAKAGE TESTS OF UNDERGROUND PRESSURE PIPING

- A. Hydrostatic pressure and leakage tests shall conform with the requirements of the latest revision of AWWA C600, with the exception that the Contractor shall furnish all gauges, meters, pressure pumps, and other equipment needed to test the line.
- B. The pressure required for the field hydrostatic pressure test shall be a minimum of 150 psi. The Contractor shall provide temporary plugs and blocking necessary to maintain the required test pressure. Corporation cocks at least 3/4 inches in diameter, pipe risers, and angle globe valves shall be provided at each pipe dead-end in order to bleed air from the line. The duration of the pressure test shall be at least two hours. The cost of the testing equipment and related materials shall be included as a part of testing.
- C. The leakage test shall be performed concurrent with the pressure test, at the maximum operating pressure as determined by the Engineer, and for a duration of not less than 2 hours. All leaks evident at the surface shall be repaired and leakage eliminated regardless of total leakage shown by the tests. Lines that fail to meet tests shall be repaired and retested as necessary until test criteria are met. Defective materials, pipes, valves, and accessories shall be removed and replaced. The pipelines shall be tested in such sections as may be directed by the Engineer by shutting valves or installing temporary plugs as required. The line shall be filled with water and all air removed, and the test pressure shall be maintained in the pipe for the entire 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.
- D. The amount of leakage permitted shall be in accordance with AWWA C600 Standards for all pressure lines.
- E. The Contractor must submit his plans for testing to the Engineer for review at least 14 days before starting the test. The Contractor shall remove and adequately dispose of all blocking material and equipment after completion and acceptance of the field hydrostatic test, unless otherwise directed by the Engineer. Any damage to the pipe coating shall be repaired by the Contractor. Lines shall be totally free and clean prior to final acceptance.

### 3.04 CLEANING AND FLUSHING

- A. The pipe shall be thoroughly cleaned of all foreign matter before installation. It is the responsibility of the Contractor to ensure cleanliness of the pipe during

installation and backfilling. At the conclusion of the work, the Contractor shall thoroughly clean all of the pipe by flushing with water. Debris cleaned from the lines shall be removed from the lowest outlet. If the groundwater level is above the pipe, or following a heavy rain, the Engineer will examine the pipe for leaks. If defective pipes or joints are discovered at this time, they shall be repaired by the Contractor.

END OF SECTION

## SECTION 15100

## VALVES AND APPURTENANCES

## PART 1 - GENERAL

## 1.01 DESCRIPTION

- A. Furnish labor, materials, equipment, and incidentals required for operation of all valves and appurtenances as shown on the Drawings and as specified herein.
- B. The equipment shall include the following:
  - 1. Air Release Valves
  - 2. Backflow Prevention Assembly
  - 3. Ball Valves
  - 4. Butterfly Valves
  - 5. Check Valves
  - 6. Detector Tape
  - 7. Fire Hydrants
  - 8. Flanged Coupling Adapters
  - 9. Gate Valves and Tapping Valves
  - 10. Link Seals and Wall Sleeves
  - 11. Plug Valves
  - 12. Pressure Gauge Assembly
  - 13. Retainer Glands
  - 14. Strainers
  - 15. Service Connections
  - 16. Tapping Sleeves
  - 17. Unions
  - 18. Valve Boxes
  - 19. Pipe Couplings

## 1.02 RELATED SECTIONS

- A. Section 02221 – Trenching Bedding Backfill for Pipe
- B. Section 15062 – Ductile Iron Pipe and Fittings
- C. Section 15065 – PVC Water Main Pipe

## 1.03 REFERENCES

- A. ANSI/AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 12 in. (100 mm through 300 mm), for Water Transmission and Distribution.

- B. ANSI/AWWA C905 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 in. through 48 in. (350 mm through 1200 mm), for Water Transmission and Distribution.
- C. ANSI/AWWA C906 – AWWA C906 Polyethylene (PE) Pressure Pipe & Fittings - 4 Inch Through 63 Inch for Water Distribution
- D. Manufactures Standardization Society (MSS) for the Valve and Fitting Industry
- E. Other references as stated below.

#### 1.04 QUALIFICATIONS

- A. Valves and appurtenances shall be products of well-established reputable firms who are fully experienced, and qualified in the manufacture of the particular equipment to be furnished in the business of manufacturing of the specific product for a minimum of ten (10) years. The equipment shall be designed, constructed, and installed in accordance with the best practices and methods and shall comply with these specifications, as applicable.

#### 1.05 SUBMITTALS

- A. Within 30 days after contract execution, submit a list of valves to be furnished, with the names of suppliers, and the date of delivery.
- B. Complete shop drawings of all valves and appurtenances shall be submitted in accordance with the requirements of Section 01340.

#### 1.06 TOOLS

- A. Special tools, handles, or wrenches, if required for normal operation and maintenance of the specified valves, shall be supplied with the equipment furnished.

#### 1.07 SUBSTITUTIONS

- A. Substitutions are not permitted unless otherwise stated.
- B. All valves and appurtenances shall be of the size of the valve being replaced and all similar valves shall be from one manufacturer.
- C. Valves and appurtenances shall have the name of the manufacturer and the working pressure for which they are designed cast in raised letters upon some appropriate part of the body.

### PART 2 - PRODUCTS

#### 2.01 AIR RELEASE VALVES

- A. Sewer Force Main Air Release Valves – System shall be a combination of one sewage air release valve and one sewage air/vacuum valve with dual isolation plug valves. Valve bodies and covers shall be of ductile iron construction in accordance with

ASTM A536. All internal parts shall be of stainless steel, ASTM A240 - Type 304 and ASTM A276 - Type 303. The venting orifice shall be 5/16" in diameter with stainless steel seat. The inlet openings shall be a minimum of 2" NPT screwed connection for both valves. The valves shall be fully capable of operation in sewage force main. Both valves shall include a back-flushing feature for periodic cleaning of the internal mechanism. The overall height shall not exceed 22 inches. Valves shall be manufactured by Val-Matic Corporation, or approved equal.

- B. Water Main Air Release Valves – Valve body and cover shall be of ductile iron construction, per ASTM A536. All internal parts shall be of stainless steel, ASTM A240 – Type 304 for the float, and ASTM A296 – Type 316 for the linkage. The venting orifice shall be 3/16" diameter with brass seat. The inlet opening shall be a 2" NPT screwed connection. The overall height shall not exceed 13 inches. Valves shall be manufactured by Valve and Primer Corporation, model number APCO 200A, or approved equal.

## 2.02 BACKFLOW PREVENTION ASSEMBLY

- A. The assembly shall conform to the latest revision of ANSI/AWWA C510 and shall be capable of withstanding a working pressure of at least 150 psi without damage to working parts or impairment of function. It shall consist of two internally loaded, independently operating check valves, located between two tightly closing resilient-seated shut off valves, with four properly placed resilient-seated test cocks.

## 2.03 BALL VALVES

- A. Stainless Steel Ball Valves
  - 1. Ball valves shall be Watts Series LFBRVM1 combination ball valve and relief valve per the Contract Drawings.

## 2.04 BUTTERFLY VALVES

- A. Butterfly valves and operators shall conform to the latest revision of ANSI/AWWA C504 standard for rubber-seated butterfly valves. Valves shall be Class 150 A or B, and shall be Mueller, Pratt, Clow, DeZurik, or approved equal.

## 2.05 CHECK VALVES

- A. Dual Check Valves
  - 1. Dual check valves shall be Watts Series LF7R, ANSI/ASSE 1024 and NSF 61-G Rated per the Contract Drawings.

## 2.06 DETECTOR TAPE

- A. Detector tape shall be 3" wide, blue tape for water mains, green tape for force mains, with a metallized foil core laminated between 2 layers of plastic film. The words "CAUTION WATER LINE BURIED BELOW" or "CAUTION FORCE MAIN BURIED BELOW" shall be printed at 30" intervals along the tape. Tape shall be placed 18" below grade above all PVC mains and services, or as recommended by

manufacturer. Non-metallic tape shall be used above ductile iron pipe.

## 2.07 FIRE HYDRANTS

- A. Fire hydrants shall have a minimum 5-1/4" valve opening and shall open against the pressure and close with the flow. Hydrants shall meet or exceed the requirements of the latest editions of ANSI/AWWA C502 or C503, and shall comply with Factory Mutual Research Corporation and Underwriters Laboratories UL246 Standard.
- B. Three blue reflective pavement markers shall be provided in the center of the nearest lanes of road pavement adjacent to all fire hydrant locations.
- C. Hydrants maintained by the City shall be painted in accordance with City standards.
- D. Acceptable Manufacturers:
  - 1. Mueller Co.
  - 2. American Cast Iron Pipe Co.
  - 3. Clow Valve Co.
  - 4. Kennedy Valve Co.

## 2.08 FLANGED COUPLING ADAPTERS

- A. Body and follower flange shall be iron. Bolt circle sizes and spacing shall conform to ASA 125 flange. Gasket shall be Nitrile (Buna-N) per ASTM D2000. Cross and tee bolts shall conform to ANSI A21.11. Coupling adapters shall be Smith-Blair or approved equal flexible connector
- B. Flexible connectors or rubber expansion joints shall be spool type containing elastomers woven with nylon fabric and nylon tire core cord reinforced with wire.
- C. Elastomers shall be nitrile (BUNA-N) unless otherwise depicted on the Drawings.
- D. All elastomers design for exterior applications shall have a factory applied UV coating.
- E. Backing plates and hardware shall be 316L stainless steel.
- F. Flexible connectors shall be manufactured by Proco series 230 or Approved Equal.

## 2.09 GATE VALVES AND TAPPING VALVES

- A. Gate valves shall be ductile iron body, fully resilient seat, bronze-mounted non-rising stem, double disc, rated at 200 psi and conforming to the latest revision of ANSI/AWWA C509. Valves shall be coated and lined. Exposed valves shall be outside screw and yoke type.
- B. Acceptable Manufacturers:
  - 1. Mueller Co.
  - 2. American Cast Iron Pipe Co.

## 3. Clow Valve Co.

## 2.10 LINK SEALS AND WALL SLEEVES

- A. The pipe-to-wall penetration closures shall be "Link-Seal" as manufactured by Thunderline Corp., Belleville, MI 48111. Seals shall be modular mechanical type, consisting of interlocking synthetic rubber links shaped to fill continuously the annular space between the pipe and wall opening. Links shall be loosely assembled with bolts to form a continuous rubber belt around the pipe with a pressure plate under each bolt head and nut. Seals shall be installed such that bolt heads are facing the inside of the structure and shall be accessible from grade without the need for excavation. After the seal assembly is positioned in the wall sleeve, tightening of the bolts shall cause the rubber sealing elements to expand and provide an absolutely water-tight seal between the pipe and wall opening. The seal shall be constructed so as to provide electrical insulation between the pipe and wall, thus reducing chances of cathodic reaction between these two members.
- B. Contractor shall determine the required inside diameter of each individual wall sleeve before ordering, fabricating, or installing. The inside diameter of each wall sleeve shall be sized as recommended by the manufacturer to fit the pipe and Link-Seal to assure a water-tight joint.
- C. Wall sleeve shall be specially designed to mate with the Link-Seal. The wall sleeve shall be heavy wall welded or seamless steel pipe. The sleeve shall have a full-circle continuously-welded water stop plate on the sleeve O.D. which acts as the sleeve anchor and water stop. Wall sleeve shall be model WS by Thunderline Corp.

## 2.11 PLUG VALVES

- A. Plug valves shall be non-lubricated eccentric type with resilient faced plugs, and shall be furnished with end connections as shown on the plans. Flanged valves shall be faced and drilled in conformance with ANSI B16.1 Class 125 standard. Mechanical joint ends shall be in conformance with AWWA C111. Bell ends shall be in conformance with AWWA C100 Class B.
- B. Unless otherwise specified on the plans, port areas for all valves shall be min. 80% of full pipe area.
- C. Valve bodies shall be of ASTM A536 Grade 65-45-12 ductile iron in compliance with AWWA Standard C517. All exposed nuts, bolts, springs, washers, etc. shall be zinc plated. Resilient plug facings shall be Neoprene or Buna-N, on a single piece plug. The plug shall be of sufficient construction so that no strengthening member is required opposite the face.
- D. Valves shall be furnished with corrosion resistant seats which comply with AWWA Standard C507 Section 7 paragraph 7.2 and with AWWA Standard C504 Section 3.5. The seat shall be in the body only. Seat ring shall be adjustable and replaceable.
- E. Valves shall be furnished with replaceable, sleeve-type bearings in the upper and lower journals. These bearings shall comply with AWWA Standard C507 Section 8 paragraphs 8.1, 8.3 and 8.5 and with AWWA Standard C504 Section 3.6.

- F. Valve shaft seals or packing shall be adjustable and replaceable without removing the valve from service or interrupting service with flow in either direction. Shaft seals shall comply with AWWA Standard C507 Section 10 and with AWWA C507 Section 111.
- G. Valve pressure ratings shall be as follows and shall be established by hydrostatic tests as specified by ANSI Standard B16.1. Pressure ratings shall be 175 psi for valves through 12", 150 psi for valves in sizes 14" through 36" and 125 psi for valves in sizes 42" through 54". Valves shall be capable of providing drip-tight shutoff up to the full valve rating with pressure in either direction.
- H. All valves 8 inches and larger shall be equipped with gear actuators with hand wheels. All gearing shall be enclosed and suitable for running in oil, with seals provided on all shafts to prevent entry of dirt and water into the actuator. All shaft bearings shall be furnished with permanently lubricated bronze bearing bushings. Actuator shall clearly indicate valve position. An adjustable stop shall be provided. Construction of actuator housing shall be cast iron or steel.
- I. Plug valves installed such that actuators are 6 feet or more above the floor shall have chain-wheels and chains provided.
- J. For plug valves with extended shafts and actuators, the actuators shall be mounted on floor stands where indicated on the Drawings or shall have removable hand-wheels where floor stands are not called for. Six inch sleeves shall be provided for extended shafts in all floors. Where necessary, covers shall be provided. Shafts shall be of adequate strength to operate the valve. Floor stands and covers, where called for, shall be cast iron. Floor stands shall be equipped with valve position indicators and a lock for the hand-wheel.
- K. All plug valves shall be installed so that the direction of flow through the valve is in accordance with the manufacturer's recommendations.
- L. Valves and actuators shall be as manufactured by DeZurik.

#### 2.12 PRESSURE GAUGE ASSEMBLY

- A. Pressure gauge shall be direct-mounted with a minimum 4-1/2 inch diameter dial with a clear glass crystal window constructed to the following standards:
  1. Accuracy – 1% full scale grade A ASME B40, 100
  2. Weather Protection – Dry Case International Protection Rating (IP) IP54
  3. Fill - Glycerin filled, hermetically sealed IP65
  4. Case type – Open front 304 stainless steel case
  5. Dial – Aluminum dial, brushed aluminum background, black figures and graduations.
  6. Bourdon Tube and Socket – 316L/316L Stainless steel
  7. Scale and range – As depicted on Drawings.
  8. Manufacture – ISO 9001 registered.
  9. Pressure gauge shall be manufactured by Ashcroft Type 1009 or Approved Equal

- B. All pressure gauges for wastewater applications shall be mounted to a Pressure Sensor.
1. Pressure Sensors shall be of the wafer type, designed to fit between standard ANSI B16.1 Class 125/ANSI B16.5 Class 150 pipeline flanges. The face-to-face of the entire sensor shall be no longer than specifications for butterfly valves - MSS-SP67.
  2. Pressure Sensors shall be flow through design with a nitrile (BUNA-N) elastomer sensing ring around the full circumference. There shall be no dead ends or crevices, and flow passage shall make the sensor self-cleaning.
  3. The sensing ring shall have a cavity behind the ring filled with ethylene glycol fluid to transfer pressure to the gauge.
  4. Pressure Sensor shall be manufactured by Red Valve Series 48 or Approved Equal
- C. Pressure gauge assembly shall include ½" brass fittings, ball valves, snubbers or gauge guards as depicted on the Drawings.

#### 2.13 RETAINER GLANDS

- A. Retainer glands shall conform to the latest revision of ANSI/AWWA C111/A21.11. All glands shall be manufactured from ductile iron as listed by Underwriters Laboratories for 250 psi minimum water pressure rating.
- B. Acceptable Manufacturers:
1. EBAA Iron, Inc.
  2. SIGMA

#### 2.14 STRAINERS

- A. Strainers shall be of the "Y" type, shall have bronze bodies with a removable bronze screen, and shall be as manufactured by Watts Regulator Company, Lawrence, MA.

#### 2.15 SERVICE CONNECTIONS

- A. Service saddles shall be ductile iron, epoxy or nylon coated, with double stainless steel straps. Saddles shall conform to the latest revisions of ANSI/AWWA C111/21.11 and ASTM A588. Service saddles shall be by Mueller, Ford, JCM, or Romac.
- B. Service lines shall be polyethylene (PE) tubing as described in ANSI/AWWA C901, latest revision, with a working pressure of 200 psi (DR 9). Pipe joints shall be of the compression type, with totally confined grip seal and coupling nut. Polyethylene shall be extruded from PE 3408 high molecular weight materials and must conform to ASTM D2737. PE service lines shall be by Performance Pipe or approved equal.
- C. Corporation stops shall be manufactured of brass alloy in accordance with ASTM B62 with threaded ends and shall be by Mueller or Ford.

- D. Meter stops shall be the 90 degree lockwing type and shall be of bronze construction in accordance with ASTM B62. Meter stops shall be closed button design, with a resilient "O" ring, sealed against external leakage at the top. Stops shall be equipped with a meter coupling nut on the outlet side, as manufactured by Mueller or Ford.
- E. All meters and meter boxes will be supplied and installed by the Contractor.

#### 2.16 TAPPING SLEEVES

- A. Tapping sleeves shall be ductile iron mechanical joint meeting ASTM Grade 65-45-12.
- B. Acceptable Manufacturers:
  - 1. Mueller Co.
  - 2. American Cast Iron Pipe Co.
  - 3. Clow Valve Co.
  - 4. Tyler Union
  - 5. U.S. Pipe

#### 2.17 UNIONS

- A. Unions on ferrous pipe, 2 inch diameter and smaller, shall be 150 lb malleable iron, and zinc-coated. Unions on water piping, 2 1/2 inch diameter and larger, shall be 125 lb pound flange pattern, and zinc-coated. Gaskets for flanged unions shall be of the best quality fiber or plastic. Unions shall not be concealed in walls, ceilings, or partitions.

#### 2.18 VALVE BOXES

- A. Valve boxes for water mains and sewer force mains shall be adjustable screw type with 5-1/4 inch shaft, 18 to 24 inch extension, cast iron ASTM A48 Class 30 marked "water" or "sewer" per the drawing details.
- B. Acceptable Manufacturers:
  - 1. U.S. Foundry
  - 2. Tyler Union
- C. See Contract Drawings for type of valve boxes for blow off assemblies.

#### 2.19 PIPE COUPLINGS

- A. Pipe couplings shall be style 38 all 316L stainless steel by Piping Specialties Dresser, Inc.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

- A. Valves and appurtenances shall be installed in the locations shown, true to alignment and rigidly supported. Any damage to the above items shall be repaired to the satisfaction of the Engineer before they are installed.
- B. Install floor boxes, brackets, extension rods, guides, and the various types of operators and appurtenances 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 having direct bearing on the locations of the valves and appurtenances, and he shall be responsible for the proper location of these items during the construction of the structures.
- C. Flanged joints shall be made with hot-dipped galvanized bolts, nuts, and washers. Mechanical joints shall be made with mild corrosion-resistant alloy steel bolts and nuts. All exposed bolts shall be painted the same color as the pipe. All buried bolts and nuts shall be heavily coated with two (2) coats of bituminous paint.
- D. Prior to assembly of split couplings, the grooves and other parts shall be thoroughly cleaned. The ends of the pipes and the outsides of the gaskets shall be moderately coated with petroleum jelly, cup grease, soft soap or graphite paste, and the gasket shall be slipped over one pipe end. After the other pipe has been brought to the correct position, the gasket shall be centered properly over the pipe ends with the lips against the pipes. The housing sections shall then be placed. After the bolts have been inserted, the nuts shall be tightened until the housing sections are firmly in contact, metal-to-metal, without excessive bolt tension.
- E. Prior to the installation of sleeve-type couplings, the pipe ends shall be cleaned thoroughly. Soapy water may be used as a gasket lubricant. A follower and gasket, in that order, shall be slipped over each pipe to a distance of about 6 inches from the end, and the middle ring shall be placed on the already laid pipe end until it is properly centered over the joint. The other pipe end shall be inserted into the middle pipe already laid. The gaskets and followers shall then be pressed evenly and firmly into the middle ring flares. After the bolts have been inserted and all nuts have been made up fingertight, diametrically opposite nuts shall be progressively and uniformly tightened all around the joint, preferably by use of a torque wrench of the appropriate size and torque for the bolts.

### 3.02 SHOP PAINTING

- A. Ferrous surfaces of valves and appurtenances shall receive an exterior coating of rust-inhibitive primer. Interior coatings shall be the manufacturer's standard except that valves for potable water lines shall be coated with paints approved by EPA, FDA, and AWWA for potable water service. All pipe connection openings shall be capped after shop painting to prevent the entry of foreign matter prior to installation.

3.03 FIELD PAINTING

- A. All above ground valves and appurtenances shall be painted in accordance with Section 09900 – Painting.

3.04 INSPECTION AND TESTING

- A. Completed pipe shall be subjected to hydrostatic pressure test for 2 hours at 150% full working pressure. All leaks shall be repaired and lines retested until approved by the Engineer.

END OF SECTION

# PINES VILLAGE WATER MAIN REPLACEMENT

## PHASE 1 PEMBROKE PINES, FLORIDA



Sheet Number	Cover	Sheet Title
G1	COVER	
G2	LEGEND AND ABBREVIATIONS	
G3	GENERAL NOTES AND SPECIFICATIONS	
K1	KEY MAP	
WM1	PROPOSED WATER MAIN PLAN	
WM2	PROPOSED WATER MAIN PLAN	
WM3	PROPOSED WATER MAIN PLAN	
WM4	PROPOSED WATER MAIN PLAN	
WM5	PROPOSED WATER MAIN PLAN	
WM6	PROPOSED WATER MAIN PLAN	
WM7	PROPOSED WATER MAIN PLAN	
WM8	PROPOSED WATER MAIN PLAN	
WM9	PROPOSED WATER MAIN PLAN	
WM10	PROPOSED WATER MAIN PLAN	
WM11	PROPOSED WATER MAIN PLAN	
WM12	WATER DETAILS	
WM13	WATER DETAILS	
WM14	WATER DETAILS	
SWP1	STORMWATER POLLUTION PREVENTION PLAN	
SWP2	STORMWATER POLLUTION PREVENTION NOTES	
PMS1	PAVEMENT MARKING AND SIGNAGE KEY MAP	
PMS2	PAVEMENT MARKING AND SIGNAGE PLAN	
PMS3	PAVEMENT MARKING AND SIGNAGE PLAN	
PMS4	PAVEMENT MARKING AND SIGNAGE PLAN	
PMS5	PAVEMENT MARKING AND SIGNAGE DETAILS	



LOCATION MAP  
Scale: 1" = 60'

### CITY OFFICIALS

- MAYOR:** FRANK C. ORTIS  
**VICE MAYOR:** THOMAS GOOD, JR.  
**COMMISSIONERS:** ANGELO CASTILLO  
 JAY D. SCHWARTZ  
 IRIS A. SIPLE  
**CITY MANAGER:** CHARLES F. DODGE

### THE FOLLOWING ITEMS ARE NOT REVIEWED OR ACCEPTED BY BROWARD COUNTY:

- BROWARD COUNTY TRAFFIC ENGINEERING SERVICES REVIEW PAGES DO NOT INCLUDE A REVIEW AND ACCEPTANCE OF THE PROJECT'S DESIGN OR OPERATIONAL ITEMS AND TO BE REVIEWED AND APPROVED BY THE CITY ENGINEER.
- THE CITY ENGINEER'S REVIEWING SERVICES DOES NOT INCLUDE OR APPROVE, OR INSPECT AND ACCEPT THE FOLLOWING ITEMS FOR MAINTENANCE: PAVEMENT MARKINGS ON OR ADJACENT TO PAVED AREAS, PAINTED ASPHALT, STAMPED ASPHALT OR PAVEMENT MARKINGS MADE OF PAPER BRICKS, RAISED INTERSECTIONS AND RELATED MARKINGS AND SIGNAGE, AND RELATED MARKINGS AND SIGNAGE, PAINTED/DECORATIVE CROSSWALKS, RAISED CROSSWALKS AND RELATED MARKINGS AND SIGNAGE, BUNKER (RECTANGULAR) RAPID FLASHER BEACONS AND RELATED MARKINGS AND SIGNAGE, ONE-STREET PARKING FLEXIBLE DELINEATORS, RECTANGULAR SIGN POSTS, PLANTERS, ON-SITE PAVEMENT MARKINGS AND SIGNAGE, PAVEMENT MARKINGS AND SIGNAGE IN RIGHT-OF-WAY THAT IS NOT DEDICATED FOR PUBLIC USE, SIDEWALK WORK OR ASPHALT WORK.
- THE CITY ENGINEER IS RESPONSIBLE FOR THE REVIEW AND APPROVAL OF THE DESIGN AND OPERATION OF THE PROJECT, AND FOR THE INSPECTION AND ACCEPTANCE OF THE FOLLOWING ITEMS THAT WILL BE MAINTAINED BY THE CITY: PAVEMENT MARKINGS AND SIGNAGE, PAINTED/DECORATIVE CROSSWALKS, RAISED CROSSWALKS AND RELATED MARKINGS AND SIGNAGE, UN-WARRANTED MID-BLOCK CROSSWALKS AND RELATED MARKINGS AND SIGNAGE, UN-WARRANTED CROSSWALKS AND RELATED MARKINGS AND SIGNAGE, PAINTED/DECORATIVE CROSSWALKS AND RELATED MARKINGS AND SIGNAGE, UN-WARRANTED CROSSWALKS AND RELATED MARKINGS AND SIGNAGE, UN-WARRANTED FLASHER BEACONS AND RELATED MARKINGS AND SIGNAGE, ON-STREET PARKING AND RELATED MARKINGS AND SIGNAGE, IN-ROAD LIGHTING AND RELATED MARKINGS AND SIGNAGE, GREEN BIKE LANES, FLEXIBLE DELINEATORS, DECORATIVE SIGN AND SIGNAGE, AND RELATED MARKINGS AND SIGNAGE IN RIGHT-OF-WAY THAT IS NOT DEDICATED FOR PUBLIC USE, SIDEWALK WORK AND ASPHALT WORK.

### NOTES:

- RESPONSIBILITY FOR THE USE OF THESE PLANS FOR ANY PURPOSE PRIOR TO SECURING PERMITS FROM ALL AGENCIES HAVING JURISDICTION OVER THIS PROJECT WILL FALL SOLELY UPON THE USER.
- AN ELECTRONIC CAD FILE WILL BE PROVIDED FOR SURVEY LAYOUT.

**Calvin, Giordano & Associates, Inc.**  
**EXCEPTIONAL SOLUTIONS<sup>SM</sup>**  
 1800 Eller Drive, Suite 600, Fort Lauderdale, Florida 33316  
 Phone: 954-921-7781 • Fax: 954-921-8807  
 Certificate of Authorization 514



PERMITTING AGENCIES	DATE SUBMITTED	CON INITIALS	DATE APPROVED	PERMIT NUMBER
CITY OF PEMBROKE PINES - DEPARTMENT OF ENGINEERING				
CITY OF PEMBROKE PINES - UTILITIES DEPARTMENT	4/25/2018	MK		
BROWARD COUNTY TRAFFIC ENGINEERING DIVISION (BCTED)	5/09/2018	MK		
BROWARD COUNTY HEALTH DEPARTMENT				

NO.	DATE	BY	NO.	DATE	REVISION



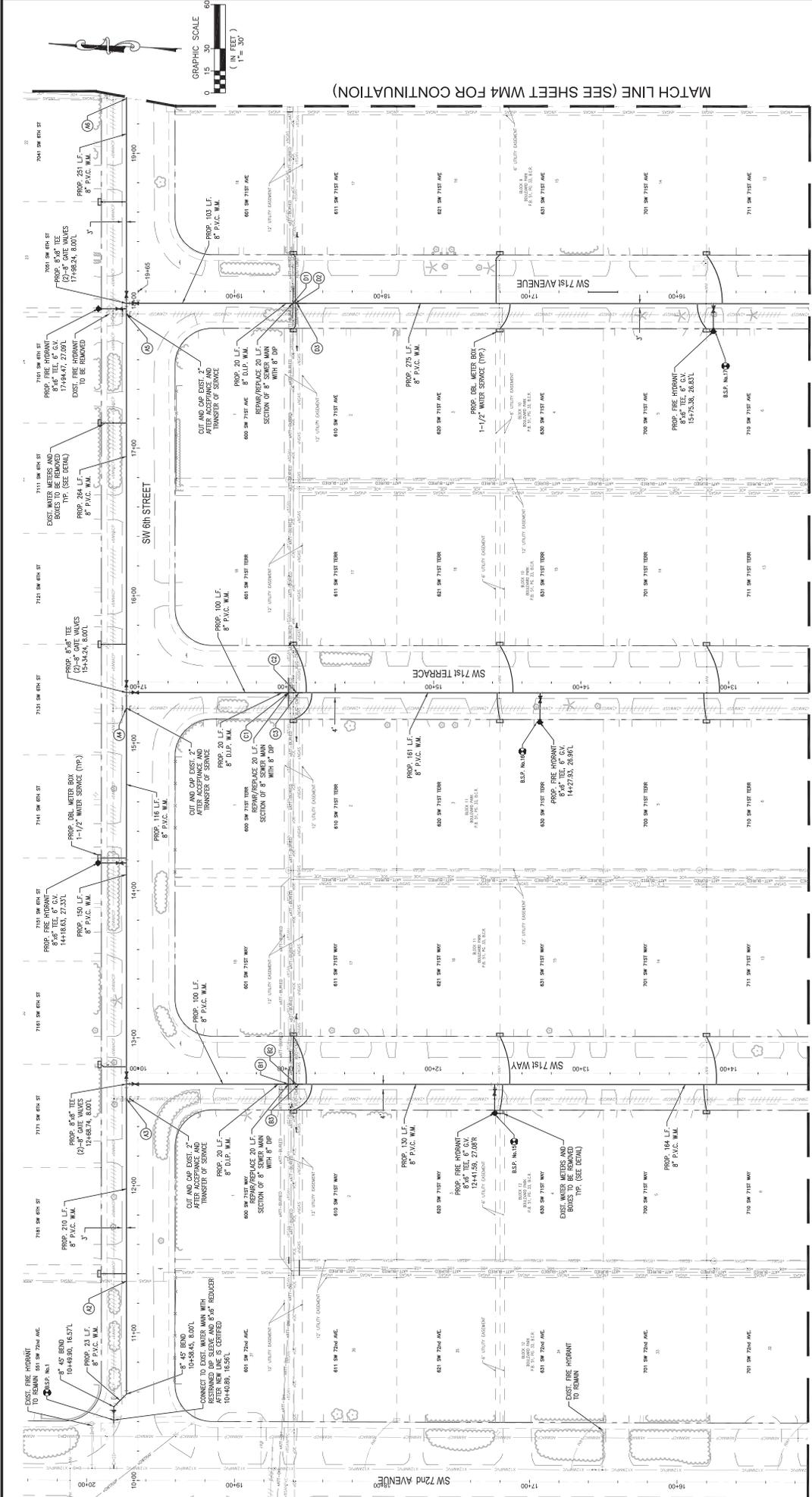
FOR BIDDING PURPOSES ONLY

CURRENT REV NO.: \*\*\*\*\*  
 NICHOLAS W. ANGELO, P.E.  
 STATE OF FLORIDA PROFESSIONAL ENGINEER  
 LICENSE NO. 1006  
 DATE: JUNE 1, 2018





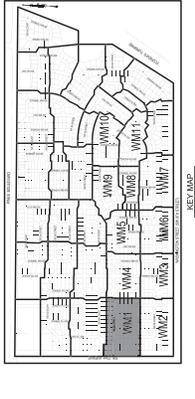




MATCH LINE (SEE SHEET WM4 FOR CONTINUATION)

MATCH LINE (SEE SHEET WM2 FOR CONTINUATION)

NO.	PPPS	CLEARANCE
A1	EXISTING	N/A
A2	Building M&S Over	12' MIN.
A3	Existing 7" WM BOP 3.25 ft Below Surface	6"
A4	Existing 2" WM BOP 3.25 ft Below Surface	6"
A5	Existing 2" WM BOP 3.25 ft Below Surface	6"
A6	Building M&S Over	12' MIN.



NO.	PPPS	CLEARANCE
B1	Existing 8" City 5.8 BOP 4.8 ft Below Surface	18"
B2	Existing 8" City 5.8 BOP 5.8 ft Below Surface	18"
B3	Existing M&S Over	12' MIN.
B4	Proposed 8" PVC WM	12' MIN.

NO.	PPPS	CLEARANCE
C1	Existing 8" City 5.8 BOP 3.8 ft Below Surface	18"
C2	Existing 8" City 5.8 BOP 4.8 ft Below Surface	18"
C3	Existing M&S Over	12' MIN.
C4	Proposed 8" PVC WM	12' MIN.

NO.	PPPS	CLEARANCE
D1	Proposed 8" PVC WM	12' MIN.
D2	Proposed 8" PVC WM	12' MIN.
D3	Proposed 8" PVC WM	12' MIN.

NOTES:  
 1. ALL EXISTING DEPTHS ARE APPROXIMATE. CONTRACTOR TO VERIFY.  
 2. EXISTING WATER METERS ON PLAN ARE SHOWN IN THEIR APPROXIMATE LOCATION. CONTRACTOR TO LOCATE PRIOR TO CONSTRUCTION.

PROJECT: Pines Village Water Main Replacement

DATE: JUNE 6, 2018

SCALE: AS SHOWN

PROJECT NO: 9-1034-1

811

CALL BEFORE YOU DIG

1-800-4-A-SHIELD

www.811.com

### PROPOSED WATER MAIN PLAN

PINES VILLAGE WATER MAIN REPLACEMENT

PEMBROKE PINES, FLORIDA

FOR BIDDING PURPOSES ONLY

DESIGNED BY: CALVIN GIORDANO, P.E., PROFESSIONAL ENGINEER  
 LICENSE NO. 10338

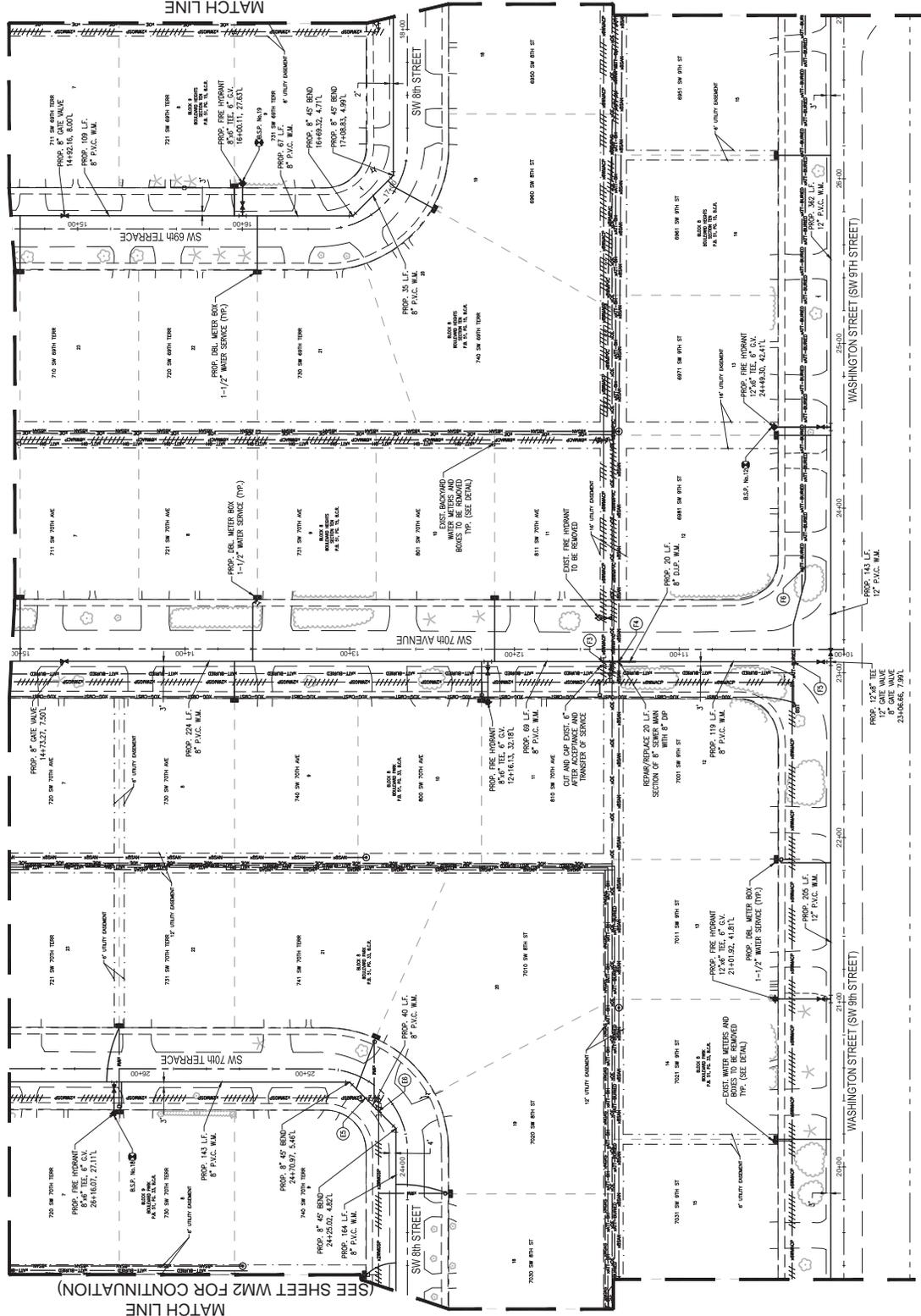
DATE: JUNE 6, 2018

WMM1

Calvin, Giordano & Associates, Inc.  
 EXCEPTIONAL SOLUTIONS  
 10000 W. BIRCHWOOD DRIVE, SUITE 100  
 PEEBLES, OHIO 44130  
 Phone: 440.292.8800 • Fax: 440.292.8801  
 Certificate of Authorization 514



MATCH LINE (SEE SHEET WM4 FOR CONTINUATION)



MATCH LINE (SEE SHEET WM6 FOR CONTINUATION)



NO.	PIPES	CLEARANCE
E5	Existing 2" WM ROP 3.25 FT Below Surface	Over
E6	Proposed 8" PVC WM ROP 3.25 FT Below Surface	Over
E7	Existing 8" PVC WM ROP 3.25 FT Below Surface	Over
F3	Proposed 8" PVC WM ROP 3.25 FT Below Surface	Over
F4	Existing 8" PVC WM ROP 3.25 FT Below Surface	Over
F5	Existing 8" PVC WM ROP 3.25 FT Below Surface	Over
F6	Proposed 8" PVC WM ROP 3.25 FT Below Surface	Over

NOTES:  
 1. ALL EXISTING DEPTHS ARE APPROXIMATE. CONTRACTOR TO VERIFY.  
 2. ALL EXISTING WATER METERS ON PLAN ARE SHOWN IN THEIR APPROXIMATE LOCATION. CONTRACTOR TO LOCATE PRIOR TO CONSTRUCTION.



FOR BIDDING PURPOSES ONLY

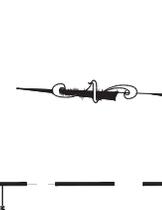
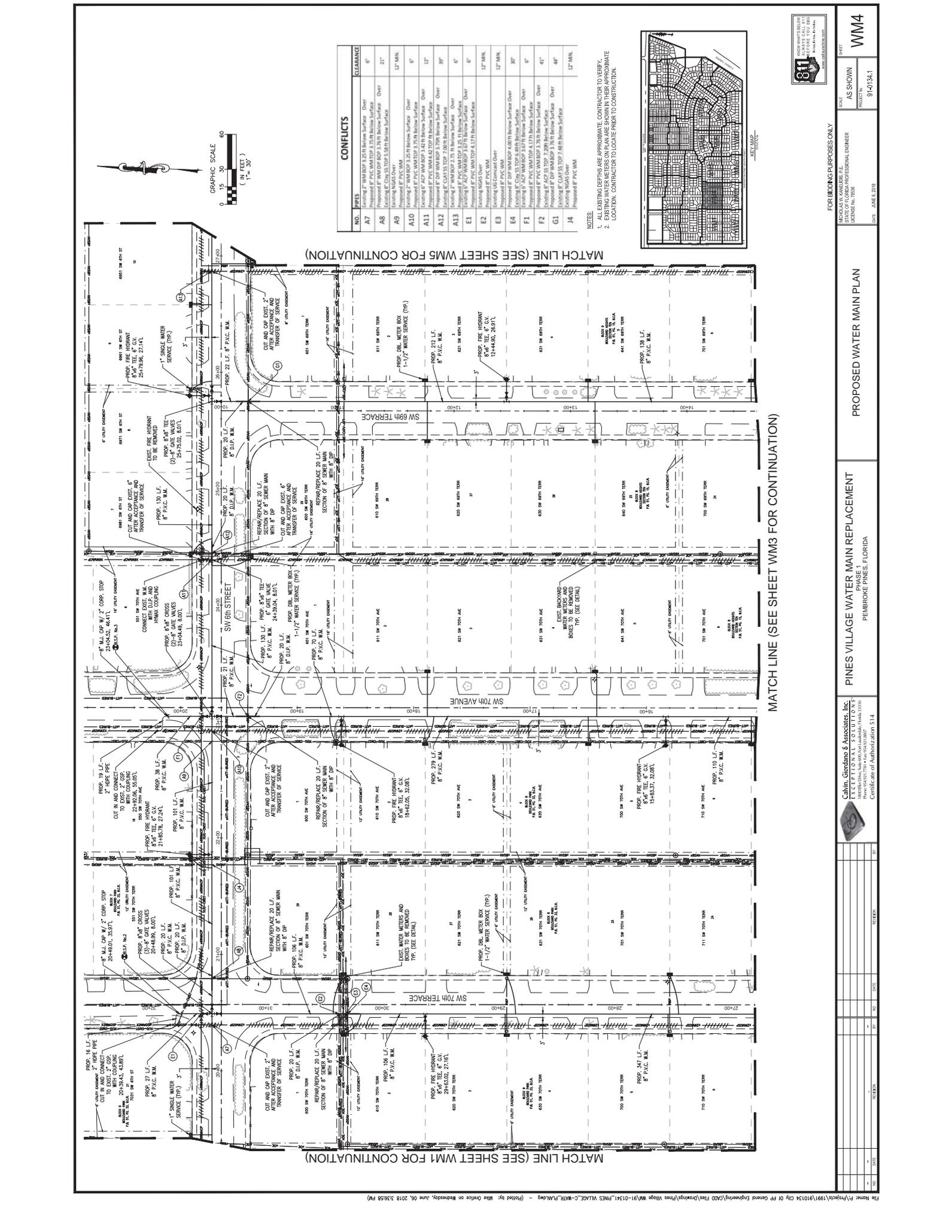
SCALE: AS SHOWN  
 PROJECT NO: 91-0134-1  
 DATE: JUNE 4, 2018

PROPOSED WATER MAIN PLAN

PINES VILLAGE WATER MAIN REPLACEMENT  
 PEMBROKE PINES, FLORIDA

Calvin, Giordano & Associates, Inc.  
 EXCEPTIONAL SOLUTIONS  
 11000 W. UNIVERSITY BLVD., SUITE 100  
 PENSACOLA, FLORIDA 32506  
 Certificate of Authorization 514

NO.	DATE	BY	DESCRIPTION



NO.	DATE	BY	CHKD.	REVISION
1	05.20.20	MM	MM	ISSUED FOR PERMIT
2	06.01.20	MM	MM	REVISED PER COMMENTS
3	06.01.20	MM	MM	REVISED PER COMMENTS
4	06.01.20	MM	MM	REVISED PER COMMENTS
5	06.01.20	MM	MM	REVISED PER COMMENTS
6	06.01.20	MM	MM	REVISED PER COMMENTS
7	06.01.20	MM	MM	REVISED PER COMMENTS
8	06.01.20	MM	MM	REVISED PER COMMENTS
9	06.01.20	MM	MM	REVISED PER COMMENTS
10	06.01.20	MM	MM	REVISED PER COMMENTS
11	06.01.20	MM	MM	REVISED PER COMMENTS
12	06.01.20	MM	MM	REVISED PER COMMENTS
13	06.01.20	MM	MM	REVISED PER COMMENTS
14	06.01.20	MM	MM	REVISED PER COMMENTS
15	06.01.20	MM	MM	REVISED PER COMMENTS
16	06.01.20	MM	MM	REVISED PER COMMENTS
17	06.01.20	MM	MM	REVISED PER COMMENTS
18	06.01.20	MM	MM	REVISED PER COMMENTS
19	06.01.20	MM	MM	REVISED PER COMMENTS
20	06.01.20	MM	MM	REVISED PER COMMENTS
21	06.01.20	MM	MM	REVISED PER COMMENTS
22	06.01.20	MM	MM	REVISED PER COMMENTS
23	06.01.20	MM	MM	REVISED PER COMMENTS
24	06.01.20	MM	MM	REVISED PER COMMENTS
25	06.01.20	MM	MM	REVISED PER COMMENTS
26	06.01.20	MM	MM	REVISED PER COMMENTS
27	06.01.20	MM	MM	REVISED PER COMMENTS
28	06.01.20	MM	MM	REVISED PER COMMENTS
29	06.01.20	MM	MM	REVISED PER COMMENTS
30	06.01.20	MM	MM	REVISED PER COMMENTS
31	06.01.20	MM	MM	REVISED PER COMMENTS
32	06.01.20	MM	MM	REVISED PER COMMENTS
33	06.01.20	MM	MM	REVISED PER COMMENTS
34	06.01.20	MM	MM	REVISED PER COMMENTS
35	06.01.20	MM	MM	REVISED PER COMMENTS
36	06.01.20	MM	MM	REVISED PER COMMENTS
37	06.01.20	MM	MM	REVISED PER COMMENTS
38	06.01.20	MM	MM	REVISED PER COMMENTS
39	06.01.20	MM	MM	REVISED PER COMMENTS
40	06.01.20	MM	MM	REVISED PER COMMENTS
41	06.01.20	MM	MM	REVISED PER COMMENTS
42	06.01.20	MM	MM	REVISED PER COMMENTS
43	06.01.20	MM	MM	REVISED PER COMMENTS
44	06.01.20	MM	MM	REVISED PER COMMENTS
45	06.01.20	MM	MM	REVISED PER COMMENTS
46	06.01.20	MM	MM	REVISED PER COMMENTS
47	06.01.20	MM	MM	REVISED PER COMMENTS
48	06.01.20	MM	MM	REVISED PER COMMENTS
49	06.01.20	MM	MM	REVISED PER COMMENTS
50	06.01.20	MM	MM	REVISED PER COMMENTS
51	06.01.20	MM	MM	REVISED PER COMMENTS
52	06.01.20	MM	MM	REVISED PER COMMENTS
53	06.01.20	MM	MM	REVISED PER COMMENTS
54	06.01.20	MM	MM	REVISED PER COMMENTS
55	06.01.20	MM	MM	REVISED PER COMMENTS
56	06.01.20	MM	MM	REVISED PER COMMENTS
57	06.01.20	MM	MM	REVISED PER COMMENTS
58	06.01.20	MM	MM	REVISED PER COMMENTS
59	06.01.20	MM	MM	REVISED PER COMMENTS
60	06.01.20	MM	MM	REVISED PER COMMENTS
61	06.01.20	MM	MM	REVISED PER COMMENTS
62	06.01.20	MM	MM	REVISED PER COMMENTS
63	06.01.20	MM	MM	REVISED PER COMMENTS
64	06.01.20	MM	MM	REVISED PER COMMENTS
65	06.01.20	MM	MM	REVISED PER COMMENTS
66	06.01.20	MM	MM	REVISED PER COMMENTS
67	06.01.20	MM	MM	REVISED PER COMMENTS
68	06.01.20	MM	MM	REVISED PER COMMENTS
69	06.01.20	MM	MM	REVISED PER COMMENTS
70	06.01.20	MM	MM	REVISED PER COMMENTS
71	06.01.20	MM	MM	REVISED PER COMMENTS
72	06.01.20	MM	MM	REVISED PER COMMENTS
73	06.01.20	MM	MM	REVISED PER COMMENTS
74	06.01.20	MM	MM	REVISED PER COMMENTS
75	06.01.20	MM	MM	REVISED PER COMMENTS
76	06.01.20	MM	MM	REVISED PER COMMENTS
77	06.01.20	MM	MM	REVISED PER COMMENTS
78	06.01.20	MM	MM	REVISED PER COMMENTS
79	06.01.20	MM	MM	REVISED PER COMMENTS
80	06.01.20	MM	MM	REVISED PER COMMENTS
81	06.01.20	MM	MM	REVISED PER COMMENTS
82	06.01.20	MM	MM	REVISED PER COMMENTS
83	06.01.20	MM	MM	REVISED PER COMMENTS
84	06.01.20	MM	MM	REVISED PER COMMENTS
85	06.01.20	MM	MM	REVISED PER COMMENTS
86	06.01.20	MM	MM	REVISED PER COMMENTS
87	06.01.20	MM	MM	REVISED PER COMMENTS
88	06.01.20	MM	MM	REVISED PER COMMENTS
89	06.01.20	MM	MM	REVISED PER COMMENTS
90	06.01.20	MM	MM	REVISED PER COMMENTS
91	06.01.20	MM	MM	REVISED PER COMMENTS
92	06.01.20	MM	MM	REVISED PER COMMENTS
93	06.01.20	MM	MM	REVISED PER COMMENTS
94	06.01.20	MM	MM	REVISED PER COMMENTS
95	06.01.20	MM	MM	REVISED PER COMMENTS
96	06.01.20	MM	MM	REVISED PER COMMENTS
97	06.01.20	MM	MM	REVISED PER COMMENTS
98	06.01.20	MM	MM	REVISED PER COMMENTS
99	06.01.20	MM	MM	REVISED PER COMMENTS
100	06.01.20	MM	MM	REVISED PER COMMENTS

NO.	PIPES	CLEARANCE
A7	Existing 4" WMBRIP 3.25' Below Surface	Over
A8	Proposed 8" WMBRIP 3.25' Below Surface	Over
A9	Existing 8" WMBRIP 3.25' Below Surface	Over
A10	Proposed 8" WMBRIP 3.25' Below Surface	Over
A11	Proposed 8" WMBRIP 3.25' Below Surface	Over
A12	Proposed 8" WMBRIP 3.25' Below Surface	Over
A13	Proposed 8" WMBRIP 3.25' Below Surface	Over
E1	Existing 8" WMBRIP 3.25' Below Surface	Over
E2	Proposed 8" WMBRIP 3.25' Below Surface	Over
E3	Proposed 8" WMBRIP 3.25' Below Surface	Over
E4	Proposed 8" WMBRIP 3.25' Below Surface	Over
F1	Proposed 8" WMBRIP 3.25' Below Surface	Over
F2	Proposed 8" WMBRIP 3.25' Below Surface	Over
G1	Existing 8" WMBRIP 3.25' Below Surface	Over
J4	Proposed 8" WMBRIP 3.25' Below Surface	Over

NOTES:  
 1. ALL EXISTING DEPTHS ARE APPROXIMATE. CONTRACTOR TO VERIFY.  
 2. EXISTING WATER METERS ON PLAN ARE SHOWN IN THEIR APPROXIMATE LOCATION. WATER METERS TO LOCATE PRIOR TO CONSTRUCTION.



FOR BIDDING PURPOSES ONLY  
 MICROSOFT WORD 2016 P.06  
 PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LICENSE NO. 12581  
 DATE: JUNE 4, 2018

SCALE: AS SHOWN  
 PROJECT: 91-0134-1  
 DATE: JUNE 4, 2018

PROPOSED WATER MAIN PLAN  
 PINES VILLAGE WATER MAIN REPLACEMENT  
 PEMBROKE PINES, FLORIDA

Calvin, Giordano & Associates, Inc.  
 EXCEPTIONAL SOLUTIONS  
 1100 S. UNIVERSITY BLVD., SUITE 100  
 FORT WORTH, TEXAS 76104  
 Certificate of Authorization 514

WM4

91-0134-1

JUNE 4, 2018

AS SHOWN

PINES VILLAGE WATER MAIN REPLACEMENT

PROPOSED WATER MAIN PLAN

PEMBROKE PINES, FLORIDA

FOR BIDDING PURPOSES ONLY

DATE: JUNE 4, 2018

PROJECT: 91-0134-1

SCALE: AS SHOWN

MICROSOFT WORD 2016 P.06

WM4

91-0134-1

JUNE 4, 2018

AS SHOWN

PINES VILLAGE WATER MAIN REPLACEMENT

PROPOSED WATER MAIN PLAN

PEMBROKE PINES, FLORIDA

FOR BIDDING PURPOSES ONLY

DATE: JUNE 4, 2018

PROJECT: 91-0134-1

SCALE: AS SHOWN

MICROSOFT WORD 2016 P.06

WM4

91-0134-1

JUNE 4, 2018

AS SHOWN

PINES VILLAGE WATER MAIN REPLACEMENT

PROPOSED WATER MAIN PLAN

PEMBROKE PINES, FLORIDA

FOR BIDDING PURPOSES ONLY

DATE: JUNE 4, 2018

PROJECT: 91-0134-1

SCALE: AS SHOWN

MICROSOFT WORD 2016 P.06

WM4

91-0134-1

JUNE 4, 2018

AS SHOWN

PINES VILLAGE WATER MAIN REPLACEMENT

PROPOSED WATER MAIN PLAN

PEMBROKE PINES, FLORIDA

FOR BIDDING PURPOSES ONLY

DATE: JUNE 4, 2018

PROJECT: 91-0134-1

SCALE: AS SHOWN

MICROSOFT WORD 2016 P.06

WM4

91-0134-1

JUNE 4, 2018

AS SHOWN

PINES VILLAGE WATER MAIN REPLACEMENT

PROPOSED WATER MAIN PLAN

PEMBROKE PINES, FLORIDA

FOR BIDDING PURPOSES ONLY

DATE: JUNE 4, 2018

PROJECT: 91-0134-1

SCALE: AS SHOWN

MICROSOFT WORD 2016 P.06

WM4

91-0134-1

JUNE 4, 2018

AS SHOWN

PINES VILLAGE WATER MAIN REPLACEMENT

PROPOSED WATER MAIN PLAN

PEMBROKE PINES, FLORIDA

FOR BIDDING PURPOSES ONLY

DATE: JUNE 4, 2018

PROJECT: 91-0134-1

SCALE: AS SHOWN

MICROSOFT WORD 2016 P.06

WM4

91-0134-1

JUNE 4, 2018

AS SHOWN

PINES VILLAGE WATER MAIN REPLACEMENT

PROPOSED WATER MAIN PLAN

PEMBROKE PINES, FLORIDA

FOR BIDDING PURPOSES ONLY

DATE: JUNE 4, 2018

PROJECT: 91-0134-1

SCALE: AS SHOWN

MICROSOFT WORD 2016 P.06

WM4

91-0134-1

JUNE 4, 2018

AS SHOWN

PINES VILLAGE WATER MAIN REPLACEMENT

PROPOSED WATER MAIN PLAN

PEMBROKE PINES, FLORIDA

FOR BIDDING PURPOSES ONLY

DATE: JUNE 4, 2018

PROJECT: 91-0134-1

SCALE: AS SHOWN

MICROSOFT WORD 2016 P.06

WM4

91-0134-1

JUNE 4, 2018

AS SHOWN

PINES VILLAGE WATER MAIN REPLACEMENT

PROPOSED WATER MAIN PLAN

PEMBROKE PINES, FLORIDA

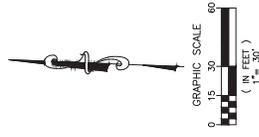
FOR BIDDING PURPOSES ONLY

DATE: JUNE 4, 2018

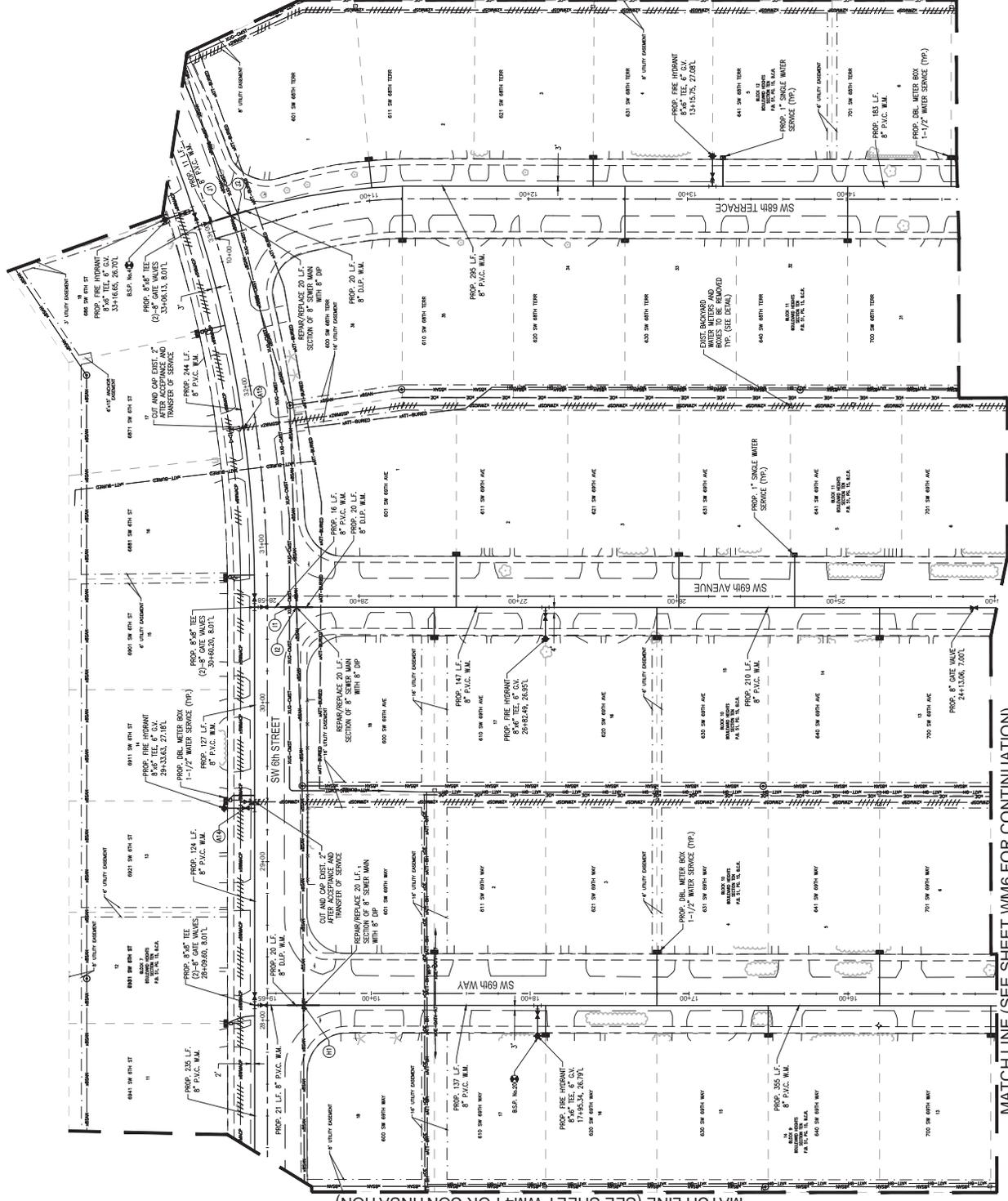
PROJECT: 91-0134-1

SCALE: AS SHOWN

MICROSOFT WORD 2016 P.06



MATCH LINE (SEE SHEET WM4 FOR CONTINUATION)



MATCH LINE (SEE SHEET WM6 FOR CONTINUATION)

NO.	PIPES	CLEARANCE
A14	Existing 2" WMBDIP 3.25 ft Below Surface Over	6"
A15	Existing 2" WMBDIP 3.25 ft Below Surface Over	6"
H1	Proposed 8" PVC WMBDIP 3.25 ft Below Surface Over	17"
I1	Existing City 15" WMBDIP 3.25 ft Below Surface Over	12" MIN.
I2	Proposed 8" PVC WMBDIP 3.25 ft Below Surface Over	29"
J1	Existing City 15" WMBDIP 3.25 ft Below Surface Over	18"
J2	Proposed 8" PVC WMBDIP 3.25 ft Below Surface Over	12" MIN.

- NOTES
1. ALL EXISTING DEPTHS ARE APPROXIMATE. CONTRACTOR TO VERIFY.
  2. EXISTING WATER METERS ON PLAN ARE SHOWN IN THEIR APPROXIMATE LOCATION. CONTRACTOR TO LOCATE PRIOR TO CONSTRUCTION.



FOR BIDDING PURPOSES ONLY

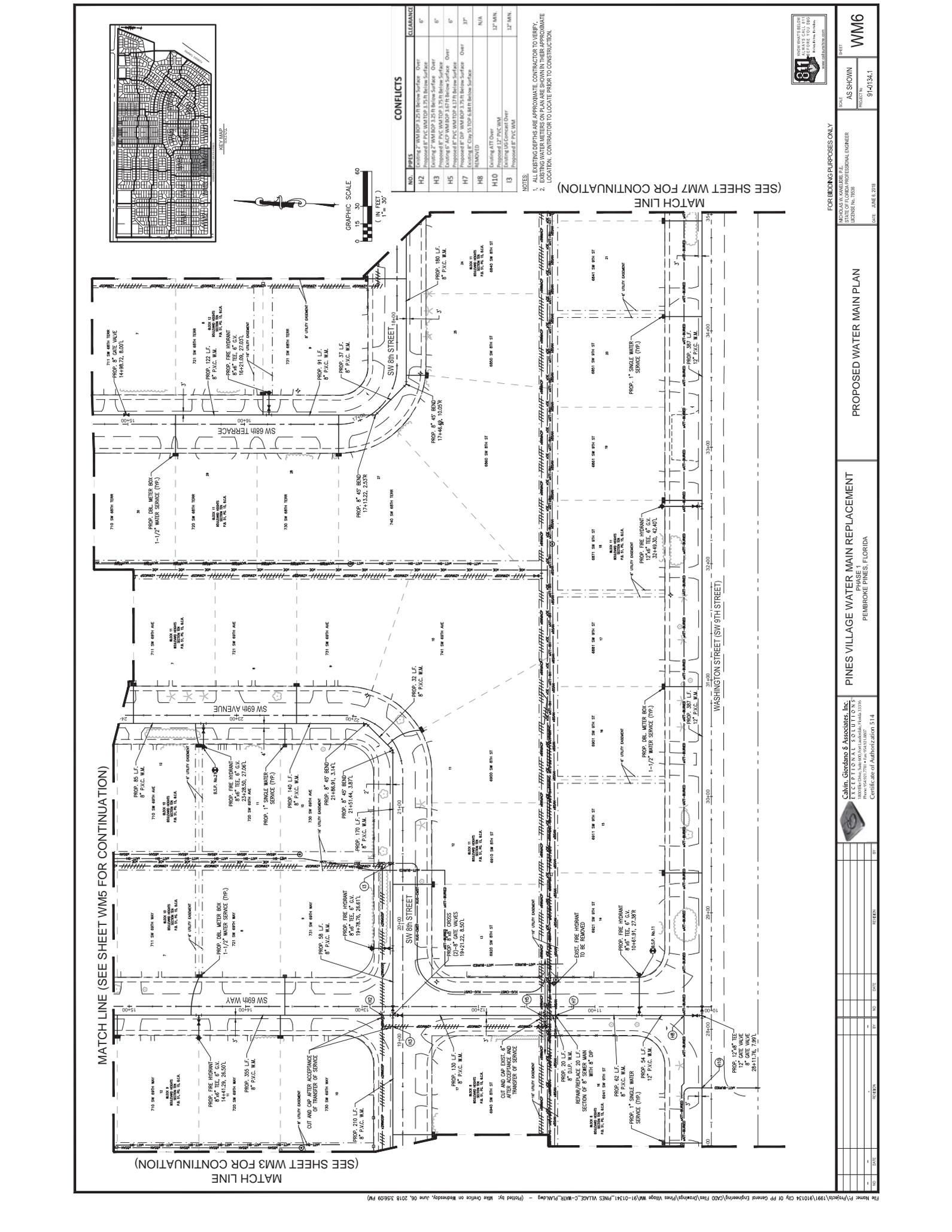
PROJECT: WM5  
 SCALE: AS SHOWN  
 PROJECT NO.: 91-0134-1  
 DATE: JUNE 8, 2018

PROPOSED WATER MAIN PLAN

PINES VILLAGE WATER MAIN REPLACEMENT  
 PEMBROKE PINES, FLORIDA

Calvin, Giordano & Associates, Inc.  
 EXCEPTIONAL SOLUTIONS  
 11000 W. UNIVERSITY BLVD., SUITE 100  
 DALLAS, TEXAS 75248  
 Certificate of Authorization 514

NO.	DATE	BY	REVISION



**CONFLICTS**

NO.	PIPE SIZE	DEPTH	LOCATION	REMARKS
H2	8"	36"	SW 68th St	Proposed 8" PVC W.M. TOP 3.25 ft Below Surface
H3	8"	36"	SW 68th St	Existing 8" PVC W.M. TOP 3.25 ft Below Surface
H4	8"	36"	SW 68th St	Proposed 8" PVC W.M. TOP 3.25 ft Below Surface
H5	8"	36"	SW 68th St	Proposed 8" PVC W.M. TOP 3.25 ft Below Surface
H6	8"	36"	SW 68th St	Proposed 8" PVC W.M. TOP 3.25 ft Below Surface
H7	8"	36"	SW 68th St	Proposed 8" PVC W.M. TOP 3.25 ft Below Surface
H8	8"	36"	SW 68th St	Proposed 8" PVC W.M. TOP 3.25 ft Below Surface
H9	8"	36"	SW 68th St	Proposed 8" PVC W.M. TOP 3.25 ft Below Surface
H10	8"	36"	SW 68th St	Proposed 8" PVC W.M. TOP 3.25 ft Below Surface
I3	12"	36"	SW 68th St	Proposed 12" PVC W.M. TOP 3.25 ft Below Surface

- NOTES**
- EXISTING UTILITIES ARE APPROXIMATE. CONTRACTOR TO VERIFY.
  - EXISTING WATER METERS ON SQUARE SHOWING THEIR APPROXIMATE LOCATION. CONTRACTOR TO LOCATE PRIOR TO CONSTRUCTION.

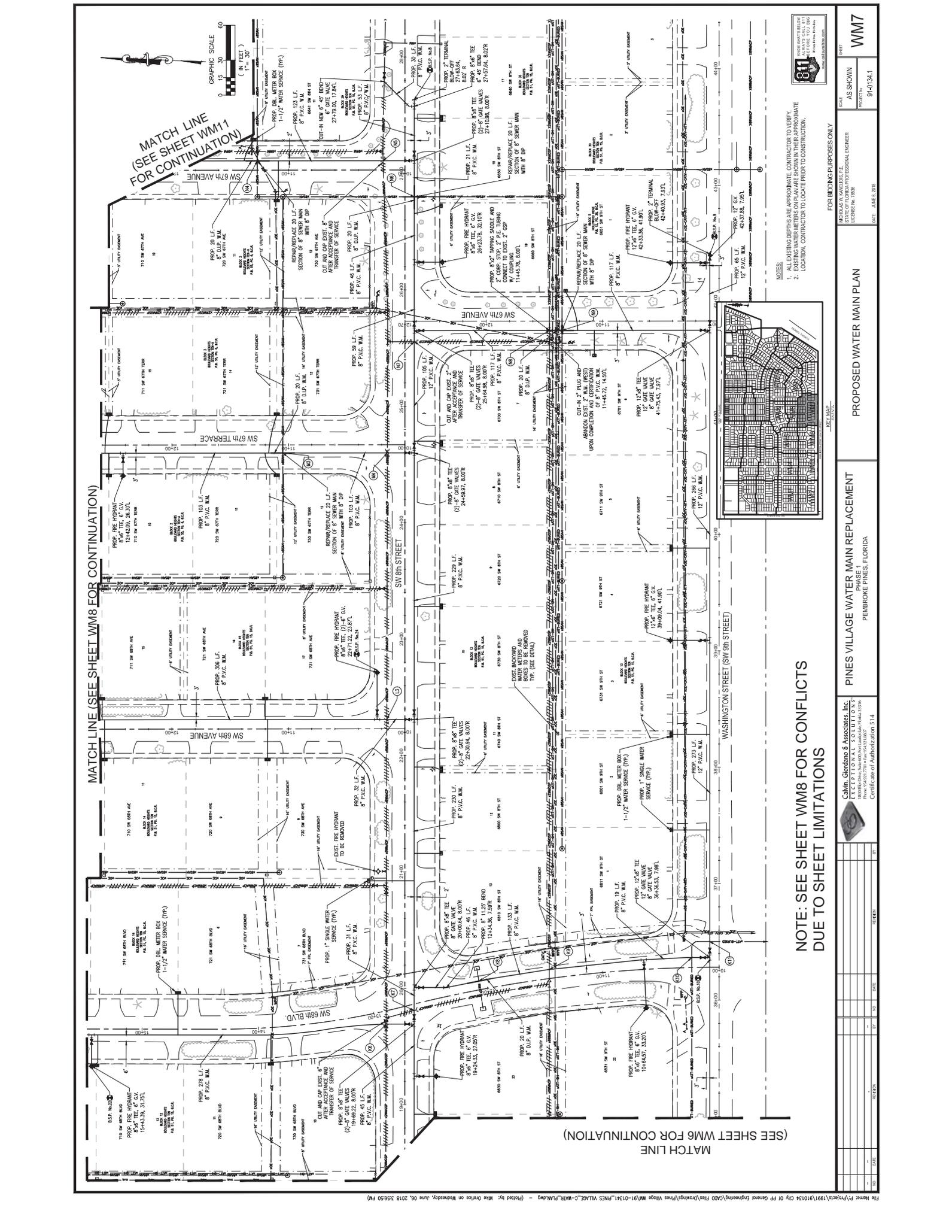
(SEE SHEET WM7 FOR CONTINUATION)

(SEE SHEET WM3 FOR CONTINUATION)

MATCH LINE (SEE SHEET WM5 FOR CONTINUATION)

MATCH LINE (SEE SHEET WM7 FOR CONTINUATION)

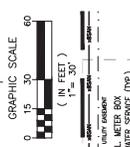
NO.	DATE	BY	REVISION



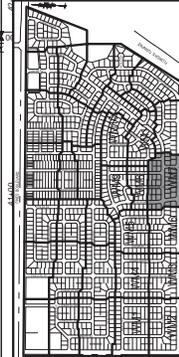
MATCH LINE (SEE SHEET WM8 FOR CONTINUATION)

MATCH LINE (SEE SHEET WM6 FOR CONTINUATION)

MATCH LINE (SEE SHEET WM1 FOR CONTINUATION)



- NOTES:
1. ALL EXISTING DEPTHS ARE APPROXIMATE. CONTRACTOR TO VERIFY.
  2. EXISTING WATER METERS ON PLAN ARE SHOWN IN THEIR APPROXIMATE LOCATION. CONTRACTOR TO LOCATE PRIOR TO CONSTRUCTION.



NOTE: SEE SHEET WM8 FOR CONFLICTS DUE TO SHEET LIMITATIONS

FOR BIDDING PURPOSES ONLY

SCALE: AS SHOWN  
PROJECT NO: 91-0134-1

PROPOSED WATER MAIN PLAN

PINES VILLAGE WATER MAIN REPLACEMENT

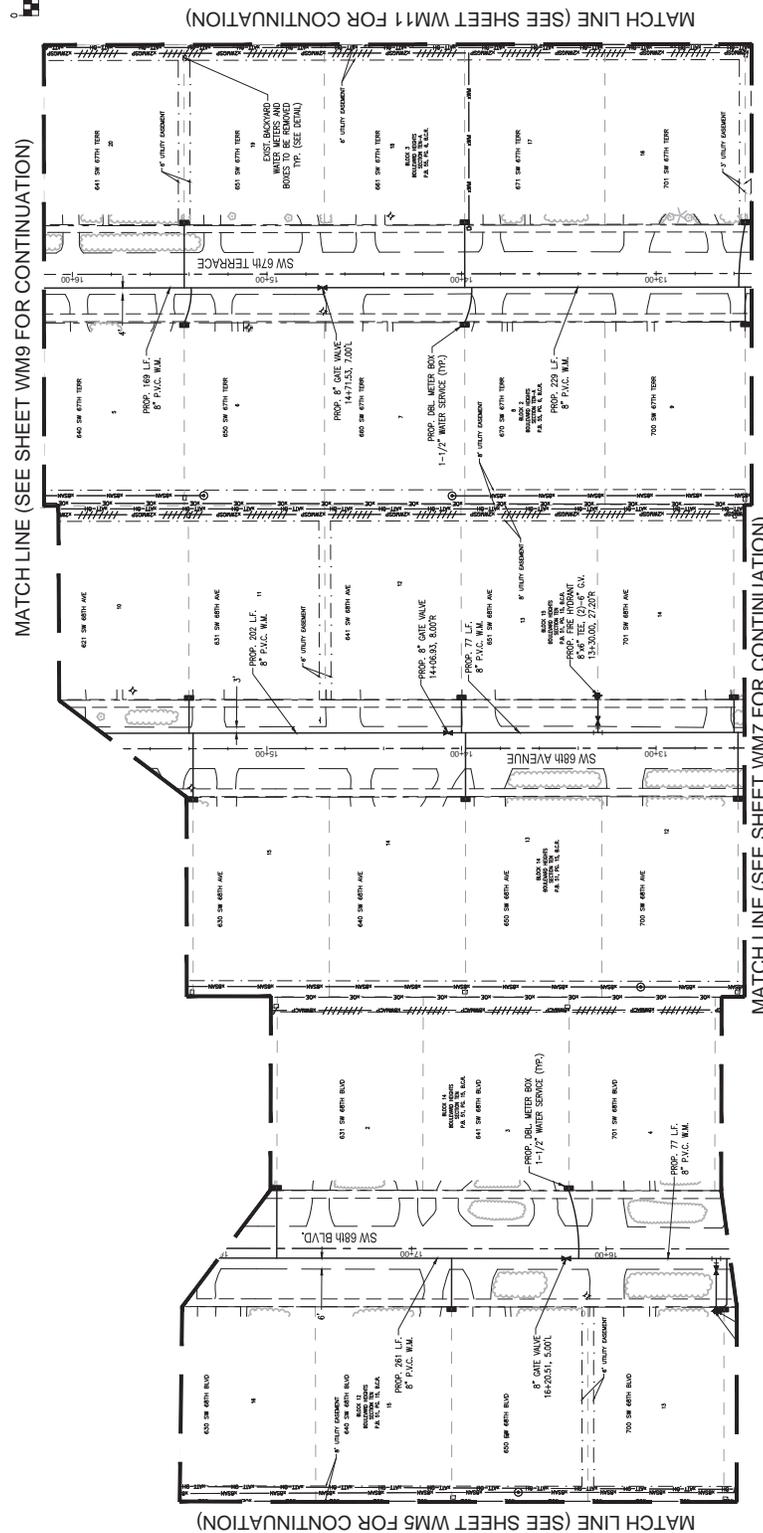
Calvin, Giordano & Associates, Inc.  
EXCEPTIONAL SOLUTIONS  
1100 S. MILITARY TRAIL, SUITE 100  
MIAMI, FL 33130  
Tel: 305.443.8800  
Fax: 305.443.8801  
Certificate of Authorization 514



NO.	DATE	BY	REVISION

DATE: JUNE 4, 2018

WM7



MATCH LINE (SEE SHEET WM11 FOR CONTINUATION)

MATCH LINE (SEE SHEET WM9 FOR CONTINUATION)

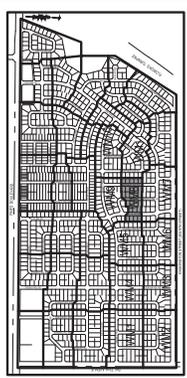
MATCH LINE (SEE SHEET WM7 FOR CONTINUATION)

MATCH LINE (SEE SHEET WMS FOR CONTINUATION)

SEE SHEET WM7 FOR  
CONFLICT LOCATIONS

NO.	PIES	CLEARANCE
K6	Existing 2" WMBOP 3.0 FT Below Surface Over	6"
K7	Existing 6" PVC WMA 4.0 FT Below Surface Over	12"
K8	Proposed 8" PVC WMBOP 3.0 FT Below Surface Over	6"
K9	Existing 12" PVC WMA 3.0 FT Below Surface Over	6"
K10	Existing 12" PVC WMA 3.0 FT Below Surface Over	12" MIN.
K11	Proposed 8" PVC WMA 3.0 FT Below Surface Over	12" MIN.
L3	Proposed 8" PVC WMA 3.0 FT Below Surface Over	6"
M3	Proposed 8" PVC WMA 3.0 FT Below Surface Over	18"
M4	Proposed 8" PVC WMA 3.0 FT Below Surface Over	12"
N4	Existing 8" PVC WMA 3.0 FT Below Surface Over	18"
N5	Proposed 8" PVC WMA 3.0 FT Below Surface Over	12"
N7	Proposed 8" PVC WMA 3.0 FT Below Surface Over	6"
N8	Proposed 8" PVC WMA 3.0 FT Below Surface Over	6"
N9	Proposed 8" PVC WMA 3.0 FT Below Surface Over	18"

- NOTES:
1. ALL EXISTING DEPTHS ARE APPROXIMATE. CONTRACTOR TO VERIFY.
  2. EXISTING WATER METERS ON PLAN ARE SHOWN IN THEIR APPROXIMATE LOCATION. CONTRACTOR TO LOCATE PRIOR TO CONSTRUCTION.



FOR BIDDING PURPOSES ONLY

SCALE: AS SHOWN

PROJECT: 91-0134-1

DATE: JUNE 6, 2018

WM8

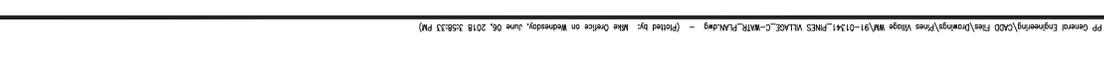
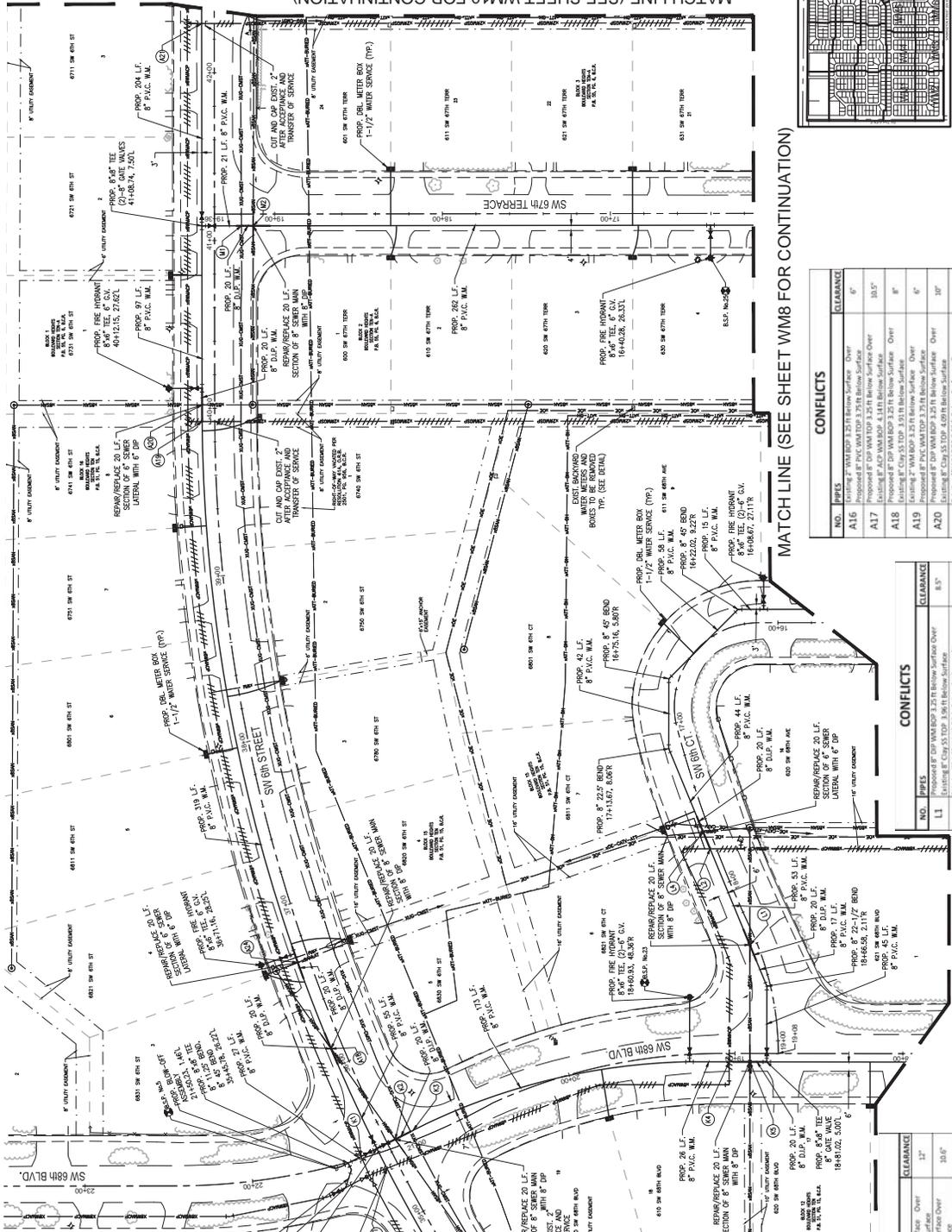
PROPOSED WATER MAIN PLAN

PINES VILLAGE WATER MAIN REPLACEMENT  
PENBROKE PINES, FLORIDA

Calvin, Giordano & Associates, Inc.  
EXCEPTIONAL SOLUTIONS  
11000 W. STATE ROAD 11  
SUITE 100  
PENSACOLA, FLORIDA 32504-1336  
Phone: 904.393.7388 • Fax: 904.393.8800  
www.cga-inc.com  
Certificate of Authorization 514



NO.	DATE	BY	CHKD.	REVISION



MATCH LINE (SEE SHEET WM5 FOR CONTINUATION)

MATCH LINE (SEE SHEET WM8 FOR CONTINUATION)

NO.	PIPES	CLEARANCE
A16	Proposed 8" PVC WADP 3.25 ft Below Surface Over	6"
A17	Proposed 8" DP WADP 3.25 ft Below Surface Over	18"
A18	Existing 8" PVC WADP 4.5 ft Below Surface Over	8"
A19	Existing 8" WADP 3.25 ft Below Surface Over	10"
A20	Proposed 8" PVC WADP 3.25 ft Below Surface Over	10"
A21	Proposed 8" PVC WADP 3.25 ft Below Surface Over	6"
A24	Proposed 8" DP WADP 11 ft Below Surface Over	12" MIN.

NO.	PIPES	CLEARANCE
L1	Proposed 8" DP WADP 3.25 ft Below Surface Over	8 1/2"
L2	Existing 8" PVC WADP 4.5 ft Below Surface Over	12"
M1	Existing 8" PVC WADP 4.5 ft Below Surface Over	12" MIN.
M2	Proposed 8" DP WADP 3.25 ft Below Surface Over	12" MIN.

NO.	PIPES	CLEARANCE
K1	Proposed 8" PVC WADP 3.25 ft Below Surface Over	12"
K2	Proposed 8" DP WADP 3.25 ft Below Surface Over	18"
K3	Existing 8" PVC WADP 4.5 ft Below Surface Over	12" MIN.
K4	Existing 8" WADP 3.25 ft Below Surface Over	12"
K5	Proposed 8" PVC WADP 3.25 ft Below Surface Over	18"

NOTES:  
 1. ALL EXISTING DEPTHS ARE APPROXIMATE. CONTRACTOR TO VERIFY.  
 2. LOCATION, CONTRACTOR TO LOCATE PRIOR TO CONSTRUCTION.

**PROPOSED WATER MAIN PLAN**

PINES VILLAGE WATER MAIN REPLACEMENT  
 PEMBROKE PINES, FLORIDA

FOR BIDDING PURPOSES ONLY

DATE: JUNE 4, 2018

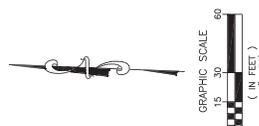
SCALE: AS SHOWN  
 PROJECT NO: 91-0134-1

811  
 CALL BEFORE YOU DIG  
 1-800-4-A-DIG  
 1-800-4-ADIG  
 1-800-4-ADIG  
 1-800-4-ADIG

MICROSOFT WORD 2016: P:\Projects\91-0134-1\Drawings\91-0134-1\_Pines Village Water Main Replacement.dwg  
 DATE: 06/04/2018 10:41:30 AM  
 USER: jgordon

**WM19**

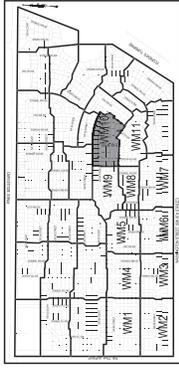
Calvin, Giordano & Associates, Inc.  
 EXCEPTIONAL SOLUTIONS  
 11000 W. STATE ROAD 11, SUITE 100  
 PENSACOLA, FLORIDA 32504  
 904.442.1800  
 www.cga-inc.com  
 Certificate of Authorization 514



MATCH LINE (SEE SHEET WM9 FOR CONTINUATION)

NO.	PIPES	CLEARANCE
A22	Proposed 8" DIP W/M ROP 3.00 FT Below Surface	18"
N1	Existing 8" PVC W/M ROP 3.60 FT Below Surface Over	12"
N2	Proposed 8" DIP W/M ROP 3.75 FT Below Surface Over	18"
	Existing 8" PVC W/M ROP 3.50 FT Below Surface	18"

- NOTES:
1. ALL EXISTING DEPTHS ARE APPROXIMATE. CONTRACTOR TO VERIFY.
  2. EXISTING WATER METERS ON PLAN ARE SHOWN IN THEIR APPROXIMATE LOCATION. CONTRACTOR TO LOCATE PRIOR TO CONSTRUCTION.



MATCH LINE (SEE SHEET WM9 FOR CONTINUATION)

FOR BEING PURPOSES ONLY

DESIGNED BY: MICHAEL R. FINE  
 DRAWN BY: MICHAEL R. FINE  
 LICENSE NO.: 10038  
 DATE: JUNE 6, 2018

PROPOSED WATER MAIN PLAN

PINES VILLAGE WATER MAIN REPLACEMENT  
 PEMBROKE PINES, FLORIDA

Calvin, Giordano & Associates, Inc.  
 EXCEPTIONAL SOLUTIONS  
 10000 W. BIRCHWOOD BLVD. SUITE 30116  
 PEEBLES, ALABAMA 36868  
 Phone: 205.337.7334 • Fax: 205.337.8889  
 Certificate of Authorization 314

NO.	DATE	BY	NO.	DATE	BY





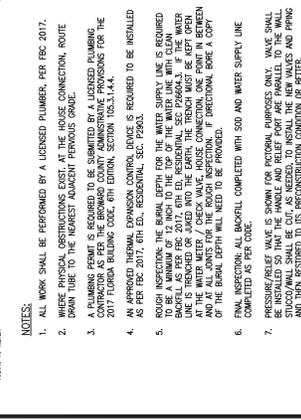




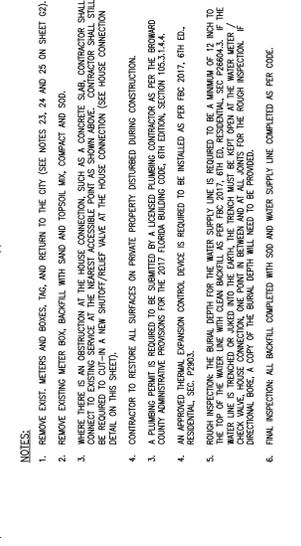
NO.	DATE	DESCRIPTION	BY	CHKD.

NO.	DATE	DESCRIPTION	BY	CHKD.

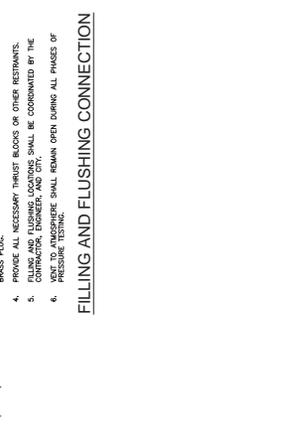
HOUSE CONNECTION DETAIL



- NOTES:
- ALL WORK SHALL BE PERFORMED BY A LICENSED PLUMBER, PER FBC 2017.
  - THE EXISTING WATER SERVICE LINE SHALL BE RELOCATED TO THE NEAREST ALREADY EXISTING SERVICE LINE.
  - A PLUMBING PERMIT IS REQUIRED TO BE OBTAINED BY A LICENSED PLUMBER CONTRACTOR AS PER THE BROWARD COUNTY ADMINISTRATIVE PROVISIONS FOR THE 2017 FLORIDA BUILDING CODE, 6TH EDITION, SECTION 105.3.1.4.4.
  - AN APPROVED THERMAL EXPANSION CONTROL DEVICE IS REQUIRED TO BE INSTALLED AS PER FBC 2017, 6TH ED., RESIDENTIAL, SEC. 7500.0.
  - ROUGH INSPECTION: THE BURIAL DEPTH FOR THE WATER SERVICE LINE IS REQUIRED TO BE A MINIMUM OF 12 INCH TO THE CURB STOP. THE BURIAL DEPTH FOR THE WATER MAIN IS REQUIRED TO BE A MINIMUM OF 24 INCH TO THE CURB STOP. THE BURIAL DEPTH FOR THE WATER MAIN SHALL BE KEPT OPEN AT THE WATER METER / CHECK VALVE HOUSE CONNECTION, ONE FOOT IN BETWEEN AND AT ALL JOINTS FOR THE ROUGH INSPECTION. IF THE BURIAL DEPTH WILL NEED TO BE PROVIDED.
  - FINAL INSPECTION: ALL WORK SHALL BE COMPLETED WITH 500 AND WATER SUPPLY LINE COMPLETED AS PER CODE.
  - PROVIDE REFLECT VALUE IS SHOWN FOR ESTIMATION PURPOSES ONLY. VALUE SHALL BE INSTALLED SO THAT THE HANDLE AND RELIEF PORT ARE PARALLEL TO THE WALL. STUCCO/WALL SHALL BE CUT, AS NEEDED, TO INSTALL THE NEW VALVES AND PIPING AND THEN RESTORED TO ITS PRECONSTRUCTION CONDITION OR BETTER.



- NOTES:
- REMOVE EXIST. METERS AND BOXES, TAG, AND RETURN TO THE CITY. (SEE NOTES 21, 24 AND 25 ON SHEET 60).
  - REMOVE EXISTING METER BOX, BACKFILL WITH SAND AND TOPSOIL MIX, COMPACT AND SOO.
  - WHERE THERE IS AN OBSTRUCTION AT THE HOUSE CONNECTION, SUCH AS A CONCRETE SLAB, CONTRACTOR SHALL BE REQUIRED TO CUT-IN A NEW SHUTOFF/RELIEF VALVE AT THE HOUSE CONNECTION. (SEE HOUSE CONNECTION DETAIL ON THIS SHEET).
  - A PLUMBING PERMIT IS REQUIRED TO BE OBTAINED BY A LICENSED PLUMBING CONTRACTOR AS PER THE BROWARD COUNTY ADMINISTRATIVE PROVISIONS FOR THE 2017 FLORIDA BUILDING CODE, 6TH EDITION, SECTION 105.3.1.4.4.
  - AN APPROVED THERMAL EXPANSION CONTROL DEVICE IS REQUIRED TO BE INSTALLED AS PER FBC 2017, 6TH ED., RESIDENTIAL, SEC. 7500.0.
  - ROUGH INSPECTION: THE BURIAL DEPTH FOR THE WATER SERVICE LINE IS REQUIRED TO BE A MINIMUM OF 12 INCH TO THE CURB STOP. THE BURIAL DEPTH FOR THE WATER MAIN IS REQUIRED TO BE A MINIMUM OF 24 INCH TO THE CURB STOP. THE BURIAL DEPTH FOR THE WATER MAIN SHALL BE KEPT OPEN AT THE WATER METER / CHECK VALVE HOUSE CONNECTION, ONE FOOT IN BETWEEN AND AT ALL JOINTS FOR THE ROUGH INSPECTION. IF THE BURIAL DEPTH WILL NEED TO BE PROVIDED.
  - FINAL INSPECTION: ALL WORK SHALL BE COMPLETED WITH 500 AND WATER SUPPLY LINE COMPLETED AS PER CODE.

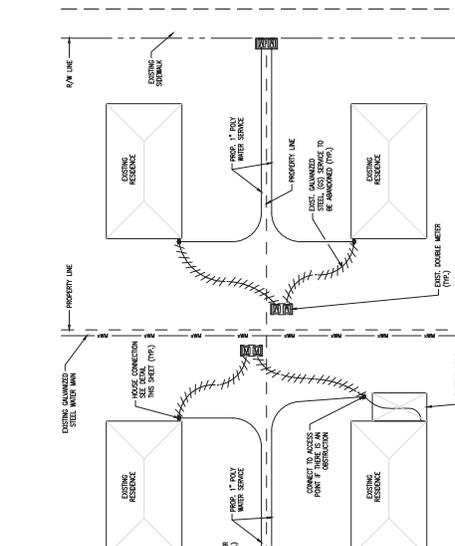


- NOTES:
- CURB IN SERVICE LINE SHALL BE AS CLOSE TO METER BOX AS PRACTICAL WITH A MINIMUM BORES SHALL BE 27" FOR 1.5" PIPING TRUNKING. THE BORE SIZE OF THE METER BOXES SHALL BE 27" WITH THE BORE SIZE OF THE SUBMETER. METERS SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).
  - METER SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).
  - METER SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).

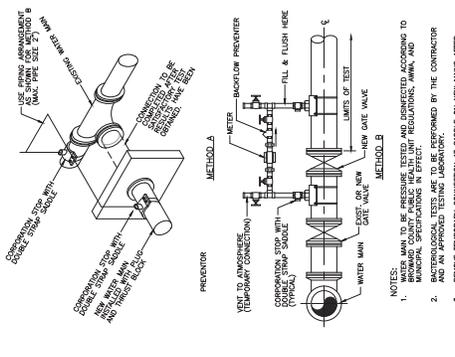


- NOTES:
- CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)
  - CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)
  - CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)

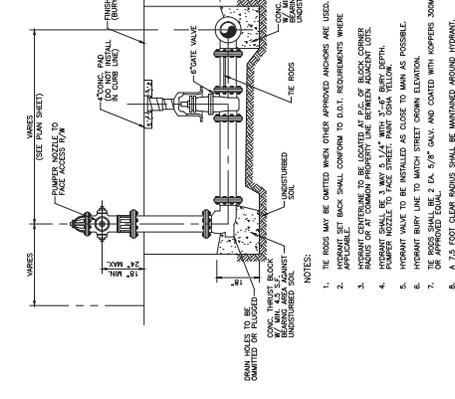
TYPICAL METER BOX INSTALLATION FOR 5/8" METERS



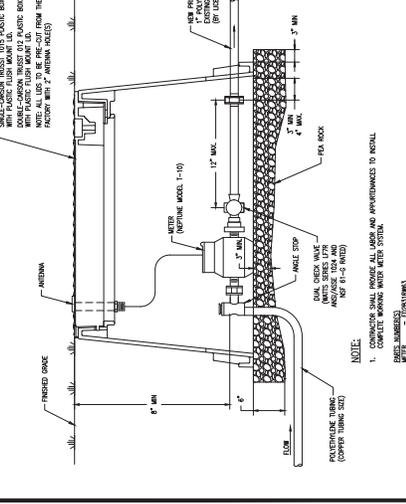
- NOTES:
- CURB IN SERVICE LINE SHALL BE AS CLOSE TO METER BOX AS PRACTICAL WITH A MINIMUM BORES SHALL BE 27" FOR 1.5" PIPING TRUNKING. THE BORE SIZE OF THE METER BOXES SHALL BE 27" WITH THE BORE SIZE OF THE SUBMETER. METERS SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).
  - METER SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).
  - METER SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).



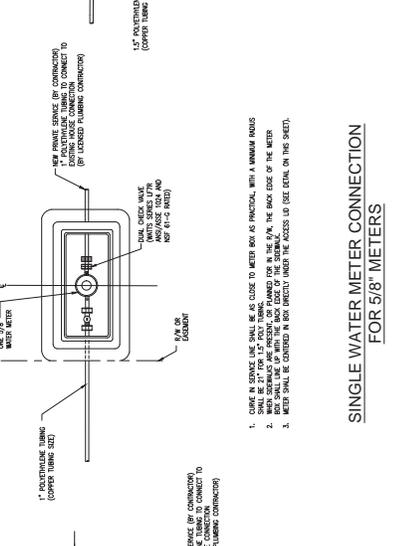
- NOTES:
- CURB IN SERVICE LINE SHALL BE AS CLOSE TO METER BOX AS PRACTICAL WITH A MINIMUM BORES SHALL BE 27" FOR 1.5" PIPING TRUNKING. THE BORE SIZE OF THE METER BOXES SHALL BE 27" WITH THE BORE SIZE OF THE SUBMETER. METERS SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).
  - METER SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).
  - METER SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).



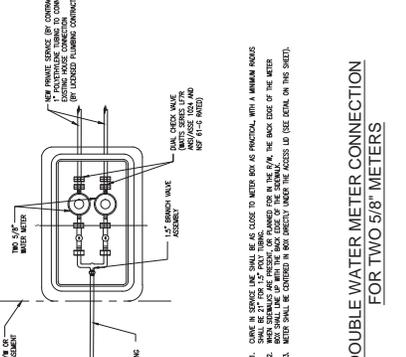
- NOTES:
- CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)
  - CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)
  - CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)



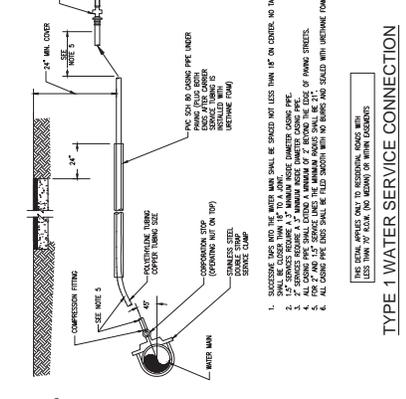
- NOTES:
- CURB IN SERVICE LINE SHALL BE AS CLOSE TO METER BOX AS PRACTICAL WITH A MINIMUM BORES SHALL BE 27" FOR 1.5" PIPING TRUNKING. THE BORE SIZE OF THE METER BOXES SHALL BE 27" WITH THE BORE SIZE OF THE SUBMETER. METERS SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).
  - METER SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).
  - METER SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).



- NOTES:
- CURB IN SERVICE LINE SHALL BE AS CLOSE TO METER BOX AS PRACTICAL WITH A MINIMUM BORES SHALL BE 27" FOR 1.5" PIPING TRUNKING. THE BORE SIZE OF THE METER BOXES SHALL BE 27" WITH THE BORE SIZE OF THE SUBMETER. METERS SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).
  - METER SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).
  - METER SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).



- NOTES:
- CURB IN SERVICE LINE SHALL BE AS CLOSE TO METER BOX AS PRACTICAL WITH A MINIMUM BORES SHALL BE 27" FOR 1.5" PIPING TRUNKING. THE BORE SIZE OF THE METER BOXES SHALL BE 27" WITH THE BORE SIZE OF THE SUBMETER. METERS SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).
  - METER SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).
  - METER SHALL BE CONTAINED IN ONE DIRECTLY UNDER THE ACCESS LID (SEE DETAIL ON THIS SHEET).



- NOTES:
- CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)
  - CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)
  - CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)

TYPE 1 WATER SERVICE CONNECTION



- NOTES:
- CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)
  - CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)
  - CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)

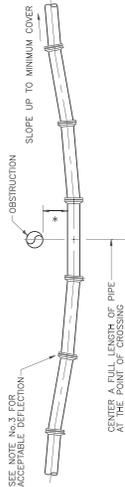


- NOTES:
- CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)
  - CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)
  - CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)



- NOTES:
- CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)
  - CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)
  - CONNECTOR SHALL PROVIDE ALL LABS AND APPROVED TO INSTALL. COMPLETE WORKING WITH WATER SERVICE METERS. (SEE SHEET 105-110)

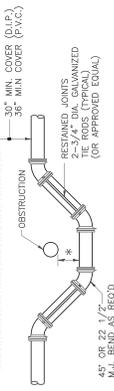
FINISHED GRADE



**UTILITY CROSSING DEFLECTION TYPE**

- NOTES:
- (1) 18" MINIMUM CLEARANCE REQUIRED FOR WATER AND SEWER MAIN CROSSINGS. 12" MINIMUM CLEARANCE REQUIRED FOR OTHER UTILITY CROSSINGS.
  - THE DEFLECTION TYPE CROSSING SHALL BE USED INWHATEVER POSSIBLE ONLY UNDER SPECIFIC ORDERS BY THE ENGINEER SHALL THE FITTING TYPE CROSSING BE ALLOWED.
  - DEFLECTION SHALL BE LIMITED TO THE MANUFACTURERS MAXIMUM JOINT DEFLECTION (MAXIMUM).

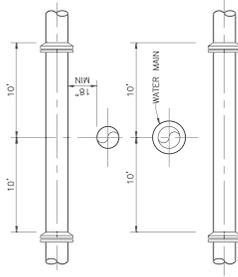
FINISH GRADE



**UTILITY CROSSING FITTING TYPE**

- NOTES:
- (1) 18" MINIMUM CLEARANCE REQUIRED FOR WATER AND SEWER MAIN CROSSINGS. 12" MINIMUM CLEARANCE REQUIRED FOR OTHER UTILITY CROSSINGS.
  - COAT THE RODS WITH A COIL TWR ENAMEL AFTER ASSEMBLY (2 COATS MIN).
  - THE RODS MAY BE OMITTED WHEN OTHER APPROVED METHODS OF RESURFACING ARE UTILIZED.

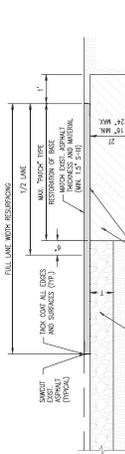
**UTILITY CROSSING FITTING TYPE**



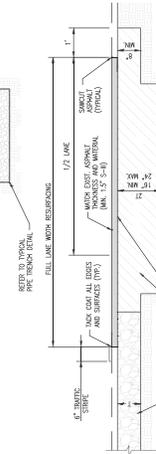
**NOTES:**

- MAINTAIN A 36 INCH COVER FOR P.C. 30 INCH COVER FOR D.I.P. AND 18 INCH SEPARATION AS MINIMUM.
- IF THE CROSSING IS TO BE MADE WITH MANHOLES OR ACCESS OPENINGS WITH LESS THAN 18 INCHES VERTICAL SEPARATION, THEN D.I.P. SHALL BE USED FOR BOTH PIPES FOR A DISTANCE OF 20 FEET CENTERLINE ON CROSSING WITH NO JOINTS WITHIN 10 FEET OF THE CROSSING.
- 18 INCH SEPARATION SHOULD BE MAINTAINED BETWEEN ALL PIPES ABSOLUTE MINIMUM SEPARATION WITH D.I.P. REQUIRED FOR ANY SEPARATION LESS THAN 18 INCHES.
- SEWER SHALL BE 9 FEET HORIZONTAL SEPARATION BETWEEN WATER AND WATER MAINS.
- 3 FOOT HORIZONTAL CLEARANCE SHALL BE PROVIDED BETWEEN UTILITIES AND ANY OBSTRUCTIONS (CATCH BASINS, CONCRETE WALLS, ETC.)
- 9 FOOT HORIZONTAL CLEARANCE SHALL BE PROVIDED BETWEEN UTILITIES AND TREES.

**UTILITY CROSSING GENERAL REQUIREMENTS**



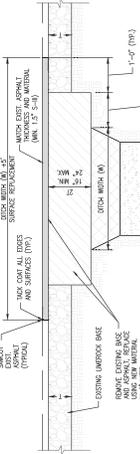
**TYPICAL RESTORATION OF LESS THAN 1/2 LANE OF ROCK BASE**



**TYPICAL RESTORATION OF MORE THAN 1/2 LANE OF ROCK BASE**



**TRENCH WITH PAVEMENT RESTORATION LONGITUDINAL**

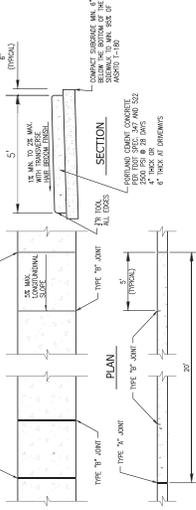


**TRENCH WITH PAVEMENT RESTORATION PERPENDICULAR**

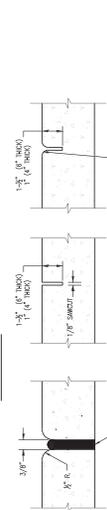
- NOTES:
- REFER TO TYPICAL SECTION GENERAL NOTES ON SEPARATIONS FOR INSTALLATION AND MATERIAL REQUIREMENTS.
  - ALL EDGES OF THE EXISTING ASPHALT PAVEMENT WHERE RESURFACING WILL BE DONE SHALL BE SAW CUT IN STRAIGHT LINES PARALLEL TO OR PERPENDICULAR TO ROADWAY PRIOR TO RESURFACING.
  - RESURFACING MATERIAL SHALL BE COMPATIBLE WITH SURROUNDING SURFACE TYPE AND THICKNESS.

**PAVEMENT RESTORATION**

SCALE: N.T.S.



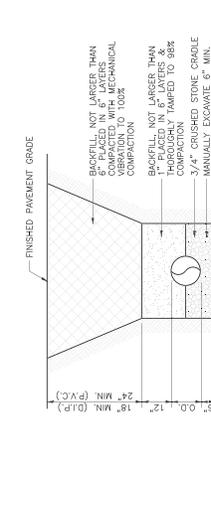
**CONCRETE SIDEWALK JOINTS**



TYPE	LOCATION
"X"	24\"/>
"Y"	5\"/>

**CONCRETE SIDEWALK CURRENT**

SCALE: N.T.S.



**TYPICAL TRENCH DETAIL**

- NOTES:
- MAXIMUM DENSITY DETERMINED BY AASHTO T-99.
  - MINIMUM DEPTH TO BOTTOM OF PRESSURE MAINS SHALL BE 5 FEET MINIMUM UNLESS OTHERWISE APPROVED BY THE CITY OF PEMBROKE PINES UTILITY DEPARTMENT.

**811**  
 KNOW WHAT'S BELOW  
 CALL 811  
 BEFORE YOU DIG  
 www.811fl.com

FOR BIDDING PURPOSES ONLY

PROJECT: WM14  
 SCALE: AS SHOWN  
 DATE: JUNE 8, 2018

DESIGNED BY: [Blank]  
 CHECKED BY: [Blank]  
 IN CHARGE: [Blank]  
 LICENSE NO.: 10338

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

PROJECT: PINES VILLAGE WATER MAIN REPLACEMENT  
 LOCATION: PEMBROKE PINES, FLORIDA

NO DATE BY NO DATE













**FOR SIGN ASSEMBLIES WITH MAXIMUM 8.75 SQUARE FOOT PANEL AREA**

**Typical Details**

**FOR SIGN ASSEMBLIES WITH GREATER THAN 8.75 SQUARE FOOT PANEL AREA WITH SUPPLEMENTAL SIGN**

**Typical Details**

**DETAIL "A"**

**DETAIL "B"**

**GROUND SIGN ASSEMBLY DETAILS**

**STOP SIGN AND STREET IDENTIFICATION ASSEMBLY TYPICAL DETAILS**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: 02-22-2017**

**DESCRIPTION: UPDATED PAVE RATE**

**SCALE: N/A**

**PROJECT NO: 18052060**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**FOR SIGN ASSEMBLIES WITH MAXIMUM 8.75 SQUARE FOOT PANEL AREA**

**Typical Details**

**FOR SIGN ASSEMBLIES WITH GREATER THAN 8.75 SQUARE FOOT PANEL AREA WITH SUPPLEMENTAL SIGN**

**Typical Details**

**DETAIL "A"**

**DETAIL "B"**

**GROUND SIGN ASSEMBLY DETAILS**

**STOP SIGN AND STREET IDENTIFICATION ASSEMBLY TYPICAL DETAILS**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: 02-22-2017**

**DESCRIPTION: UPDATED PAVE RATE**

**SCALE: N/A**

**PROJECT NO: 18052060**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**FOR SIGN ASSEMBLIES WITH MAXIMUM 8.75 SQUARE FOOT PANEL AREA**

**Typical Details**

**FOR SIGN ASSEMBLIES WITH GREATER THAN 8.75 SQUARE FOOT PANEL AREA WITH SUPPLEMENTAL SIGN**

**Typical Details**

**DETAIL "A"**

**DETAIL "B"**

**GROUND SIGN ASSEMBLY DETAILS**

**STOP SIGN AND STREET IDENTIFICATION ASSEMBLY TYPICAL DETAILS**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: 02-22-2017**

**DESCRIPTION: UPDATED PAVE RATE**

**SCALE: N/A**

**PROJECT NO: 18052060**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**FOR SIGN ASSEMBLIES WITH MAXIMUM 8.75 SQUARE FOOT PANEL AREA**

**Typical Details**

**FOR SIGN ASSEMBLIES WITH GREATER THAN 8.75 SQUARE FOOT PANEL AREA WITH SUPPLEMENTAL SIGN**

**Typical Details**

**DETAIL "A"**

**DETAIL "B"**

**GROUND SIGN ASSEMBLY DETAILS**

**STOP SIGN AND STREET IDENTIFICATION ASSEMBLY TYPICAL DETAILS**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: 02-22-2017**

**DESCRIPTION: UPDATED PAVE RATE**

**SCALE: N/A**

**PROJECT NO: 18052060**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**FOR SIGN ASSEMBLIES WITH MAXIMUM 8.75 SQUARE FOOT PANEL AREA**

**Typical Details**

**FOR SIGN ASSEMBLIES WITH GREATER THAN 8.75 SQUARE FOOT PANEL AREA WITH SUPPLEMENTAL SIGN**

**Typical Details**

**DETAIL "A"**

**DETAIL "B"**

**GROUND SIGN ASSEMBLY DETAILS**

**STOP SIGN AND STREET IDENTIFICATION ASSEMBLY TYPICAL DETAILS**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: 02-22-2017**

**DESCRIPTION: UPDATED PAVE RATE**

**SCALE: N/A**

**PROJECT NO: 18052060**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**FOR SIGN ASSEMBLIES WITH MAXIMUM 8.75 SQUARE FOOT PANEL AREA**

**Typical Details**

**FOR SIGN ASSEMBLIES WITH GREATER THAN 8.75 SQUARE FOOT PANEL AREA WITH SUPPLEMENTAL SIGN**

**Typical Details**

**DETAIL "A"**

**DETAIL "B"**

**GROUND SIGN ASSEMBLY DETAILS**

**STOP SIGN AND STREET IDENTIFICATION ASSEMBLY TYPICAL DETAILS**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: 02-22-2017**

**DESCRIPTION: UPDATED PAVE RATE**

**SCALE: N/A**

**PROJECT NO: 18052060**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**FOR SIGN ASSEMBLIES WITH MAXIMUM 8.75 SQUARE FOOT PANEL AREA**

**Typical Details**

**FOR SIGN ASSEMBLIES WITH GREATER THAN 8.75 SQUARE FOOT PANEL AREA WITH SUPPLEMENTAL SIGN**

**Typical Details**

**DETAIL "A"**

**DETAIL "B"**

**GROUND SIGN ASSEMBLY DETAILS**

**STOP SIGN AND STREET IDENTIFICATION ASSEMBLY TYPICAL DETAILS**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: 02-22-2017**

**DESCRIPTION: UPDATED PAVE RATE**

**SCALE: N/A**

**PROJECT NO: 18052060**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

**811**

**FOR BEING PURPOSES ONLY**

**DATE: JUNE 8, 2018**

**AS SHOWN**

**PROJECT: 9-0134-1**

[Vendor view of bid](#)

[Chat](#) | [Bid Comments](#) | [Documents](#) | [Attachments](#) | [Items](#) | [Addendums](#)

Bid #PSUT-18-05 - Pines Village Water Main Improvements Phase I   

<b>Time Left</b>	Bid has ended.		
<b>Bid Started</b>	Jun 12, 2018 8:52:45 PM EDT	<b>Notifications</b>	<a href="#">Report (Bidder Activity)</a>
<b>Bid Ended</b>	<b>This bid closed on Jul 17, 2018 2:00:00 PM EDT</b>	<b># of suppliers that viewed</b>	131  <a href="#">(View)</a>
<b>Agency Information</b>	City of Pembroke Pines, FL <a href="#">(view agency's bids)</a>	<b>Q &amp; A</b>	<a href="#">Questions &amp; Answers</a> Questions: 59 Q&A Deadline: Jul 3, 2018 8:30:00 PM EDT
<b>Bid Classifications</b>	<a href="#">Classification Codes</a>		
<b>Bid Regions</b>	<a href="#">Regions</a>		
<b>Bid Contact</b>	<a href="#">see contact information</a>		
<b>Pre-Bid Conference(s)</b>	Jun 26, 2018 9:00:00 AM EDT <b>Attendance is mandatory</b> Location: There will be a mandatory scheduled pre-bid meeting on June 26, 2018 at 9:00 a.m. Meeting location will be at the Public Services Building, Large Conference Room, located at 8300 S. Palm Drive, Pembroke Pines, FL 33025.  All vendors will be required to complete Attachment M "Mandatory Pre-Bid Meeting Form" at the meeting and submit it as part of their proposal to show proof of attendance to the mandatory meeting.  <a href="#">Transcript</a> <a href="#">Attendance</a>		
<b>Copy Bid</b>	Click here to <a href="#">copy</a> the bid and relist it as a new bid		
<b>View Rules</b>	Click here to <a href="#">change</a> the rules for this bid.		
<b>Bid Packet</b>	 <a href="#">Packet for Bid PSUT-18-05</a> <a href="#">(download)</a>		
<b>Best and Final Offer:</b>	<a href="#">Create</a>		

Approval

**View Approval Flow** [View Approval Flow](#)  
**Approval Status** Approved

Bid Comments

<b>Contract Duration</b>	One Time Purchase
<b>Contract Renewal</b>	Not Applicable
<b>Prices Good for</b>	90 days
<b>Budgeted Amount</b>	\$0.00 <a href="#">(change)</a>
<b>Expected Expenditure</b>	\$3,600,000.00
<b>Standard Disclaimer</b>	Bids/proposals must be submitted electronically

Please note vendors should be registered on BidSync under the name of the organization that they are operating as and it should match the organization name on the documents that they are submitting and utilizing when responding to the solicitation. The vendor must provide the necessary information on the BidSync website and upload all of the requested documents listed in the PROPOSAL REQUIREMENTS section of this solicitation. Unless otherwise specified, the City requests for vendors to upload their documents as one (1) PDF document in the order that is outline in the bid package.

The City recommends for proposers to submit their proposals as soon as they are ready to do so. Please allow ample time to submit your proposals on the BidSync website. Proposals may be modified or withdrawn prior to the deadline for submitting Proposals. BidSync Support is happy to help you with submitting your proposal and to ensure that you are submitting your proposals correctly, but we ask that you contact their support line at 1-800-990-9339 with ample time before the bid closing date and time.

PLEASE DO NOT SUBMIT ANY PROPOSALS VIA MAIL, E-MAIL OR FAX.

However, please note that any required Bid Bond or Cashier's Check should be in a sealed envelope, plainly marked "BID SECURITY" (with the

Solicitation Number and Title) and sent to the City of Pembroke Pines, City Clerk's Office, 4th Floor, 601 City Center Way, Pembroke Pines, FL 33025.

**Bid Comments**

The City of Pembroke Pines is seeking proposals from qualified firms, hereinafter referred to as the Contractor, to construct new potable water mains, water services, meters and house services for the Pines Village Water Main Improvements Phase I project in accordance with the terms, conditions, and specifications contained in this solicitation.

The Pines Village Water Main Improvements Phase I project is located in Pembroke Pines, and the project limits are Pines Boulevard to the north, SW 9th Street to the south, SW 72nd Avenue to the West, and SW 67th Avenue to the east. The water main pipes in this neighborhood require replacement due to their age, frequent breaks and customer service complaints due to poor service. Water meters are often located in the rear yards with inadequate piping and should be relocated to the front yards on new, larger water mains.

**Documents**

Select All | Select None | Download Selected

- 1.  [PSUT-18-05 Pines Village Water Main Improvements Phase 1.pdf](#) [\[download\]](#)
- 3.  [Attachment B - Vendor Information Form and a W-9 Rev 2017-11.pdf](#) [\[download\]](#)
- 5.  [Attachment D - Sworn Statement on Public Entity Crimes](#) [\[download\]](#)
- 7.  [Attachment F - Veteran Owned Small Business \(VOSB\) Preference Certification](#) [\[download\]](#)
- 9.  [Attachment H - Vendor Drug-Free Workplace Certification Form.pdf](#) [\[download\]](#)
- 11.  [Attachment J - Sample Insurance Certificate.pdf](#) [\[download\]](#)
- 13.  [Attachment L - References Form.pdf](#) [\[download\]](#)
- 15.  [Attachment N - Standard Release of Lien.pdf](#) [\[download\]](#)
- 17.  [Attachment P - Technical Specifications Final.pdf](#) [\[download\]](#)
-  Mandatory Pre-Bid Meeting (2018-06-26) (4 documents)
- 19.  [Addendum 01.pdf](#) [\[download\]](#)
- 2.  [Attachment A - Contact Information Form.docx](#) [\[download\]](#)
- 4.  [Attachment C - Non-Collusive Affidavit](#) [\[download\]](#)
- 6.  [Attachment E - Local Vendor Preference Certification](#) [\[download\]](#)
- 8.  [Attachment G - Equal Benefits Certification Form](#) [\[download\]](#)
- 10.  [Attachment I - Proposers Qualifications Statement.pdf](#) [\[download\]](#)
- 12.  [Attachment K - Specimen Contract Construction Rev. 2016-03-15.pdf](#) [\[download\]](#)
- 14.  [Attachment M - Mandatory Pre-Bid - Site Visit Confirmation Form 2018-01-10.pdf](#) [\[download\]](#)
- 16.  [Attachment O - Vendor Certification Regarding Scrutinized Companies List.pdf](#) [\[download\]](#)
- 18.  [Attachment Q - Drawings Final.pdf](#) [\[download\]](#)
- 20.  [Addendum 02.pdf](#) [\[download\]](#)

 = Included in Bid Packet     = Excluded from Bid Packet

**Items**

Item	Title	Offers
PSUT-18-05--01-01	<a href="#">Did you submit the Proposal Security/Bid Bonds as required in Section 4.1?</a> 	Y <a href="#">Info</a>
PSUT-18-05--01-02	<a href="#">1.01 General Requirements (Bonds, Insurance, etc.)</a>	Y <a href="#">Info</a>
PSUT-18-05--01-03	<a href="#">1.02 Mobilization / Demobilization</a>	Y <a href="#">Info</a>
PSUT-18-05--01-04	<a href="#">1.03 Stormwater Pollution Prevention</a>	Y <a href="#">Info</a>
PSUT-18-05--01-05	<a href="#">1.04 Maintenance of Traffic</a>	Y <a href="#">Info</a>
PSUT-18-05--01-06	<a href="#">2.01 12" C-900 PVC Water Main</a>	Y <a href="#">Info</a>
PSUT-18-05--01-07	<a href="#">2.02 8" C-900 PVC Water Main</a>	Y <a href="#">Info</a>
PSUT-18-05--01-08	<a href="#">2.03 6" C-900 PVC Water Main</a>	Y <a href="#">Info</a>
PSUT-18-05--01-09	<a href="#">2.04 8" DIP Water Main</a>	Y <a href="#">Info</a>
PSUT-18-05--01-10	<a href="#">2.05 12"x8" DIP Tee</a>	Y <a href="#">Info</a>
PSUT-18-05--01-11	<a href="#">2.06 12"x6" DIP Tee</a>	Y <a href="#">Info</a>
PSUT-18-05--01-12	<a href="#">2.07 12"x6" DIP Reducer</a>	Y <a href="#">Info</a>

PSUT-18-05--01-13	<a href="#">2.08 12" DIP 45° Bend</a>	Y	<a href="#">Info</a>
PSUT-18-05--01-14	<a href="#">2.09 8"x8" DIP Tee</a>	Y	<a href="#">Info</a>
PSUT-18-05--01-15	<a href="#">2.10 8"x6" DIP Tee</a>	Y	<a href="#">Info</a>
PSUT-18-05--01-16	<a href="#">2.11 8"x8" DIP Cross</a>	Y	<a href="#">Info</a>
PSUT-18-05--01-17	<a href="#">2.12 8"x6" DIP Reducer</a>	Y	<a href="#">Info</a>
PSUT-18-05--01-18	<a href="#">2.13 8" DIP Plug</a>	Y	<a href="#">Info</a>
PSUT-18-05--01-19	<a href="#">2.14 8" DIP 11.25° Bend</a>	Y	<a href="#">Info</a>
PSUT-18-05--01-20	<a href="#">2.15 8" DIP 22.5° Bend</a>	Y	<a href="#">Info</a>
PSUT-18-05--01-21	<a href="#">2.16 8" DIP 45° Bend</a>	Y	<a href="#">Info</a>
PSUT-18-05--01-22	<a href="#">2.17 6" DIP 45° Bend</a>	Y	<a href="#">Info</a>
PSUT-18-05--01-23	<a href="#">2.18 6" DIP 90° Bend</a>	Y	<a href="#">Info</a>
PSUT-18-05--01-24	<a href="#">2.19 12" Gate Valve</a>	Y	<a href="#">Info</a>
PSUT-18-05--01-25	<a href="#">2.20 8" Gate Valve</a>	Y	<a href="#">Info</a>

◀ Previous 1 2 3 Next ▶

#### Addendum #1 - Made On Jul 10, 2018 1:07:14 PM EDT

**New Documents**    Addendum 01.pdf

- Added Items**
- [1.01 General Requirements \(Bonds, Insurance, etc.\)](#)
  - [1.02 Mobilization / Demobilization](#)
  - [1.03 Stormwater Pollution Prevention](#)
  - [1.04 Maintenance of Traffic](#)
  - [2.01 12" C-900 PVC Water Main](#)
  - [2.02 8" C-900 PVC Water Main](#)
  - [2.03 6" C-900 PVC Water Main](#)
  - [2.04 8" DIP Water Main](#)
  - [2.05 12"x8" DIP Tee](#)
  - [2.06 12"x6" DIP Tee](#)
  - [2.07 12"x6" DIP Reducer](#)
  - [2.08 12" DIP 45° Bend](#)
  - [2.09 8"x8" DIP Tee](#)
  - [2.10 8"x6" DIP Tee](#)
  - [2.11 8"x8" DIP Cross](#)
  - [2.12 8"x6" DIP Reducer](#)
  - [2.13 8" DIP Plug](#)
  - [2.14 8" DIP 11.25° Bend](#)
  - [2.15 8" DIP 22.5° Bend](#)
  - [2.16 8" DIP 45° Bend](#)
  - [2.17 6" DIP 45° Bend](#)
  - [2.18 6" DIP 90° Bend](#)
  - [2.19 12" Gate Valve](#)
  - [2.20 8" Gate Valve](#)
  - [2.21 6" Gate Valve](#)
  - [2.22 Cut-In and Connect to Existing ACP Water Main](#)
  - [2.23 Cut-In and Connect to Existing Non-ACP Water Main](#)
  - [2.24 Cut-In and Connect to Existing GSP with Poly Tubing](#)
  - [2.25 DIP Point Repairs](#)
  - [2.26 Fire Hydrant Assemblies](#)
  - [2.27 Remove Existing Fire Hydrant Assemblies](#)
  - [2.28 Bacteriological Sample Points](#)
  - [2.29 1" Single, Short Water Services \(from new main to new meter\)](#)
  - [2.30 1" Single, Long Water Services \(from new main to new meter\)](#)
  - [2.31 1.5" Double, Short Water Services \(from new main to new meter\)](#)
  - [2.32 1.5" Double, Long Water Services \(from new main to new meter\)](#)
  - [2.33 Single Meter Box Assembly](#)
  - [2.34 Double Meter Box Assembly](#)
  - [2.35 2" Manual Blow Off Assembly](#)
  - [2.36 Cap, Grout, and Abandon Existing Water Main \(4" and larger\)](#)

- [2.37 Cap and Abandon Existing Water Main \(3" and smaller\)](#)
  - [2.38 Remove Existing Water Meter and Restoration](#)
  - [2.39 Sidewalk Replacement \(4'x5' Sections\)](#)
  - [3.01 1" Single Poly Service \(new meter to existing service or house connection\)](#)
  - [3.02 3/4" Single Brass House Connection \(including pressure valve\)](#)
  - [4.01 Solid Traffic Stripe \(24" White\) - Thermoplastic](#)
  - [4.02 Solid Traffic Stripe \(12" White\) - Thermoplastic](#)
  - [4.03 Solid Traffic Stripe \(6" Double Yellow\) - Thermoplastic](#)
  - [4.04 Solid Traffic Stripe \(6" White\) - Thermoplastic](#)
  - [4.05 Solid Traffic Stripe \(6" Yellow, 10-30 Skip\) - Thermoplastic](#)
  - [4.06 Retro-Reflective Pavement Markers](#)
  - [4.07 Painted School Message](#)
  - [5.01 Permitting Allowance \(\\$10,000\)](#)
- Changed Items**
- [Did you submit the Proposal Security/Bid Bonds as required in Section 4.1?](#)

Addendum #2 - Made On Jul 12, 2018 12:01:22 PM EDT

**New Documents**    Addendum 02.pdf

Change Made On Jul 2, 2018 11:37:05 AM EDT

**New Documents**    2018-06-26 - Pre-Bid Agenda.pdf  
 2018-06-26 - Pre-Bid Sign-In Sheet.pdf  
 EX1 HOUSE CONNECTION EXHIBIT.pdf  
 EX2 HOUSE CONNECTION EXHIBIT.pdf

Contractor Advertisements

[View All Ads](#)

There are no advertisements on this solicitation.

Questions? Contact a BidSync representative: 800-990-9339 or email: [support@bidsync.com](mailto:support@bidsync.com)

[Home](#) | [Bid Search](#) | [Bids](#) | [Orders](#) | [Tools](#) | [Support](#) | [Privacy](#) | [Logout](#)



Copyright © 1999-2018 - BidSync - All rights reserved.

## **ADDENDUM**

Addendum No. 1 (July 10, 2018)

to

Contract Documents

City of Pembroke Pines

### **Pines Village Water Main Replacement – Phase 1**

Pembroke Pines Bid No. PSUT-18-05

CGA Project No. 91-0134.1

To All Bidders:

Bidders for the above-referenced project shall take note of the following changes, revisions, additions, deletions, clarifications, and other modifications to the Plans and Specifications, which in accordance with the Contract Documents, shall become a part of, and have precedence over, anything shown or described otherwise.

#### **IN THE CONTRACT SPECIFICATIONS:**

1. Bid Item No. 2.28 “Bacteriological Sample Points” has INCREASED to 42.
2. Table of Contents has been REPLACED in its entirety.
3. Appendix “A” (Geotechnical Report) has been ADDED.

#### **IN THE CONTRACT DRAWINGS:**

1. Sheet G1 has been REPLACED in its entirety.
2. Sheet G2 has been REPLACED in its entirety.
3. Sheet G3 has been REPLACED in its entirety.
4. Sheet WM2 has been REPLACED in its entirety.
5. Sheet WM3 has been REPLACED in its entirety.
6. Sheet WM4 has been REPLACED in its entirety.
7. Sheet WM6 has been REPLACED in its entirety.
8. Sheet WM7 has been REPLACED in its entirety.
9. Sheet WM9 has been REPLACED in its entirety.
10. Sheet WM10 has been REPLACED in its entirety.
11. Sheet WM13 has been REPLACED in its entirety.
12. Sheet WM14 has been REPLACED in its entirety.

**ADDITIONAL COMMENTS:**

1. Please find responses to Bidder questions uploaded directly to BidSync.

All other documents, specifications, drawings, terms and conditions remain the same.

Bidders must acknowledge receipt of the Addendum in their Bid.

END OF ADDENDUM

## TABLE OF CONTENTS

### TECHNICAL SPECIFICATIONS

#### DIVISION 1 - GENERAL REQUIREMENTS

01010	Summary of Work
01012	Measurement and Payment
01015	General Requirements
01021	Owner Allowances
01045	Cutting and Patching
01046	Modifications to Existing Structures, Piping & Equipment
01050	Field Engineering and Surveying
01090	References
01152	Applications for Payment
01200	Project Meetings
01310	Construction Schedules
01340	Shop Drawings, Working Drawings, and Samples
01370	Schedule of Values
01380	Construction Photographs
01381	Audio/Video Preconstruction Record
01400	Quality Control
01410	Materials and Installation Testing
01505	Control of Work
01510	Temporary Utilities
01530	Existing Utilities
01531	Protection of Existing Property
01540	Security
01550	Site Access and Storage
01570	Traffic Regulation
01600	Material and Equipment
01630	Substitutions
01700	Contract Closeout
01710	Cleaning
01720	Project Record Documents
01730	Operating and Maintenance Data
01740	Warranties and Bonds

#### DIVISION 2 - SITEWORK

02210	Finish Grading
02221	Trenching, Bedding, and Backfill for Pipe
02276	Stormwater Pollution Prevention
02341	Horizontal Directional Drilling (HDD) with (HDPE) Pipe
02430	Sodding
02513	Asphaltic Concrete Paving

**DIVISION 15 – MECHANICAL**

- 15010 Testing Piping Systems
- 15060 HDPE Pipe
- 15062 Ductile Iron Pipe and Fittings
- 15065 Polyvinyl Chloride (PVC) Water Main Pipe
- 15100 Valves and Appurtenances

**APPENDIX “A”**

Geotechnical Report

APPENDIX A – GEOTECHNICAL REPORT

THIS PAGE LEFT INTENTIONALLY BLANK

**REPORT OF  
GEOTECHNICAL EXPLORATION**

**PINES VILLAGE WATER MAIN REPLACEMENT  
SW 72<sup>ND</sup> AVENUE EAST TO SW 67<sup>TH</sup> AVENUE  
PEMBROKE PINES, FLORIDA**

**FOR**

**CALVIN, GIORDANO & ASSOCIATES, INC.  
1800 ELLER DRIVE  
SUITE 600  
FORT LAUDERDALE, FLORIDA 33316**

**PREPARED BY**

**NUTTING ENGINEERS OF FLORIDA, INC.  
1310 NEPTUNE DRIVE  
BOYNTON BEACH, FLORIDA 33426**

**ORDER NO. 11036.73**

**JUNE 2018**



Geotechnical & Construction Materials  
Engineering, Testing, & Inspection  
Environmental Services

Offices throughout the state of Florida

[www.nuttingengineers.com](http://www.nuttingengineers.com) [info@nuttingengineers.com](mailto:info@nuttingengineers.com)



June 29, 2018

Mr. Nico Kanelidis, P.E.  
Calvin Giordano and Associates, Inc.  
1800 Eller Drive, Suite 600  
Fort Lauderdale, Florida 33316  
Phone: 954-921-7781 Email: nkanelidis@cgasolutions.com

Subject: Report of Geotechnical Exploration  
**Pines Village Water Main Replacement**  
SW 72<sup>nd</sup> Avenue East to SW 67<sup>th</sup> Avenue  
Pembroke Pines, Florida

Dear Mr. Kanelidis:

Nutting Engineers of Florida, Inc. (NE), has performed a Geotechnical Exploration for the proposed utility renovations along the above referenced roadways in Pembroke Pines, Florida. This exploration was performed in accordance with the written authorization to proceed provided by Calvin Giordano and Associates, Inc. dated June 12, 2018. This study was performed to develop information regarding existing subsurface conditions at specific test locations. This information which along with proposed construction information provided was used to develop opinions regarding the development for the proposed new water main. This report presents our findings and recommendations based upon the information examined at the time of this evaluation.

### PROJECT INFORMATION

Based on discussions and review of site plans, we understand that plans include new water main replacements. The replacement will consist of approximately 20,000 linear feet of new 8-inch diameter pipes from approximately SW 72<sup>nd</sup> Avenue east to SW 67<sup>th</sup> Avenue and from SW 6<sup>th</sup> Street to SW 9<sup>th</sup> Street. We were provided a plan detailing the area of the proposed construction. The work is located within approximately Phase 5 of the work as detailed by your plan.

It is currently anticipated that the water main replacement will consist of an open trench style construction with the new lines being installed approximately two and a half to three feet below existing grades, subject to verification by others. It is also currently anticipated that the work to be performed will occur within the existing roadways along the construction route; therefore new asphalt pavement sections will also be constructed. If this information is incorrect our office must be notified in writing in order to determine if additional test borings are needed to address the revised construction information.

Based on current site elevations and review of plans provided to our office, we estimate that existing grades are within approximately six inches of final elevations; however, the final elevations shall be determined by a civil engineer, or other qualified party. NE should be notified in writing by the client of any changes in the proposed construction along with a request to amend our analysis and/or recommendations within.

## GENERAL SUBSURFACE CONDITIONS

### Soil Survey Maps

As part of the geotechnical exploration, we have reviewed available Natural Resources Conservation Service (NRCS) online soil survey map for Broward County. The USDA online NRCS mapping provides qualitative information about potential general shallow soil conditions in the project vicinity.

This information was derived from approximately 6 ft. deep manual auger borings, aerial photo and surface feature interpretation at some point in the past. The NRCS data may or may not reflect actual current site conditions. As indicated in the online Soil Survey Mapping at the time the survey was conducted, two main soil descriptions were identified within the subject construction area. The soil types are outlined below.

#### Immokalee-Limestone substratum, Urban Land Complex

This series is mapped from approximately SW 70<sup>th</sup> Avenue due east within the construction area. About 30 to 50 percent of the complex is open land, such as lawns, vacant lots, and playgrounds; and about 40 to 70 percent is Urban land, or areas covered by sidewalks, streets, parking lots, and buildings, where the natural soil cannot be observed. The open land consists of nearly level, poorly drained Immokalee, limestone substratum, soils. Typically, the surface layer is very dark gray sand about 5 inches thick. The subsurface layer is light gray and white sand to a depth of 48 inches. The subsoil is black sand about 10 inches thick. Soft, porous limestone containing solution holes filled with sand and rock fragments is at a depth of about 58 inches.

#### Immokalee-Urban Land Complex

This series is mapped from approximately SW 70<sup>th</sup> Avenue due west within the construction area. The Immokalee series consists of nearly level, poorly drained soils on broad, low ridges in the eastern part of the survey. The series formed in unconsolidated beds of marine sand. This complex consists of Immokalee fine sand and Urban land soils. The Urban land soils cannot be observed due to their being covered by buildings, asphalt and concrete sidewalks, etc. We note that the maximum depth of the survey is approximately six feet.

## **Subsurface Exploration**

NUTTING ENGINEERS OF FLORIDA, INC. performed fifteen Standard Penetration Test (SPT) borings (ASTM D-1586) to depths of six feet below the land surface. The locations of the test borings are indicated on the boring location plan presented in the Appendix of this report. We note that the number of borings and locations were determined based on the site plan prepared by Calvin Giordano and Associates, Inc. The boring locations were identified in the field using approximate methods; namely, a measuring wheel and available surface controls. As such the soil boring locations should be considered to be approximate.

## **Pavement Section Cores**

In order to better evaluate the existing pavement section materials and thicknesses, a total of fifteen 6-inch diameter pavement section cores were performed at each of the boring locations indicated on the Boring Location Plan in the Appendix of this report. The core locations were identified in the field using approximate methods; namely, a measuring wheel and available surface controls. As such the core locations should be considered to be approximate. Please refer to the Report of Asphalt Thickness in the Appendix section of this report for the pavement section findings.

## **Asphalt Core Findings**

In summary, the thickness of the asphalt ranged from 1.21 to 2.19 inches. The asphalt was generally observed to consist of one to two lifts of asphalt material.

The base course material in the cores consisted of a mix of limerock fragments with little sand approximately four to eight inches in thickness. Below the base course a subbase course consisting of sand was observed with a thickness greater than twelve inches.

## **Test Boring Results**

In general, the soil boring locations recorded a pavement section surface layer in the upper six to ten inches (asphalt/basecourse), underlain by an intermix of medium dense to dense sands to a depth ranging from two to six feet, the maximum depth explored. Below the sand soils in test borings B-1 through B-6, B-8, and B-9 (eastern side of site) at approximately two feet below existing grade, soft to medium hard porous limestone and sand was encountered to a depth of six feet, the maximum depth explored. Please see the enclosed soil classification sheet in the Appendix of this report for additional important information regarding these descriptions, the field evaluation and other related information.

The very loose conditions indicated at depths of two to six feet below the ground surface in some of the test borings potentially represent where the split-spoon sampler penetrated through sand filled vertical solution holes within the limestone stratum. In order to verify this condition additional exploration via backhoe excavated test pits would need to be performed.

### **Rock Formation Note:**

It is possible that the sandstone/limestone encountered may be present in areas other than recorded in the test boring. Generally, rock in the South Florida area may include limestone or sandstone which has irregularities and discontinuities including vertical and horizontal solution features, varying surface and bottom elevations, and varying degrees of hardness. The rock features may also contain intervening sand and other material filled lenses. The standard penetration test borings executed in this evaluation were performed in accordance with the normal standard of care in this area. Despite this, this process may sometimes fail to detect the presence of rock strata by passing through solution features. Solution features can be very common in rock strata in Southeast Florida.

Also given the brittle nature of some rock strata, rocks may readily shatter when hit by the split spoon. Despite this, these strata which may not be depicted in the soil boring logs may present significant resistance to excavation. Resistance to excavation may generate vibrations which may be perceived to or actually induce settlements in subject nearby structures. Pre and post condition surveys and vibration monitoring would be advantageous in such circumstances. For these reasons, appropriate due care shall be exercised by contractors performing excavation operations in this area, utilizing local experience and test excavations if feasible.

### **Groundwater Information**

The immediate groundwater level was measured at the boring locations at the time of drilling. The groundwater level was encountered at an approximate depth ranging from five to six feet below the existing ground surface at the time of drilling.

The immediate depth to groundwater measurements presented in this report will not provide a reliable indication of stabilized or more long term depth to groundwater at this site. Water table elevations can vary dramatically with time through rainfall, droughts, storm events, flood control activities, nearby surface water bodies, tidal activity, pumping and many other factors. For these reasons, this immediate depth to water data **should not** be relied upon alone for project design considerations.

## **ANALYSIS AND RECOMMENDATIONS**

Based on the borings performed for this project, it is our opinion that the proposed utility lines and manholes along the roadway section explored may be supported on in-place soils using conventional installation and compaction techniques. It appears that with exception to any root material, the excavated soils as recorded in the soil borings may be used for pipe bedding and general backfill. During the excavation process, any questionable soils, boulders, or other unforeseen conditions encountered should be evaluated by a representative of Nutting Engineers.

**It must be anticipated that some hard limestone material will be encountered during excavation operations starting at depths of approximately two feet below existing grade. Appropriate rock excavation equipment must be planned for this project.**

Based upon the depth to ground water encountered in our explorations, we anticipate that dewatering may be necessary. If dewatering is to be performed, it is recommended that such work be designed, permitted and executed by qualified knowledgeable parties thoroughly experienced with similar local dewatering operations.

Backfill should be performed in accordance with the recommendations presented herein or as specified by the civil engineer. Sand and/or limestone fragments encountered above the unsuitable material layer may be stockpiled for later use.

Fill needed to bring the site to back to grade may be placed in lifts not exceeding twelve inches in loose thickness. Each lift should be thoroughly compacted until densities equivalent to at least 95 percent of the modified Proctor maximum dry density (ASTM D-1557) are uniformly obtained. Fill should consist of granular soil, with less than ten percent passing the No. 200 sieve, free of rubble, organics (five percent or less) clay, debris and other unsuitable material. The fill should have ASTM designation (D-2487) of GP, GW, SP, or SW, with a maximum particle size of no more than three inches or as otherwise approved by the geotechnical engineer.

### **Dewatering**

The immediate groundwater table was encountered up to a depth of approximately five to six feet below the existing ground surface and is subject to variation as stated. As stated previously, other qualified personnel shall be responsible for the design, permitting, maintenance, and other factors related to dewatering and groundwater control, if needed. We note that during construction, if foundation compaction is needed then the groundwater level should be maintained at least two feet below the bottom of the excavations so that adequate compaction and density tests can be performed. If this is not feasible, our office should be contacted for additional consultation.

### **Trench Excavations**

Based on the borings performed for this project, it appears that an unsupported vertical cut is not considered stable or safe during construction. An unsupported excavation may cause the collapse of the sidewalls when workmen are in the excavations. An excavation collapse can also damage the formwork and/or steel for the proposed structure as it is being constructed. Therefore, in our opinion and following the current regulations established by OSHA for excavations, cut slopes are required. If slopes cannot be maintained, or are not practical, then the excavation must be cased or shored. Shoring procedures should conform to those presented in the Occupational Safety and Health Administration (OSHA) standards.

Excavations of five feet or more will need to be sloped or shored in accordance with State of Florida and OSHA recommendations. It is our opinion that if the excavation remains dry, temporary side slopes of 3 horizontal to 1 vertical may be used for this project. Where existing utilities, roadways or other obstructions prevent sloping the soils, shoring will be required. Where temporary shoring will be required, the soil parameter table should be used for earth pressure determinations. The limestone encountered may generally be classified as a Type B material, however where sands are encountered procedures should be in accordance with the Type C category.

**For Generalized Asphalt Pavement Section:** The following would apply within pavement areas which require trench repair. The pavement areas should be compacted to a minimum of 98 percent of the modified Proctor maximum dry density to a depth of at least 12 inches below the subgrade level. We recommend that stabilized subgrade having a minimum Limerock Bearing Ratio (LBR) of 40 be placed to a depth of approximately one foot below the base course. The base course will range from approximately 6 to 8 inches, and should have a minimum LBR of 100. The pavement material and thickness should be based on design requirements as determined by the project Civil Engineer.

It does not appear that the natural ground water level should have an impact on the roadway pavement. Wet season water levels and major rain events should be anticipated to be somewhat higher than we encountered in our study, which may affect the pavement section. Please review our discussions of groundwater in the Groundwater Information section of this report. The project Civil Engineer should review our findings in order to provide final pavement section specifications for the proposed roadway construction.

## GENERAL INFORMATION

Our client for this geotechnical evaluation was:

Mr. Nico Kanelidis  
Calvin Giordano and Associates, Inc.  
1800 Eller Drive, Suite 600  
Fort Lauderdale, Florida 33316

The contents of this report are for the exclusive use of the client, the client's design & construction team and governmental authorities for this specific project exclusively. Information conveyed in this report shall not be used or relied upon by other parties or for other projects without the expressed written consent of Nutting Engineers of Florida, Inc. This report discusses geotechnical considerations for this site based upon observed conditions and our understanding of proposed construction for foundation support. Environmental issues including (but not limited to), soil and/or groundwater contamination, and other environmental considerations are beyond our scope of service for this project. As such, this report should not be used or relied upon for evaluation of environmental issues.

Prior to initiating compaction operations, we recommend that representative samples of the structural fill material to be used and acceptable in-place soils be collected and tested to determine their compaction and classification characteristics. The maximum dry density, optimum moisture content, gradation and plasticity characteristics should be determined. These tests are needed for compaction quality control of the structural fill and existing soils, and to determine if the fill material is acceptable.

If conditions are encountered which are not consistent with the findings presented in this report, or if proposed construction is moved from the location investigated, this office shall be notified immediately so that the condition or change can be evaluated and appropriate action taken.

The vibratory compaction equipment may cause vibrations that could be felt by persons within nearby buildings and could potentially induce structural settlements. Additionally, preexisting settlements may exist within these structures that could be construed to have been caused or worsened by the proposed vibratory compaction after the fact. Pre- and post conditions surveys of these structures along with the vibration monitoring during vibratory compaction could be performed to better evaluate this concern. The contractor should exercise due care during the performance of the vibratory compaction work with due consideration of potential impacts on existing structures. If potential vibrations and impacts are not considered tolerable, then alternate foundation modification techniques should be considered.

Nutting Engineers of Florida, Inc. shall bear no liability for the implementation of recommended inspection and testing services as described in this report if implemented by others. Nutting has no ability to verify the completeness, accuracy or proper technique of such procedures if performed by others.

Excavations of five feet or more in depth should be sloped or shored in accordance with OSHA and State of Florida requirements.

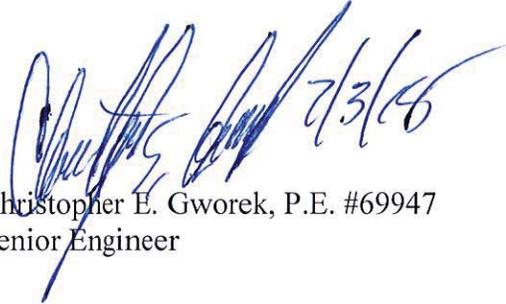
The Geotechnical Engineer warrants that the findings, recommendations, specifications, or professional advice contained herein, have been presented after being prepared in accordance with general accepted professional practice in the field of foundation engineering, soil mechanics and engineering geology. No other warranties are implied or expressed.

We appreciate the opportunity to be of service on this project. If we can be of any further assistance, or if you need additional information, please contact us at your convenience.

Sincerely,  
**NUTTING ENGINEERS OF FLORIDA, INC.**



Richard C. Wohlfarth, P.E.  
Director of Engineering



Christopher E. Gworek, P.E. #69947  
Senior Engineer

Appendix:     Boring Location Plan  
                  Test Boring Results  
                  Report of Asphalt Thickness  
                  Limitations of Liability  
                  Soil Classification Criteria

REP CALVIN GIORDANO PINE VILLAGE WATER MAIN REPLACE SW 72-SW 67 AVE PEMBROKE CEG



 <p><b>NUTTING ENGINEERS</b> OF FLORIDA, INC. ESTABLISHED 1967</p>	<p>Calvin Giordano &amp; Associates, Inc. <b>Pines Village Water Main Replacement</b> Pembroke Pines, Florida</p>	<p>PROJECT NO. 11036.73</p>	<p>APPROXIMATE TEST LOCATION PLAN</p>
<p>GEOTECHNICAL EXPLORATION</p>		<p>FIG. 1</p>	



1310 Neptune Drive  
 Boynton Beach, Fl., 33426  
 Telephone: 561-736-4900  
 Fax: 561-737-9975

**BORING NUMBER B-1**

PAGE 1 OF 1

CLIENT Calvin Giordano & Associates, Inc.  
 PROJECT LOCATION Pembroke Pines, Florida

PROJECT NUMBER 11036.73  
 PROJECT NAME Pines Village Water Main Replacement

DATE STARTED 6/21/18 COMPLETED 6/21/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown  
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:  
 LOGGED BY FGE CHECKED BY C. Gworek  $\nabla$  AT TIME OF DRILLING 5.2 ft  
 APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL      MC      LL 20      40      60      80			
						□ FINES CONTENT (%) □			
						20	40	60	80
0.0		ASPHALT, basecourse 8"							
		Brown fine SAND, some limestone fragments	SS 1	10-14-15-14	29			▲	
2.5			SS 2	16-11-8-11	19			▲	
5.0	$\nabla$		SS 3	10-3-11	14			▲	
		Bottom of hole at 6.0 feet.							

TEST NUTTING BOREHOLE 1-11036.73 CALVIN GIORDANO & ASSOCIATES - PINES VILLAGE WATER MAIN REPLACEMENT PEMBROKE PINES.GPJ GINT US.GDT 6/29/18



1310 Neptune Drive  
 Boynton Beach, Fl., 33426  
 Telephone: 561-736-4900  
 Fax: 561-737-9975

CLIENT Calvin Giordano & Associates, Inc. PROJECT NUMBER 11036.73  
 PROJECT LOCATION Pembroke Pines, Florida PROJECT NAME Pines Village Water Main Replacement

DATE STARTED 6/21/18 COMPLETED 6/21/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown  
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:  
 LOGGED BY FGE CHECKED BY C. Gworek  $\nabla$  AT TIME OF DRILLING 5.2 ft  
 APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						PL	MC	LL	
						20	40	60	80
						□ FINES CONTENT (%) □			
						20	40	60	80
0.0	ASPHALT	ASPHALT, basecourse 7"							
0.0 - 2.5	Brown fine SAND	Brown fine SAND	SS 1	15-9-9-11	18		▲		
2.5 - 5.0	Lt. brown fine SAND and LIMESTONE	Lt. brown fine SAND and LIMESTONE	SS 2	7-11-13-10	24		▲		
5.0 - 6.0	Bottom of hole at 6.0 feet.	Bottom of hole at 6.0 feet.	SS 3	6-4-3-4	7	▲			

TEST NUTTING BOREHOLE 1-11036.73 CALVIN GIORDANO & ASSOCIATES - PINES VILLAGE WATER MAIN REPLACEMENT PEMBROKE PINES.GPJ GINT US.GDT 6/29/18



1310 Neptune Drive  
 Boynton Beach, FL, 33426  
 Telephone: 561-736-4900  
 Fax: 561-737-9975

**BORING NUMBER B-3**

CLIENT Calvin Giordano & Associates, Inc. PROJECT NUMBER 11036.73  
 PROJECT LOCATION Pembroke Pines, Florida PROJECT NAME Pines Village Water Main Replacement

DATE STARTED 6/21/18 COMPLETED 6/21/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown  
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:  
 LOGGED BY FGE CHECKED BY C. Gworek  $\nabla$  AT TIME OF DRILLING 5.2 ft  
 APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL      MC      LL  ----- ----- -----  20    40    60    80			
						<input type="checkbox"/> FINES CONTENT (%) <input type="checkbox"/> 20    40    60    80			
0.0		ASPHALT, basecourse 8"							
1.5		Lt. brown fine SAND	SS 1	17-9-14-14	23			▲	
2.5		Lt. brown fine SAND and LIMESTONE	SS 2	7-4-4-4	8			▲	
5.0			SS 3	4-2-1-2	3			▲	
6.0		Bottom of hole at 6.0 feet.							



1310 Neptune Drive  
 Boynton Beach, FL, 33426  
 Telephone: 561-736-4900  
 Fax: 561-737-9975

CLIENT Calvin Giordano & Associates, Inc.  
 PROJECT LOCATION Pembroke Pines, Florida

PROJECT NUMBER 11036.73  
 PROJECT NAME Pines Village Water Main Replacement

DATE STARTED 6/21/18 COMPLETED 6/21/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown  
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:  
 LOGGED BY FGE CHECKED BY C. Gworek  $\nabla$  AT TIME OF DRILLING 5.7 ft  
 APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL	MC	LL	
						20	40	60	80
						□ FINES CONTENT (%) □			
						20	40	60	80
0.0		ASPHALT, basecourse 8"							
		Lt. brown fine SAND	SS 1	9-7-10-11	17		▲		
2.5		Lt. brown fine SAND and LIMESTONE	SS 2	5-5-4-4	9		▲		
5.0			SS 3	4-3-12-10	15		▲		
		Bottom of hole at 6.0 feet.							

TEST NUTTING BOREHOLE 1-11036.73 CALVIN GIORDANO & ASSOCIATES - PINES VILLAGE WATER MAIN REPLACEMENT, PEMBROKE PINES, FL, GINT US, GDT 6/29/18



1310 Neptune Drive  
 Boynton Beach, FL, 33426  
 Telephone: 561-736-4900  
 Fax: 561-737-9975

CLIENT Calvin Giordano & Associates, Inc.  
 PROJECT LOCATION Pembroke Pines, Florida

PROJECT NUMBER 11036.73  
 PROJECT NAME Pines Village Water Main Replacement

DATE STARTED 6/21/18 COMPLETED 6/21/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown  
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:  
 LOGGED BY FGE CHECKED BY C. Gworek  $\nabla$  AT TIME OF DRILLING 5.7 ft  
 APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL — MC — LL 20 40 60 80 <input type="checkbox"/> FINES CONTENT (%) <input type="checkbox"/> 20 40 60 80			
0.0		ASPHALT, basecourse 8"							
1.5		Lt. brown fine SAND	SS 1	7-7-9-9	16		▲		
2.5		Lt. brown fine SAND and LIMESTONE	SS 2	7-4-6-12	10		▲		
5.0			SS 3	10-8-9-3	17		▲		
6.0		Bottom of hole at 6.0 feet.							



1310 Neptune Drive  
 Boynton Beach, FL, 33426  
 Telephone: 561-736-4900  
 Fax: 561-737-9975

CLIENT Calvin Giordano & Associates, Inc.  
 PROJECT LOCATION Pembroke Pines, Florida

PROJECT NUMBER 11036.73  
 PROJECT NAME Pines Village Water Main Replacement

DATE STARTED 6/21/18 COMPLETED 6/21/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown  
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:  
 LOGGED BY FGE CHECKED BY C. Gworek  $\nabla$  AT TIME OF DRILLING 5.5 ft  
 APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL	MC	LL	
						20	40	60	80
						□ FINES CONTENT (%) □			
						20	40	60	80
0.0		ASPHALT, basecourse 6"							
		Lt. brown fine SAND	SS 1	12-10-15-20	25			▲	
2.5		Lt. brown fine SAND and LIMESTONE	SS 2	11-9-6-7	15			▲	
5.0			SS 3	5-2-2-3	4			▲	
		Bottom of hole at 6.0 feet.							



1310 Neptune Drive  
 Boynton Beach, FL, 33426  
 Telephone: 561-736-4900  
 Fax: 561-737-9975

**BORING NUMBER B-7**

PAGE 1 OF 1

CLIENT Calvin Giordano & Associates, Inc.  
 PROJECT LOCATION Pembroke Pines, Florida

PROJECT NUMBER 11036.73  
 PROJECT NAME Pines Village Water Main Replacement

DATE STARTED 6/21/18 COMPLETED 6/21/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown  
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:  
 LOGGED BY FGE CHECKED BY C. Gworek  AT TIME OF DRILLING 5.5 ft  
 APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL	MC	LL	
						20	40	60	80
						□ FINES CONTENT (%) □			
						20	40	60	80
0.0		ASPHALT, basecourse 8"							
		Lt. brown fine SAND	SS 1	8-11-8-11	19		▲		
2.5			SS 2	7-8-6-8	14		▲		
5.0			SS 3	5-2-2-3	4		▲		
		Bottom of hole at 6.0 feet.							

TEST NUTTING BOREHOLE 1-11036.73 CALVIN GIORDANO & ASSOCIATES - PINES VILLAGE WATER MAIN REPLACEMENT PEMBROKE PINES GP. GINT US GDT 6/29/18



1310 Neptune Drive  
 Boynton Beach, FL, 33426  
 Telephone: 561-736-4900  
 Fax: 561-737-9975

**BORING NUMBER B-8**

PAGE 1 OF 1

CLIENT Calvin Giordano & Associates, Inc.  
 PROJECT LOCATION Pembroke Pines, Florida

PROJECT NUMBER 11036.73  
 PROJECT NAME Pines Village Water Main Replacement

DATE STARTED 6/21/18 COMPLETED 6/21/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown  
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:  
 LOGGED BY FGE CHECKED BY C. Gworek  $\nabla$  AT TIME OF DRILLING 5.5 ft  
 APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL	MC	LL	
						20	40	60	80
						□ FINES CONTENT (%) □			
						20	40	60	80
0.0	ASPHALT	ASPHALT, basecourse 6"							
0.0 - 2.5	Lt. brown fine SAND	Lt. brown fine SAND	SS 1	14-10-10-13	20		▲		
2.5 - 5.0	Lt. brown fine SAND and LIMESTONE	Lt. brown fine SAND and LIMESTONE	SS 2	6-5-5-5	10		▲		
5.0 - 6.0			SS 3	6-6-7-11	13		▲		
6.0		Bottom of hole at 6.0 feet.							

Disclaimer Nutting Engineers of Florida, Inc. accepts no liability for the consequences of the independent interpretation of drilling logs by others.



1310 Neptune Drive  
 Boynton Beach, FL., 33426  
 Telephone: 561-736-4900  
 Fax: 561-737-9975

CLIENT Calvin Giordano & Associates, Inc.  
 PROJECT LOCATION Pembroke Pines, Florida

PROJECT NUMBER 11036.73  
 PROJECT NAME Pines Village Water Main Replacement

DATE STARTED 6/21/18 COMPLETED 6/21/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown  
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:  
 LOGGED BY FGE CHECKED BY C. Gworek ∇ AT TIME OF DRILLING 5.3 ft  
 APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL — MC — LL 20 40 60 80 <input type="checkbox"/> FINES CONTENT (%) <input type="checkbox"/> 20 40 60 80			
0.0		ASPHALT, basecourse 6"							
1.8		Lt. brown fine SAND	SS 1	9-9-8-10	17				▲
2.5		Lt. brown fine SAND and LIMESTONE	SS 2	5-3-3-2	6				▲
5.0			SS 3	3-3-3-5	6				▲
		Bottom of hole at 6.0 feet.							

TEST NUTTING BOREHOLE 1-11036.73 CALVIN GIORDANO & ASSOCIATES - PINES VILLAGE WATER MAIN REPLACEMENT PEMBROKE PINES GPJ GINT US.GDT 6/29/18



1310 Neptune Drive  
 Boynton Beach, Fl., 33426  
 Telephone: 561-736-4900  
 Fax: 561-737-9975

**BORING NUMBER B-10**

PAGE 1 OF 1

CLIENT Calvin Giordano & Associates, Inc.  
 PROJECT LOCATION Pembroke Pines, Florida

PROJECT NUMBER 11036.73  
 PROJECT NAME Pines Village Water Main Replacement

DATE STARTED 6/21/18 COMPLETED 6/21/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown  
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:  
 LOGGED BY FGE CHECKED BY C. Gworek  $\nabla$  AT TIME OF DRILLING 5.2 ft  
 APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL      MC      LL 20    40    60    80			
						□ FINES CONTENT (%) □			
						20	40	60	80
0.0		ASPHALT, basecourse 10"							
		Lt. brown fine SAND	SS 1	18-15-12-15	27			▲	
2.5			SS 2	10-8-7-6	15			▲	
5.0	$\nabla$		SS 3	5-4-5-5	9			▲	
		Bottom of hole at 6.0 feet.							

TEST NUTTING BOREHOLE 1-11036.73 CALVIN GIORDANO & ASSOCIATES - PINES VILLAGE WATER MAIN REPLACEMENT PEMBROKE PINES.GPJ GINT US.GDT 6/29/18



1310 Neptune Drive  
 Boynton Beach, FL., 33426  
 Telephone: 561-736-4900  
 Fax: 561-737-9975

**BORING NUMBER B-11**

PAGE 1 OF 1

CLIENT Calvin Giordano & Associates, Inc.  
 PROJECT LOCATION Pembroke Pines, Florida

PROJECT NUMBER 11036.73  
 PROJECT NAME Pines Village Water Main Replacement

DATE STARTED 6/21/18 COMPLETED 6/21/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown  
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:  
 LOGGED BY FGE CHECKED BY C. Gworek  $\nabla$  AT TIME OF DRILLING 5.6 ft  
 APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL	MC	LL	
						20	40	60	80
						□ FINES CONTENT (%) □			
						20	40	60	80
0.0		ASPHALT, basecourse 6"							
1.8		Lt. brown fine SAND	SS 1	17-13-14-17	27				▲
2.5			SS 2	10-4-9-11	13				▲
5.0			SS 3	10-6-7-7	13				▲
		Bottom of hole at 6.0 feet.							

TEST NUTTING BOREHOLE 1-11036.73 CALVIN GIORDANO & ASSOCIATES - PINES VILLAGE WATER MAIN REPLACEMENT PEMBROKE PINES GPJ GINT US GDT 6/29/18



1310 Neptune Drive  
 Boynton Beach, Fl., 33426  
 Telephone: 561-736-4900  
 Fax: 561-737-9975

**BORING NUMBER B-12**

PAGE 1 OF 1

CLIENT Calvin Giordano & Associates, Inc.  
 PROJECT LOCATION Pembroke Pines, Florida

PROJECT NUMBER 11036.73  
 PROJECT NAME Pines Village Water Main Replacement

DATE STARTED 6/21/18 COMPLETED 6/21/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown  
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:  
 LOGGED BY FGE CHECKED BY C. Gworek  $\nabla$  AT TIME OF DRILLING 5.6 ft  
 APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL      MC      LL 20    40    60    80			
						□ FINES CONTENT (%) □			
						20	40	60	80
0.0		ASPHALT, basecourse 6"							
		Dk. brown fine SAND	SS 1	9-7-7-8	14				
2.5		Lt. brown fine SAND	SS 2	6-8-7-12	15				
5.0			SS 3	8-4-4-3	8				
		Bottom of hole at 6.0 feet.							

TEST NUTTING BOREHOLE 1-11036.73 CALVIN GIORDANO & ASSOCIATES - PINES VILLAGE WATER MAIN REPLACEMENT PEMBROKE PINES.GPJ GINT US.GDT 6/29/18



1310 Neptune Drive  
 Boynton Beach, FL, 33426  
 Telephone: 561-736-4900  
 Fax: 561-737-9975

CLIENT Calvin Giordano & Associates, Inc. PROJECT NUMBER 11036.73  
 PROJECT LOCATION Pembroke Pines, Florida PROJECT NAME Pines Village Water Main Replacement

DATE STARTED 6/21/18 COMPLETED 6/21/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown  
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:  
 LOGGED BY FGE CHECKED BY C. Gworek  $\nabla$  AT TIME OF DRILLING 5.3 ft  
 APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL	MC	LL	
						20	40	60	80
						□ FINES CONTENT (%) □			
						20	40	60	80
0.0		ASPHALT, basecourse 6"							
		Lt. brown fine SAND	SS 1	10-11-12-17	23				
2.5			SS 2	4-6-5-4	11				
5.0			SS 3	5-4-4-5	8				
		Bottom of hole at 6.0 feet.							

TEST NUTTING BOREHOLE 1-11036.73 CALVIN GIORDANO & ASSOCIATES - PINES VILLAGE WATER MAIN REPLACEMENT PEMBROKE PINES.GPJ GINT US.GDT 6/29/18



1310 Neptune Drive  
 Boynton Beach, FL, 33426  
 Telephone: 561-736-4900  
 Fax: 561-737-9975

# BORING NUMBER B-14

CLIENT Calvin Giordano & Associates, Inc.  
 PROJECT LOCATION Pembroke Pines, Florida

PROJECT NUMBER 11036.73  
 PROJECT NAME Pines Village Water Main Replacement

DATE STARTED 6/21/18 COMPLETED 6/21/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown  
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:  
 LOGGED BY FGE CHECKED BY C. Gworek  $\nabla$  AT TIME OF DRILLING 5.7 ft  
 APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL      MC      LL  ----- ----- -----  20    40    60    80			
						□ FINES CONTENT (%) □			
						20	40	60	80
0.0		ASPHALT, basecourse 9"							
		Lt. brown fine SAND	SS 1	13-10-10-17	20			▲	
2.5			SS 2	11-14-8-8	22			▲	
5.0			SS 3	7-9-5-7	14			▲	
		Bottom of hole at 6.0 feet.							

TEST NUTTING BOREHOLE 1-11036.73 CALVIN GIORDANO & ASSOCIATES - PINES VILLAGE WATER MAIN REPLACEMENT PEMBROKE PINES.GPJ GINT US.GDT 6/29/18



1310 Neptune Drive  
 Boynton Beach, FL, 33426  
 Telephone: 561-736-4900  
 Fax: 561-737-9975

**BORING NUMBER B-15**

CLIENT Calvin Giordano & Associates, Inc.  
 PROJECT LOCATION Pembroke Pines, Florida

PROJECT NUMBER 11036.73  
 PROJECT NAME Pines Village Water Main Replacement

DATE STARTED 6/21/18 COMPLETED 6/21/18 SURFACE ELEVATION REFERENCE Approx. @ Road Crown  
 DRILLING METHOD Standard Penetration Boring GROUND WATER LEVELS:  
 LOGGED BY FGE CHECKED BY C. Gworek  $\nabla$  AT TIME OF DRILLING 5.6 ft  
 APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲			
						10	20	30	40
						PL      MC      LL 20    40    60    80			
						□ FINES CONTENT (%) □			
						20	40	60	80
0.0		ASPHALT, basecourse 6"							
		Lt. brown fine SAND	SS 1	10-14-15-17	29				▲
2.5			SS 2	12-9-8-8	17				▲
5.0			SS 3	4-5-4-6	9				▲
		Bottom of hole at 6.0 feet.							

TEST NUTTING BOREHOLE 1-11036.73 CALVIN GIORDANO & ASSOCIATES - PINES VILLAGE WATER MAIN REPLACEMENT PEMBROKE PINES.GPJ GINT US.GDT 6/29/18



Geotechnical & Construction Materials  
Engineering, Testing, & Inspection  
Environmental Services

Offices throughout the state of Florida

www.nuttingengineers.com info@nuttingengineers.com

## REPORT OF ASPHALT THICKNESS

Client: Calvin Girodano & Associates  
 Project Name: Pines Village Water Main Replacement  
 Project Location: SW 72nd Ave due East to SW 67th Ave, SW 6th Street South to SW 9th Street, Pembroke Pines, FL  
 Order No. 11036.73

Asphalt Core No.	Thickness #1	Thickness #2	Thickness #3	Thickness #4	Average Thickness (inches)	Base Course Thickness (Approx. inches)
C-1	1.940	1.919	1.980	1.959	1.950	6
C-2	2.228	2.006	2.105	1.991	2.083	5
C-3	1.459	1.446	1.351	1.360	1.404	6
C-4	2.100	2.182	2.125	2.347	2.189	6
C-5	1.480	1.443	1.497	1.524	1.486	5
C-6	1.712	1.757	1.401	1.512	1.596	4
C-7	1.290	1.376	1.304	1.092	1.266	7
C-8	1.460	1.462	1.472	1.544	1.485	4
C-9	1.355	1.189	1.303	1.233	1.270	5
C-10	1.885	1.948	1.881	1.855	1.892	8
C-11	1.345	1.210	1.051	1.220	1.207	5
C-12	1.317	1.125	1.243	1.233	1.230	6
C-13	1.890	1.895	1.857	1.824	1.867	6
C-14	1.358	1.364	1.380	1.371	1.368	7
C-15	1.644	1.605	1.524	1.625	1.600	4

Note: Asphalt Thickness was Determined Using Caliper. Base Course Thickness Could Only Be Determined To The Nearest Inch Due To Variable Cohesion.

TABLE ASPHALT THICKNESS CALGIO SW 72ND PEMBROKE PINES CEG

## LIMITATIONS OF LIABILITY

### WARRANTY

We warrant that the services performed by Nutting Engineers of Florida, Inc. are conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession in our area currently practicing under similar conditions at the time our services were performed. **No other warranties, expressed or implied, are made.** While the services of Nutting Engineers of Florida, Inc. are a valuable and integral part of the design and construction teams, we do not warrant, guarantee or insure the quality, completeness, or satisfactory performance of designs, construction plans, specifications we have not prepared, nor the ultimate performance of building site materials or assembly/construction.

### SUBSURFACE EXPLORATION

Subsurface exploration is normally accomplished by test borings; test pits are sometimes employed. The method of determining the boring location and the surface elevation at the boring is noted in the report. This information is represented in the soil boring logs and/or a drawing. The location and elevation of the borings should be considered accurate only to the degree inherent with the method used and may be approximate.

The soil boring log includes sampling information, description of the materials recovered, approximate depths of boundaries between soil and rock strata as encountered and immediate depth to water data. The log represents conditions recorded specifically at the location where and when the boring was made. Site conditions may vary through time as will subsurface conditions. The boundaries between different soil strata as encountered are indicated at specific depths; however, these depths are in fact approximate and dependent upon the frequency of sampling, nature and consistency of the respective strata. Substantial variation between soil borings may commonly exist in subsurface conditions. Water level readings are made at the time and under conditions stated on the boring logs. Water levels change with time, precipitation, canal level, local well drawdown and other factors. Water level data provided on soil boring logs shall not be relied upon for groundwater based design or construction considerations.

### LABORATORY AND FIELD TESTS

Tests are performed in *general* accordance with specific ASTM Standards unless otherwise indicated. All criteria included in a given ASTM Standard are not always required and performed. Each test boring report indicates the measurements and data developed at each specific test location.

### ANALYSIS AND RECOMMENDATIONS

The geotechnical report is prepared primarily to aid in the design of site work and structural foundations. Although the information in the report is expected to be sufficient for these purposes, it shall not be utilized to determine the cost of construction nor to stand alone as a construction specification. Contractors shall verify subsurface conditions as may be appropriate prior to undertaking subsurface work.

Report recommendations are based primarily on data from test borings made at the locations shown on the test boring reports. Soil variations commonly exist between boring locations. Such variations may not become evident until construction. Test pits sometimes provide valuable supplemental information that derived from soil borings. If variations are then noted, the geotechnical engineer shall be contacted in writing immediately so that field conditions can be examined and recommendations revised if necessary.

The geotechnical report states our understanding as to the location, dimensions and structural features proposed for the site. **Any significant changes of the site improvements or site conditions must be communicated in writing to the geotechnical engineer immediately** so that the geotechnical analysis, conclusions, and recommendations can be reviewed and appropriately adjusted as necessary.

### CONSTRUCTION OBSERVATION

Construction observation and testing is an important element of geotechnical services. The geotechnical engineer's field representative (G.E.F.R.) is the "owner's representative" observing the work of the contractor, performing tests and reporting data from such tests and observations. **The geotechnical engineer's field representative does not direct the contractor's construction means, methods, operations or personnel.** The G.E.F.R. does not interfere with the relationship between the owner and the contractor and, except as an observer, does not become a substitute owner on site. The G.E.F.R. is responsible for his/her safety, but has no responsibility for the safety of other personnel at the site. The G.E.F.R. is an important member of a team whose responsibility is to observe and test the work being done and report to the owner whether that work is being carried out in general conformance with the plans and specifications. The enclosed report may be relied upon solely by the named client.

## SOIL AND ROCK CLASSIFICATION CRITERIA

### SAND/SILT

N-VALUE (bpf)	RELATIVE DENSITY
0 - 4	Very Loose
5 - 10	Loose
11 - 29	Medium
30 - 49	Dense
>50	Very dense
100	Refusal

### CLAY/SILTY CLAY

N-VALUE (bpf)	UNCONFINED COMP. STRENGTH (tsf)	CONSISTENCY
<2	<0.25	v. Soft
2 - 4	0.25 - 0.50	Soft
5 - 8	0.50 - 1.00	Medium
9 - 15	1.00 - 2.00	Stiff
16 - 30	2.00 - 4.00	v. Stiff
>30	>4.00	Hard

### ROCK

N-VALUE (bpf)	RELATIVE HARDNESS	ROCK CHARACTERISTICS
$N \geq 100$	Hard to v. hard	Local rock formations vary in hardness from soft to very hard within short vertical and horizontal distances and often contain vertical solution holes of 3 to 36 inch diameter to varying depths and horizontal solution features. Rock may be brittle to split spoon impact, but more resistant to excavation.
$25 \leq N \leq 100$	Medium hard to hard	
$5 \leq N \leq 25$	Soft to medium hard	

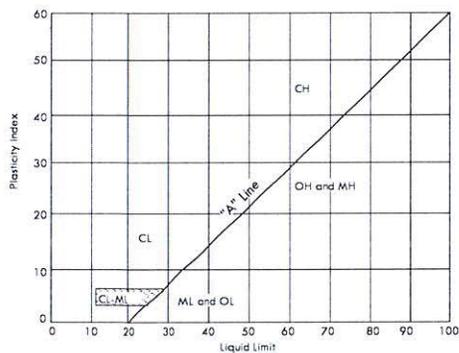
### PARTICLE SIZE

Boulder	>12 in.
Cobble	3 to 12 in.
Gravel	4.76 mm to 3 in.
Sand	0.074 mm to 4.76 mm
Silt	0.005 mm to 0.074 mm
Clay	<0.005 mm

### DESCRIPTION MODIFIERS

0 - 5%	Slight trace
6 - 10%	Trace
11 - 20%	Little
21 - 35%	Some
>35%	And

Major Divisions		Group Symbols	Typical names	Laboratory classification criteria
Coarse-grained soils (More than half of material is larger than No. 200 sieve size)	Gravels (More than half of coarse fraction is larger than No. 4 sieve size)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_z = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3  Not meeting all gradation requirements for GW  Atterberg limits below "A" line or P.I. less than 4  Atterberg limits above "A" line with P.I. greater than 7  $C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_z = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3  Not meeting all gradation requirements for SW  Atterberg limits below "A" line or P.I. less than 4  Atterberg limits above "A" line with P.I. more than 7  Limits plotting in hatched zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
		GP	Poorly graded gravels, gravel-sand mixtures, little or no fines	
		GW*	Silty gravels, gravel-sand-silt mixtures	
		GC		
	Sands (More than half of coarse fraction is smaller than No. 4 sieve size)	SW	Well-graded sands, gravelly sands, little or no fines	
		SP	Poorly graded sands, gravelly sands, little or no fines	
SM*		Silty sands, sand-silt mixtures		
SC	Clayey sands, sand-clay mixtures			
Fine-grained soils (More than half of material is smaller than No. 200 sieve size)	Silt and clays (Liquid limit less than 50)	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity	
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
		OL	Organic silts and organic silty clays of low plasticity	
	Silt and clays (Liquid limit greater than 50)	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	
		CH	Inorganic clays or high plasticity, fat clays	
		OH	Organic clays of medium to high plasticity, organic silts	
	Highly organic soils	PT	Peat and other highly organic soils	





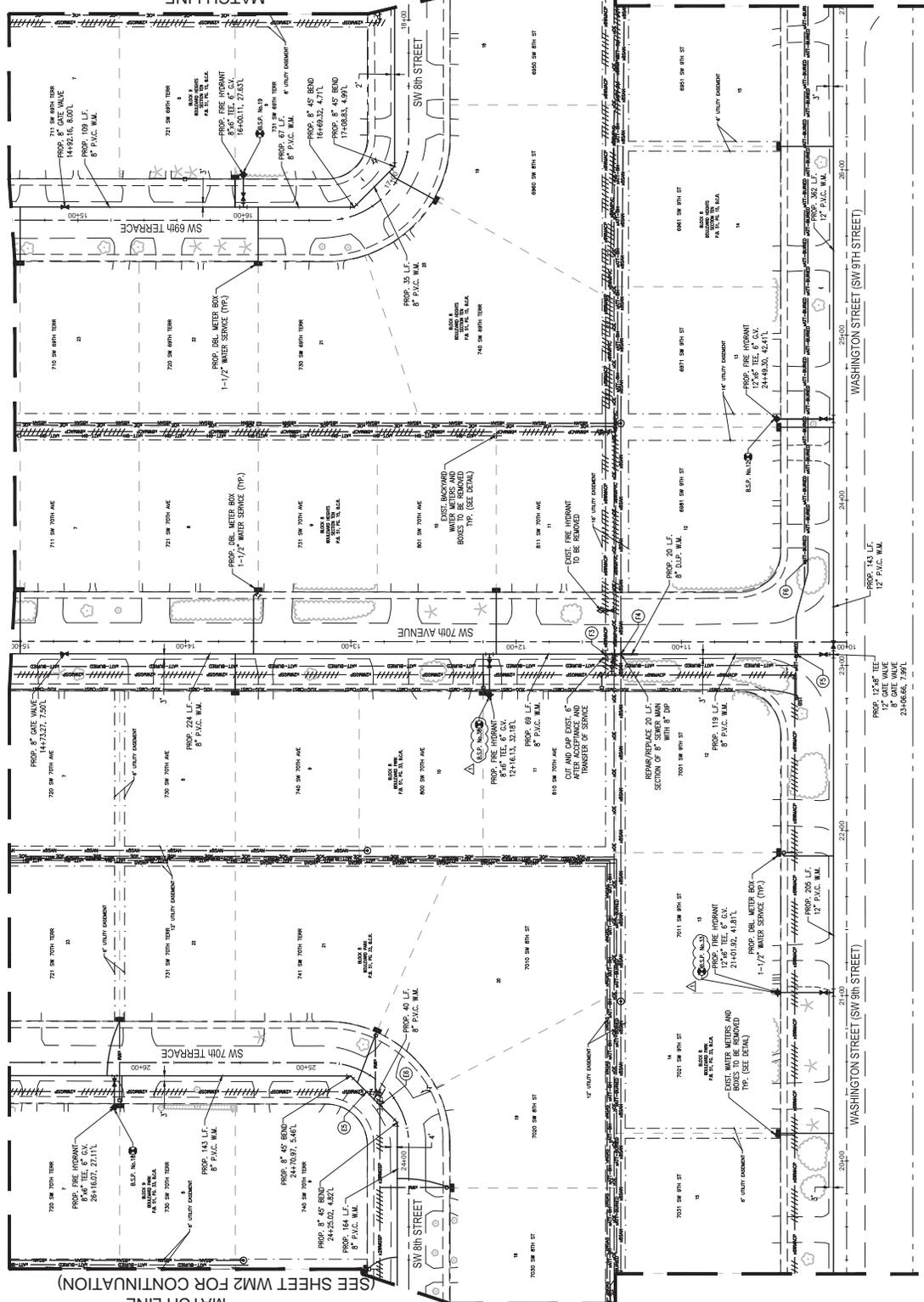








MATCH LINE (SEE SHEET WM2 FOR CONTINUATION)

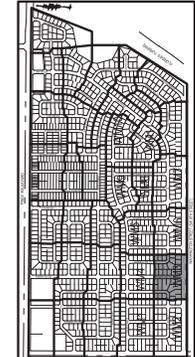


MATCH LINE (SEE SHEET WM4 FOR CONTINUATION)

MATCH LINE (SEE SHEET WM6 FOR CONTINUATION)

NO.	PIPES	CLEARANCE
E5	Existing 2\"/>	6\"/>
E6	Proposed 8\"/>	6\"/>
F3	Proposed 8\"/>	10\"/>
F4	Existing 8\"/>	21\"/>
F5	Existing 12\"/>	17\"/>
F6	Proposed 8\"/>	17\"/>

NOTES:  
 1. ALL EXISTING DEPTHS ARE APPROXIMATE. CONTRACTOR TO VERIFY.  
 2. ALL EXISTING WATER METERS ON PLAN ARE SHOWN IN THEIR APPROXIMATE LOCATION. CONTRACTOR TO LOCATE PRIOR TO CONSTRUCTION.



FOR BIDDING PURPOSES ONLY  
 SCALE: AS SHOWN  
 PROJECT NO.: 91-034-1  
 DATE: JULY 10, 2018

PROJECT: WMS3

PROPOSED WATER MAIN PLAN  
 PENBROKE PINES, FLORIDA

Calvin, Giordano & Associates, Inc.  
 EXCEPTIONAL SOLUTIONS  
 11000 W. STATE ROAD 10, SUITE 100  
 PENSACOLA, FLORIDA 32504  
 CERTIFICATE OF AUTHORIZATION 514



NO.	DATE	BY	REVISION

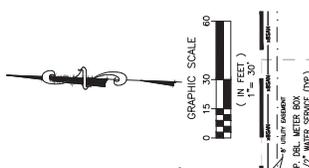






MATCH LINE (SEE SHEET WM8 FOR CONTINUATION)

MATCH LINE (SEE SHEET WM6 FOR CONTINUATION)



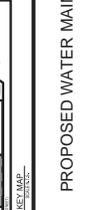
- NOTES:
1. ALL EXISTING DEPTHS ARE APPROXIMATE. CONTRACTOR TO VERIFY.
  2. EXISTING WATER METERS ON PLAN ARE SHOWN IN THEIR APPROXIMATE LOCATION. CONTRACTOR TO LOCATE PRIOR TO CONSTRUCTION.

FOR BIDDING PURPOSES ONLY

SCALE: AS SHOWN

PROJECT: 91-0134-1

DATE: JULY 10, 2018



PROPOSED WATER MAIN PLAN

PINES VILLAGE WATER MAIN REPLACEMENT

PENNBROKE PINES, FLORIDA

Calvin, Giordano & Associates, Inc.  
 EXCEPTIONAL SOLUTIONS  
 1100 S. UNIVERSITY BLVD., SUITE 100  
 WEST PALM BEACH, FLORIDA 33411  
 PHONE: 561-832-7334 FAX: 561-832-7335  
 WWW: CALVINGIORDANO.COM  
 Certificate of Authorization 514

NO.	DATE	BY	REVISION
1	07/02/18	MM	ISSUE FOR BIDDING

ASSEMBLER: MM-1

DATE: 07/02/18

SCALE: AS SHOWN

PROJECT: 91-0134-1

DATE: JULY 10, 2018

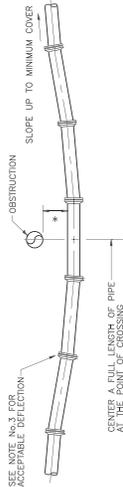
WM7







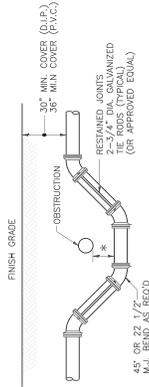
FINISHED GRADE



**NOTES:**

1. (1) 18" MINIMUM CLEARANCE REQUIRED FOR WATER AND SEWER MAIN CROSSINGS. 12" MINIMUM CLEARANCE REQUIRED FOR OTHER UTILITY CROSSINGS.
2. THE DEFLECTION TYPE CROSSING SHALL BE USED INWHENEVER POSSIBLE ONLY UNDER SPECIFIC ORDERS BY THE ENGINEER SHALL THE FITTING TYPE CROSSING BE ALLOWED.
3. THE DEFLECTION TYPE CROSSING USING SIPS OF MANUFACTURES MAXIMUM JOINT DEFLECTION (MAXIMUM).

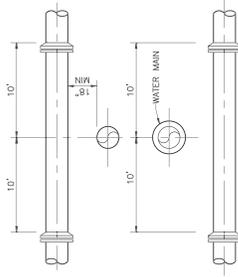
**UTILITY CROSSING DEFLECTION TYPE**



**NOTES:**

1. (1) 18" MINIMUM CLEARANCE REQUIRED FOR WATER AND SEWER MAIN CROSSINGS. 12" MINIMUM CLEARANCE REQUIRED FOR OTHER UTILITY CROSSINGS.
2. COAT THE RODS WITH A COIL TIR ENWEL AFTER ASSEMBLY (2 COATS MIN).
3. THE RODS MAY BE OMITTED WHEN OTHER APPROVED METHODS OF RESTRAINING ARE UTILIZED.

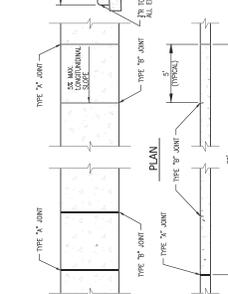
**UTILITY CROSSING FITTING TYPE**



**NOTES:**

1. MAINTAIN COVER OVER PIPES INWHENEVER POSSIBLE MAINTAINING A 36 INCH COVER FOR P.C. 30 INCH COVER FOR D.I.P. AND 18 INCH SEPARATION AS MINIMUMS.
2. WHEN A FITTING TYPE CROSSING IS USED, THE MIN. JOINT SEPARATION SHALL BE LESS THAN 18 INCHES VERTICAL SEPARATION THEN D.I.P. SHALL BE USED FOR BOTH PIPES FOR A DISTANCE OF 20 FEET CHANNEL ON CROSSING WITH NO JOINTS WITHIN 18 FEET OF THE CROSSING.
3. 18 INCH SEPARATION SHOULD BE MAINTAINED BETWEEN ALL PIPES ABSOLUTE MINIMUM SEPARATION WITH D.I.P. REQUIRED FOR ANY SEPARATION LESS THAN 18 INCHES.
4. SEWER PIPES SHALL MAINTAIN 9\"/>

**UTILITY CROSSING GENERAL REQUIREMENTS**



**NOTES:**

1. MAXIMUM DENSITY DETERMINED BY ASTM D-1585.
2. TRENCH SHALL BE EXCAVATED AND COMPACTED FOR 12\"/>

**TYPICAL TRENCH DETAIL**

SCALE: N.T.S.

CURRENT

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

DEPARTMENT:

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

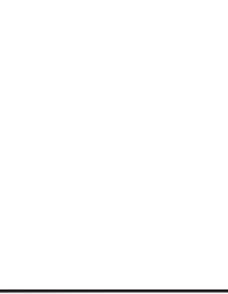
DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:



**NOTES:**

1. (1) 18" MINIMUM CLEARANCE REQUIRED FOR WATER AND SEWER MAIN CROSSINGS. 12" MINIMUM CLEARANCE REQUIRED FOR OTHER UTILITY CROSSINGS.
2. THE DEFLECTION TYPE CROSSING SHALL BE USED INWHENEVER POSSIBLE ONLY UNDER SPECIFIC ORDERS BY THE ENGINEER SHALL THE FITTING TYPE CROSSING BE ALLOWED.
3. THE DEFLECTION TYPE CROSSING USING SIPS OF MANUFACTURES MAXIMUM JOINT DEFLECTION (MAXIMUM).

**TYPICAL TRENCH DETAIL**

SCALE: N.T.S.

CURRENT

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

DEPARTMENT:

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018



**NOTES:**

1. (1) 18" MINIMUM CLEARANCE REQUIRED FOR WATER AND SEWER MAIN CROSSINGS. 12" MINIMUM CLEARANCE REQUIRED FOR OTHER UTILITY CROSSINGS.
2. THE DEFLECTION TYPE CROSSING SHALL BE USED INWHENEVER POSSIBLE ONLY UNDER SPECIFIC ORDERS BY THE ENGINEER SHALL THE FITTING TYPE CROSSING BE ALLOWED.
3. THE DEFLECTION TYPE CROSSING USING SIPS OF MANUFACTURES MAXIMUM JOINT DEFLECTION (MAXIMUM).

**TYPICAL TRENCH DETAIL**

SCALE: N.T.S.

CURRENT

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

DEPARTMENT:

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

DEPARTMENT:

FOR BIDDING PURPOSES ONLY

DATE: JULY 01, 2018

PROJECT NO. 91-0134-1

SCALE: AS SHOWN

DESIGNED BY: PROFESSIONAL ENGINEER

LICENSE NO. 9838

PROJECT NO. 91-0134-1

DATE: JULY 01, 2018

## **ADDENDUM**

Addendum No. 2 (July 11, 2018)

to

Contract Documents

City of Pembroke Pines

### **Pines Village Water Main Replacement – Phase 1**

Pembroke Pines Bid No. PSUT-18-05

CGA Project No. 91-0134.1

To All Bidders:

Bidders for the above-referenced project shall take note of the following changes, revisions, additions, deletions, clarifications, and other modifications to the Specifications and Drawings, which in accordance with the Contract Documents, shall become a part of, and have precedence over, anything shown or described otherwise.

#### **IN THE CONTRACT SPECIFICATIONS:**

1. Sewer/Water Utility Tracer Wire Specification has been ADDED. Contractor shall include price for installing in each appropriate Bid Item.
2. Fire hydrants that are salvageable as determined by the Engineer and the Owner shall not be disposed of and shall be returned to the Owner.
3. Section 01381(Part 3)(A) shall be REPLACED with “The video recording shall show all surface features located within the construction zone. These features shall include, but not be limited to, roadways, sidewalks, outside of houses (front and sides), driveways, culverts, walls, fences, and landscaping. Video shall also show where proposed private work is to take place, such as existing meters, house water service connections, fences, landscaping, concrete slabs, brick pavers, porches, patios, pools, sheds, and other aboveground features.”

#### **IN THE CONTRACT DRAWINGS:**

1. New water services within the Right-of-Way shall be installed perpendicular to the water main wherever possible.
2. Fire hydrants shall be installed at least 3 feet from water meter boxes for future maintenance and replacement purposes.
3. Sheet G1 has been REPLACED in its entirety.
4. Sheet WM13 has been REPLACED in its entirety.

#### **ADDITIONAL COMMENTS:**

N/A

All other documents, specifications, drawings, terms and conditions remain the same.  
Bidders must acknowledge receipt of the Addendum in their Bid.

END OF ADDENDUM

# Sewer/Water Utility - Trace Wire Specification

## Materials

### General

All trace wire and trace wire products shall be domestically manufactured in the U.S.A.

All trace wire shall have HDPE(High Density Polyethylene) or High Molecular Weight Polyethylene (HMWPE) insulation intended for direct bury, color coated per APWA standard for the specific utility being marked.

### Trace wire

- **Open Trench** - Trace wire shall be #12 AWG Copper Clad Steel or Solid Copper, High Strength with minimum 450 lb. break load, with minimum 30 mil HDPE insulation thickness.
- **Directional Drilling/Boring** - Trace wire shall be #12 AWG Copper Clad Steel, Extra High Strength with minimum 1,150 lb. break load, with minimum 30 mil HDPE insulation thickness.
- **Trace wire – Pipe Bursting/Slip Lining** - Trace wire shall be 7 x 7 Stranded Copper Clad Steel, Extreme Strength with 4,700 lb. break load, with minimum 50 ml Polyethylene (PE) insulation thickness.

### Connectors

- All mainline trace wires must be interconnected in intersections, at mainline tees and mainline crosses. At tees, the three wires shall be joined using a single 3-way lockable connector, Copperhead SnakeBite, and 3M DBR or approved equal. At Crosses, the four wires shall be joined using a 4-way connector. Use of two 3-way connectors with a short jumper wire between them is an acceptable alternative.
- **Direct bury wire connectors** – shall include 3-way lockable connectors and mainline to lateral lug connectors specifically manufactured for use in underground trace wire installation. Connectors shall be dielectric silicon filled to seal out moisture and corrosion, and shall be installed in a manner so as to prevent any uninsulated wire exposure.
- Non locking friction fit, twist on or taped connectors are prohibited.

### Termination/Access

- All trace wire termination points must utilize an approved trace wire access box (above ground access box or grade level/in-ground access box as applicable), specifically manufactured for this purpose.
  - All grade level/in-ground access boxes shall be appropriately identified with “sewer” or “water” cast into the cap and be color coded.
  - A minimum of 2 ft. of excess/slack wire is required in all trace wire access boxes after meeting final elevation.
  - All trace wire access boxes must include a manually interruptible conductive/connective link between the terminal(s) for the trace wire connection and the terminal for the grounding anode
-

# Sewer/Water Utility - Trace Wire Specification

wire connection.

- Grounding anode wire shall be connected to the identified (or bottom) terminal on all access boxes.
- **Service Laterals on public property** - Trace wire must terminate at an approved grade level/in-ground trace wire access box, located at the edge of the road right-of-way, and out of the roadway.
- **Service Laterals on private property** - Trace wire must terminate at an approved above-ground trace wire access box, affixed to the building exterior directly above where the utility enters the building, at an elevation not greater than 5 vertical feet above finished grade, or terminate at an approved grade level/in-ground trace wire access box, located within 2 linear feet of the building being served by the utility.
- **Hydrants** – Trace wire must terminate at an approved above-ground trace wire access box, properly affixed to the hydrant grade flange. (affixing with tape or plastic ties shall not be acceptable)
- **Long-runs, in excess of 500 linear feet without service laterals or hydrants** - Trace wire access must be provided utilizing an approved grade level/in-ground trace wire access box, located at the edge of the road right-of-way, and out of the roadway. The grade level/in-ground trace wire access box shall be delineated using a minimum 48" polyethylene marker post, color coded per APWA standard for the specific utility being marked.

## Grounding

- Trace wire must be properly grounded at all dead ends/stubs
- Grounding of trace wire shall be achieved by use of a drive-in magnesium grounding anode rod with a minimum of 20ft of #14 red PE insulated copper clad steel wire connected to anode (minimum 0.5 lb.) specifically manufactured for this purpose, and buried at the same elevation as the utility.
- When grounding the trace wire at dead ends/stubs, the grounding anode shall be installed in a direction 180 degrees opposite of the trace wire, at the maximum possible distance.
- When grounding the trace wire in areas where the trace wire is continuous and neither the mainline trace wire or the grounding anode wire will be terminated at/above grade, install grounding anode directly beneath and in-line with the trace wire. Do not coil excess wire from grounding anode. In this installation method, the grounding anode wire shall be trimmed to an appropriate length before connecting to trace wire with a mainline to lateral lug connector.
- Where the anode wire will be connected to a trace wire access box, a minimum of 2 ft. of excess/slack wire is required after meeting final elevation.

## Installation

### General

- Trace wire installation shall be performed in such a manner that allows proper access for connection of line tracing equipment, proper locating of wire without loss or deterioration of low frequency (512Hz) signal for distances in excess of 1,000 linear feet, and without distortion of signal caused by multiple wires being installed in close proximity to one another.
  - Trace wire systems must be installed as a single continuous wire, except where using approved connectors. No looping or coiling of wire is allowed.
-

# Sewer/Water Utility - Trace Wire Specification

- Any damage occurring during installation of the trace wire must be immediately repaired by removing the damaged wire, and installing a new section of wire with approved connectors. Taping and/or spray coating shall not be allowed.
- The tracer wire should be placed in the same orientation to all installed pipe. Trace wire shall be installed in the three o'clock position and secured (taped/tied) at 8 to 10 foot intervals using a spacer.
- Trace wire must be properly grounded as specified.
- Trace wire on all service laterals/stubs must terminate at an approved trace wire access box located directly above the utility, at the edge of the road right-of-way, but out of the roadway. (See Trace wire Termination/Access)
- At all mainline dead-ends, trace wire shall go to ground using an approved connection to a drive-in magnesium grounding anode rod, buried at the same depth as the trace wire. (See Grounding)
- Mainline trace wire shall not be connected to existing conductive pipes. Treat as a mainline dead-end, ground using an approved waterproof connection to a grounding anode buried at the same depth as the trace wire.
- All service lateral trace wires shall be a single wire, connected to the mainline trace wire using a mainline to lateral lug connector, installed without cutting/splicing the mainline trace wire.
- In occurrences where an existing trace wire is encountered on an existing utility that is being extended or tied into, the new trace wire and existing trace wire shall be connected using approved splice connectors, and shall be properly grounded at the splice location as specified.

## Sanitary Sewer System

- A mainline trace wire must be installed, with all service lateral trace wires properly connected to the mainline trace wire, to ensure full tracing/locating capabilities from a single connection point.
- Lay mainline trace wire continuously, by-passing around the outside of manholes/structures on the North or East side.
- Trace wire on all sanitary service laterals must terminate at an approved trace wire access box color coded green and located directly above the service lateral at the edge of road right of way.

## Water System

- A mainline trace wire must be installed, with all service lateral trace wires properly connected to the mainline trace wire, to ensure full tracing/locating capabilities from a single connection point.
  - Lay mainline trace wire continuously, by-passing around the outside of valves and fittings on the North or East side.
  - Trace wire on all water service laterals must terminate at an approved trace wire access box color coded blue and located directly above the service lateral at the edge of road right of way.
  - Above-ground tracer wire access boxes will be installed on all fire hydrants.
  - All conductive and non-conductive service lines shall include tracer wire.
- 
-

# Sewer/Water Utility - Trace Wire Specification

## Storm Sewer System

*This section shall be included at the discretion of the facility owner.*

- If the storm sewer system includes service laterals for connection of private drains and tile lines, it shall be specified the same as a sanitary sewer application.
- Lay mainline trace wire continuously, by-passing around the outside of manholes/structure on the North or East side.

## **Prohibited Products and Methods**

**The following products and methods shall not be allowed or acceptable**

- Uninsulated trace wire
- Trace wire insulations other than PE
- Trace wires not domestically manufactured
- Non locking, friction fit, twist on or taped connectors
- Brass or copper ground rods
- Wire connections utilizing taping or spray-on waterproofing
- Looped wire or continuous wire installations, that has multiple wires laid side-by-side or in close proximity to one another
- Trace wire wrapped around the corresponding utility
- Brass fittings with trace wire connection lugs
- Wire terminations within the roadway, i.e. in valve boxes, cleanouts, manholes, etc.
- Connecting trace wire to existing conductive utilities

## **Testing**

All new trace wire installations shall be located using typical low frequency (512Hz) line tracing equipment, witnessed by the contractor, engineer and facility owner as applicable, prior to acceptance of ownership.

This verification shall be performed upon completion of rough grading and again prior to final acceptance of the project.

Continuity testing in lieu of actual line tracing shall not be accepted.

---

---





## Question and Answers for Bid #PSUT-18-05 - Pines Village Water Main Improvements Phase I

[Create New Question](#)

Question Deadline: Jul 3, 2018 8:30:00 PM EDT

### Overall Bid Questions

#### Question 1

Where is the approved Bid Bond Form? (Submitted: Jun 13, 2018 3:57:27 PM EDT)

#### Answer

[edit](#) 

- The City of Pembroke Pines does not use a specific Bid Bond Form. (Answered: Jun 18, 2018 6:33:54 PM EDT)

Add to Answer:

#### Question 2

Is there a geotechnical report for this project available? (Submitted: Jun 20, 2018 4:41:31 PM EDT)

#### Answer

[edit](#) 

- Please see refer to the Geotechnical report that has been provided in an addendum. However, Contractor shall still be responsible for visiting the work site and familiarizing themselves with local conditions through tests, examinations, and investigations. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

#### Question 3

Section 2.06 States, Pipe and fittings for wastewater service shall be ceramic epoxy lined with Protecto 401 or approved equal. Please provide Pay Item, Measurement and Payment, and total approximate quantity of 520 LF of 8" DIP Sewer Main proposed at various locations on the plans. (Submitted: Jun 21, 2018 3:07:03 PM EDT)

#### Answer

[edit](#) 

- The locations of these proposed gravity sewer pipe replacements are currently shown on the Drawings. Per Section 01012(3.05,3.06)(A), the cost for replacing these pipe sections shall be included in the Bidder's price for the new 8" PVC or DIP water main and shall be considered incidental to construction. This shall also include all restoration, including, but not limited to, asphalt, limerock, subgrade, backfill, driveways, sod, sidewalk, irrigation, and landscaping. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

#### Question 4

Section 2.06 States, Pipe and fittings for wastewater service shall be ceramic epoxy lined with Protecto 401 or approved equal. Please provide Pay Item, Measurement and Payment, and approximate quantity of 20 LF of 6" DIP Sewer Lateral on P-9. (Submitted: Jun 21, 2018 3:10:01 PM EDT)

#### Answer

[edit](#) 

- The locations of these proposed gravity sewer pipe replacements are currently shown on the Drawings. Per Section 01012(3.05,3.06)(A), the cost for replacing these pipe sections shall be included in the Bidder's price for the new 8" PVC or DIP water main and shall be considered incidental to

construction. This shall also include all restoration, including, but not limited to, asphalt, limerock, subgrade, backfill, driveways, sod, sidewalk, irrigation, and landscaping. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

#### Question 5

When a combination of conditions in the substrata, water table, or method of disposal may be encountered during the course of the work which makes dewatering impossible, or possible only through the use of unusual methods, the cost of which is excessive. Will the contractor be allowed to use an alternate method of construction and install the pipe under water to save the City of Pembroke Pines the excessive costs? (Submitted: Jun 21, 2018 3:14:32 PM EDT)

[edit](#) 

#### Answer

- Please refer to Section 15065(3.02)(G). (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

#### Question 6

For Bid Items Section III, Is there a Blanket Plumbing Permit to cover these Items 3.01 and 3.02 or does it requires 365 individual permits? What are the individual plumbing permitting fee or the blanket permitting fee? (Submitted: Jun 21, 2018 3:23:18 PM EDT)

[edit](#) 

#### Answer

- Individual Plumbing Permits shall be required for each property. The permit application fees shall be determined at the time of application and shall be reimbursed through a Permitting Allowance by the City. The effort of applying for each permit and for providing the required documentation by the Building Department shall be the responsibility of the Contractor. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

#### Question 7

For Bid Items Section III, Are the Plumbing Permitting fees for Items 3.01 and 3.02 covered under Item 5.01 Permitting Allowance? (Submitted: Jun 21, 2018 3:24:56 PM EDT)

[edit](#) 

#### Answer

- See response to Question #6. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

#### Question 8

Vendor Information Form on P.33 States: Please entirely complete this vendor information form along with the IRS Form W-9, and email to [accountspayable@ppines.com](mailto:accountspayable@ppines.com). Please clarify if these 2 forms are to be emailed or submitted with bid. (Submitted: Jun 21, 2018 3:29:28 PM EDT)

[edit](#) 

#### Answer

- These forms should be submitted with the bid. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

#### Question 9

On Reference Form, Attachment L have both Project Size and Project Cost. Please clarify what is meant by Project Size. (Submitted: Jun 21, 2018 3:33:11 PM EDT)

[edit](#) 

**Answer**

- Project size shall be the approximate area disturbed by construction and/or the approximate linear footage of the infrastructure. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 10**

On Reference Form, Attachment L, Please clarify what is meant by Contract Type. (Submitted: Jun 21, 2018 3:33:47 PM EDT)

**Answer**

[edit](#) 

- Bidder to advise whether the Contract Type was Private or Public. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 11**

Please provide Geotechnical Reports to determine if Well Pointing is an option for Dewatering or advise if subsurface is conducive of using Well Points. (Submitted: Jun 21, 2018 3:37:44 PM EDT)

[edit](#) 

**Answer**

- See response to Question #2. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 12**

3.01 MAINTENANCE OF TRAFFIC

B. The Contractor shall provide a Maintenance of Traffic Plan, sealed by a Professional Engineer registered in the State of Florida holding a current FDOT MOT certificate. From past experience with several municipalities in Broward County, A FDOT Certified Advanced MOT Traffic Supervisor was approved to design MOT Plans. Is that acceptable for this project? (Submitted: Jun 21, 2018 3:46:11 PM EDT)

[edit](#) 

**Answer**

- An FDOT Certified Advanced MOT Traffic Supervisor is acceptable for developing MOT plans. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 13**

Please provide Pay Item, Measurement and Payment, Quantities in (SY) and thickness for Milling and Overlay for entire project. (Submitted: Jun 21, 2018 3:48:55 PM EDT)

[edit](#) 

**Answer**

- Milling and overlay of the entire project area shall not be required under this Contract. Please refer to the revised Drawing details for trench restoration. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 14**[edit](#) 

Please provide Pay Item, Measurement and Payment, Quantities in (SY) for Limerock for Pavement Restoration. (Submitted: Jun 21, 2018 3:50:36 PM EDT)

**Answer**

- Contractor's cost for providing compacted limerock and asphalt and for restoration shall be included in their price for each applicable Bid Item and shall be considered incidental to construction. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 15**

Please provide Pay Item, Measurement and Payment, Quantities in (SY) and thickness of Asphaltic Concrete for Pavement Restoration. (Submitted: Jun 21, 2018 3:51:45 PM EDT)

[edit](#) **Answer**

- See response to Question #14. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 16**

On Plan Page WM-14, The Ditch Width (W) on the Pavement Restoration Detail needs the Length (in) on both sides of the pipe OD and the Length (in) just outside excavation. See detail for clarity. Please provide these 2 lengths. (Submitted: Jun 21, 2018 4:00:42 PM EDT)

[edit](#) **Answer**

- Please refer to the revised Drawing details for trench restoration. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 17**

On Plan Page PMS5, please provide Pay Item, Measurement and Payment, Quantities and Types of proposed signs. (Submitted: Jun 22, 2018 12:27:53 PM EDT)

**Answer**[edit](#) 

- Currently, all signs shown on the Drawings are existing to remain. Should the County require new/proposed signs, an addendum shall be issued. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 18**

3.02 DIRECTIONAL DRILLING OPERATION

I. Upon completion of the pilot hole phase of the operation, a complete set of as-built records shall be submitted in duplicate to the Owner. These records shall include copies of the plan and profile drawing, as well as directional survey reports as recorded during the drilling operation. The only HDD required for this project is for Long Water Services which don't usually require a plan and profile with as-builts. Please clarify if this is required. (Submitted: Jun 22, 2018 1:24:54 PM EDT)

[edit](#) **Answer**

- If the water services utilize HDD, the record drawings shall show the horizontal locations and burial depths. The boring logs shall also be provided by the Contractor. For other record drawing requirements, please refer to Section 01720. No profile drawings shall be required. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 19**

1.04 SUBMITTALS

A. Growers Certifications:

3. All Contractors' licenses and or certifications for the uses and or application of herbicides, pesticides and fertilizers per the State, County and governing municipality.

The installation of Sod and above referenced chemicals are Installed by experienced staff with several projects of similar size and scope. Please advise if the installation of sod and chemicals can be installed by experienced staff in lieu of the certification. (Submitted: Jun 22, 2018 1:34:58 PM EDT)

[edit](#) 

**Answer**

- The installation of sod can performed by experienced staff. Contractor shall still conform to the other requirements of Section 02430. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 20**

2.01 ACCEPTABLE MANUFACTURERS

A. Ductile iron pipe and fittings shall be furnished by manufacturers who are fully experienced, reputable, and qualified in the manufacture of the materials. The pipe and fittings shall be designed, constructed, and installed in accordance with the best practices and methods and shall comply with the Specifications in all respects.

Acceptable manufacturers include:

1. American Cast Iron Pipe Company
2. U.S. Pipe
3. McWane Ductile

[edit](#) 

Please advise if these are the only 3 manufacturers that can supply Fittings for this project. (Submitted: Jun 22, 2018 1:39:16 PM EDT)

**Answer**

- That is correct. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 21**

Please advise if this project requires Domestic Fittings only? (Submitted: Jun 22, 2018 1:40:02 PM EDT)

**Answer**

[edit](#) 

- Please refer to Section 15062 for all DIP fitting requirements. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 22**

2.09 GATE VALVES AND TAPPING VALVES

B. Acceptable Manufacturers:

1. Mueller Co.
2. American Cast Iron Pipe Co.
3. Clow Valve Co.

[edit](#) 

Please advise if these are the only 3 acceptable Gate Valve manufacturers for this project. (Submitted: Jun 22, 2018 1:45:58 PM EDT)

**Answer**

- That is correct. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 23**

Please provide Pay Items, Measurement & Payment, and Quantities (SY) for additional Limerock and Asphaltic Concrete for pavement restoration for the approximate 520 LF of 8" DIP Sewer Main. (Submitted: Jun 22, 2018 1:50:24 PM EDT)

[edit](#) 

**Answer**

- See response to Question #3. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 24**

Please advise new Engineer's Estimate if applicable due to revisions. (Submitted: Jun 22, 2018 1:51:59 PM EDT)

[edit](#) 

**Answer**

- No revisions are required at this time. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 25**

Upon review of the plans, there are several water services that requires the destruction of Asphalt Driveways. Please provide Pay Item, Measurement & Payment, and Quantities (SY) for Limerock and Asphaltic concrete for Driveway Restorations. (Submitted: Jun 22, 2018 2:31:28 PM EDT)

[edit](#) 

**Answer**

- Contractor's cost for providing limerock and asphalt for restoration shall be included in their price for Water Services. However, Contractor may propose to field adjust water service locations on a case-by-case basis, but the general locations of both the services and meters shall remain as shown on the Drawings. These field adjustments shall require City and EOR approval. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 26**

Upon review of the plans, there is a water service that requires the destruction of a paved driveway at 6840 SW 8th St. Please provide Pay Item, Measurement & Payment, and Quantities for Paved Driveway Restoration. (Submitted: Jun 22, 2018 3:27:21 PM EDT)

[edit](#) 

**Answer**

- See response to Question #25. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 27**

Is the City asking for Field Office if so please provide a minimum requirements . (Submitted: Jun 22, 2018 3:59:03 PM EDT)

[edit](#) 

**Answer**

- A field office shall not be required. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 28**

Is the City asking for Builder Risk ? (Submitted: Jun 22, 2018 3:59:33 PM EDT)

**Answer**

[edit](#) 

- The City will waive the requirement for the Builderâ€™s Risk Insurance, however in lieu of the Builderâ€™s Risk Insurance, the Contractor shall provide documentation stating that they assume all liability and are responsible for anything that would be covered under Builderâ€™s Risk Insurance. (Answered: Jul 16, 2018 5:28:04 PM EDT)

Add to Answer:

**Question 29**

Does the City provide the Staging Area? (Submitted: Jun 22, 2018 4:05:41 PM EDT)

**Answer**

[edit](#) 

- The staging area address is 7400 Pines Boulevard. Alternate locations may be proposed by the Contractor, but they shall first require City review and approval. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 30**

On Attachment P, Section 01410-3, Item 3.02 Testing , the frequencies looks high. Please advise. (Submitted: Jun 22, 2018 4:33:23 PM EDT)

**Answer**

[edit](#) 

- The test frequencies stated in Section 01410 shall be adhered to for this project. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 31**

The City calls on Attachment P, Section 01530-3, Item 3.08 B for " Temporary Resurfacing " before the final Trench Restoration. Can the Contractor use a Milling Material instead of Asphalt before the Final Restoration? (Submitted: Jun 22, 2018 4:39:43 PM EDT)

**Answer**

[edit](#) 

- Contractor shall not be allowed to use milling material but may use a temporary cold patch for restoration only after successful testing of the limerock. Prior to final hot asphalt lifts, Contractor shall be required to remove the temporary cold patch. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 32**

Reviewing the Insurance Requirments, the City is calling for Cyber, Crime , Builder Risk and Sexual Abuse for this job. Is this correct? (Submitted: Jun 25, 2018 2:52:41 PM EDT)

**Answer**

[edit](#) 

- Cyber, crime and sexual abuse can be waived. In regards to builders risk coverage, see question 28 above. (Answered: Jul 16, 2018 5:28:04 PM EDT)

Add to Answer:

### Question 33

Also for Commercial General Liability, the City is requiring 2 Years of maintenance after completion plus an increase of 10 Years for construction projects). Is this correct? (Submitted: Jun 25, 2018 2:58:19 PM EDT)

### Answer

[edit](#) 

- Yes, the City is requiring that the contractor keep in effect general liability insurance including products and completed operations for a period of 10 years following completion of the project. (Answered: Jul 16, 2018 5:28:03 PM EDT)

Add to Answer:

### Question 34

Can the contractor use cold asphalt for temporary resurfacing prior to final trench restoration? (Submitted: Jun 26, 2018 11:29:27 AM EDT)

### Answer

[edit](#) 

- See response to Question #31. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

### Question 35

3.02 TESTING

A. The following types of tests and test frequencies are required. Copies of all reports are to be sent to the Engineer immediately upon availability.

1. Density tests for trench backfill at a minimum rate of one (1) test per 6" lift per 100 feet of trench, unless otherwise directed by the Engineer.
2. Density tests for subgrade compaction at a minimum rate of three (3) tests in 100 feet of roadway, unless otherwise directed by the Engineer.
3. Density tests for limerock base at a minimum rate of three (3) tests per day on each course of completed compacted base, unless otherwise directed by the Engineer.
4. Density test for roadway crossings at the rate of one test per lane per lift of compacted material, beginning one foot above the normal water table.

[edit](#) 

The density testing parameters listed above appear to be excessive. Please clarify if these are the correct parameters for this project. (Submitted: Jun 26, 2018 2:14:19 PM EDT)

### Answer

- See response to Question #30. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

### Question 36

On measure and payment, items # 3.05 and # 3.06 for Water Mains say the following: "When the new water main pipe crosses under and existing clay sanitary main or crosses over by 12" or less, a 20' section of the sanitary main shall be replaced with DIP".

The drawings do not have profiles and nobody knows when or where it can happen and to be fair with everyone, please add items for DIP ( 12",8" and 6" ). (Submitted: Jun 26, 2018 3:45:06 PM EDT)

[edit](#) 

### Answer

- The Drawings currently show each location for sewer pipe replacement. Conflict tables have also been provided. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 37**

Has the sign in sheet from the 6/26 pre-bid meeting been posted to the County site? (Submitted: Jun 28, 2018 1:39:55 PM EDT)

**Answer**

[edit](#) 

- Yes, the Sign In sheet has been posted to the BidSync website. (Answered: Jul 2, 2018 11:38:33 AM EDT)

Add to Answer:

**Question 38**

What's the liquidated damages amount? (Submitted: Jun 29, 2018 8:45:03 AM EDT)

**Answer**

[edit](#) 

- \$500 per day. (Answered: Jul 11, 2018 4:17:29 PM EDT)

Add to Answer:

**Question 39**

Pay Item 2.26. Measurement & Payment states that only DIP pipe & Fittings are to be included in this pay item. What about the Valves? Does Pay Item 2.21 includes the valves for the Fire Hydrants? (Submitted: Jun 29, 2018 9:32:22 AM EDT)

**Answer**

[edit](#) 

- 6" gate valves shall be paid for under Bid Item No. 2.21. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 40**

Bid Items 2.33-2.34. Is the furnish & Installation of the water meters a responsibility of the contractor or that is going to be done by the city? (Submitted: Jun 29, 2018 9:38:43 AM EDT)

**Answer**

[edit](#) 

- Furnishing and installing the new water meters shall be the responsibility of the Contractor along with removing, tagging, and delivering the existing meters to the City Utilities Department. Please refer to Section 01012(3.17) and the Drawings for other Work and appurtenances included in the Meter Box Assemblies. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 41**

Bid Item 2.38 "Remove Existing Water Meters and Restoration" What about the existing service lines that are to be removed? Please advise. (Submitted: Jun 29, 2018 10:10:10 AM EDT)

**Answer**

[edit](#) 

- Existing service lines shall be capped and abandoned in place. Cost shall be considered incidental to construction. (Answered: Jul 10, 2018 11:20:24 AM EDT)

Add to Answer:

**Question 42**

Bid Item 2.39 is it only for the water meters? Does it cover the service line restoration as well? Please advise. (Submitted: Jun 29, 2018 10:15:05 AM EDT)

**Answer**

- Bid Item 2.39 shall be used at the discretion of the City and the Engineer where adjacent sidewalk sections need to be replaced. Otherwise, any sidewalk damaged or demolished due to new water service piping, water meters, DIP point repairs, fire hydrants, or the installation of other infrastructure shall be considered incidental to construction and shall be restored under the Contractor's price for the appropriate Bid Item. (Answered: Jul 10, 2018 11:20:24 AM EDT)

[edit](#) 

Add to Answer:

**Question 43**

can you please post the sign in sheet from the pre-bid meeting?

Thanks (Submitted: Jun 29, 2018 11:43:57 AM EDT)

[edit](#) 

**Answer**

- Yes, the Sign In sheet has been posted to the BidSync website. (Answered: Jul 2, 2018 11:38:33 AM EDT)

Add to Answer:

**Question 44**

1. The Florida building code allows for schedule 40 PVC material to be used on the private water services as well as HDPE, as already specified. The schedule 40 pipe is available to homeowners at local building retail stores for future use or repairs. Can our pricing for the rear to front conversions (Item 3.01) be priced utilizing a choice of schedule 40 or HDPE? (Submitted: Jun 29, 2018 3:06:11 PM EDT)

**Answer**

- We take no exception to using PVC for the private water services provided that it conforms to the requirements of the Florida Building Code. (Answered: Jul 10, 2018 11:20:24 AM EDT)

[edit](#) 

Add to Answer:

**Question 45**

1. Measurement and Payment section alludes to removal and replacement of muck/organics within many items. Please furnish soil borings as discussed at the pre-bid meeting of June 26, 2018. (Submitted: Jun 29, 2018 3:07:08 PM EDT)

**Answer**

- See response to Question #2. (Answered: Jul 10, 2018 11:20:24 AM EDT)

[edit](#) 

Add to Answer:

**Question 46**

2. Service items include all restoration. Will item 2.39 "Sidewalk Replacement" be utilized for restoration of services? (Submitted: Jun 29, 2018 3:07:29 PM EDT)

[edit](#) 

**Answer**

- See response to Question #42. (Answered: Jul 10, 2018 12:13:40 PM EDT)

Add to Answer:

**Question 47**

3. Measurement and Payment section only requires sewer replacement if the new water main is installed over or under by 12". The plans show 20' ductile iron replacement of sanitary sewer at every crossing, despite the conflict tables showing greater than 12" separation at all but one location. Shall we assume that the measurement and payment language is correct or construct the water main as shown on the plans? (Submitted: Jun 29, 2018 3:09:53 PM EDT)

[edit](#) 

**Answer**

- Contractor shall construct the subject sewer pipe replacements as shown on the Drawings. (Answered: Jul 10, 2018 12:13:40 PM EDT)

Add to Answer:

**Question 48**

4. Paving details show rock extending 1' beyond edge of pavement. Many decorative, concrete and asphalt driveways will be disturbed. Will the Engineer permit alignment variations of the new water main to avoid disturbance of driveways? (Submitted: Jun 29, 2018 3:10:15 PM EDT)

[edit](#) 

**Answer**

- Contractor is encouraged to avoid damaging or demolishing existing driveways or swales provided that the proposed alignment variation is not significant. However, please refer to the revised drawing details regarding restoration limits and requirements. (Answered: Jul 10, 2018 12:13:40 PM EDT)

Add to Answer:

**Question 49**

5. The plans require valve insertions and line stops at several locations throughout the plans however there is no pay item for this work. Please provide items for insertions and line stops. (Submitted: Jun 29, 2018 3:10:32 PM EDT)

[edit](#) 

**Answer**

- There are no insertion valves or line stops in this project. For cutting into and connecting to existing water main, Contractor shall utilize Bid Items 2.22 through 2.24. Valves shall be compensated for under Bid Items 2.19 through 2.21. (Answered: Jul 10, 2018 12:13:40 PM EDT)

Add to Answer:

**Question 50**

Has the Owner conducted a review of existing valves in order to determine whether or not they are operational and can be relied upon for closures if needed. (Submitted: Jun 29, 2018 3:10:57 PM EDT)

[edit](#) 

**Answer**

- Existing valves are operational to the extent known. (Answered: Jul 10, 2018 12:13:40 PM EDT)

Add to Answer:

**Question 51**

[edit](#) 

Will the City be providing new meters or will old meters be relocated to new meter box? (Submitted: Jun 29, 2018 3:56:04 PM EDT)

**Answer**

- See response to Question #40. (Answered: Jul 10, 2018 12:13:40 PM EDT)

Add to Answer:

**Question 52**

[edit](#) 

Please provide copy of the pre bid sign in sheet.

Thx (Submitted: Jun 29, 2018 4:53:52 PM EDT)

**Answer**

- Yes, the Sign In sheet has been posted to the BidSync website. (Answered: Jul 2, 2018 11:38:33 AM EDT)

Add to Answer:

**Question 53**

[edit](#) 

Can bid form be provided in excel? (Submitted: Jul 2, 2018 2:34:01 PM EDT)

**Answer**

- In lieu of utilizing Attachment A for the pricing, the City has recently added each of the bid line items directly to the BidSync website. The BidSync website will automatically calculate the total for the line items. (Answered: Jul 10, 2018 1:17:59 PM EDT)

Add to Answer:

**Question 54**

[edit](#) 

Bid form in docs doesn't included extended costs for each item. Can form be revised to included extended costs? (Submitted: Jul 2, 2018 2:34:55 PM EDT)

**Answer**

- See response to Question #53. (Answered: Jul 10, 2018 1:17:59 PM EDT)

Add to Answer:

**Question 55**

[edit](#) 

Can soil reports be provided? (Submitted: Jul 2, 2018 2:52:25 PM EDT)

**Answer**

- See response to Question #2. (Answered: Jul 10, 2018 12:13:40 PM EDT)

Add to Answer:

**Question 56**

[edit](#) 

Can a pay item be added for removal of unsuitable materials and replace with clean fill with assumed quantity? (Submitted: Jul 2, 2018 2:54:20 PM EDT)

**Answer**

- The Geotechnical Report has been provided. Cost shall be considered incidental to construction. (Answered: Jul 10, 2018 12:13:40 PM EDT)

Add to Answer:

**Question 57**

General Notes and Specifications call for 12" thick limerock base and 1" thick asphalt pavement, however sheet WM14 notes dictate " Resurfacing Material Shall be consistent with surrounding surface type and thickness" the detail shows 1.5" asphalt thickness and 8" Limerock base, please advise. (Submitted: Jul 2, 2018 4:43:47 PM EDT)

[edit](#) 

**Answer**

- Please see the revised Drawings. (Answered: Jul 10, 2018 12:13:40 PM EDT)

Add to Answer:

**Question 58**

It appears that some of the bid documents including Attachment A, the SOV have fields that can be filled out on Bidsync but the Bid document print out states that all bid documents are to be filled out, executed & uploaded as a single pdf. Please confirm that the digital fields do not need to be filled out and only a pdf uploaded including attachment a is all that will be necessary. (Submitted: Jul 3, 2018 12:32:17 PM EDT)

[edit](#) 

**Answer**

- Attachment A, and Attachments C-G are webforms that can be filled out on the BidSync website and do not need to be converted to a PDF and uploaded with the rest of the bid submittal. However, the proposer may choose to convert those completed documents to a PDF and upload them along with the rest of their submittal. (Answered: Jul 10, 2018 1:17:59 PM EDT)

Add to Answer:

**PSUT-18-05--01-01 - Did You Submit The Proposal Security/Bid Bonds As Required In Section 4.1?**

**Question 1**

Attachment A, the bid schedule of values seems to be missing a total for the line items. Please advise. (Submitted: Jul 3, 2018 11:26:31 AM EDT)

**Answer**

[edit](#) 

- See response to Question #53. (Answered: Jul 10, 2018 1:17:59 PM EDT)

Add to Answer:

Submit



**Sign-In Sheet**

- Fort Lauderdale Office · 1800 Eller Drive · Suite 600 · Fort Lauderdale, FL 33316 · 954.921.7781(p) · 954.921.8807(f)
- West Palm Beach Office · 560 Village Boulevard · Suite 340 · West Palm Beach, FL 33409 · 561.684.6161(p) · 561.684.6360(f)

Time: 9:00 AM  
Date: 6/26/2018

Subject: City of Pembroke Pines – Pines Village Water Main Replacement (Phase 1) Pre-Bid Meeting  
City Project No. PSUT-18-05  
CGA Project No. 91-0134.1

Meeting Location: Pembroke Pines Utilities Conference Room, 8300 S Palm Drive, Pembroke Pines, FL 33025

NAME/TITLE	COMPANY NAME	EMAIL	PHONE NO.
David Stambaugh	Calvin, Giordano & Associates, Inc	d.stambaugh@cga.solutions.com	954 766 2736
Nico Kanelidris	CALVIN, GIORDANO & ASSOCIATES, INC.	NKANELIDRIS@CGASOLUTIONS.COM	954-766-2750
Alphonso Brown	R.P. Utility & Excavation Corp.	abrown@rplcorp.com	305-498-2587
Emily Cortes	Rabon Engineering, Inc	rabonengineering@outlook.com	305-218-3547
MICHAEL LACROIX	Mad Cow Inc	mike@madcow.us	954-427-0230
Bob Henning	Giannetti Contracting	bob@giannetti.com	954-551-4950
RAFAEL VEGA	RIC-MAN CONSTRUCTION FLORIDA	RUEGA@RIC-MAN.FL.COM	954-209-0000
JUNO GARCIA JUAN	CONTRONAL GASSTAS ONUL	INFO@USACONTRONAL.COM	954-801-1368
James Tili	Lanzo	Estimating@Lanzo.org	954 979 0802
ROLAND LARREAL	Roll Global Networks	MILIECIRSKI@RollGlobal.com	717-395-1619
Lisa Valencia	Southern Underground Industries	Juanb@southernui.com	954-650-4699
IVAN LEAL	C & W Pipe Line Inc	ileal@cupireline.com	305 681 0026
Yassir El-Khamlichai	MCM	Yassir@mcm-us.com	305-541-0000
Jylio Amodeo	MCM	JAmodeo@mcm-us.com	305-541-0000
HOWARD WIGHT	POSTAL MARINE CONTRACTOR, INC	HOWARD@POSTAL-MARINE.NE	561-683-0034
J. COOPER	City	JCOOPER@ppines.com	
MARK GOMES	City	m.gomes@ppines.com	

Continue on other side





**Calvin, Giordano & Associates, Inc.**  
EXCEPTIONAL SOLUTIONS™

## **PINES VILLAGE WATER MAIN REPLACEMENT – PHASE 1**

**City of Pembroke Pines**

**Solicitation PSUT-18-05**

**PRE-BID MEETING AGENDA**

**June 26, 2018**

### **1.01 PROJECT REPRESENTATIVES AND RESPONSIBILITIES**

#### **A. Owner**

- City of Pembroke Pines

#### **B. Engineer**

- Calvin, Giordano & Associates, Inc.

##### **a. Contact(s)**

- 1) Nico Kanelidis (954-766-2750, [nkanelidis@cgasolutions.com](mailto:nkanelidis@cgasolutions.com))
- 2) David Stambaugh (954-766-2736, [dstambaugh@cgasolutions.com](mailto:dstambaugh@cgasolutions.com))

#### **C. Affected Utilities**

- Electric
- Water
- Sewer
- Gas
- Communication

#### **D. Permitting Agencies**

- City Building Department
- City Engineering Department
- Florida Department of Health – Broward County
- Broward County Traffic Engineering Division
- Broward County Environmental Building Permitting and Engineering Division

### **1.02 REQUIREMENTS OF THE CONTRACT**

#### **A. Scope of Work**

- 20,000 linear feet of new PVC water main, replacement of over 350 existing water meters, relocation of backyard meters to the front of properties, private plumbing including check valves and pressure valves, and restoration.
- Exhibits are being provided to give a general idea of the backyard water service connections.

- B. Mandatory Pre-Bid Meeting Attendance
  - Attachment "M" of the bid documents must be signed by a City Representative.
  - Field visits are not mandatory. However, bidders shall be responsible for performing site visits to their own satisfaction and comfort level in order to properly bid and price the project. The City shall accompany any Bidders that desire to inspect the properties immediately following this meeting and shall assist with obtaining Owner's consent for right of entry. Access to all properties may not be realistic due to this requirement.
- C. Completion
  - 365 Calendar Days from Notice-To-Proceed
- D. Key Dates
  - Questions Due: 7/3/2018 at 5:00 PM
  - Bid Opening: 7/17/2018 at 2:00 PM
- E. Work Hours
  - 7:00 AM to 5:00 PM from Monday through Friday.
- F. Warranty
  - Work and materials, public and private, shall be warrantied for one year after acceptance.

### 1.03 QUESTIONS AND COMMENTS



WATER CONNECTION - AGAINST STRUCTURE



WATER METER LOCATION - BACKYARD



WATER CONNECTION - OBSTRUCTION AND WITHIN AN ENCLOSED AREA



WATER CONNECTION - OFFSET FROM STRUCTURE





WATER CONNECTION - OBSTRUCTION



WATER CONNECTION - OFFSET FROM STRUCTURE



WATER CONNECTION - AGAINST STRUCTURE



WATER METER LOCATION - BACKYARD

