

Bid Set
Invitation to Bid 2022-03
City of Parker
Highway 98 Watermain
Directional Bore at Cooper Street



Date of Issue: April 20, 2022

Closing: May 17, 2022 @ 2:00 p.m. CST

ITB Coordinator(s):

Taylor Jeffreys, Public Works Administrator
City of Parker
1001 West Park Street, Parker, Florida 32404
and
Mandy O'Regan
Anchor CEI
450 Magnolia Avenue
Panama City, Florida 32401



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INSTRUCTIONS TO BIDDERS

INTRODUCTION

The objective of this Invitation to Bid (ITB) is to select a **Florida-Licensed General Contractor or Florida-Licensed Underground Utility Contractor** Contractor to provide construction services to the City of Parker (hereinafter referred to as "CITY" or "OWNER") for the construction of a new 8-inch fusible polyvinyl chloride (FPVC) directional bore piping that crosses U.S. Highway 98 (Tyndall Parkway) at the intersection with Wood Avenue that will connect to a new 6-inch PVC which will connect to a new 8-inch PVC which will continue southwest (parallel to the existing watermain) to the Cooper Street and U.S. Highway 98 intersection where it will tie into the existing watermain. This includes all appurtenances as detailed on the Bid Form included in this Bid Package. Please refer to the Construction Drawings included in this Bid Package for further details.

The OWNER seeks BIDs from **Florida-Licensed General Contractor or Florida-Licensed Underground Utility Contractor Contractor** that can provide all permits, labor, materials, equipment, tools, transportation and supplies required for the coordination and construction of the watermains and all appurtenances as detailed within this Bid Package and as detailed in the Construction Drawings. Work shall be completed in conformance with the Construction Drawings and Specifications provided by the OWNER.

QUALIFICATIONS

The CONTRACTOR shall be a Florida-Licensed General Contractor or Florida-Licensed Underground Utility Contractor Contractor who specializes in water utility projects. Subcontractors shall be Florida licensed in their trade. BIDs may be deemed nonresponsive if not accompanied by proof of State of Florida Utility Contractor's License.

BID DEADLINE/DELIVERY

SEALED BIDS will be received up until **2:00 p.m. (CDT) on Tuesday, May 17, 2022** for **ITB 2022-03 – CITY OF PARKER – HIGHWAY 98 WATERMAIN DIRECTIONAL BORE AT COOPER STREET**. BIDs will be publicly opened during the City Council meeting at 5:30 p.m. on Tuesday, May 17, 2022. Late submissions will not be accepted. Each BID shall be valid to the City of Parker for a period of 90 days after the Bid Opening.

BIDs shall be delivered to:

**Ms. Taylor Jeffreys
Public Works Administrator
City of Parker Florida
1001 West Park Street**

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Parker, Florida 32404

BIDs shall be received by the OWNER no later than the BID deadline. BIDDERS should submit one (1) original BID package labeled as "Original." BIDs shall be enclosed in a sealed envelope bearing the title of the work, the name of the BIDDER and the date of Bid Opening. It is the sole responsibility of the BIDDER to ensure that the BID is received on time. Late BIDs will not be accepted.

The OWNER will publicly open and read aloud each BID. Once the OWNER has determined the lowest, responsive, responsible BIDDER and has verified all BIDDER documentation, the selected BIDDER will be notified of intent to award the BID and to start the contract process.

SPECIAL ACCOMMODATION

Any person requiring a special accommodation at a Bid Opening because of a disability should call the City Clerk at (850) 871-4104 at least 5 workdays prior to the Bid Opening. For Hearing Impaired, Dial 1-800-955-8771 (TDD), and 1-800-955-8770 (Voice).

BID DOCUMENTS

Electronic versions of the solicitation documents are available on the City's webpage at www.cityofparker.com. Hard copies of the solicitation documents are also available at Parker City Hall, located at 1001 West Park Street, Parker, Florida 32404.

POINT OF CONTACT

The OWNER's representative, Mandy O'Regan, Project Administrator with Anchor CEI (moregan@anchorcei.com) is the only point of contact for this ITB. Under no circumstances may a BIDDER contact any City Council Member or other City employee concerning this ITB until after the contract has been awarded. Any such contact may result in disqualification.

QUESTIONS

BIDDERS shall submit all questions, in writing, to Mandy O'Regan at moregan@anchorcei.com. All questions shall be submitted no later than 5:00 p.m. (CST) on **Friday, May 6, 2022**.

PLAN HOLDERS LIST

Those who wish to be included on the Plan Holders list, must submit Name, Company, Address, Telephone Number, and E-mail Address to Mandy O'Regan at moregan@anchorcei.com. This list will be used during the issuance of any addenda.

ADDENDA

Addenda issued after the initial specifications are released will be posted on the City's website at www.cityofparker.com. In addition, those who have submitted contact information to Ms. O'Regan as detailed above for the Plan Holder's List will be notified via e-mail of all addenda.

It is the responsibility of the BIDDER prior to submission of any proposal to check the above website or contact the City of Parker to verify if any addenda have been issued. The receipt of all addenda must be acknowledged on the addenda response sheet provided within this BID package. Please e-mail Mandy O'Regan, ACEI (OWNER's Representative), at moregan@anchorcei.com with questions regarding the issuance of addenda.

BID FORM

To receive consideration, all BIDs shall be made on the forms provided herein, properly executed and with all items filled out. Do not change the wording of the Bid Form and do not add words to the wording of the Bid Form. Alterations by erasure or interlineations must be explained or noted in the BID over the signature of the BIDDER.

COMPLETE BID AMOUNTS; EXAMINATIONS OF SPECIFICATIONS; WORK SITES

BIDs shall be calculated as detailed in the Bid Tab of the Bid Form and as outlined in the Measurement and Payment section.

Prices shall include all charges for completing the construction of the watermains as depicted on the Contract Drawings to include layout, insurance, taxes, field office and supervision, overhead and profit, bonds and miscellaneous items needed to complete the BID. No allowance will be made to any BIDDER because of a claimed lack of examination or knowledge.

The submission of a BID shall be construed as conclusive evidence that the BIDDER has made such examination.

WITHDRAWAL OF BIDS

Any BIDDER may withdraw his/her BID, either personally or by written request, at any time prior to the Bid Opening Date as posted in this ITB.

A BIDDER may not withdraw his BID for a period of 90 days after the date of Bid Opening and all BIDs shall be subject to acceptance by the OWNER during this period.

CANCELLATION

The OWNER may cancel this ITB, or reject in whole or in part, when it is in the best interest of the OWNER, as determined by the City Council or their designee. Notice of cancellation shall be posted on the City website.

The notice shall identify the solicitation, and, where appropriate, explain that an opportunity will be given to compete on any re-solicitation or any future procurement of similar items.

BASIS OF AWARD

The contract will be awarded to the lowest, responsive, responsible BIDDER who has proposed the lowest qualified base bid and is deemed qualified by the City of Parker, subject to the OWNER's right to reject any or all BIDs and to waive informality and irregularity in the BIDs and proposing or to accept other than the lowest BID when considered to be in the best interest of the OWNER.

RIGHT TO REJECT

In accordance with OWNER policies, the OWNER reserves the right to:

1. Reject any or all BIDs received.
2. Select and award any portion of any or all BID items.
3. Waive minor informalities and irregularities in the Respondent's BID.

A BID may be rejected if it is non-responsive or does not conform to the requirements and instructions in this ITB. A BID may be non-responsive by reasons, including, but not limited to:

1. Failure to utilize or complete prescribed forms.
2. Conditional BIDs.
3. Incomplete BIDs.
4. Indefinite or ambiguous BIDs.
5. Failure to meet deadlines and improper and/or undated signatures.

Other conditions which may cause rejection of BIDs include:

1. Evidence of collusion.
2. Obvious lack of experience or expertise to perform the required work.
3. Submission of more than one BID for the same work from an individual.
4. Respondent or corporation under the same or a different name.

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5. Failure to perform or meet financial obligations on previous contracts.
6. Not delivered on or before the date and time specified as the due date for submission of the BID.

EXECUTION OF AGREEMENT

The successful BIDDER shall, within 10 business days after receipt of the Notice of Award and the contract forms or documents, sign and deliver to the OWNER all required Contract Documents.

The AWARDED BIDDER shall also deliver the policies of insurance or insurance certificate as required. All insurance documents shall be approved by the OWNER before the successful BIDDER may proceed with the work. The execution of the Agreement shall be contingent upon the AWARDED CONTRACTOR obtaining all required building permits.

CONSTRUCTION TIME

The Agreement will include a stipulation that the work be completed in a period of 120 calendar days following receipt of the Notice to Proceed.

Should the CONTRACTOR fail to complete the work by the specified date, the OWNER shall deduct from the Contract Sum the amount of \$100.00 per calendar day as liquidated damages for every day subsequent to the specified date until the work is fully completed and receipted by the OWNER as being completed. For purposes of time calculation, day one of the project is the calendar day after the Notice to Proceed date.

PAYMENTS

Payments shall be made in accordance with the Florida Prompt Payment Act, Chapter 218, Florida Statutes.

LICENSING

BIDDER shall be properly licensed for the work specified in this Invitation to Bid. All BIDDERS are requested to submit any required license(s) with their BIDs. License(s) must be effective as of the Bid Opening date and must be maintained throughout the contract period. Failure to be properly licensed as stated above will result in the rejection of the BID as nonresponsive.

PUBLIC RECORDS

In accordance with Chapter 119 of the Florida Statutes (Public Records Law) and except as may be provided by other applicable state or federal law, all BIDDERS should be aware that BIDs, responses, and proposals are in the public domain.

BIDDERS must identify specifically any information contained in their response which they consider confidential and/or proprietary and which they believe to be exempt from disclosure, citing, specifically the applicable exempting law.

Pursuant to Florida Statute Section 119.071(1)(b), BIDs received as a result of this ITB will not become public record until such time as the OWNER provides notice of an intended decision or until 30 days after opening the BIDs, whichever is earlier.

EXEMPTION OF MEETINGS/PRESENTATIONS

Pursuant to Florida Statute Section 286.0113(2), any portion of a meeting at which a negotiation with a contractor is conducted pursuant to a competitive solicitation, at which a contractor makes an oral presentation as part of a competitive solicitation, or at which a contractor answers questions as part of a competitive solicitation are exempt from public meeting requirements.

However, the OWNER must make a complete recording of any portion of an exempt meeting and no portion of the exempt meeting may be held off the record.

The recording of, and any records presented at, the exempt meeting are exempt from the public records law of Section 119.07(1), Florida Statute (2015) and Section 24(a), Article I of the State Constitution, until such time as the agency provides notice of an intended decision or until 30 days after opening the BIDs, submittals, or final replies, whichever occurs earlier.

If the OWNER rejects all BIDs, submittals, or replies and concurrently provides notice of its intent to reissue a competitive solicitation, the recording and any records presented at the exempt meeting remain exempt from Section 119.07(1), Florida Statute (2015) and Section 24(a), Article I of the State Constitution until such time as the agency provides notice of an intended decision concerning the reissued competitive solicitation or until the agency withdraws the reissued competitive solicitation.

A recording and any records presented at an exempt meeting are not exempt for longer than 12 months after the initial agency notice rejecting all BIDs, submittals, or replies.

REPRESENTATIONS

The Contract Documents contain the provisions required for the project. Information obtained from an office, Director, or employee of the OWNER for any other person shall not affect the risks or obligations assumed by the BIDDER or relieve the BIDDER from fulfilling any of the conditions of the contract.

PUBLIC ENTITY CRIMES STATEMENT

A person or affiliate who has been placed on the convicted contractor 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, contractor, 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 Florida Statutes, Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted contractor list.

By submission of a proposal in response to this document, the contractor certifies compliance with the above requirements as stated in Section 287.133, Florida Statutes.

EMPLOYMENT ELIGIBILITY VERIFICATION

CONTRACTOR shall utilize the U.S. Department of Homeland Security's E-Verify system, in accordance with the terms governing use of the system, to confirm the employment eligibility of:

1. All persons employed by the CONTRACTOR during the term of the Contract to perform employment duties within Florida; and
2. All persons, including contractors, subcontractors, assigned by the CONTRACTOR to perform work pursuant to the contract with the DHS and OWNER. By submission of a proposal in response to this document, the CONTRACTOR certifies compliance with the above requirements.

WARRANTY

All goods and services furnished by BIDDER, relating to and pursuant to this ITB, will be warranted to meet or exceed the specifications contained herein. In the event of a breach, the BIDDER will take all necessary action, at BIDDER's expense, to correct such breach in the most expeditious manner possible.

SUBCONTRACTORS

The AWARDED BIDDER will be the prime service provider and shall be responsible for all work performed and contract deliverables. Proposed use of subcontractors should be included in the BIDDER's Response. Requests for use of subcontractors received subsequent to the solicitation process are subject to review and approval by the OWNER. The OWNER reserves the right to request and review information in conjunction with its determination regarding a subcontract request. All subcontractors are subject to the same requirements of this solicitation as the AWARDED BIDDER. The AWARDED BIDDER is the single point of contact for all work performed on the awarded project.

AWARDED BIDDER shall provide a single point of contact for matters in relation to the construction, as follows:

1. Name
2. Phone Number(s)
3. Email Address

HOLD HARMLESS AND INDEMNIFICATION

1. The AWARDED BIDDER shall indemnify and hold harmless the OWNER, and its officers, agents, attorneys and employees, from any and all claims, suits, actions, damages, liabilities, expenditures, or causes of action of any kind, losses, penalties, interest, demands, judgments, and costs of suit, including attorneys' fees and paralegals' fees, for any expense, damage, or liability incurred by any of them, whether for bodily or personal injury, death, property damage, direct or consequential damages, or economic loss, including environmental impairment, arising directly or indirectly, on account of or in connection with contractor's performance of the contract or by any person, firm, or corporation to whom any portion of the performance of this Agreement is subcontracted to or used by the contractor, or by any other person.
2. The parties understand and agree that such indemnification by the contractor relating to any matter which is the subject of this Agreement shall extend throughout the term of this Contract and any statutes of limitations thereafter.
3. The AWARDED BIDDER's obligation shall not be limited by or in any way to any insurance coverage or by any provision in or exclusion or omission from any policy of insurance.

DUTY TO PAY DEFENSE COSTS AND EXPENSES

1. The AWARDED BIDDER agrees to reimburse and pay on behalf of the OWNER the cost of the OWNER legal defense, through and including all appeals, and to include all attorneys' fees, costs, and expenses of any kind for any and all:
 - a. claims described in the Hold Harmless and Indemnification paragraph; or,
 - b. other claims arising out of the contractor's performance of the Contract and in which the OWNER has prevailed.
2. The OWNER shall choose its legal defense team, experts, and consultants and invoice the AWARDED BIDDER accordingly for all fees, costs and expenses upon the conclusion of the claim.
3. Such payment on the behalf of the OWNER shall be in addition to any and all other legal remedies available to the OWNER and shall not be considered to be the OWNER's exclusive remedy.

BONDS

A Bid Bond, in the amount of 5% of the proposed Base Bid contract amount, shall accompany each bid. The successful BIDDER's security will be retained until the contract has been signed and the BIDDER has furnished the required Public Construction Bond. The OWNER reserves the right to retain the security of the next BIDDER until the selected BIDDER enters into contract or until 90 days after Bid Opening, whichever is shorter. All other BID security will be returned as soon as practicable.

Prior to signing the Contract, the AWARDED BIDDER will secure and post a Public Construction Bond pursuant to Section 255.05 of the Florida Statutes. All such bonds shall be issued by a Surety acceptable to the OWNER. The OWNER will designate to whom subject bonds shall be posted. Failure or refusal to furnish adequate bonds in a satisfactory form shall subject the AWARDED BIDDER to loss of time from the allowable construction period equal to the time of delay in furnishing the required bonds.

TERMINATION FOR CONVENIENCE

The OWNER may terminate any awarded contract at any time for any reason by giving at least a 30-day notice in writing to the AWARDED BIDDER. If the contract is terminated by the OWNER as provided herein, the AWARDED BIDDER will be entitled to receive payment for those services reasonably performed to the date of termination.

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TERMINATION FOR CAUSE

This Contract may be terminated by the OWNER if the AWARDED BIDDER is found to have submitted a false certification as required under Section 215.471 (5), Florida Statutes, been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or been engaged in business operations in Cuba or Syria.

If the AWARDED BIDDER fails to comply with any of the terms and conditions of the awarded Contract, the OWNER may give notice, in writing, to the AWARDED BIDDER of any or all deficiencies claimed. The notice will be sufficient for all purposes if it describes the default in general terms. If all defaults are not cured and corrected within a reasonable period as specified in the notice, the OWNER may, with no further notice, declare the awarded contract to be terminated. The AWARDED BIDDER will thereafter be entitled to receive payment for those services reasonably performed to the date of termination, less the amount of reasonable damages suffered by the OWNER by reason of the AWARDED BIDDER's failure to comply with the awarded Contract.

Notwithstanding the above, the AWARDED BIDDER is not relieved of liability to the OWNER for damages sustained by the OWNER by virtue of any breach of this Contract by the AWARDED BIDDER and the OWNER may withhold any payments to the AWARDED BIDDER for the purpose of setoff until such time as the amount of damages due the OWNER from the AWARDED BIDDER is determined.

BID PROTEST

A notice of protest must be submitted within three business days after posting of the recommendation of award on the City website at www.cityofparker.com. The protest must be in writing, via e-mail or letter and must identify the protester and the solicitation and shall include a factual summary of the basis of the protest. The notice of protest is considered filed when it is received by the City Clerk. Further information may be found in the City Code.

ANTICIPATED SCHEDULE

This schedule may be altered solely at the OWNER's discretion:

ITB Advertisement:	Wednesday, April 20, 2022 Wednesday, May 4, 2022
Questions Due Date:	Friday, May 6, 2022 (5:00 p.m. CST)
Bid Deadline:	Tuesday, May 17 (2:00 p.m. CST)
Award Recommendation Council Meeting:	Tuesday, June 7, 2022
Installation Complete:	Within 120 days of Notice to Proceed

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BID CHECKLIST

Please submit one original of the items on the following list and any other items required by any section of this ITB. The checklist is provided as a courtesy and may not be all inclusive of items required within this ITB.

1. VALID FLORIDA-REGISTERED UNDERGROUND UTILITY CONTRACTOR'S LICENSE
2. BID FORM
3. BID BOND
4. ADDENDUM ACKNOWLEDGEMENT
5. ANTI-COLLUSION CLAUSE
6. CONFLICT OF INTEREST DISCLOSURE FORM
7. IDENTICAL TIE BIDS/DRUG FREE WORKPLACE
8. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION
9. 44 C.F.R. PART 18-CERTIFICATION REGARDING LOBBYING



TECHNICAL SPECIFICATIONS

**SECTION 01046
SPECIAL PROVISIONS**

PART 1 - GENERAL

1.01 CONSTRUCTION AREAS

- A. The CONTRACTOR shall:
1. Limit use of the construction areas for work and for storage to allow for:
 - a. Work by other contractors.
 - b. Utilities Use.
 - c. Owner use.
 - d. Public use.
 2. Coordinate use of Work site under direction of Project Representative.
 3. Assume full responsibility for the protection and safekeeping of materials and products under this Contract, stored on or off the site.
 4. Move any stored products, under CONTRACTOR's control, which interfere with operations of the OWNER, Utilities, or any separate contractor.
 5. Obtain and pay for the use of additional lay down areas needed for operations.

1.02 SPECIFICATIONS

- A. All Work called for in the Specifications applicable to this Contract, but not shown on the plans in their present form, or vice versa, shall be of like effect as if shown or mentioned in both. Work not specified in either the plans or the Specifications but involved in carrying out their intent or in the complete and proper execution of the Work is required and shall be performed by the CONTRACTOR as though it were specifically delineated or described.
- B. The apparent silence of the specifications as to any detail, or the apparent omission from them of a detailed description concerning any Work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation shall be made on the basis of these specifications.

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

1.03 WORK PROGRESS

- A. The CONTRACTOR shall construct the Work as shown on the drawings and provide equipment which will be efficient, appropriate, and large enough to secure a satisfactory quality of work and a rate of progress which will ensure the completion of the Work within the Contract Time.
- B. If at any time project execution appears to be inefficient, inappropriate, or insufficient for securing the quality of Work required or for producing the necessary rate of progress, the Project Representative may request the CONTRACTOR to increase the efficiency, change the character or increase the project equipment, and the CONTRACTOR shall conform to such request.
- C. Failure of the Project Representative to give such request shall in no way relieve the CONTRACTOR of its obligations to secure the quality of the work and rate of progress required.

1.04 PRIVATE LAND

- A. The CONTRACTOR shall not enter or occupy private land outside of the construction site or easements, except by written permission of the landowner.

1.05 WORK LOCATIONS

- A. Structures, pipelines, and equipment shall be substantially located as indicated on the Drawings, but the ENGINEER through the Project Representative reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons.

1.06 OPEN EXCAVATIONS

- A. All open excavations shall be adequately safeguarded by the CONTRACTOR by providing temporary barricades, caution signs, lights and other appropriate means to prevent accidents to persons and damage to property.
- B. The CONTRACTOR shall, at its own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen.

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- C. Bridges provided for access during construction shall be removed when no longer required.
- D. The length or size of excavation will be controlled by the particular surrounding conditions. The Project Representative may require special construction procedures such as limiting the length of the open trench, prohibiting the stacking of excavated material in the street or requiring that the trench shall not remain open overnight.
- E. 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 properly signed, appropriately barricaded at all times, and well lit.
- F. The CONTRACTOR shall adhere to the requirements of Chapter 553 Part III of the Florida Statutes entitled Trench Safety Act and The United States Department of Labor Occupational Safety and Health Administration (O.S.H.A.) Excavation Safety Standards 29 CFRs 1926.650 Subpart P.

1.07 TEST PITS

- A. Test pits for the purpose of locating all known and unknown underground pipelines, utilities, or structures in advance of the construction shall be excavated and backfilled by the CONTRACTOR at the direction of the Project Representative.
- B. Test pits shall be immediately backfilled after their purpose has been satisfied and the surface restored and maintained in a manner satisfactory to the Project Representative.
- C. No separate payment will be made for such test pit obligations.

1.08 CARE AND PROTECTION OF PROPERTY

- A. The CONTRACTOR shall be responsible for the preservation of all public and private property and shall use every precaution necessary to prevent damage thereto.
 - 1. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the Work on the part of the CONTRACTOR, such property shall be restored by the CONTRACTOR, at its expense, to a condition similar or equal to that existing before the damage was done or make good the damage in other manner acceptable to the OWNER and Project Representative.

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- B. All sidewalks, mailboxes, and driveways which are disturbed by the CONTRACTOR's operations shall be restored to their original construction or better and in accordance with best practice and the requirements of the Contract Documents.

- C. Along the location of this Work, all fences, walks, bushes, trees, shrubbery, and other physical features shall be protected and restored in a thoroughly workmanlike manner.
 - 1. Fences and other features removed by the CONTRACTOR shall be replaced in the location and by the date indicated by the Project Representative.
 - 2. All grass areas beyond the limits of construction which have been damaged by the CONTRACTOR shall be regraded, seeded, and re-established as before damage.

- D. Trees close to the work shall be boxed or otherwise protected against injury.
 - 1. The CONTRACTOR shall trim all branches that are liable to be damaged because of construction operations, but in no case shall any tree be cut or removed without prior notification or written approval of the Project Representative.
 - 2. All injuries to bark, trunk, limbs, and roots of trees shall be repaired by dressing, cutting, and painting according to appropriate methods, using only appropriate tools and materials.
 - 3. All landscaping to be removed shall be documented and replaced with like kind or better and re-established as before removal.
 - 4. All palm trees shown on plans shall be spaded out, protected, temporarily stored, and replaced to their same location(s).

- E. The protection, removal, and replacement of existing physical features along the line of Work shall be a part of the Work under the Contract, and all costs in connection therewith shall be included in the lump sum prices.

1.09 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

- A. The CONTRACTOR shall assume full responsibility for the protection of all public or private buildings, structures, and utilities, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, storm drains and electric and telephone cables, whether or not they are shown on the Drawings.

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1. The CONTRACTOR shall carefully support and protect all such structures and utilities from injury of any kind.
 2. Any damage resulting from the CONTRACTOR's operations, or any of its subcontractors, shall be repaired at its expense.
- B. The CONTRACTOR shall bear full responsibility for obtaining all locations of underground structures and utilities (including existing water services, drain lines and sewers). Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by the CONTRACTOR.
- C. Protection and temporary removal and replacement of existing utilities and structures shall be a part of the Work under the Contract and all costs in connection therewith shall be included in the lump sum price.
- D. The CONTRACTOR shall be responsible to maintain water, telephone, power, cable TV, sewer, gas, and other related utilities throughout construction at no additional cost to OWNER.
- E. The CONTRACTOR shall fully cooperate with all private and public utilities during the installation of new facilities or relocation of existing facilities. The CONTRACTOR shall coordinate its work accordingly and shall have no claim except for time extension for delays associated with the proposed utility improvements.

1.10 WATER FOR CONSTRUCTION PURPOSES

- A. In locations where public water supply is available, the CONTRACTOR may purchase water for construction purposes.
- B. The express approval of the OWNER shall be obtained before using water.
1. Waste of water by the CONTRACTOR shall be sufficient cause for withdrawing the privilege of unrestricted use.
 2. Hydrants shall only be operated under the supervision of the appropriate utility personnel.
- C. All water drawn from a public water supply shall be metered using a meter supplied by the appropriate utility, and CONTRACTOR shall pay OWNER based on water usage according to such metering.

1.11 MAINTENANCE OF FLOW

- A. The CONTRACTOR shall at its own cost, provide for the flow of sewers, drains and water courses interrupted during the progress of the work, and shall immediately cart away and remove all offensive matter.

- B. The entire procedure of maintaining existing flow shall be fully coordinated with the Project Representative in advance of the interruption of any flow.

1.12 CLEANUP AND DISPOSAL OF EXCESS MATERIAL

- A. During the course of the Work, the CONTRACTOR shall keep the construction site in a reasonably clean and neat condition.
 - 1. The CONTRACTOR shall dispose of all residues resulting from the construction Work and, at the conclusion of the Work, shall remove and haul away any surplus excavation, broken pavement, lumber, equipment, temporary structures and any other refuse remaining from the construction operations.
 - 2. The CONTRACTOR shall leave the entire site of the Work in a neat, orderly, and restored condition.
- B. In order to prevent environmental pollution arising from the construction activities related to the performance of this Contract, the CONTRACTOR and its subcontractors shall comply with all applicable federal, state and local laws and regulations concerning waste material disposal, as well as any other specific requirements stated elsewhere in these Specifications or the Contract Documents.

1.13 MAINTENANCE OF ACCESS

- A. Portions of the Work are located in developed areas requiring access for fire, police, emergency, and other city, state, or federal agencies to be provided and at least one free lane must be available at all times for all traffic.
- B. The CONTRACTOR shall arrange operations in these areas to meet these requirements and secure approval or operating procedures from the City of Panama City Beach (OWNER) or Florida Department of Transportation (FDOT) as the case may be.

1.14 MAINTENANCE OF TRAFFIC

- A. Open pits, trenches, unpaved streets, debris, or other obstructions due to construction that will prevent the normal flow of traffic during an extended construction stoppage, for any reason, shall be minimized.
- B. In the event an extended construction stoppage is found to be necessary CONTRACTOR shall, at its own expense, maintain normal traffic flow during extended construction stoppage.

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- C. All excavated material shall be placed so that vehicular and pedestrian traffic may be maintained at all times.
- D. If construction operations cause traffic hazards, the CONTRACTOR shall repair the road surface, provide temporary roadways, erect wheel guards or fences, or take other satisfactory measures for safety, subject to approval by the Project Representative.
- E. Detours around construction areas will be subject to the approval of the Project Representative. Where detours are permitted, the CONTRACTOR shall provide all necessary barricades and signs as required by the Project Representative to divert the flow of traffic. While traffic is detoured, the CONTRACTOR shall expedite construction operations and the Project Representative will strictly control periods when traffic is being detoured.

1.15 CONNECTION TO WORK BY OTHERS

- A. If construction by others occurs at the same time and in the same areas as Work being done under this Contract, the CONTRACTOR shall conduct operations as follows:
 - 1. Force Mains, Reuse Mains and Water Mains:
 - a. If shown on the Drawings, pipelines constructed under this Contract may be connected to pipelines to be built by others.
 - b. Pipelines built under this Contract will be connected to pipelines constructed by others by removing the plugs at both ends of the pipeline segment and making the connection.
 - c. If the pipelines have not been constructed by others, the pipeline under this Contract shall be laid to the required line and grade, terminated with a plugged connection, precisely at the location of the connection indicated on the Drawings, and then backfilled and marked with a stake and the connection made later as specified in sub-paragraph "b" above.

1.16 PROTECTION OF CONSTRUCTION AND EQUIPMENT

- A. All newly constructed Work shall be carefully protected from any injury or damage. The CONTRACTOR shall not allow any wheeling or walking or placing of heavy loads on any newly constructed Work. All portions injured or damaged shall be reconstructed by the CONTRACTOR at its own expense.

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- B. All structures shall be protected in a manner approved by the Project Representative. If, in the final inspection of the work, any defects, faults or omissions are found, the CONTRACTOR shall cause the same to be repaired or removed and replaced by proper materials and workmanship without extra compensation by OWNER for the materials and labor required. Further, the CONTRACTOR shall be fully responsible for the satisfactory maintenance and repair of the construction and other work undertaken herein, for at least the guarantee period described in the Contract.
- C. The CONTRACTOR shall take all necessary precautions 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.
- D. The CONTRACTOR shall maintain the work during construction and until the project is accepted.
 - 1. Such maintenance shall constitute continuous and effective work executed daily, with adequate equipment, and forces in order that the roads or structures are kept in satisfactory condition at all times.
 - 2. In the case of a contract for the placing of a previously constructed course or subgrade, the CONTRACTOR shall maintain the previous course or subgrade during all construction operations.
- E. All cost of maintenance work during construction and before the project is accepted shall be included in the contract price and the CONTRACTOR will not be paid an additional amount for such work.

1.17 WORKING HOURS

- A. Regular working hours are defined as up to 10 hours per day, Monday through Friday, beginning no earlier than 7:00 a.m. and ending no later than 5:00 p.m., excluding holidays.
- B. The CONTRACTOR shall not work on holidays.
- C. The Contract Time shall not be extended due to holidays falling within the Contract Time.
- D. All Work performed by the CONTRACTOR is subject to observation at all times by the OWNER and its agents, including the Project Representative.
- E. Requests to work outside of the defined regular working hours must be submitted in writing to the Project Representative, at least 48 hours prior to any proposed weekend work or scheduled extended workweeks.

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- F. Periodic unscheduled overtime on weekdays will be permitted provided that 2 hours' notice is provided to the Project Representative. Maintenance of the CONTRACTOR's equipment and cleanup may be performed during hours other than regular working hours.
- G. Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Subarticle 8-6.4 (Pages 88-89) regarding "Suspension of Contractor's Operations – Holidays and Special Events" applies to this Project.
- H. The CONTRACTOR shall reimburse the OWNER for additional engineering and/or inspection costs incurred as a result of overtime work in excess of the regular working hours.
 - 1. At OWNER'S option, overtime costs may either be deducted from the CONTRACTOR's monthly payment request or deducted from the CONTRACTOR's retention prior to release of final payment.
 - 2. Engineering/Inspection costs shall be calculated at the following rates:
 - a. Professional Engineer \$210.00
 - b. Project Engineer \$180.00
 - c. Sr. Field Representative \$115.00
 - d. Field Representative \$95.00

1.18 MEETINGS

- A. Immediately after awarding the Contract but before construction Work begins, the CONTRACTOR shall attend a preconstruction conference as scheduled by the Project Representative to review construction aspects of the project and to provide required preconstruction submittals and other documentation.
- B. In addition, the CONTRACTOR shall attend weekly meetings scheduled by the Project Representative to discuss Contract progress, near term scheduled activities, including utility relocations, as well as problems and proposed solutions. The CONTRACTOR shall submit a 2-week planning schedule at each weekly meeting, showing the work planned for the next 2 weeks in bar chart format, identifying current and planned activities and related contract schedule work activities, including subcontractor work. The planning schedule shall designate all activities that are controlling work items as determined by the currently accepted contract schedule.

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- C. The CONTRACTOR shall also attend other meetings as may be required by OWNER or Project Representative from time to time to discuss, coordinate, and resolve specific issues, problems, change orders or disputes.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01046

**SECTION 01150
MEASUREMENT AND PAYMENT**

PART 1 - SCOPE OF WORK

- A. The scope of this section of the Contract Documents is to further define the items included in each Bid Item in the Bid Proposal section of these Specifications.
- B. Payment will be made based on the specified items included in the description in this section for each bid item.

1.02 GENERAL

- A. All Contract Prices included in the Bid Proposal section will be full compensation for all labor, materials, tools, equipment and incidentals necessary to complete the construction as shown on the drawings and/or as specified in the Contract Documents to be performed under this contract.
- B. Actual quantities of each item bid on a unit price basis will be determined upon completion of the construction in the manner set up for each item in this section of the specifications.
- C. Payment for all items listed in the Bid Form will constitute full compensation for all work shown and/or specified to be performed under this project.

1.03 ESTIMATED QUANTITIES

- A. The quantities shown are approximate and are given only as a basis of calculation upon which the award of the Contract is to be made.
- B. The OWNER/ENGINEER does not assume any responsibility for the final quantities, nor shall the CONTRACTOR claim misunderstanding because of such estimate of quantities.
- C. Final payment will be made only for satisfactorily completed quantity of each item.

1.04 WORK OUTSIDE AUTHORIZED LIMITS

- A. No payment will be made for work constructed outside the authorized limits of work.

1.05 MEASUREMENT STANDARDS

- A. Unless otherwise specified for the particular items involved, all measurements of distance shall be taken horizontally or vertically.

1.06 AREA MEASUREMENTS

- A. In the measurement of items to be paid for on the basis of area of finished work, the lengths and/or widths to be used in the calculations shall be the final dimensions measured along the surface of the completed work within the neat lines shown or designated.

1.07 LUMP SUM ITEMS

- A. Where payment for items is shown to be paid on a lump sum basis, no separate payment will be made for any item of work required to complete the lump sum item.
- B. Lump sum bid items shall be complete, tested and fully operable prior to request for final payment.
- C. Measurement shall be based upon the ENGINEER's estimate of percent complete per partial payment period.

1.08 UNIT PRICE ITEM

- A. Separate payment will be made for the items of work described herein and listed on the Bid Form.
- B. Any related work not specifically listed but required for satisfactory completion of the work shall be considered to be included in the scope of the appropriate listed work items.

1.09 OTHER PROVISIONS

- A. No separate payment will be made for the following items and the cost of such work shall be included in the applicable pay items of work unless indicated otherwise in the individual bid item.
 - 1. Sheeting and shoring.
 - 2. Clearing, grubbing, and grading.
 - 3. Replacement and/or repair of existing utilities damaged during construction.
 - 4. Trench excavation, including necessary pavement removal, rock removal, muck removal and restoration unless a separate bid item is listed in the Bid Form.
 - 5. Ditch and swale restoration.

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6. Dewatering and disposal of surplus water, including permitting if required.
 7. Bypass pumping.
 8. Structural fill, backfill and grading.
 9. Adjusting existing valve boxes, manhole frames and covers and other structures.
 10. Foundation and borrow materials.
 11. Placing system in operation.
 12. Any material and equipment required to be installed and utilized for the tests.
 13. Maintaining the existing quality of service during construction.
 14. Appurtenant work as required for a complete and operable system.
- B. Final payment shall not be requested by the CONTRACTOR or made by the OWNER until record drawings have been submitted to the ENGINEER.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.01 BASE BID

- A. BID ITEM 1 - MOBILIZATION/DEMobilIZATION
1. Payment for all work included under this Bid Item will be made at the lump sum price bid for mobilization and demobilization of all labor, equipment, materials, and appurtenances necessary for construction of the project.
 2. Mobilization shall include all those operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, and sanitary and other facilities.
 3. Also, included as part of this Bid Item is the cost for project indemnifications, photographs, shop drawings, working drawings, schedules, record documents (excluding as-builts), coordination, phasing, and any other preconstruction expense necessary for the start of the work, excluding the cost of construction materials.

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4. The lump sum price for mobilization/demobilization will be limited to 10% of the total Base Bid Amount.
5. The initial 70% of the lump sum price will be payable with the first month's partial payment.
6. The remaining thirty percent (30%) will be payable with the final partial payment.
7. Measurement for this bid item will be lump sum. The lump sum price for mobilization/demobilization will be limited to 10% of the total contract base bid amount.

B. BID ITEM 2 – BONDS AND INSURANCE

1. Payment for this bid item shall be made at the lump sum price bid for all bonds and insurance policies as required by the Contract Documents.
2. Payment will be made only after proper documentation is provided to the ENGINEER. Measurement of this bid item shall be lump sum.
3. THIS ITEM BID SHALL NOT EXCEED 5.0% OF THE ENTIRE CONTRACT BID AMOUNT.

C. BID ITEM 3 – EROSION CONTROL

1. Payment for all work included under this bid item will be made at the lump sum price bid for all work associated with the prevention, control and abatement of erosion and water pollution in accordance with the contract documents.
2. Payment shall include all items and incidentals necessary to complete the work in conformance with NPDES and other permit requirements.
3. Measurement for work included under this bid item will be lump sum.

D. BID ITEM 4 – TESTING AND FLUSHING

1. The Owner has allocated the amount indicated as a testing allowance for quality control testing during construction.
2. The Owner will provide water for the project, at a cost to the Contractor. The Contractor should include \$3,000.00 in Bid Item No. 7 for the cost of the water and meter.
3. The Contractor shall employ, coordinate and direct the services of

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independent testing laboratories required for all testing.

4. The Contractor shall pay all testing laboratory invoices and submit them for reimbursement.
5. Payment for testing completed under this Bid Item shall be made at the direct invoice amount without markup of any kind.
6. Payment for flushing completed under this Bid Item shall be made at the lump sum bid price for all work associated with the flushing for quality control testing during construction.

E. BID ITEM 5 – LAYOUT AND AS-BUILTS

1. Payment for the work included under this bid item shall be made at the lump sum price bid for all work associated with furnishing all layouts of the improvements as well as surveys and preparation of record drawings as required under the contract documents.
2. Payment shall constitute complete compensation for all labor, materials, and equipment necessary to complete this work item.
3. Measurement for the work included under this bid item shall be lump sum.

F. BID ITEM 6 - MAINTENANCE OF TRAFFIC

1. Payment for all work included under this Bid Item will be made at the lump sum bid price for maintenance of traffic in accordance with the contract documents and Florida Department of Transportation (FDOT) Standards.
2. Payment shall include all maintenance of traffic necessary for construction of the improvements indicated in the contract documents complete in every detail.
3. Payment of the applicable Contract lump sum price as stated in the proposal will be full compensation for furnishing all labor, materials, and equipment necessary to maintain public roadway and pedestrian traffic including flag men, uniformed police officers, barricades, warning lights/flashers, and safety ropes.
4. Also included is furnishing, installing, and maintaining a Traffic Control Plan, control and safety devices, control of dust, temporary crossing structures over trenches, any necessary detour facilities, and other specific requirements for the safe and expeditious movements of traffic.

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5. Payment shall constitute complete compensation for all labor, materials, and equipment necessary to complete this work item.

G. BID ITEM 7 – 6-INCH PVC WATER MAIN AND APPURTENANCES

1. Payment for this Bid Item will be made at the contract lump sum bid price and shall include all labor, materials, and equipment to construct a 6-inch PVC water main and all appurtenances.
2. This bid item shall include but not be limited to the coordination with existing utilities, protection of existing utilities, clearing and grubbing, excavation, sheeting, shoring and bracing, dewatering, groundwater treatment and disposal, backfill, compaction, and grading, and clean-up.
3. This item also includes all necessary fittings, valves, reducers, bends, tees, wyes, plugs, restraining devices, metallic tracer wire, line locator and identification markers and all other items and incidentals necessary to construct the 6-inch PVC Water Main including all appurtenances complete in every detail.
4. Measurement for the work included under this bid item shall percentage of work completed.

H. BID ITEM 8 – 8-INCH PVC WATER MAIN AND APPURTENANCES

1. Payment for this Bid Item will be made at the contract lump sum bid price and shall include all labor, materials, and equipment to construct an 8-inch PVC water main and all appurtenances.
2. This bid item shall include but not be limited to the coordination with existing utilities, protection of existing utilities, clearing and grubbing, excavation, sheeting, shoring and bracing, dewatering, groundwater treatment and disposal, backfill, compaction, and grading, and clean-up.
3. This item also includes all necessary fittings, valves, reducers, bends, tees, wyes, plugs, restraining devices, metallic tracer wire, line locator and identification markers and all other items and incidentals necessary to construct the 6-inch PVC Water Main including all appurtenances complete in every detail.
4. Measurement for the work included under this bid item shall percentage of work completed.

I. BID ITEM NO. 9 – 8-INCH FPVC WATER MAIN AND APPURTENANCES

1. Payment for this Bid Item will be made at the contract lump sum bid

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price and shall include all labor, materials, and equipment to construct an 8-inch FPVC water main and all appurtenances.

2. This bid item shall include but not be limited to coordination with existing utilities, protection of existing utilities, clearing and grubbing, excavation, sheeting, shoring and bracing, dewatering, groundwater treatment and disposal, backfill, compaction, and grading, and clean-up.
3. This item also includes all necessary fittings, valves, reducers, bends, tees, wyes, plugs, restraining devices, metallic tracer wire, line locator and identification markers and all other items and incidentals necessary to construct the 6-inch PVC Water Main including all appurtenances complete in every detail.
4. Measurement for the work included under this bid item shall percentage of work completed.

J. BID ITEM 10 – FIRE HYDRANT ASSEMBLIES

1. Payment for all work included under this bid item will be unit price per replacement of two fire hydrant assemblies and all associated appurtenances associated with connecting to the watermain, piping between the main and the hydrant.
2. This bid item shall include but not be limited to excavation, disposal of existing fire hydrants, backfill, cleanout, and right-of-way restoration per the construction plan details and specifications.
3. Measurement for the work included under this bid item shall be unit price per item.

K. BID ITEM 11 – CONCRETE SIDEWALK

1. Payment for this Bid Item will be made at the contract lump sum bid price and shall include all labor, materials, and equipment to remove and replace existing concrete sidewalks as indicated on the Contract Drawings.
2. This Bid Item includes coordination with property owners, utilities, protection of existing utilities, tree protection, excavation, sheeting, shoring, and bracing, dewatering, groundwater treatment and disposal, backfill, compaction, and grading, restoration, sod, and clean-up of the concrete sidewalks.
3. In addition, this Bid Item includes all necessary incidentals and appurtenances that are needed for replacing the concrete sidewalks as indicated on the Contract Drawings.

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4. Measurement for the work included under this bid item shall percentage of work completed.

L. BID ITEM 12 – ASPHALT DRIVE

1. Payment for this Bid Item will be made at the contract lump sum bid price and shall include all labor, materials, and equipment to remove and replace existing asphalt driveways as indicated on the Contract Drawings.
2. This Bid Item includes coordination with property owners, utilities, protection of existing utilities, tree protection, excavation, sheeting, shoring, and bracing, dewatering, groundwater treatment and disposal, backfill, compaction, and grading, restoration, sod, and clean-up of the asphalt driveway.
3. In addition, this Bid Item includes all necessary incidentals and appurtenances that are needed for replacing the asphalt driveways as indicated on the Contract Drawings.
4. Measurement for the work included under this bid item shall percentage of work completed.

M. BID ITEM 13 – RESTORATION

1. Payment for all work included under this bid item will be made as a percentage of work completed for all work related to restoring each area disturbed to pre-construction conditions and shall include seeding or sodding in areas where construction disturbed landscape, in accordance with the contract documents.
2. Payment shall include, but not be limited to site restoration, removal and replacement of landscaping, fencing, drainage and other required and associated work or materials.
3. Payment shall constitute complete compensation for all labor, materials, and equipment necessary to complete this work item.

END OF SECTION 01150

**SECTION 01300
SUBMITTALS**

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The CONTRACTOR shall submit to the ENGINEER for review such working drawings, shop drawings, test reports and data on materials and equipment (hereinafter in this Section called "Data"), and material samples (hereinafter in this Section called "Samples") as are required for the proper control of work, including but not limited to those working drawings, shop drawings, Data and Samples for materials and equipment specified elsewhere in the Specifications and in the Contract Drawings.
- B. The CONTRACTOR shall note that there are specific submittal requirements in other sections of these Specifications.
- C. The CONTRACTOR is to maintain an accurate updated submittal log and shall bring this log to each scheduled progress meeting with the PROJECT REPRESENTATIVE and the ENGINEER. This log shall be organized using the ten (10) character numbering system in subparagraph 1.6 F. This log should include the following items:
 - 1. Submittal Description and File Number assigned.
 - 2. Date to ENGINEER.
 - 3. Date returned to CONTRACTOR (from ENGINEER).
 - 4. Status of Submittal
 - a. Approved
 - b. Approved As Noted
 - c. Approved As Noted/Confirm
 - d. Not Approved/Resubmit
 - e. Not Approved
 - 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 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 and shall consist of the following:
1. Fabrication.
 2. Erection and setting drawings and schedule drawings.
 3. Manufacturer’s scale drawings.
 4. Bills of material.
 5. Wiring and control diagrams.
 6. Inspection and test reports including performance curves and certifications as applicable to the Work.
- B. All details on shop drawings submitted for approval shall clearly show the elevations of the various parts to the main members and lines of the structure and/or equipment, and where correct fabrication of the Work depends upon field measurements, such measurements shall be made and noted on the shop drawings before being submitted for approval.
- C. See Shop Drawing Schedule requirements in Subparagraph 1.7 CONTRACTOR’S RESPONSIBILITY.

1.03 PRODUCT DATA

- A. Product data as specified in individual sections, include, but are not necessarily limited to the following, as applicable to the Work:
1. Standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer’s product specification and installation instructions.
 2. Availability of colors and patterns.
 3. Manufacturer’s printed statements of compliances and applicability.
 4. Roughing-in diagrams and templates.
 5. Catalog cuts.
 6. Product photographs.
 7. Standard wiring diagrams.

8. Printed performance curves and operational-range diagrams.
9. Production or quality control inspection and test reports and certifications.
10. Mill reports.
11. Product operating and maintenance instructions and recommended spare-parts listing storage instructions.
12. Printed product warranties.

1.04 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, groundwater 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. Working drawings shall be signed and sealed by a registered Professional Engineer, currently licensed to practice in the State of Florida and shall convey, or be accompanied by, calculations or other sufficient information to completely explain the structure, machine, or system described and its intended manner of use.
- C. Prior to commencing such Work, working drawings must have been reviewed without specific exceptions by the ENGINEER. Such review will be for general conformance and will not relieve the CONTRACTOR in any way from his responsibility with regard to the fulfillment of the terms of the Contract.
- D. All risks of error are assumed by the CONTRACTOR; the OWNER and ENGINEER shall have no responsibility, therefore.

1.05 SAMPLES

- A. General:
 1. The CONTRACTOR shall furnish, for the approval of the ENGINEER, samples required by the Contract Documents or requested by the ENGINEER.
 2. Samples shall be delivered to the ENGINEER as specified or requested and in quantities and sizes as specified.

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3. A minimum of two samples of each item shall be submitted unless otherwise specified.
 4. The CONTRACTOR shall prepay all shipping charges on samples.
 5. Materials or equipment for which samples are required shall not be used in the Work until approved by the ENGINEER.
- B. Samples specified in individual sections, include, but are not necessarily limited to physical examples of the Work as applicable such as:
- a. Sections of manufactured or fabricated work.
 - b. Small cuts or containers of materials.
 - c. Complete units of repetitively used products.
 - d. Color/texture/pattern swatches and range sets.
 - e. Specimens for coordination of visual effect.
 - f. Graphic symbols.
 - g. Units of Work to be used by the ENGINEER or Project Representative for independent inspection and testing.
- C. The CONTRACTOR shall prepare a transmittal letter in triplicate for each shipment of samples to the ENGINEER.
1. The CONTRACTOR shall enclose a copy of this letter with the shipment and send a copy of this letter to the Project Representative.
 2. 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.
- D. Approved samples not destroyed in testing shall be sent to the ENGINEER or stored at the site of the Work. Materials and equipment incorporated in the Work shall match the approved samples.
- E. Samples which fail testing or are not approved will be returned to the CONTRACTOR at their expense, if so, requested at time of submission.

1.06 SUBMITTAL REQUIREMENTS

- A. The CONTRACTOR shall review, approve, and submit, with reasonable promptness and in such sequence as shown on the Shop Drawing Submittal Schedule so as to cause no delay in the Contract Work or in the

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Work of the OWNER or any separate contractor, all shop drawings, product data, working drawings and samples required by the Contract Documents.

- B. The CONTRACTOR shall submit 10 copies of all shop drawings for the ENGINEER to review, of which the ENGINEER will retain 8 sets.
- C. All submittals shall be directly transmitted to the ENGINEER's office. Submittals to the Project Representative will not be accepted.
- D. Shop drawings, product data, working drawings and samples shall be furnished with the following information:
 - 1. Number and title of the drawing.
 - 2. Date of drawing or revision.
 - 3. Name of project building or facility.
 - 4. Name of contractor, subcontractor, and manufacturer submitting drawing.
 - 5. Clear identification of contents, location of the work, and the sheet numbers where the product is found in the contract drawings.
 - 6. CONTRACTOR Certification Statement.
 - 7. Submittal Identification Number.
 - 8. Contract Drawing Number Reference.
 - 9. A certification by the CONTRACTOR that states the following:
 - a. I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is in compliance with the Contract Drawings and Specifications, can be installed in the allocated space, will be stored in accordance with the manufacturer's recommendations and the Specifications, and is submitted for approval.
- E. In accordance with Subparagraph 1.7 A, each shop drawing, working drawing, sample, and catalog data submitted by the CONTRACTOR shall have affixed to it the following Certification Statement, signed by the CONTRACTOR:
 - 1. Certification Statement:
 - a. By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria,

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materials, dimensions, catalog numbers, and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all contractor requirements.

F. The CONTRACTOR shall utilize a 10-character submittal identification numbering system in the following manner:

1. The first character shall be a D, S, P, M, or R, which represents Shop/Working Drawing and other Product Data (D), Sample (S), Preliminary Submittal (P), Operating/Maintenance Manual (M), or Request for Information (R).
2. The next five digits shall be the applicable Specification Section Number.
3. The next three digits shall be the numbers 001 to 999 to sequentially number each item or drawing submitted under each specific section number.
4. The last character shall be a number 1 to 10, indicating the submission, or resubmission of the same Drawing, i.e., 1=1st submission, 2=2nd submission, 3=3rd submission, etc. A typical submittal number would be as follows:

D 03300-008.2:

D	=	Shop Drawing
03300	=	Specification Section for Concrete
008	=	The eighth submittal under this specification section
2	=	The second submission (first resubmission) of that particular shop drawing.

G. The CONTRACTOR shall submit a copy of each submittal transmittal sheet (for shop drawings, product data, working drawings and samples) to the Project Representative simultaneously with the CONTRACTOR's submission of said drawings, data, samples or manual packages to the ENGINEER.

H. All items specified are not necessarily intended to be a Manufacturer's standard product.

1. Variations from specified items will be considered on an "or equal" basis.
2. If submittals show variations from Contract requirements because of standard shop practice or for other reasons, the CONTRACTOR

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shall describe such variations in the letter of transmittal and on the shop drawings along with notification of intent to seek contract adjustment.

3. If acceptable, proper adjustment in the Contract shall be implemented where appropriate.
 4. If the CONTRACTOR fails to describe such variations, responsibility will not be waived for executing the Work in accordance with the Contract, even though such drawings have been reviewed.
 5. Variations submitted but not described may be cause for rejection.
 6. Any variations initiated by the CONTRACTOR will not be considered as an addition to the scope of work unless specifically noted and then approved as such in writing by the ENGINEER.
- I. Data on materials and equipment shall include materials and equipment lists giving, for each item thereon, the name and location of the supplier or manufacturer, trade name, catalog reference, material, size, finish, and all other pertinent data.
 - J. For all mechanical and electrical equipment furnished, the CONTRACTOR shall provide a list including the equipment name, and address and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained. In addition, a maintenance and lubrication schedule for each piece of equipment shall be submitted.
 - K. The CONTRACTOR shall use the color "green" to make his remarks on the Submittals. Only the ENGINEER will utilize the color "red" in marking submittals.
 - L. Facsimiles or copies of facsimiles will not be accepted for review.

1.07 CONTRACTOR'S RESPONSIBILITY

- A. It is the duty of the CONTRACTOR to check, and coordinate with the work of all trades, all drawings, data, schedules and samples before submitting them to the ENGINEER for review.
- B. Each and every copy of any drawing or data sheet larger than 11-inch by 17-inch shall bear CONTRACTOR's stamp showing that they have been so checked and approved.
- C. Drawings or data sheets 11-inch by 17-inch and smaller shall be bound together in an orderly fashion and bear the CONTRACTOR's stamp on the cover sheet.

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- D. The cover sheet shall fully describe the packaged data and include a list of all sheet numbers within the package.
- E. Shop drawings submitted to the ENGINEER without the CONTRACTOR's stamp will be returned to the CONTRACTOR, without review at the ENGINEER's option, for conformance with this requirement.
- F. The CONTRACTOR shall review shop drawings, product data, and Samples prior to submission to determine and verify the following:
 - 1. Field measurements.
 - 2. Field construction criteria.
 - 3. Manufacturer's catalog numbers and similar data.
 - 4. Conformance with Specifications.
- G. Shop drawings shall indicate any deviations in the submittal from the requirements of the Contract Documents.
- H. Shop Drawing Schedule:
 - 1. At a time decided upon at the preconstruction meeting, the CONTRACTOR shall furnish to the Project Representative and ENGINEER, a Shop Drawing Schedule fixing the respective dates for the initial submission of shop and working drawings, the beginning of manufacture, testing and installation of materials, supplies and equipment.
 - 2. This schedule shall be provided as a separate entity and indicate those submittals that are critical to the progress schedule.
- I. The CONTRACTOR shall prepare and sufficiently transmit each submittal in advance of performing the related work or other applicable activities, or within the time specified in the individual Work sections of the Specifications, so that the installation will not be delayed by processing times including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery, and similar sequenced activities. No extension of time will be authorized because of the CONTRACTOR's failure to transmit complete and acceptable submittals sufficiently in advance of the Work.
- J. The CONTRACTOR shall not begin any Work affected by a submittal returned not approved.
 - 1. Before starting this Work, all revisions must be corrected by the CONTRACTOR.

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2. After resubmittal they will be reviewed and returned by the ENGINEER.
 3. If approved or approved as noted, then the CONTRACTOR may begin this Work.
 4. Any corrections made to the shop drawings are to be followed without exception.
- K. The CONTRACTOR shall submit to the ENGINEER all shop drawings and data sufficiently in advance of construction requirements to provide no less than 21 calendar days for review from the time the ENGINEER receives them. No less than 30 calendar days will be required for major equipment that requires review by more than one engineering discipline.
- L. 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.
- M. All shop drawings, product data, working drawings and samples submitted by subcontractors for approval shall be sent directly to the CONTRACTOR for checking. The CONTRACTOR shall be responsible for their submission according to the approved shop drawing schedule so as to prevent delays in delivery of materials and project completion.
- N. The CONTRACTOR shall check all subcontractor's shop drawings, product data, working drawings and samples regarding measurements, size of members, materials, and details to satisfy himself that they are in conformance to the Contract Documents. Shop drawings found to be inaccurate or otherwise in error shall be returned to the subcontractors for correction before submission to the ENGINEER.
- O. Requests for Information (RFI) shall be submitted on a standard form through the Project Representative. RFIs shall indicate their importance to the timely completion of the project. RFIs will be processed as a shop drawing unless there is an urgent need for immediate response.

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

- A. The ENGINEER's review is for general conformance with the design concept and contract drawings.
1. Markings or comments shall not be construed as relieving the CONTRACTOR from compliance with the contract plans and specifications or from departures therefrom.

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2. The CONTRACTOR remains responsible for details and accuracy, for coordinating the Work with all other associated work and trades, for selecting fabrication processes, for techniques of assembly, and for performing work in a safe manner.
- B. The review of shop drawings, data, and samples will be general. They shall not be construed:
1. As permitting any departure from the Contract requirements.
 2. As relieving the CONTRACTOR of responsibility for any errors, including details, dimensions, and materials.
 3. As approving departures from details furnished by the ENGINEER, except as otherwise provided herein.
- C. If the shop drawings, data or samples as submitted describe variations per Subparagraph 1.6H (above referenced), and show a departure from the Contract requirements which the ENGINEER finds to be in the interest of the OWNER and to be so minor as not to involve a change in Contract Price or Contract Time for performance, the ENGINEER may return the reviewed drawings without noting an exception.
- D. Submittals will be returned to the CONTRACTOR under one of the following codes:
1. Code Descriptions:
 - Code 1:** “**APPROVED**” is assigned when there are no notations or comments on the submittal. When returned under this code the CONTRACTOR may release the equipment and/or material for manufacture.
 - Code 2:** “**APPROVED AS NOTED**” is assigned when notations or comments have been made on the submittal pointing out minor discrepancies as compared with the Contract Documents. Resubmittal or confirmation is not necessary prior to release for manufacturing.
 - Code 3:** “**APPROVED AS NOTED/CONFIRM**” is assigned as a combination of codes when a confirmation of the notations and comments is required by the CONTRACTOR. The CONTRACTOR may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product. This confirmation is to address the

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omissions and/or nonconforming items that were noted. Only the items to be “confirmed” need to be resubmitted.

Code 4: “**NOT APPROVED/RESUBMIT**” is assigned as combination of codes when the submittal is in noncompliance with the Contract Documents and must be corrected and the entire package resubmitted. This code generally means that the equipment or material cannot be released for manufacture unless the CONTRACTOR takes full responsibility for providing the submitted items in accordance with Contract Documents.

Code 5: “**NOT APPROVED**” is assigned when the submittal does not meet the intent of the Contract Documents. The CONTRACTOR must resubmit the entire package revised to bring the submittal into conformance. It may be necessary to resubmit using a different manufacturer/vendor to meet the Contract Documents.

Code 6: “**COMMENTS ATTACHED**” is assigned where there are comments attached to the returned submittal which provide additional data to aid the CONTRACTOR.

Code 7: “**FOR YOUR INFORMATION**” is assigned when the package provides information of a general nature that may or may not require a response.

2. Codes 1 through 5 designate the status of the reviewed submittal.
3. Code 6 shows there is an attachment which contains additional data.
4. Code 7 is used as may be necessary.

E. Resubmittals:

1. Resubmittals will be handled in the same manner as first submittals.
2. On resubmittals the CONTRACTOR shall direct specific attention, in writing on the letter of transmittal and on resubmitted shop drawings by use of revision triangles or other similar methods, to revisions other than the corrections requested by the ENGINEER on previous submissions.
3. Any such revisions which are not clearly identified shall be made at the risk of the CONTRACTOR.

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4. The CONTRACTOR shall make corrections to any Work done because of this type revision that is not in accordance to the Contract Documents as may be required by the ENGINEER.
- F. If the CONTRACTOR considers any correction indicated on the shop drawings to constitute a change to the Contract Documents, the CONTRACTOR shall give written notice thereof to the Project Representative at least 7 working days prior to release for manufacture.
- G. The ENGINEER will review a submittal a maximum of two times, after which cost of review will be borne by the CONTRACTOR. The cost of engineering shall be equal to the ENGINEER's charges to the OWNER under the terms of the ENGINEER's agreement with the OWNER.
- H. When the shop drawings have been completed to the satisfaction of the ENGINEER, the CONTRACTOR shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the ENGINEER.
- I. Partial Submittals:
 1. Partial submittals may not be reviewed.
 2. The ENGINEER will be the only judge as to the completeness of a submittal.
 3. Submittals not complete will be returned to the CONTRACTOR, and will be considered "Not Approved" until resubmitted.
 4. The ENGINEER may, but is not required to, provide a list, or mark the submittal directing the CONTRACTOR to the areas that are incomplete.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01300

**SECTION 01505
MOBILIZATION/DEMobilIZATION**

PART 1 - GENERAL

1.01 DEFINITION AND SCOPE

- A. As required for this project, prior to mobilizing onto the project site, the CONTRACTOR is required to have the following documentation or personnel readily available at all times:
1. Certificates of insurance and bonds.
 2. Local, state or federal permits.
 3. OSHA, FDEP, Department of Labor, and all other required notices.
 4. Full-Time Project Manager and/or Superintendent.
 5. Hurricane preparedness plan that has been approved by the ENGINEER.
 6. Fire Protection Plan and Safety Program that has been approved by the ENGINEER.
 7. Detailed construction schedule approved by the ENGINEER.
 8. Schedule of Values for the work to be completed approved by the ENGINEER.
- B. As required for the proper performance and completion of the work, the CONTRACTOR is allowed to mobilize, install, erect, secure, and provide the following principal items to include, but not be limited to:
1. Plant and equipment required for the first month's operation onto the project site.
 2. Temporary construction power, wiring, telephone, and lighting facilities.
 3. Construction water supply.
 4. On-site sanitary facilities and potable water facilities.
 5. Field office trailers for CONTRACTOR and ENGINEER.
 6. Lay down and storage yard and employee's parking facilities.
 7. Project related signs.

1.02 PAYMENT FOR MOBILIZATION

- A. Payment for all mobilization/demobilization work will be made at the lump sum price for mobilization and demobilization of all labor, equipment, materials and appurtenances necessary for construction of the project.
- B. Mobilization shall include all items listed in the Paragraph 1.01.B above.
- C. Also included, but not limited to, as part of this Bid Item is the cost for:
 - 1. Project performance indemnifications.
 - 2. Shop drawings.
 - 3. Working drawings.
 - 4. Schedules.
 - 5. Record drawings and documents.
 - 6. Coordination.
 - 7. Phasing.
 - 8. Other miscellaneous items associated with the work.
- D. Measurement and payment for this Bid Item will be lump sum.
- E. The lump sum price for mobilization/demobilization will be limited to 10% of the total contract base bid amount.
- F. The initial 70% of the lump sum price will be payable with the first month's partial payment.
- G. The remaining thirty percent (30%) will be payable with the final partial payment.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01505

**SECTION 01705
PROJECT CLOSEOUT**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract apply to work of this section.

1.02 DESCRIPTION OF REQUIREMENTS

- A. Definitions:

1. Closeout is hereby defined to include general requirements near the end of Contract Time, in preparation for final acceptance, final payment, normal termination of Contract, and similar actions evidencing completion of the Work.
2. Specific requirements for individual units of work are specified elsewhere in these Specifications.
3. Time of closeout is directly related to "Substantial Completion," and therefore, may be either a single time period for entire work or a series of time periods for individual parts of the work which have been certified as substantially complete at different dates.
4. That time variation (if any) shall be applicable to other provisions of this section.

1.03 PREREQUISITES FOR SUBSTANTIAL COMPLETION

- A. General:

1. Prior to requesting ENGINEER's inspection for the Certificate of Substantial Completion (for either the entire work completed, or portions of the work completed), complete the following and list known exceptions in request:
 - a. Submit an Application for Payment, coinciding with or first following date claimed, show either 100% completion for portion of work claimed as "substantially complete" or list incomplete items, value of incompleteness, and reasons for being incomplete.
 - b. Submit supporting documentation for completion to ENGINEER as indicated in these Contract Documents.

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- c. Submit statement showing accounting of changes to the Contract Sum to ENGINEER.
 - d. Submit pending insurance change-over requirements to OWNER.
 - e. Submit special warranties, workmanship/maintenance bonds, maintenance agreements, final certifications, and similar documents to ENGINEER and OWNER.
 - f. Prepare and submit releases enabling OWNER's full and unrestricted use of the work and access to services and utilities, including (where required) operating certificate, and similar releases to the ENGINEER and OWNER.
 - g. Submit record drawings, operation and maintenance manuals, and similar final record information to the ENGINEER and OWNER.
 - h. Deliver tools, spare parts, extra stocks of materials, and similar physical items to the OWNER.
 - i. Make final change-over of locks and transfer keys to OWNER, and advise OWNER's personnel to change-over in security provisions, if applicable.
 - j. Perform start-up testing of systems and provide the OWNER's operating/maintenance personnel with instructions on the use and testing of systems.
 - k. Discontinue and remove (or change over to OWNER) all temporary facilities and services, along with construction tools and facilities, mock-ups, and similar elements from the project site.
 - l. Complete final cleanup of project site to include touch-up painting of marred surfaces, construction debris removed from site, and any other restoration to pre-construction conditions needed for the site.
- B. Inspection Procedures:
- 1. Upon receipt of CONTRACTOR's request, the ENGINEER will either proceed with inspection or advise CONTRACTOR of unfulfilled prerequisites which require CONTRACTOR's attention.

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2. Following initial inspection, the ENGINEER will either prepare the Certificate of Substantial Completion, or advise the CONTRACTOR of work which must be performed prior to issuance of certificate; and repeat inspection when requested and assured that work has been substantially completed.
3. Results of completed inspection will form initial “punch- list” for final acceptance.

1.04 PREREQUISITES FOR FINAL ACCEPTANCE

A. General:

1. Prior to requesting ENGINEER’s final inspection for the Certificate of Final Acceptance as well as the final payment, as required by General Conditions (Section 00100), complete the following and list known exceptions (if any) in request:
 - a. Submit final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 - b. Submit updated final statement, accounting for additional (final) changes to the Contract Sum.
 - c. Submit consent of surety.
 - d. Submit final liquidation damages settlement statement, acceptable to the OWNER.
 - e. Revise and submit evidence of final continuing insurance coverage complying with insurance requirements.

B. Reinspection Procedure:

1. Upon receipt of CONTRACTOR’s notice that the work has been completed, including punch-list items resulting from earlier inspections, and excepting incomplete items delayed because of acceptable circumstances, the ENGINEER will reinspect the Work.
2. Upon completion of reinspection, the ENGINEER will either prepare a Certificate of Final Completion or will advise the CONTRACTOR of work not completed or unfulfilled obligations as required for final acceptance. If necessary, procedure will be repeated.

1.05 RECORD DOCUMENT SUBMITTALS

A. General:

1. Specific requirements for record documents are indicated in individual sections of these specifications. Other requirements are indicated in General Conditions. General submittal requirements are indicated in Section 01300 (Submittals).
2. Do not use record documents for construction purposes; protect from deterioration and loss in a secure fire-resistive location; provide access to record documents for ENGINEER's reference during normal working hours.

B. Record Drawings:

1. Maintain a set of contract drawings and shop drawings in clean, undamaged condition, with mark-up of actual installations which vary substantially from the work as originally shown.
2. Mark whichever drawing is most capable of showing "field" condition fully and accurately; however, where shop drawings are used for mark-up, record a cross-reference at corresponding location on working drawings.
3. Mark with red erasable pencil and, where feasible, use other colors to distinguish between variations in separate categories of work.
4. Mark-up new information which is recognized to be of importance to the OWNER but was for some reason not shown on either the Drawings or Shop Drawings. Give particular attention to concealed work, which would be difficult to measure and record at a later date.
5. Note related Change Orders where applicable.

C. Record Specifications:

1. Maintain one copy of specifications, including Addenda, Change Orders and similar modifications issued in printed form during construction, and mark-up variation (of substance) in actual work in comparison with text of Specifications and modifications as issued.
2. Give particular attention to substitutions, selection of options, and similar information on work where it is concealed or cannot otherwise be readily discerned at a later date by direct observation.

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3. Note related Record Drawing information and product data, where applicable.
 4. Submit completed mark-up to ENGINEER for OWNER's records upon project completion.
- D. Operation and Maintenance Manuals:
1. Organize and prepare four sets of operating and maintenance manuals into suitable sets of manageable size and bind into individual binders properly identified and indexed (thumb tabbed).
 2. Include emergency instructions, spare parts listing, copies of all warranties, wiring diagrams, recommended "turn-around" cycles, inspection procedures, shop drawings, product data, and similar applicable information.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 CLOSEOUT PROCEDURES

- A. General Operating and Maintenance Instructions:
1. Arrange for each installer of work requiring continuing operating or maintenance to meet with OWNER's personnel, at project site, to provide basic instructions needed for proper operation and maintenance of entire work.
 2. Include instructions from manufacturer's representatives where installers are not expert in the required procedures.
 3. Review operation and maintenance manuals, record documentation, tools, spare parts and materials, lubricants, fuels, identification systems, control sequences, hazards, cleaning, and similar procedures and facilities.
 4. Demonstrate start-up, shut-down, emergency operations, noise and vibration adjustments, safety, economy/efficiency adjustments, energy effectiveness, and similar operations for operational equipment.
 5. Review operations and maintenance in relation with applicable warranties, agreements to maintain, bonds, and similar continuing commitments.

3.02 FINAL CLEANING

A. General:

1. Special cleaning for specific units of work is specified in other sections. The following are examples, but not by way of limitation, of cleaning levels required:
2. Remove labels which are not required as permanent labels.
3. Wipe surfaces of mechanical and electrical equipment clean and remove excess lubrication and other substances.
4. Clean project site (yard and grounds), including landscape development areas, of litter and foreign substances.
5. Sweep paved areas to a broom-clean condition; remove stains, Petro-chemical spills and other foreign deposits.
6. Rake grounds which are neither planted nor paved, to a smooth, even- textured surface.

B. Compliances:

1. Comply with safety standards and governing regulations for cleaning operations.
2. Do not burn waste materials at or on project site, bury debris or excess materials on OWNER's property, or discharge volatile or other harmful or dangerous materials into drainage systems.
3. Remove waste materials from site and dispose of in a lawful manner.
4. Dispose of extra materials of value remaining after completion of the associated work has become the OWNER's property, to OWNER' best advantage as directed.

END OF SECTION 01705

**SECTION 02222
TRENCHING, BACKFILLING AND COMPACTING**

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The extent of trenching, backfilling, and compacting is shown on the drawings.
- B. This Section includes furnishing equipment, labor, and materials, and performing all operations necessary and incidental to perform the required work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 CLEARING THE SITE

- A. The site of the Work shall be cleared of all trees, shrubs, paving and objectionable material which interfere with the execution of the proposed Work.
- B. Trees and shrubs which will not interfere with construction shall be protected from damage.
- C. Clearing shall be considered as an incidental item of excavation.

3.02 EXCAVATION

- A. General:
 - 1. Perform excavation described of whatever substance encountered to the dimensions and depths specified or shown on the drawings.
 - 2. Undercutting will not be permitted, except when ordered by the ENGINEER. Material suitable for backfill shall be stockpiled near the site.
 - 3. Rock or other material undesirable for backfill shall be spoiled outside the area in a neat manner, as directed by the ENGINEER.
 - 4. Where it is necessary to cut roots projecting into an excavation or where it is necessary to trim branches for equipment clearance, all severed root ends, or cuts to branches over 1/2-inch in diameter shall be treated with an asphalt base pruning paint.
 - 5. Backfill over exposed roots as soon as possible.

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B. Rock:

1. Where encountered in the trench bed, rock shall be excavated to a depth of 1/4 of the pipe diameter below the bottom of the pipe but in no case less than 4 inches.
2. All undercut trench excavation shall be backfilled and tamped with materials as specified in the Item C (Unstable Subgrade) below.

C. Unstable Subgrade:

1. In the event that unsuitable material is encountered at or below the excavation depth specified or shown on the drawings, the ENGINEER shall be notified.
2. Such material shall be removed and replaced with suitable material.
3. Methods and materials used for replacement shall be one of the following as directed by the ENGINEER in writing.
 - a. Suitable earth or sand, compacted in the trench. Materials shall be furnished as a part of the Bid Proposal item covering excavation and backfill.
 - b. Gravel or crushed limerock, compacted in the trench and paid for under the appropriate Bid Item.
 - c. Existing materials, stabilized after removal and then replaced and compacted in the trench at no additional cost to the OWNER.
4. The Engineer shall determine the methods and materials to be used, based on the condition of the excavation, the pipe structure to be supported, and the availability and character of stabilizing materials.

D. Trenches:

1. Keep pipe laying operations as close to the excavation operation as possible during the execution of the Work. The ENGINEER reserves the right to stop the excavation at any time when, in his opinion, the excavation is opened too far in advance of the pipe laying.
2. Excavate pipe trenches to a depth that will ensure a minimum of:
 - a. 36 inches of cover for ductile iron (DI) and polyvinyl chloride (PVC) pipe.

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- b. 54 inches of cover for polyethylene (PE) pipe, except service laterals.
 3. Ensure trenches shall be only of sufficient width to provide a free working space on each side of the pipe.
 4. To prevent excess pressure on the pipe, the maximum width of trench at the top of the pipe and at the bottom of the trench shall not be greater than 2 feet more than the greatest exterior diameter of the pipe. If this maximum width is exceeded, it shall be the CONTRACTOR's responsibility to provide, at no additional cost to the OWNER, such additional bedding or select backfill materials as the ENGINEER may require.
 5. Conform the excavation below the spring line as near as possible to the shape of the lower third of the pipe.
 6. Complete all Work in open trenches to protect the pipelines from unusual stresses.
 7. Excavate bells of all pipes and to a sufficient depth to permit access to the joint for construction and inspections. In no case will the bells be used to support the body of the pipe.
 8. In order to avoid existing utilities, at times it may be necessary for the pipe to be laid deeper than the minimum cover specified in the preceding paragraph. At such time, the CONTRACTOR will not be allowed extra compensation for additional excavation involved.
 9. In case excavation has been made deeper than necessary, a layer of concrete, fine gravel, or other material satisfactory to the ENGINEER shall be placed, at no extra cost, to secure a firm foundation for the lower third of each pipe.
 10. Where possible, place excavated material so as not to interfere with public travel.
 11. Provide bridging to afford necessary access to public or private premises. Bridging shall be considered as part of the excavation operation and shall be supplied at no additional cost to the OWNER.
- E. Structural: (For inlets, manholes, valve pits and similar structures)
1. Sufficient material shall be removed to allow proper space for erecting and removing forms.
 2. The elevations of the bottoms of footings, if shown on the drawings, shall be considered as approximate only, and the ENGINEER may

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order, in writing, such changes in dimensions or elevations of footings as may be deemed necessary to secure a satisfactory foundation. Excavation for structures shall be sufficient to leave at least 12 inches in the clear between their outer surfaces and the embankment of timber that may be used to protect them.

3. Backfill of earth under structures will not be permitted.
4. Excess excavation for structures shall be filled with thoroughly compacted sand, gravel, or concrete at the expense of the CONTRACTOR.
5. After excavation for a structure is completed, the CONTRACTOR shall notify the ENGINEER to that effect.
6. No concrete or reinforcing steel shall be placed until the ENGINEER has approved the depth of the excavation and the character of the foundation material.

F. Sheeting and Shoring:

1. The CONTRACTOR shall provide all trench and structural bracing, sheeting, or shoring necessary to construct and protect the excavation, existing utilities, structures, and private property of all types and as required for the safety of the employees.
2. Sheeting shall be removed or cut off by the CONTRACTOR during backfilling operations as directed by the ENGINEER.
3. Sheeting which is left in place by order of the ENGINEER will be paid for under the item.
4. Shoring for structures shall be removed in such a manner as not to disturb or mar finished masonry or concrete surfaces.

3.03 DRAINAGE

- A. Grading shall be controlled in the vicinity of excavations so that the surface of the ground will be properly sloped to prevent water from running into trenches or other excavated areas.
- B. Any water which accumulates in the excavations shall be promptly removed by well point or by other means satisfactory to the ENGINEER in such a manner as to not create a nuisance to adjacent property or public thoroughfare.
- C. Trenches shall be kept dry while pipe is being laid.

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- D. Bridging of dewatering pipe shall be provided where necessary.
- E. Pumps and engines for well point systems shall be operated with mufflers, and at a minimum noise level suitable to a residential area.
- F. The CONTRACTOR will not be allowed to discharge water into the OWNER's storm drainage system without the written approval of the ENGINEER. Approval will be subject to the condition that the storm sewer be returned to its original condition.
- G. The CONTRACTOR is responsible for carrying the water to the nearest ditch or body of water and for obtaining the necessary permission to use same.
- H. The CONTRACTOR shall be financially responsible for any nuisance created due to carrying off water from his drainage system.

3.04 BACKFILL

- A. Trenches:
 - 1. Trenches shall be backfilled immediately after the pipe is laid unless other protection for the pipeline is provided.
 - a. Clean earth, sand, crushed limerock or other material approved by the ENGINEER shall be used for backfilling.
 - b. Backfill material shall be selected, deposited, and compacted (simultaneously on both sides of the pipe) so as to eliminate the possibility of lateral displacement of the pipe.
 - c. Backfill material shall be solidly tamped around the pipes in layers to a level at least 1 foot above the top of the pipe.
 - d. Each layer shall be compacted to a maximum thickness of 6 inches.
 - 2. In unpaved areas, the remainder of the backfill shall be deposited and then compacted by puddling, water flooding, or mechanical tampers.
 - a. Mechanical tamping of layers in unpaved areas shall be to a maximum thickness of 12 inches.
 - b. In areas to be paved or repaved, the entire depth of backfill shall be deposited in layers and compacted by hand or mechanical tampers to a maximum thickness of 6 inches.

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- c. Compaction shall be carried out to achieve a density of at least 98% of the maximum density as determined by AASHTO, Method T-180.
 - d. Under areas to be paved, puddling may be used for backfill consolidation after tamping to 1 foot over the pipe, as specified, provided the method is first approved by the ENGINEER and the density requirements are met.
3. In areas to be paved, density tests for determination of the specified compaction shall be made by a testing laboratory and spaced one in every 300 feet of trench cut.
 4. It is the intent of this specification to secure a condition where no further settlement of trenches will occur.
 5. When backfilling is completed, the roadway base for pavement replacement may be placed immediately.
 6. It will be the responsibility of the CONTRACTOR to restore the surface to the original grade wherever settlement occurs.
- B. Wet Trenches (CONTRACTOR's Option):
1. Backfill for the pipe bed in wet trenches shall be crushed, graded limerock, compacted in the trench.
 2. After the pipe is laid, a graded limerock backfill shall be placed and worked in around the haunches to a point 6 inches above the pipe.
 3. The width of the limerock material around the pipe shall not be less than the outside diameter of the pipe plus 6 inches on each side of the pipe.
 4. Material shall be carefully distributed along the pipe so as to provide full and uniform support under and around the pipe.
 5. Six inches above the top of the pipe and up to the water level, material from the excavations with no rock or earth exceeding 4 inches in any one dimension shall then be lifted to the trench and released at the water level.
 6. Material shall be uniformly distributed for the full width of the trench.
 7. Backfill and compaction above the water level in the trench shall be as specified above.

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8. All costs for graded limerock placed in wet trenches shall be included in the cost of stage excavation and backfill for the various sizes of pipe.

C. Bedding and Backfill - Flexible Pipe:

1. For PVC pipe, the bedding and backfill materials shall be such as to limit the vertical ring deflection to 5% of the inside pipe diameter. A deflection greater than 5% of the inside diameter shall be cause for rejection of the pipe.
2. Class IV or Class V materials as defined in ASTM D2321-74 shall not be used for bedding, haunching or initial backfill for flexible pipes.
3. For PVC plastic pipe, bedding shall be in accordance with ASTM D2321-74, using Class I, II or III materials, except under wet conditions. In any area where the pipe will be installed below existing or future groundwater levels or where the trench could be subject to inundation, Class I material shall be placed to the springline of the pipe.
4. A minimum of effort is needed to compact the material.
 - a. In the initial stage of placing this type of material, take care to ensure that sufficient material has been worked under the haunch of the pipe to provide adequate side support.
 - b. Take precautions to prevent movement of the pipe during placing of the material under the pipe haunch.
 - c. Except for the protection of the pipe from large particles of backfill material, little care need be taken, and no compaction is necessary in placing backfill material in the balance of the initial backfill area above the pipe.
 - d. Where unstable trench wall exists because of migratory materials, such as water-bearing silts or fine sand, take care to prevent the loss of side support through the migratory action.
5. All bedding requirements for flexible pipe specified in the preceding paragraphs shall be included in the price bid for the applicable pipe material and no additional compensation for bedding material will be allowed.

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- D. Structural:
1. After completion of foundation footings and walls and other construction below the elevation of the final grades, and prior to backfilling, forms shall be removed, and the excavation shall be cleared of all trash and debris.
 2. Material for backfilling shall consist of the excavation, borrow sand or other approved materials, and shall be free of trash, lumber, or other debris.
 3. Backfill shall be placed in horizontal layers not in excess of 9 inches in thickness and have a moisture content such that a density may be obtained to prevent excessive settlement or shrinkage.
 4. Each layer shall be compacted by hand or approved machine tampers with extreme care being exerted not to damage pipe or structures.
 5. Backfill shall be placed and evenly compacted against the exposed surfaces to prevent undue stress on any surface.

3.05 RESTORATION OF SURFACE IMPROVEMENTS

- A. Roadways, including shoulders, alleys, and driveways of shell, limerock, stabilized soil or gravel, grass plots, sod, shrubbery, ornamental trees, signs, fences, or other surface improvements on public or private property which have been damaged or removed in excavation, shall be restored to conditions equal to or better than conditions existing prior to beginning Work.
1. Restoration of shoulders shall consist of seeding and mulching or stabilizing with limerock as selected by the ENGINEER.
 2. The cost of doing this work shall be included in the cost of the various applicable items.
 3. General Quality Control will be used as an aid in determining conditions prior to construction.
- B. Materials for unpaved roadways, road shoulders, alleys, or driveways, shall be compacted as described in the plans.
1. The cost of this work and furnishing new materials shall be included in the cost of the applicable items of work as no separate payment will be made unless a separate bid item is provided.

3.06 FINE GRADING

- A. Finished areas around structures shall be graded smooth and hand raked and shall meet the elevations and contours shown on the drawings.
- B. Lumber, earth clods, rocks and other undesirable materials shall be removed from the site.

3.07 DISPOSAL OF MATERIALS

- A. Such portions of the excavated materials as needed and as suitable, shall be used for backfilling and grading about the completed work to the elevations as shown of the drawings or as directed.
- B. Excavated material in excess of the quantity required for this purpose shall be disposed of by the CONTRACTOR in those areas designated by the OWNER and as shown on the drawings.
- C. The CONTRACTOR shall leave the earth over the trenches or other excavations in a neat and uniform condition acceptable to the OWNER.

3.08 PAVEMENT REPLACEMENT

- A. Asphalt pavement shall be removed by saw cutting on a straight line with edges as vertical as possible.
- B. Concrete pavement or asphalt surfaced concrete shall be removed by cutting with a concrete saw in as straight a line and vertically as possible.
- C. Materials to replace State Highway paving shall conform to the specifications required by the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition, for Type S-I asphaltic concrete surface course, or as specifically shown in the plans.
- D. Prior to replacing concrete or asphalt pavement replacement, a limerock base shall be laid.
 - 1. The base for concrete pavement shall be 6 inches of compacted thickness, and that for asphalt pavement shall be 8 inches of compacted thickness.
 - 2. The base course for each shall be compacted to a minimum of 98% of the maximum density as determined by AASHTO, Method T-180.
 - 3. The OWNER will have tests made by an independent testing laboratory to verify compaction results.

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4. One test will be made for each block of continuous trench cut.
- E. Non-asphalt pavement replacement shall be replaced of like material and thickness.
1. Asphalt or built-up asphalt pavement shall be replaced with like material or concrete as directed by the ENGINEER.
 2. Where asphalt or built-up asphalt pavement is replaced by concrete, the concrete shall have a minimum of 6 inches in thickness and be reinforced with 6 by 6 No. 6 gage welded wire fabric.
 3. Concrete for paving shall be 3,000 pounds per square inch (psi) design strength.
 4. Where the pavement replacement is of like material, it shall be replaced in thickness equal to or better than that existing at the time of removal.
- F. Unless the base is sealed or other temporary paving applied over areas to be repaved, pavement shall be replaced no later than 3 weeks after completion of backfill.

3.09 TESTS

- A. The CONTRACTOR shall furnish facilities for making all density tests and make such restorations as may be necessary due to test operations.
- B. All density tests on backfill or base replacement will be made by a commercial testing laboratory employed by the CONTRACTOR and at such locations as may be recommended by the ENGINEER.
- C. If the densities as determined by the specified tests fall below the required minimums, the CONTRACTOR shall pay for all retests.

3.10 SIDEWALK, CURB AND GUTTER REMOVAL AND REPLACEMENT

- A. Sidewalk, curb and gutter removal and replacement required in the construction of this Work shall be done by the CONTRACTOR.
- B. Reasonable care shall be exercised in removing sidewalk and curb and gutter, and the CONTRACTOR shall either stockpile or dispose of this material as directed by the ENGINEER.
- C. Brick, concrete, or built-up asphalt sidewalk replacement as well as curb and gutter replacement shall be replaced of like material in a manner and condition equal to or better than that existing at the time of removal.

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- D. Materials and methods of replacing State Highway sidewalks or curbs shall conform to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.

END OF SECTION 02222

**SECTION 02505
UNDERGROUND UTILITY PROTECTION**

PART 1 - SCOPE

- 1.01** This section pertains to the protection of all existing underground utilities that exist within and adjacent to Work zones.
- A. "Paint Marks" or "Flags" as provided by Local One Call (811) or other utility locate services shall NOT be accepted as exact or definitive.
 - B. It shall be the responsibility of the CONTRACTOR to physically verify all Paint Marks and/or Flags.
 - C. It shall be the responsibility of the CONTRACTOR to physically locate all existing utilities within and adjacent to the work zone prior to initiating work.

PART 2 - GENERAL

2.01 GENERAL INFORMATION

- A. All utilities within 5 feet of the planned work zone MUST be found and visually located prior to the start of any excavation operations.
- B. Potholing shall be performed to verify the location and depth of the existing utilities.
- C. Backhoes, trenches, or other type of mechanical equipment shall not be used to find underground utilities within 5 feet of a planned installation.
- D. At no time shall picks, round pointed shovels, or any other type of sharp tool be used for locating utilities.
- E. Only square blunt non-sharp tools may be used for hand digging.
- F. Vacuum Excavation shall be allowed with the use of high-pressure water (up to 4,000 psi) with an approved non-cutting nozzle. Zero-degree nozzles are not allowed.
- G. Vacuum Excavation may also be allowed utilizing high-pressure air (with dust containment system) or dry vacuum.

PART 3 - EXECUTION

3.01 GENERAL INFORMATION

- A. The CONTRACTOR shall contact One Call (811) utility locate service (in writing) at least 48 hours in advance to order locates within and adjacent to the work zone.

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- B. The CONTRACTOR shall notify all other known utility companies (those not affiliated with One Call) at least 48 hours in advance to order locates within and adjacent to the work zone.
- C. All utility crossings are to be exposed (using methods described in Part 2 above) prior to any excavation.
- D. All existing utilities running parallel and within 10 feet of either side of the intended work shall be physically located.
- E. The CONTRACTOR shall not assume that utilities found will continue on the same line and grade.
- F. Underground utility pothole spacing, and frequency shall be as follows:
 - 1. Gas and electric lines within 25 feet of the work zone shall be potholed and marked every 25 feet to verify the line has not changed directions.
 - 2. Gas and electric lines greater than 25 feet from the work zone shall be potholed at least once on each end of the limits of excavation.
 - 3. Fiber-Optic lines shall be potholed every 25 feet within the work zone.
 - 4. Telephone and cable television lines shall be potholed every 50 feet within the work zone.
 - 5. Water, sewer, and reuse utilities (less than 8 inches in diameter) shall be potholed every 25 feet within the work zone.
 - 6. Water, sewer, and reuse utilities (8 inches through 24 inches in diameter) shall be potholed every 50 feet within the work zone.
 - 7. Water, sewer, and reuse utilities (greater than 24 inches in diameter) shall be potholed every 100 feet within the work zone.
 - 8. At least two potholes shall be obtained for each utility within the work zone regardless of the size of the work zone.
- G. Material returned to the inspection hole shall be compacted back in place.
- H. All inspection holes shall be returned to original surface condition.

PART 4 - PERMITTING AND SAFETY

- A. It shall be the responsibility of the CONTRACTOR to ensure that all applicable permits for underground work have been obtained prior to the commencement of work.
- B. All work shall be performed by licensed underground Contractors.
- C. The CONTRACTOR shall prepare and follow a written safety plan.
 - 1. This safety plan shall be provided to the permitting agency and shall be made available on-site.
 - 2. The Safety plan shall include a site map and show all known existing utilities and shut-off valves.
- D. Shut-off valve handles (for all existing water, sewer, reuse, gas, and electric utilities) are to be in place through the duration of the work for immediate operation if needed.

END OF SECTION 02505

SECTION 02960 RESTORATION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK:

- A. The work includes the restoration of driveways, lawn areas, trees and plants, roadways, sprinkler systems, walks and any other existing improvement affected by the proposed work.
- B. This section includes furnishing equipment, labor and materials, and performing all necessary and incidental operations to perform the required work.

PART 2 - PRODUCTS

2.01 SOD:

- A. Any slope equal to or steeper than 1 vertical to 3 horizontals shall be sodded and the sod shall be pinned down for stabilization.
- B. The CONTRACTOR shall, at his expense, maintain the sodded areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include watering, re-staking sod, filling, leveling and repairing of any washed or eroded areas, as may be necessary.

2.02 PLANTS AND TREES:

- A. Existing damaged plants and trees shall be replaced by plants and trees of equal type, quality, and size whenever possible. All new plants and trees shall be sound, healthy, vigorous and free from defects, decay, disfiguring, bade abrasions plant diseases, insect pests, their eggs or larvae. The new plants shall be approved by the ENGINEER before placing.
- B. Existing plants may be removed, preserved, and replaced at the CONTRACTOR's option. Plants shall be handled by an approved nursery.
- C. Plants shall be watered and cared for until new growth appears. Dead and dying plants shall be immediately replaced. Plants used shall be in accordance with the standards for Florida No. 1 or better as given in Grades and Standards for Nursery Plants Part I.
- D. Plants shall conform to the sizes indicated by the OWNER.
- E. Trees shall be guaranteed for 1 year. If the replaced tree dies within 1 year of project completion it shall be replaced by the CONTRACTOR at no expense to the City.

2.03 MULCH:

Match existing mulch.

2.04 WATER:

The water used in the performance of this Contract shall be of drinking water quality, clean and free from injurious amounts of oil, acid, alkali, or organic matter. The CONTRACTOR shall purchase all testing water from the City.

2.05 PLANTING MIXTURE:

The 18-inch planting mixture, when required, shall consist of a thorough mixture of 40% peat and 60% sand. The peat shall be Florahome peat or equivalent and the sand shall be clean and free from debris of any kind.

2.06 FERTILIZER:

Fertilizer shall be pelletized 13-13-13 or approved equal.

PART 3 - EXECUTION

3.01 LANDSCAPING RESTORATION:

A. Lawn Areas:

Any lawn area affected by the required work shall be restored to a condition equal or better than the conditions existing before the commencement of work.

B. Balled Plants:

1. Plants where required shall be adequately balled with firm natural balls of soil, sized as set forth in "Horticultural Standards."
2. Balls shall be firmly wrapped with burlap or equally approved strong cloth.
3. A balled plant will not be planted if the ball is cracked or broken before or during the process of planting.

C. Preparation of Plant Pits:

1. All plant pits shall be circular in outline and have vertical sides.

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2. Tree pits shall be 2 feet wider than the width of the ball and 1 foot deeper than the depth of the ball.
 3. Shrubs that are either balled and burlapped (B&B) or 3 gallons (and plus) shall have pits that are 2 feet wider than the width of the plant ball and 6 inches deeper than the depth of the ball.
 4. Smaller shrubs shall have pits that are at least 1 foot wider than the width of the plant ball and 6 inches deeper than the ball depth.
- D. Setting Plants:
1. All plants except as otherwise specified, shall be centered in pits.
 2. Deep planting shall be avoided and unless otherwise specified, plants shall be set at such a level that after settlement they will bear the same relation to the required grade as they have to the natural grade before being transplanted.
 3. B&B Plants and Palm Trees:
 - a. B&B plants and palm trees shall be placed on 6 to 12 inches of tamped planting mixture and adjusted so as to be at the proper level.
 - b. The rope and burlap shall be cut away and the burlap folded down to the bottom of the pit.
 - c. Very large B&B plants shall remain wrapped until fully backfilled and then just the upper portion of the burlap shall be removed.
 - d. Backfill of planting mix shall be placed halfway up the pit and then water tamped.
 - e. After this water has drained away, backfill around the ball to grade and water tamp again.
 - f. Finally, form a ridge of soil around the edge of the pit to form a saucer and full area three times with water.
- E. Water:
1. Water to be used initially during plant installation shall be furnished by the CONTRACTOR.
 2. The existing irrigation system, where damaged, shall be promptly repaired after the installation of the plants.

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F. Options as to Methods:

Any plant may be furnished container grown instead of balled if all other requirements are met.

G. Fertilizer:

Immediately before sod is placed, 8-8-8 fertilizer shall be applied at the rate of approximately 500 pounds per acre, by broadcasting and raking into the planting area.

H. Tamping:

1. Sod shall be firmly embedded by light tamping.
2. Wherever necessary to prevent an erosion condition caused by vertical edges at the outer limits of the sodded area, the sod shall be tamped so as to produce a featheredge at the outer Limits.
3. The sod shall be kept in a moist condition after it is planted.
4. Water shall not be applied between the hours of 8:00 a.m. and 4:00 p.m. nor when there is danger of freezing.

I. The CONTRACTOR shall, at his expense, maintain the planted areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include watering, filling, leveling and repairing of any washed or eroded areas, as may be necessary.

3.02 PAVEMENT REPLACEMENT:

A. Asphalt pavement shall be removed by saw cutting on a straight line with edges as vertical as possible. Concrete pavement or asphalt surfaced concrete shall be removed by cutting with a concrete saw in as straight a line and vertically as possible.

1. Non-asphalt pavement replacement shall be replaced of like material and thickness.
2. Asphalt or built-up asphalt pavement replacement shall be replaced with like material or concrete as directed by the ENGINEER.
3. Where asphalt or built-up asphalt pavement is replaced by concrete, the concrete shall have a minimum of 6 inches in thickness and be reinforced with 6 by 6 No. 6 gage welded wire fabric. Where the pavement replacement is of like material, it shall be replaced in thickness equal to or better than that existing at the time of removal.

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- B. Road cuts across City or County roads shall not be cut.
- C. Unless the base is sealed or other temporary paving applied over driveway areas to be repaved, pavement shall be replaced not later than 3 weeks after completion of backfill.

3.03 CURB REMOVAL AND REPLACEMENT:

- A. Curb removal and replacement required in the construction of this work shall be done by the CONTRACTOR.
- B. Reasonable care shall be exercised in removing the curb, and the CONTRACTOR shall either stockpile or dispose of this material as directed by the ENGINEER.
- C. Curb shall be replaced of like material in a manner and condition equal to or better than that existing at the time of removal.
- D. Materials and methods of replacing State Highway sidewalks or curbs shall conform to the Florida Department of Transportation specifications.

3.04 TESTS:

- A. The CONTRACTOR shall furnish facilities for making all density tests and make such restorations as may be necessary due to test operations.
- B. All density tests on backfill or base replacement will be made by a commercial testing laboratory employed by the CONTRACTOR at such locations as may be recommended by the ENGINEER.
- C. If the densities as determined by the specified tests fall below the required minimums, the CONTRACTOR shall pay for all retests.

END OF SECTION 02960

**SECTION 02446
HORIZONTAL DIRECTIONAL DRILLING**

PART 1 - GENERAL

1.01 DESCRIPTION

This section includes requirements for Horizontal Directional Drilling (HDD) of Fusible Polyethylene Vinyl Chloride (FPVC) Pressure pipe.

1.02 QUALITY ASSURANCE

A. Experience:

1. Actively engaged in horizontal directional drilling for minimum of 3 years.

B. Field supervisory personnel:

1. Experienced in the performance of the work and tasks as stated herein for minimum of 3 years.

1.03 SUBMITTALS

A. Submit for information only:

1. Presentation of similar experience in the last 3 years.
2. Include, but not limited to:
 - a. Owner name.
 - b. Address.
 - c. Telephone number.
 - d. Contact person.
 - e. Date and duration of work.
 - f. Location.
 - g. Pipe information.
 - h. Contents handled by pipeline.
3. Supervisory field personnel and historical information of HDD experience.

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- a. At least one field supervisors listed must be at site when HDD operations are in progress.
- B. Submit the following:
 - 1. Working Drawings and written procedure describing in detail proposed method and entire operation for information only including, but not limited to:
 - a. Size, capacity and arrangement of equipment.
 - b. Location and size of drilling and receiving pits.
 - c. Dewatering and methods of removing spoils material.
 - d. Method of installing detection wire and pipe.
 - e. Type, location and method of installing locator station.
 - f. Method of fusion pipe segment and type of equipment.
 - g. Type of cutting head.
 - h. Method of monitoring and controlling line and grade.
 - i. Detection of surface movement.
 - j. Bentonite drilling mud for information only:
 - 2. Products information, material specifications, and handling procedures.
 - 3. Material safety data sheet and special precautions required.
 - 4. Method of mixing and application.

1.04 PROJECT CONDITIONS

- A. Complete HDD so as not to interfere with, interrupt, or endanger surface and activity thereon.
- B. Do not use HDD in rock stratum or subsoil consisting of boulders and underground obstructions that impede the process.
- C. Comply with applicable state and local ordinances, codes, statutes, rules, and regulations, and applicable regulations of Federal Government, OSHA 29CFR 1926, and applicable criteria of ANSI A10.16-1995 (R2001), "Safety Requirements for Tunnels, Shafts, and Caissons."

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Pipe:
 - 1. FPVC: See Section 15065.
 - 2. FPVC Joints:
 - a. Use butt fusion joining technique for joining pipe segments installed by HDD. See Section 15065.
 - b. When joining FPVC pipe at ends of directional drilling runs fusion bond to adjacent pipe section. Use butt fusion, socket fusion, or electrofusion coupling joining technique: See Section 02623.
 - c. Mechanical Couplings are not permitted for joining of directional drilled pipe sections.
 - 3. Connect to other pipe materials: See Section 02623.
- B. Drilling Fluid:
 - 1. Bentonite drilling mud compatible with the environment.
 - 2. Waste oil or environmentally non-compatible polymers cannot be part of composition.
- C. Detection Wire:
 - 1. Tracer wire for directional drilling/boring shall be #12 AWG (0.0808-inch diameter) hard drawn, high carbon 1055 grade steel, solid extra-high-strength copper-clad steel conductor (EHS-CCS), insulated with a 45 mil, high-density, high molecular weight polyethylene (HDPE) insulation, and rated for direct burial use at 30 volts.
 - 2. EHS-CCS conductor must be at 21% conductivity for locate purposes.
 - 3. Break load of 1150 pounds.
 - 4. FPVC insulation shall be RoHS compliant and utilize virgin grade material. Insulation color shall meet the APWA color code standard for identification of buried utilities.

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5. Manufacturers supplying copper clad steel tracer wire must have available detailed performance data including 5 years of underground testing in terms of durability related to damage of protective insulation and effects of potential corrosion of the specific copper clad steel used. Origin of copper clad steel manufacturer is required, and steel core must be manufactured in the United States. If manufacturer has not completed 5-year corrosion testing, a 5-year warranty must be provided.
 6. Acceptable manufacturers:
 - a. Copperhead Industries Reinforced #1245 Extra-High Strength Tracer Wire.
 - b. Or approved equal.
- D. Locator Station:
1. Underground, Flush Mounted:
 - a. Tube minimum 15 inches long with minimum inside diameter of 2-1/2-inches made of non-corrosive material, Schedule 40 PVC, HDPE, or approved equal.
 - b. Factory attached cast iron or high-impact plastic collar with ribs to prevent rotation when removing locking lid after locator station is set in concrete.
 - c. Light blue cast iron or high-impact plastic locking lid that will withstand AASHTO H-20 traffic loads and ultra-violet rays.
 - d. Mark locking lid to identify pipeline with a permanent identification such as P.S. Locator.
 - e. Terminal block made of high dielectric material, which is made of phenolic resin, plastic, micarta, Lexan or Bakelite for each locator station. Terminal block furnished with two 3/16-inch threaded studs, nuts, and washers made of nickel-plated brass.
 - f. Approved manufacturers:
 - 1) C.P. Test Services, Inc., Model Mini.
 - 2) Handly, Industries, Model T2IS2.
 - 3) Or approved equal.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Excavate pits following working drawings.
- B. Provide equipment to guard against electrocution and an alarm system on drilling equipment capable of detecting electrical current as it approaches electric lines.
- C. Test pit underground utilities crossing before HDD operation, as needed.

3.02 OPERATION

- A. General.
 - 1. Determine drilling length and equipment pull strength for type of soil encountered.
 - 2. Provide method to control line and grade.
 - a. Provide and maintain instrumentation that accurately locates pilot hole.
 - b. Drill pilot hole along path following Drawings to these tolerances:
 - 1) Vertical alignment plus or minus 0.5 foot. Vertical path of the pilot hole must not establish new high points not shown on Drawings.
 - 2) Horizontal alignment plus or minus 1.0 foot
 - c. Include electronic monitoring of horizontal and vertical drilling head location. Obtain accuracy range within 1 inch of actual position of pipeline. Record position readings at maximum of 10-foot intervals.
 - d. At completion of pilot hole drilling, furnish Engineer tabulations of horizontal and vertical alignment.
 - 3. When water is encountered:
 - a. Provide and maintain dewatering system of sufficient capacity to remove water.
 - b. Keep excavation free of water until backfill operation is in progress.

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- c. Perform dewatering in such a manner that removal of soils particles are held to a minimum.
 - d. Dewater into sediment trap following Section 01570.
 - 4. Maintain close observation to detect settlement or displacement of surface and adjacent facilities.
 - a. Notify Engineer and Owner immediately if settlement or displacement is detected.
 - b. Maintain safe conditions and prevent damage.
- B. Drilling Operation.
 - 1. Drilling Fluids:
 - a. Maintain drilling fluid in bore hole to increase stability of surrounding soil and reduce drag on pulled pipe.
 - b. Dispose of drilling fluid and other spoils at location following laws, ordinances, rules, and regulations of local jurisdiction.
 - c. Transport excess fluids and other spoils to disposal site.
 - d. Minimize drilling fluid at locations other than entry and exit points. Immediately clean up any drilling fluids that inadvertently surface.
 - e. Provide clean water for drilling.
 - 2. Pilot Hole Drilling:
 - a. Angle entry hole so that curvature of pilot hole does not exceed allowable bending radius of FPVC pipe.
 - b. Be able to make a turn of up to 90 degrees and maintain a curvature not to exceed allowable bending radius of FPVC pipe.
 - c. Alignment Adjustment and Restarts:
 - 1) Follow pipeline alignment on Drawings within tolerances specified herein. Before adjustments, notify Engineer for approval.
 - 2) Notify Engineer when forward motion of operation is stopped by an obstruction.

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- d. Abandon in place with drilling fluid, unless Engineer directs otherwise:
 - 1) Attempt a second installation at approved location or excavate at the point of difficulty and install the FPVC pipe by trench method.
 - 2) Exercise caution including, but not limited to, locating utilities, drilling downholes (test pits) to observe drill stems or reamer assembly to clear other existing utilities at locations following Drawings.
 - 3) Keep the number of boring pits to a minimum, no closer than following distances:
 - a) Equipment must be capable of boring following lengths in a single bore.

Iron Pipe Size (IPS)	Boring Distance (In feet)
1-1/4	400
1-1/2	400
2	350
2-1/2	350
3	300
4	250

3.03 INSTALLATION

- A. Installing FPVC Pipe:
 - 1. Provide a swivel to reaming assembly and pull section of pipe to minimize torsional stress on pull section after drilling pilot hole.
 - 2. Hold reaming diameter to 1.5 times outside diameter of FPVC pipe being installed.
 - 3. Protect pull section as it proceeds during pull back, so it moves freely and is not damaged.
 - 4. Pull detection wire along with FPVC pipe. Extend wire into locator station, or as otherwise indicated on the drawings at each end of FPVC pipe.

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5. When connecting to adjacent pulled or non-pulled section of FPVC pipe, allow pull section of pipe to extend past termination point. Make tie-ins the next day after pullback of FPVC pipe.
 6. Test pit pipe installation to verify horizontal and vertical alignment:
 - a. One test pit for every 500 feet along length of pipeline.
 - b. Engineer may order additional test pit for each test pit that reveals pipeline installation is not in compliance with Contract Documents.
 7. Replace portions of pipeline not in compliance with Contract Documents.
- B. Installing Locator Station:
1. Locator Stations:
 - a. At each end of the FPVC pipe. Follow Standard Details or Drawings,
 - b. Flush mount underground locator: See Standard Details.
 - c. When FPVC pipe is connected to another type of pipe material, continue detector wire over connecting pipe, so locator station is installed out of paved area.
 - d. In areas scheduled to be improved identify and protect station locations immediately after installation.
 - 1) Space 3 stakes equally around the station.
 - 2) Extend at least 4 feet above existing grade.
 - 3) Flag with orange fluorescent wrap within 6 inches from top of stakes.
 2. Detection Wire:
 - a. Install detection wire without splices as shown on Standard Details.
 - b. Terminate detection wire inside locator box using proper sized crimp type connectors on wire ends.

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- c. Connect each wire to terminal maintaining at least 18 inches slack in each wire for underground flush mounted locator stations.
- d. Neatly coil slack wire in test station below terminal board.
- e. Locate wires on top and along FPVC pipe.
- f. Allow adequate slack and support to protect wires from damage during backfilling operations.
- g. Test each detection wire for continuity after backfill is completed.
 - 1) If test for continuity is negative, repair or replace.
 - 2) After continuity is verified, connect each detection wire to terminal block in locator station.

3.04 FIELD QUALITY ASSURANCE

- A. Perform field testing of FPVC pipe.

END OF SECTION 02446

**SECTION 15062
POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS**

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The CONTRACTOR shall furnish all labor, materials, equipment, and incidentals required and install in the locations as shown on the Drawings.
- B. The CONTRACTOR shall install the plastic piping, fittings, and appurtenances (as specified herein) as shown on the Drawings.

1.02 DESCRIPTION OF SYSTEM

- A. The CONTRACTOR shall install the piping in the locations as shown on the Drawings.

1.03 QUALIFICATIONS

- A. All plastic pipe, fittings and appurtenances shall be furnished by a single Manufacturer who is fully experienced, reputable, and qualified in the manufacture of the items to be furnished.
- B. The equipment shall be designed, constructed, and installed in accordance with the best practices and methods and shall comply with these Specifications.

1.04 SUBMITTALS

- A. The CONTRACTOR shall submit Shop Drawings that include dimensions and technical specifications for all piping to the ENGINEER.
- B. The CONTRACTOR shall submit samples of all materials specified herein to the ENGINEER.
- C. The CONTRACTOR shall submit and shall comply with pipe Manufacturer's recommendation for handling, storing, and installing pipe and fittings.
- D. The CONTRACTOR shall submit pipe Manufacturer's certification of compliance with these Specifications.

1.05 TOOLS

- A. The CONTRACTOR shall furnish special tools, solvents, lubricants, and caulking compounds required for normal installation with the pipe.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Polyvinyl Chloride (PVC) Pipe:
1. PVC Pipe **4 to 8** inches in diameter shall meet the requirements of American Water Works Association (AWWA) Specifications C900 "Polyvinyl Chloride (PVC) Pressure Pipe," and shall be **DR18 (Pressure Class 235)**.
 2. Provisions shall be made for expansion and contraction at each joint with an elastomeric ring and shall have an integral thickened bell as part of each joint.
 3. PVC pipe shall be installed as recommended by the Manufacturer.
 4. Pipe shall be furnished in nominal lengths of approximately 20 feet, unless otherwise directed by the ENGINEER.
 5. Pipe and accessories shall bear the NSF mark indicating pipe size, Manufacturer's name(s), AWWA and/or ASTM Specification Number, working pressure, and production code.
 6. Pipe shall be blue for potable water service, green for sewage force main service, and purple for reclaimed water mains (Pantone 522C).
- B. All potable water pipe shall be NSF certified and copies of lab certification shall be submitted to the ENGINEER.
- C. All PVC pipe shall be restrained to the next full joint beyond given length.
- D. All PVC pipe adjacent to in-line valves 10 inches and smaller shall be restrained for 20 feet on each side, including the valve-to-pipe connection. All pipe adjacent to in-line valves 12 inches and larger shall be restrained for a distance of required plug (dead end) length on each side including the valve-to-pipe connection.
- E. Joints:
1. The PVC joints for pipe shall be of the push-on type unless otherwise directed by the ENGINEER so that the pipe and fittings may be connected on the job without the use of solvent cement or any special equipment.
 2. The push-on joint shall be a single rubber gasket joint designed to be assembled by the positioning of a continuous, molded rubber ring gasket in annular recess in the pipe or fitting socket and the forcing

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of the plain end of the entering pipe into the socket; thereby, compressing the gasket radially to the pipe to form a positive seal.

3. The gasket and annular recess shall be designed and shaped so that the gasket is locked in place against displacement as the joint is assembled.
4. The rubber ring joint shall be designed for thermal expansion or contraction with a total temperature change of at least 750 degrees Fahrenheit (F) in each joint per length of pipe.
5. The bell shall consist of an integral wall section with a solid cross section elastomeric ring which shall meet requirements of ASTM F-477.
6. The thickened bell section shall be designed to be at least as strong as the pipe wall.
7. Lubricant furnished for lubricating joints shall be nontoxic, shall not support the growth of bacteria, shall not have deteriorating effects on the gasket or pipe material, and shall not impart color, taste, or odor to the water.

F. Fittings and Specials:

1. All fittings for PVC pipe shall be cast iron/ductile iron with mechanical joints and shall conform to the specifications for cast iron/ductile iron fittings, unless otherwise directed by the ENGINEER. PVC C-900 fittings are allowable upon approval by the ENGINEER and required for sewage force main applications. DR ratio shall be the same as the pipe.
2. Bell hardness restraints shall be Megalug Series 2500 by EBBA Iron or approved equal. Restraint devices manufactured of ductile iron conforming to ASTM A536 and shall be coated using MEGA-Bond.
3. Fittings for Schedule 80 PVC pipe less than 3 inches in diameter shall be threaded and be PVC as shown on the Drawings, or as directed by the ENGINEER. Threaded PVC fittings shall conform to ASTM Specification D2464-69.
4. The Manufacturer of the pipe shall supply all PVC accessories as well as any adaptors and/or specials required to perform the Work as shown on the Drawings and specified herein.
5. Standard double bell couplings will not be accepted where the pipe will slip completely through the coupling.

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6. All fittings shall be restrained to the connecting sections of pipe.
 7. Restrained lengths for tees represent length on branch. Restrained lengths for reducers represent length on large end of reduces.
- G. Tracer Wire:
1. A 12-gauge tracer wire shall be placed on top of all PVC piping.
 2. The 12-gauge tracer wire shall be stripped, wrapped, and taped to PVC pipe with pipe wrap tape that is UPC approved, completely covering wire, taped on top of the PVC pipe, as indicated on Gate Valve detail of the construction drawings.

PART 3 - EXECUTION

3.01 STORAGE/INSTALLATION

- A. The CONTRACTOR shall be in strict accordance with the Manufacturer's technical data and printed instruction for the storage and installation of plastic pipe.
- B. The CONTRACTOR shall cover all plastic pipe to prevent fading.
- C. The OWNER reserves the right to reject any pipe not properly stored or pipe that has faded.

3.02 INSPECTION AND TESTING

- A. The CONTRACTOR shall not disturb all pipelines for 24 hours to develop complete strength at all joints.
- B. General:
 1. Provide temporary equipment for testing, including pump and gauges.
 2. Test piping system before insulation is installed (wherever feasible) and remove control devices before testing.
 3. Expel air from the pipe before applying the specified test pressure.
 4. Make taps (if necessary) at points of highest elevation, and afterwards tightly plugged.
 5. Test each natural section of each piping system independently but do not use piping system valves to isolate sections where test pressure exceeds valve pressure rating.
 6. Fill each section with water and subject to a hydrostatic pressure equal to the pressure rating of the pipe being tested.

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- C. The CONTRACTOR shall test for the required 2-hour period.
- D. The CONTRACTOR shall test pipe at 150 pounds per square inch (psi), except where fittings are lower class or pressure rating.

1. Water System Permissible Leakage:

Inches	gallons/1,000 feet/24 Hours	gallons/1,000 feet/1 Hours
2"	3.6 gal.	0.15 gal.
3"	5.4 gal.	0.23 gal.
4"	7.2 gal.	0.30 gal.
6"	10.8 gal.	0.45 gal.
8"	14.4 gal.	0.60 gal.
10"	18.0 gal.	0.75 gal.
12"	21.6 gal.	1.90 gal.
14"	25.2 gal.	1.05 gal.
16"	28.8 gal.	1.66 gal.
18"	32.4 gal.	1.66 gal.

- E. The CONTRACTOR shall repair piping systems sections which fail required piping tests by disassembly and re-installation using new materials to the extent required to overcome leakage. Do not use chemicals, stop-leak compounds, mastics, or other temporary repair methods.
- F. The CONTRACTOR shall, at his own expense, locate and repair the defective joints should any test of combined sections of pipe laid disclose leakage greater than the specified limit, until the leakage is within the specified allowance.
- G. The CONTRACTOR shall be provided water from the City for testing at City determined cost.
- H. The CONTRACTOR may subject pipe to hydrostatic pressure, inspect and test for leakage at any convenient time after partial completion of backfill.
- I. The CONTRACTOR may test the system with joints exposed or backfilling complete at his/her option. The ENGINEER shall be notified at least 48 hours before beginning testing.

- J. The CONTRACTOR shall drain test water from piping systems after testing and repair work has been completed.

3.03 CLEANING, FLUSHING, AND INSPECTING

- A. General:

1. Clean installed piping systems' exterior surfaces of superfluous materials and prepare for application of specified coatings (if any).
2. Flush out piping systems with clean water before proceeding with required tests.
3. Inspect each run of each system for completion of joints, supports, and accessory items.

- B. The CONTRACTOR shall thoroughly flush each run of pipe after the mains have been laid and pressure tested so as to remove all debris and foreign matter from the lines.

1. Flushing will ordinarily be done by opening fire hydrants or blowoffs along the pipeline.
2. Where fire hydrants or blowoffs are not available or are of insufficient capacity to permit adequate flushing, the pipeline shall be opened, and flumes or piping shall be provided by the CONTRACTOR to waste the water to the nearest approved disposal point.
3. A minimum volume of water equal to six times the volume of the main shall be used to flush the mains.
4. The water shall be introduced into the mains to produce a velocity of not less than 3 feet per second, and this rate of flow shall be continued until the discharge is clear and no evidence of silt or foreign matter is visible.

- C. The CONTRACTOR shall inspect pressure piping in accordance with American Society of Mechanical Engineers (ASME) B31 procedures.

- D. The CONTRACTOR shall disinfect water mains and water service piping in accordance with AWWA C601 and the Florida Department of Environmental Protection (FDEP), Chapter 17-22 requirements.

- E. The CONTRACTOR is responsible for costs (including sampling and analysis) associated with disinfecting the potable water lines.

- F. The CONTRACTOR shall submit sample results documenting compliance with disinfection testing requirements to the FDEP with a duplicate copy sent to the ENGINEER.

END OF SECTION 15062

SECTION 15075

FUSIBLE POLYVINYL CHLORIDE PIPE FOR INSTALLATION BY HORIZONTAL DIRECTIONAL DRILL (HDD)

PART 1 - GENERAL

1.01 DESCRIPTION

A. SCOPE:

1. This section specifies fusible PVC pipe, including standards for dimensionality, testing, quality, acceptable fusion practice, safe handling, storage, and installation of the pipe by horizontal directional drilling, directional boring, or guided boring.
2. Quantities shown on the plans may not be the exact length needed for directional bores.
3. The CONTRACTOR shall investigate this before the Bid and shall inform the ENGINEER prior to the bid if additional Fusible PVC pipe will be needed. If any additional Fusible PVC pipe is needed after the Bid, it will be the responsibility of the CONTRACTOR and shall not require any additional costs to the OWNER.

B. REQUIREMENTS:

1. CONTRACTOR shall provide fusible PVC pipe conforming to all standards and procedures and meeting all testing and material properties as described in this specification for installation by horizontal directional drilling.
2. CONTRACTOR shall be responsible for all installation processes and procedures associated with the installation by horizontal directional drilling in accordance with this specification.

C. PIPE DESCRIPTION:

1. Pipe Supplier shall furnish fusible PVC pipe conforming to all standards and procedures and meeting all testing and material properties as described in this specification.
2. Pipe shall conform to the dimensions specified in the plans.

1.02 QUALITY ASSURANCE

A. References:

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1. Refer to table on next page for reference information.

Reference	Title
ANSI/AWWA C110/A21.10	American National Standard for Ductile-Iron and Gray-Iron Fittings, 3-inch through 48-inch, for Water and Other Liquids
ANSI/AWWA C111/A21.11	American National Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
AWWA C605-94	Standard for Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water
AWWA C651	Standard for Disinfecting Water Mains
AWWA C900-97	Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 in. through 12 in. (100mm through 300mm), for Water Distribution
AWWA M23	AWWA Manual of Supply Practices PVC Pipe—Design and Installation, Second Edition
ASTM C923	Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals
ASTM D1784	Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
ASTM D1785	Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120 Test Method for Degree of Fusion of Extruded
ASTM D2152	Poly (Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion
ASTM D2241	Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)
ASTM D2665	Poly (Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
ASTM D3034	Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings
ASTM F477	Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F679	Standard Specification for Poly (Vinyl Chloride) (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings

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Reference	Title
ASTM F1057	Standard Practice for Estimating the Quality of Extruded Poly (Vinyl Chloride) (PVC) Pipe by the Heat Reversion Technique
ASTM F1417	Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air
UNI-B-6	Recommended Practice for Low-Pressure Air Testing of Installed Sewer Pipe
UNI-PUB-08	Tapping Guide for PVC Pressure Pipe
NSF-14	Plastics Piping System Components and Related Materials
NSF-61	Drinking Water System Components--Health Effects
PPI TR-2	PVC Range Composition Listing of Qualified Ingredients

B. Manufacturer Requirements:

1. Fusible PVC pipe shall be tested at the extrusion facility for properties required to meet all applicable parameters as outlined in AWWA C900, applicable sections of ASTM D2241, ASTM D3034, or ASTM F679. Testing priority shall be in conformance with AWWA C900, except for pipe made to the ASTM D3034 or ASTM F679 standards, which shall be tested to those standards.
2. All piping shall be made from a PVC compound conforming to cell classification 12454 per ASTM D1784.

C. Fusion Technician Requirements:

1. Fusion Technician shall be fully qualified by the pipe supplier to install fusible PVC pipe of the type(s) and size(s) being used.
2. Qualification shall be current as of the actual date of fusion performance on the project.

D. Specified Pipe Suppliers:

1. Fusible PVC pipe shall be used as manufactured under the trade names Fusible C-900® and FPVC™, for Underground Solutions, Inc., Poway, CA, (858) 679-9551.
2. Fusion process shall be as patented by Underground Solutions, Inc., Poway, CA, Patent No. 6,982,051.

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3. OWNER and ENGINEER are aware of no other supplier or fusible PVC pipe that is an equal to this specified pipe supplier and product.

E. Warranty:

1. The pipe shall be warranted for 1 year from the date of substantial completion.
2. In addition to the standard pipe warranty, the fusion services shall be warranted for 1 year from the date of substantial completion.

F. Pre-Construction Submittals:

1. The following PRODUCT DATA is required from the pipe supplier and/or fusion provider:
 - a. Pipe Size.
 - b. Dimensionality.
 - c. Pressure Class per applicable standard.
 - d. Color.
 - e. Recommended Minimum Bending Radius.
 - f. Recommended Maximum Safe Pull Force.
 - g. Pipe and fusion services warranty information.
 - h. Written procedural documentation for piping products including proper handling and storage, installation, tapping, and testing.
 - i. Fusion technician qualification indicating conformance with this specification.
2. The following Work Plan and Information is required from the contractor and/or horizontal directional drilling CONTRACTOR. This Work Plan and Information shall also be supplied to the pipe supplier, should it be requested:
 - a. Work plan shall include for each HDD installation any excavation locations and dimensions, interfering utilities, bore dimensions and locations including bend radii used, and traffic control schematics.

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- b. A project safety and contingency plan which shall include but shall not be limited to drilling fluid containment and cleanup procedures, equipment and plan for compromised utility installations including electrical and power lines, water, wastewater, and any other subsurface utility in the area.
 - c. An HDD schedule identifying daily work hours and working dates for each installation.
- G. Post-Construction Submittals:
- 1. The following As-Recorded Data is required from the contractor and/or fusion provider to the OWNER or pipe supplier upon request:
 - a. Fusion report for each fusion joint performed on the project, including joints that were rejected. Specific requirements of the Fusion Technician's joint report shall include:
 - 1) Pipe Size and Thickness
 - 2) Machine Size
 - 3) Fusion Technician Identification
 - 4) Job Identification
 - 5) Fusion Joint Number
 - 6) Fusion, Heating, and Drag Pressure Settings
 - 7) Heat Plate Temperature
 - 8) Time Stamp
 - 9) Heating and Cool Down Time of Fusion
 - 10) Ambient Temperature
 - b. As-recorded Information:
 - 1) The as-recorded plan and profile will reflect the actual installed alignment and reflect the horizontal offset from the baseline and depth of cover.
 - c. All fittings, valves, or other appurtenances will also be referenced and shown.

- 1) A daily project log, along with tracking log sheets, should they be used, shall be provided. Tracking log sheet data, should it be employed, shall include any and all that apply, including inclination, depth, azimuth, and hydraulic pull-back and rotational force measured.

PART 2 - PRODUCTS

2.01 FUSIBLE POLYVINYLCHLORIDE PRESSURE PIPE FOR POTABLE WATER

- A. Fusible PVC pipe shall conform to AWWA C900. Testing shall be in accordance with AWWA standards for all pipe types. FPVC pipe rating shall be as follows:
 1. 4 to 8 inches, AWWA C900, DR 18, Pressure Class 235 psi
 2. 10 to 12 inches, AWWA C900, DR 25, Pressure Class 165 psi
 3. Greater than 12 inches, AWWA C900, DR 25, Pressure Class 165 psi
- B. Rework material shall be allowed per AWWA C900 standards.
- C. Fusible PVC pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.
- D. Fusible PVC pipe shall be manufactured in a standard 20', 30' or 40' nominal length.
- E. Fusible PVC pipe shall be blue in color for potable water use.
- F. Pipe generally shall be marked per AWWA C900, and shall include as a minimum:
 1. Nominal pipe size.
 2. PVC.
 3. Dimension Ratio, Standard Dimension Ratio or Schedule.
 4. AWWA pressure class or standard pressure rating for non-AWWA pipe.
 5. AWWA Standard designation number or pipe type for non-AWWA pipe.
 6. NSF-61 mark verifying suitability for potable water service.

- 7. Extrusion production-record code.
 - 8. Trademark or trade name.
 - 9. Cell Classification 12454 and/or PVC material code 1120 may also be included.
- G. Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.

2.02 FUSIBLE POLYVINYLCHLORIDE PRESSURE PIPE FOR NON-POTABLE WATER

- A. NOT APPLICABLE FOR THIS PROJECT

2.03 FUSIBLE POLYVINYLCHLORIDE PRESSURE PIPE FOR WASTEWATER

- A. NOT APPLICABLE FOR THIS PROJECT

2.04 FUSIBLE POLYVINYLCHLORIDE NON-PRESSURE PIPE FOR WASTEWATER OR SURFACE WATER

- A. NOT APPLICABLE FOR THIS PROJECT

2.05 FUSION JOINTS

- A. Unless otherwise specified, fusible PVC pipe lengths shall be assembled in the field with butt-fused joints. The CONTRACTOR shall follow the pipe supplier's guidelines for this procedure. All fusion joints shall be completed as described in this specification.

2.06 CONNECTIONS AND FITTINGS FOR PRESSURE APPLICATIONS

- A. Connections shall be defined in conjunction with the coupling of project piping, as well as the tie-ins to other piping systems.
- B. Ductile Iron Mechanical and Flanged Fittings:
- 1. Acceptable fittings for use with fusible PVC pipe shall include standard ductile iron fittings conforming to AWWA/ANSI C110/A21.10 and AWWA/ANSI C111/A21.11.
 - 2. Connections to fusible PVC pipe may be made using a restrained or non-restrained retainer gland product for PVC pipe, as well as for MJ or flanged fittings.
 - 3. Bends, tees, and other ductile iron fittings shall be restrained with the use of thrust blocking or other means as indicated in the construction

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documents.

4. Ductile iron fittings and glands must be installed per the manufacturer's guidelines.

C. PVC Gasketed, Push-On Fittings:

1. Acceptable fittings for use with fusible PVC pipe shall include standard PVC pressure fittings conforming to AWWA C900.
 - a. Acceptable fittings for use joining fusible PVC pipe other sections of fusible PVC pipe or other sections of PVC pipe shall include gasketed PVC, push-on type couplings and fittings, including bends, tees, and couplings as shown in the drawings.
 - b. Bends, tees, and other PVC fittings shall be restrained with the use of thrust blocking or other restraint products as indicated in the construction documents.
 - c. PVC gasketed, push-on fittings and mechanical restraints, if used, must be installed per the manufacturer's guidelines.

D. Fusible Polyvinyl Chloride Sweeps or Bends:

1. Fusible PVC sweeps or bends shall conform to the same sizing convention, diameter, dimensional tolerances, and pressure class of the pipe that they are joining together.
2. Fusible PVC sweeps or bends shall be manufactured from the same fusible PVC pipe being used for the installation and shall have at least 2 feet of straight section on either end of the sweep or bend to allow for fusion of the sweep to the pipe installation.
3. Standard fusible PVC sweep or bend angles shall not be greater than 22.5 degrees and shall be used in nominal diameters ranging from 4 inch through 16 inch.

E. Sleeve-Type Couplings:

1. Sleeve-type mechanical couplings shall be manufactured for use with PVC pressure pipe and may be restrained or unrestrained as indicated in the construction documents. Sleeve-type couplings shall be rated at the same or greater pressure carrying capacity as the pipe itself.

F. Expansion and Flexible Couplings:

1. Expansion-type mechanical couplings shall be manufactured for use with PVC pipe and may be restrained or unrestrained as indicated in the construction documents.
2. Expansion-type mechanical couplings shall be rated at the same or greater pressure carrying capacity as the pipe itself.

G. Connection Hardware:

1. Bolts and nuts for buried service shall be made of non-corrosive, high-strength, low-alloy steel having the characteristics specified in ANSI/AWWA C111/A21.11, regardless of any other protective coating.

2.07 CONNECTIONS FOR GRAVITY SANITARY SEWER AND NON-PRESSURE APPLICATIONS

- A. Non applicable for this project.

2.08 DRILLING SYSTEM EQUIPMENT

A. General:

1. The directional drilling equipment, as a minimum, shall consist of a directional drilling rig of sufficient capacity to perform the bore(s) and pull-back of the pipe(s), a drilling fluid mixing & delivery system of sufficient capacity to successfully complete the crossing, a guidance system to accurately guide boring operations, and trained and competent personnel to operate the system.
2. 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.
3. All required equipment shall be included in the emergency and contingency plan as submitted per these specifications.

B. Drilling Rig:

1. The directional drilling machine shall consist of a hydraulically powered system to rotate, push, and pull drill pipe while delivering a pressurized fluid mixture to a drill head.
2. The machine shall be anchored to withstand the pulling, pushing and rotating forces required to complete the project.

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3. The drilling rig hydraulic system shall be of sufficient pressure and volume to power drilling operations. The hydraulic system shall be free from leaks.
 4. The drilling rig shall have a system to monitor pull-back hydraulic pressure during pull-back operations.
- C. Drill Head:
1. The horizontal directional drilling equipment shall produce a stable fluid lined tunnel with the use of a steer-able drill head and any subsequent pre-reaming heads.
 2. The system must be able to control the depth and direction of the drilling operation.
 3. Drill head shall contain all necessary cutters and fluid jets for the operation and shall be of the appropriate design for the ground medium being drilled.
- D. Drilling Fluid System:
1. Drilling Fluid (Drilling Mud):
 - a. Drilling fluid shall be composed of clean water and the appropriate additive(s) for the fluid to be used.
 - b. Water shall be from a clean source and shall meet the mixing requirements of the mixture manufacturer(s).
 - c. The water and additives shall be mixed thoroughly to assure the absence of any clumps or clods. No hazardous additives may be used.
 - d. Drilling fluid shall be maintained at a viscosity sufficient to suspend cuttings and maintain the integrity of bore wall(s).
 - e. Drilling fluid shall be disposed of off-site in accordance with local, state, and federal requirements and/or permit conditions.
 - f. No additional chemicals or polymer surfactants shall be allowed to be added to the drilling fluid unless they have been submitted per this specification.
 2. Mixing System:
 - a. A drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid for the project.

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- b. The mixing system shall be able to ensure thorough mixing of the drilling fluid. The drilling fluid reservoir tank shall be sized for adequate storage of the fluid.
 - c. The mixing system shall continually agitate the drilling fluid during drilling operations.
3. Drilling Fluid Delivery and Recovery System
- a. The drilling fluid pumping system shall have a minimum capacity to supply drilling fluid in accordance with the drilling equipment pull-back rating at a constant required pressure.
 - b. The delivery system shall have filters or other appropriate in-line equipment to prevent solids from being pumped into the drill pipe.
 - c. Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and properly disposed of.
 - d. The use of spill containment measures shall be maintained around drill rigs, drilling fluid mixing system, entry and exit pits and drilling fluid recycling system (if used) to prevent spills into the surrounding environment. Pumps, vacuum truck(s), and/or storage of sufficient size shall be in place to contain excess drilling fluid.
 - e. A closed loop drilling fluid system and a drilling fluid cleaning system should be used to whatever extent practical, depending upon project size and conditions.
 - f. Under no circumstances shall drilling fluid that has escaped containment be reused in the drilling system.
4. Drilling Control System:
- a. Calibration of the electronic detection and control system shall be verified prior to the start of the bore.
 - b. The drilling head shall be remotely steer-able by means of an electronic or magnetic detection system.
 - c. The drilling head location shall be monitored in three dimensions:
 - d. Offset from the baseline,
 - e. Distance along the baseline, and

- f. Depth of cover.
- 5. Point of rotation of the head shall also be monitored.
- 6. For gravity application and on-grade drilling, sonde/beacon, or approved equipment applicable for grade increments of 1/10th of one percent shall be used.

2.09 PIPE PULL HEADS

- A. Pipe pull heads shall be utilized that employ a positive through-bolt design assuring a smooth wall against the pipe cross-section at all times.
- B. Pipe pull heads shall be specifically designed for use with fusible PVC pipe and shall be as recommended by the pipe supplier.

2.10 PIPE ROLLERS

- A. Pipe rollers, if required, shall be of sufficient size to fully support the weight of the pipe during handling and pullback operations.
- B. A sufficient quantity of rollers and spacing, per the pipe supplier's guidelines shall be used to assure adequate support and excessive sagging of the product pipe.

PART 3 - EXECUTION

3.01 DELIVERY AND OFF-LOADING

- A. All pipes shall be bundled or packaged in such a manner as to provide adequate protection of the ends during transportation to the site. Any pipe damaged in shipment shall be replaced as directed by the OWNER or ENGINEER.
- B. Each pipe shipment should be inspected prior to unloading to see if the load has shifted or otherwise been damaged. Notify OWNER or ENGINEER immediately if more than immaterial damage is found. Each pipe shipment should be checked for quantity and proper pipe size, color, and type.
- C. Pipe should be loaded, off-loaded, and otherwise handled in accordance with AWWA M23, and all of the pipe supplier's guidelines shall be followed.
- D. Off-loading devices such as chains, wire rope, chokers, or other pipe handling implements that may scratch, nick, cut, or gouge the pipe are strictly prohibited.
- E. During removal and handling, be sure that the pipe does not strike anything. Significant impact could cause damage, particularly during cold weather.

- F. If appropriate unloading equipment is not available, pipe may be unloaded by removing individual pieces. Care should be taken to ensure that pipe is not dropped or damaged. Pipe should be carefully lowered, not dropped, from trucks.

3.02 HANDLING AND STORAGE

- A. Any length of pipe showing a crack, or which has received a blow that may have caused an incident fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work. Damaged areas, or possible areas of damage may be removed by cutting out and removing the suspected incident fracture area. Limits of the acceptable length of pipe shall be determined by the OWNER or ENGINEER.
- B. Any scratch or gouge greater than 10% of the wall thickness will be considered significant and can be rejected unless determined acceptable by the OWNER or ENGINEER.
- C. Pipe lengths should be stored and placed on level ground. Pipe should be stored at the job site in the unit packaging provided by the manufacturer. Caution should be exercised to avoid compression, damage, or deformation to the ends of the pipe. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.
- D. Pipe shall be handled and supported with the use of woven fiber pipe slings or approved equal. Care shall be exercised when handling the pipe to not cut, gouge, scratch or otherwise abrade the piping in any way.
- E. If pipe is to be stored for periods of 1 year or longer, the pipe should be shaded or otherwise shielded from direct sunlight. Covering of the pipe which allows for temperature build-up is strictly prohibited. Pipe should be covered with an opaque material while permitting adequate air circulation above and around the pipe as required to prevent excess heat accumulation.
- F. Pipe shall be stored and stacked per the pipe supplier's guidelines.

3.03 FUSION PROCESS

- A. General:
 - 1. Fusible PVC pipe will be handled in a safe and non-destructive manner before, during, and after the fusion process and in accordance with this specification and pipe supplier's guidelines.

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2. Fusible PVC pipe will be fused by qualified fusion technicians, as documented by the pipe supplier.
3. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) affixed to the fusion machine.
4. Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process. Fusion machines must incorporate the following properties, including the following elements:

B. Heat Plate:

1. Heat plates shall be in good condition with no deep gouges or scratches. Plates shall be clean and free of any debris or contamination.
2. Heater controls shall function properly; cord and plug shall be in good condition.
3. The appropriately sized heat plate shall be capable of maintaining a uniform and consistent heat profile and temperature for the size of pipe being fused, per the pipe supplier's guidelines.

4. Carriage:

Carriage shall travel smoothly with no binding at less than 50 psi. Jaws shall be in good condition with proper inserts for the pipe size being fused. Insert pins shall be installed with no interference to carriage travel.

C. General Machine:

1. Overview of machine body shall yield no obvious defects, missing parts, or potential safety issues during fusion.

D. Data Logging Device:

1. The current version of the pipe supplier's recommended and compatible software shall be used.
2. Datalogging device operations and maintenance manual shall be with the unit at all times.
3. If fusing for extended periods of time, an independent 110V power source shall be available to extend battery life.

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- E. Other equipment specifically required for the fusion process shall include the following:
1. Pipe rollers shall be used for support of pipe to either side of the machine
 2. A weather protection canopy that allows full machine motion of the heat plate, fusion assembly and carriage shall be provided for fusion in inclement and /or windy weather.
 3. Fusion machine operations and maintenance manual shall be kept with the fusion machine at all times.
 4. Facing blades specifically designed for cutting fusible PVC pipe shall be used.
- F. Joint Recording:
1. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine.
 2. The fusion data logging and joint report shall be generated by software developed specifically for the butt-fusion of thermoplastic pipe.
 3. The software shall register and/or record the parameters required by the pipe supplier and these specifications.
 4. Data not logged by the data logger shall be logged manually and be included in the Fusion Technician's joint report.

3.04 DRILLING OPERATIONS

- A. General:
1. Bore path and alignment are as indicated in the contract documents.
 2. The path of the bore may be modified based on field and equipment conditions.
 3. Entry and exit locations and control-point elevations shall be maintained as indicated in the contract documents.
 4. Bend radii shown in the contract documents are minimum allowable radii and shall not be reduced.

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- B. Location and Protection of Underground Utilities:
1. Correct location of all underground utilities that may impact the HDD installation is the responsibility of the CONTRACTOR, regardless of any locations shown on the drawings or previous surveys completed.
 2. Utility location and notification services shall be contacted by the CONTRACTOR prior to the start of construction.
 3. All existing lines and underground utilities shall be positively identified, including exposing those facilities that are located within an envelope of possible impact of HDD installation as determined for the project specific site conditions. It is the CONTRACTOR and HDD system operator's responsibility to determine this envelope of safe offset from existing utilities. This will include, but is not limited to, soil conditions and layering, utility proximity and material, HDD system and equipment, and foreign subsurface material.
- C. Site Location Preparation:
1. Work site as indicated on drawings shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made.
- D. CONTRACTOR shall confine all activities to designated work areas.
- E. Drilling Layout and Tolerances:
1. The drill path shall be accurately surveyed with entry and exit areas placed in the appropriate locations within the areas indicated on drawings. If using a magnetic guidance system, drill path will be surveyed for any surface geomagnetic variations or anomalies.
 2. Instrumentation shall be provided and maintained at all times that accurately locates the pilot hole, measures drill-string axial and torsional loads and measures drilling fluid discharge rate and pressure.
 3. Entry and exit areas shall be drilled so as not to exceed the bending limitations of the pipe as recommended by the pipe supplier.
- F. Pilot Hole Bore:
1. Pilot hole shall be drilled along bore path. In the event that the pilot bore does deviate from the bore path, it may require contractor to pull-back and re-drill from the location along bore path before the deviation.
 2. The CONTRACTOR shall limit curvature in any direction to reduce force on the pipe during pull-back. The minimum radius of curvature

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shall be no less than that specified by the pipe supplier and as indicated on the drawings.

G. Reaming:

1. After successfully completing the pilot hole, the bore hole shall be reamed to a diameter which meets the requirements of the pipe being installed. The following table is offered as an estimated guide:

Nominal Diameter	Pipe	Bore Hole Diameter
< 8 inches		Pipe Dia. + 4 inches
8 inches to 24 inches		Pipe Dia. X 1.5
> 24 inches		Pipe Dia. + 12 inches

2. Multiple reaming passes shall be used at the discretion of the CONTRACTOR and shall conform to this specification.
3. In the event of a drilling fluid fracture, returns loss or other loss of drilling fluid, the CONTRACTOR shall be responsible for restoring any damaged property to original condition and cleaning up the area in the vicinity of the damage or loss. **PIPE PULL-BACK AND INSERTION**

H. Pipe shall be fused prior to insertion, if the site and conditions allow, into one continuous length.

I. CONTRACTOR shall handle the pipe in a manner that will not over-stress the pipe prior to insertion. Vertical and horizontal curves shall be limited so that the pipe does not bend past the pipe supplier's minimum allowable bend radius, buckle, or otherwise become damaged. Damaged portions of the pipe shall be removed and replaced.

J. The pipe entry area shall be graded as needed to provide support for the pipe and to allow free movement into the bore hole.

1. The pipe shall be guided into the bore hole to avoid deformation of, or damage to, the pipe.
2. The fusible PVC pipe may be continuously or partially supported on rollers or other OWNER and ENGINEER approved friction decreasing implement during joining and insertion, as long as the pipe is not over-stressed or critically abraded prior to, or during installation.

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3. A swivel shall be used between the reaming head and the fusible PVC pipe to minimize torsion stress on the pipe assembly.
- K. Buoyancy modification shall be at the sole discretion of the CONTRACTOR and shall not exceed the pipe supplier's guidelines in regard to maximum pull force or minimum bend radius of the pipe. Damage caused by buoyancy modifications shall be the responsibility of the CONTRACTOR.
- L. Once pull-back operations have commenced, the operation shall continue without interruption until the pipe is completely pulled through the bore hole.
- M. The pipe shall be installed in a manner that does not cause upheaval, settlement, cracking, or movement and distortion of surface features. Any damages caused by the CONTRACTOR's operations shall be corrected by the CONTRACTOR.

3.05 INSTALLATION CLEANUP

- A. Following the installation, the project site shall be returned to a condition equal to or better than the pre-construction condition of the site. All excavations will be backfilled and compacted per the construction documents and jurisdictional standards. All pavement and hardscape shall be repaired per applicable jurisdictional standards, excess materials shall be removed from the site, and disturbed areas shall be re-landscaped. All drilling fluid shall be properly disposed of per these specifications and all applicable jurisdictional laws.
- B. CONTRACTOR shall verify that all utilities, structures, and surface features in the project area are sound.

3.06 PREPARATION PRIOR TO MAKING CONNECTIONS INTO EXISTING PIPING SYSTEMS

- A. Approximate locations for existing piping systems are shown in the construction documents. Prior to making connections into existing piping systems, the CONTRACTOR shall:
 1. Field verify location, size, piping material and piping system of the existing pipe.
 2. Obtain all required fittings, which may include saddles, sleeve type couplings, flanges, tees, or others as shown in the construction documents.
 3. Have installed all temporary pumps and/or pipes in accordance with established connection plans.

- B. Unless otherwise approved, new piping systems shall be completely assembled and successfully tested prior to making connections into existing pipe systems.

3.07 PIPE SYSTEM CONNECTIONS

- A. Pipe connections shall be installed per applicable standards and regulations, as well as per the connection manufacturer's guidelines and as indicated in the construction documents. Pipe connections to structures shall be installed per applicable standards and regulations, as well as per the connection manufacturer's guidelines.

3.08 TAPPING FOR POTABLE AND NON-POTABLE WATER APPLICATIONS

- A. Tapping shall be performed using standard tapping saddles designed for use on PVC piping in accordance with AWWA C605. Tapping shall be performed only with use of tap saddles or sleeves. **NO DIRECT TAPPING WILL BE PERMITTED.** Tapping shall be performed in accordance with the applicable sections for Saddle Tapping per Uni-Pub-8.
- B. All connections requiring a larger diameter than that recommended by the pipe supplier, shall be made with a pipe connection as specified and indicated on the drawings.
- C. Equipment used for tapping shall be made specifically for tapping PVC pipe:
 - 1. Tapping bits shall be slotted "shell" style cutters, specifically made for PVC pipe. 'Hole saws' made for cutting wood, steel, ductile iron, or other materials are strictly prohibited.
 - 2. Manually operated or power operated drilling machines may be used.
- D. Taps may be performed while the pipeline is filled with water and under pressure ('wet' tap), or when the pipeline is not filled with water and not under pressure ('dry' tap).

3.09 TESTING

- A. Testing shall comply with all applicable jurisdictional building codes, statutes, standards, regulations, and laws.
- B. Hydrostatic Testing and Leakage Testing for Pressure Piping:
 - 1. Hydrostatic and leakage testing for piping systems that contain mechanical jointing as well as fused PVC jointing shall comply with AWWA C605.

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2. Unless agreed to or otherwise designated by the owner or engineer, for a simultaneous hydrostatic and leakage test following installation, a pressure equal to 150% of working pressure at point of test, but not less than 125% of normal working pressure at highest elevation shall be applied. The duration of the pressure test shall be for two (2) hours.
 3. If hydrostatic testing and leakage testing are performed at separate times, follow procedures as outlined in AWWA C605.
 4. In preparation for pressure testing the following parameters must be followed:
 5. All air must be vented from the pipeline prior to pressurization.
 6. This may be accomplished with the use of the air relief valves or corporation stop valves, vent piping in the testing hardware or end caps, or any other method which adequately allows air to escape the pipeline at all high points.
 7. Venting may also be accomplished by 'flushing' the pipeline in accordance with the parameters and procedures as described in AWWA C605.
 8. The pipeline must be fully restrained prior to pressurization.
 - a. This includes complete installation of all mechanical restraints per the restraint manufacturer's guidelines, whether permanent or temporary to the final installation.
 - b. This also includes the installation and curing of any and all required thrust blocking.
 - c. All appurtenances included in the pressure test, including valves, blow-offs, and air-relief valves shall be checked for proper installation and restraint prior to the beginning of the test.
 9. Temporary pipeline alignments that are being tested, such as those that are partially installed in their permanent location shall be configured to minimize the amount of potentially trapped air in the pipeline.
- C. Leakage Testing for Non-Pressure Piping (Not Applicable)
- D. Deflection Testing for Non-Pressure Piping:

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1. After completion of the backfill, the ENGINEER or OWNER may require that a deflection test be performed.
 2. Deflection tests should be conducted using a go/no-go mandrel.
 3. The mandrels outside dimension shall be sized to permit no more than 7.5 percent deflection.
 4. The percent deflection shall be established from the base inside diameter of the pipe.
 5. If the internal beading of the joints for the pipe is not required to be removed, the mandrel shall account for this clearance as well.
 6. The mandrel shall be approved by the OWNER or ENGINEER prior to use.
- E. Lines that permit safe entry may allow other deflection test options, such as direct measurements.
- F. Disinfection of the Pipeline for Potable Water Piping:
1. After installation, the pipeline, having passed all required testing, shall be disinfected prior to being put into service.
 2. Unless otherwise directed by the OWNER or ENGINEER, the pipeline will be disinfected per AWWA C651.
- G. Partial Testing:
1. Segments of the pipe may be tested separately in accordance with standard testing procedure, as approved by the OWNER and ENGINEER.

END OF SECTION OF 15075

**SECTION 15101
VALVES AND ACCESSORIES**

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The CONTRACTOR shall furnish all labor, materials, equipment, and incidentals required and install complete and ready for operation and test all buried and non-buried valves as shown on the Drawings and as specified herein.

1.02 SUBMITTALS

- A. Submit materials required to establish compliance with these Specifications in accordance with Section 01300. Submittals shall include the following:
1. Certified drawings showing all important details of construction and dimensions.
 2. Descriptive literature, bulletins and/or catalogs of the equipment.
 3. The total weight of each item.
 4. A complete bill of materials.
 5. Additional submittal data, where noted with individual pieces of equipment.
- B. Test Reports:
1. Provide certified hydrostatic test data, per Manufacturers standard procedure or MSS-SP-61 for all valves.
- C. Certificates:
1. For each valve specified to be manufactured, tested and/or installed in accordance with AWWA and other standards, submit an affidavit of compliance with the appropriate standards, including certified results of required tests and certification of proper installation.
- D. Manufacturer's Installation and Application Data
- E. Operating and Maintenance Data:
1. Operating and maintenance instructions shall be furnished to the ENGINEER. The instructions shall be prepared specifically for this

installation and shall include all required cuts, drawings, equipment lists, descriptions and other information required to instruct operating and maintenance personnel unfamiliar with such equipment.

1.03 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM):
1. ASTM A48 - Specification for Gray Iron Castings.
 2. ASTM A126 - Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings.
 3. ASTM A159 - Specification for Automotive Gray Iron Castings.
 4. ASTM A240 - Standard Specification for Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels.
 5. ASTM A276 - Standard Specification for Stainless and Heat-Resisting Steel Bars and Shapes.
 6. ASTM A436 - Specification for Austenitic Gray Iron Castings.
 7. ASTM A536 - Specification for Ductile Iron Castings.
 8. ASTM B30 - Specification for Copper-Base Alloys in Ingot Form.
 9. ASTM B62 - Standard Specification for Composition Bronze or Ounce Metal Castings
- B. American Water Works Association (AWWA):
1. AWWA C111 - Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings.
 2. AWWA C500 - Gate Valves, 3-inch Through 48-inch NPS, for Water and Sewage Systems
 3. AWWA C509 - Resilient-Seated Gate Valves, 3-inch Through 12-inch NPS, for Water and Sewage Systems
 4. AWWA C511 - Reduced Pressure Principal Backflow Prevention Assembly
 5. AWWA C540 - Power-Actuating Devices for Valves and Sluice Gates
AWWA C550 - Protective Interior Coatings for Valves and Hydrants

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6. AWWA C800 - Underground Service Line Valves and Fittings
7. AWWA C515 – Resilient Seated Valves for 14-inch and Larger
- C. American National Standards Institute (ANSI):
 1. ANSI B2.1 - Specifications, Dimensions, Gauging for Taper and Straight Pipe Threads (except dry seals).
 2. ANSI B16.1 - Cast Iron Pipe Flange and Flanged Fittings Class 25, 125, 250 and 800
 3. ANSI B16.10 - Face-to-Face and End-to-End Dimensions of Valves
- D. American Iron and Steel Institute (AISI).
- E. Manufacturer's Standardization Society of the Valve and Fittings Industry (MSS):
 1. MSS-SP-61 - Pressure Testing of Steel Valves.
 2. MSS-SP-70 - Cast Iron Gate Valves, Flanged and Threaded Ends.
 3. MSS-SP-78 - Cast Iron Plug Valves, Flanged and Threaded Ends.
 4. MSS-SP-80 - Bronze Gate, Globe, Angle and Check Valves.
 5. MSS-SP-82 - Valve Pressure Testing Methods
 6. MSS-SP-98 - Protective Epoxy Coatings for Interior of Valves and Hydrants.
- F. National Electrical Manufacturers Association (NEMA).
- G. Underwriters Laboratories (UL).
- H. Factory Mutual Insurance (FM).
- I. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.04 QUALITY ASSURANCE

- A. Qualifications:
 1. Valves and appurtenances shall be products of well-established firms who are fully experienced, minimum 10 years, reputable and qualified in the manufacture of the particular equipment to be furnished.

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2. The equipment shall be designed, constructed, and installed in accordance with the best practices and methods and shall comply with these Specifications as applicable.
 3. All units of the same type shall be the product of one Manufacturer.
- B. Certifications:
1. The Manufacturer's shall furnish an affidavit of compliance with Standards referred to herein as specified in paragraph 1.03C.
 2. Refer to Part 3 for testing required for certain items in addition to that required by referenced standards.
- C. Provide the services of a qualified and factory-trained service representative of the Manufacturer to provide operational and maintenance instruction, for a one- day, 8-hour period for:
1. Valve motor operators.
 2. Valve hydraulic operators.
 3. Valve pneumatic operators.
 4. Pressure regulating valves.
 5. Air release, air and vacuum valves.
- D. Inspection of the units may also be made by the ENGINEER or other representative of the OWNER after delivery. The equipment shall be subject to rejection at any due to failure to meet any of the Specification requirements, even though submittal data may have been accepted previously. Equipment rejected after delivery shall be marked for identification and shall be removed from the job site at once.

1.05 SYSTEM DESCRIPTION

- A. All the equipment and materials specified herein is intended to be standard for use in controlling the flow of wastewater, sludges, reclaimed water, potable water, air, or chemicals, depending on the individual systems, as noted on the Drawings.
- B. Valves, appurtenances, and miscellaneous items shall be installed as shown on the Drawings and as specified, so as to form complete workable systems.
- C. Unless otherwise noted all powered valve operators shall have:

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1. Valves smaller than 8 inches: electric operators 120-volt, single phase, 60 Hz.
2. Valves larger than 8 inches: electric operators 480-volt, 3 phase, 60 Hz.
3. Solenoid valves: 120-volt, single phase, 60 hz, NEMA 4 enclosure, continuous duty Class F coils and manual operator.
4. See other paragraphs for additional requirements.

D. Packing and Shipping:

1. Care shall be taken in loading, transporting, and unloading to prevent injury to the valves, appurtenances, or coatings. Equipment shall not be dropped. All valves and appurtenances shall be examined before installation and no piece shall be installed which is found to be defective. Any damage to the coatings shall be repaired as acceptable to the ENGINEER.
2. Prior to shipping, the ends of all valves shall be acceptably covered to prevent entry of foreign material. Covers shall remain in place until after installation and connecting piping is completed.
 - a. All valves 3-inch and larger shall be shipped and stored on site until time of use with wood or plywood covers on each valve end.
 - b. Valves smaller than 3-inch shall be shipped and stored as above except that heavy cardboard covers may be used on the openings.
 - c. Rising stems and exposed stem valves shall be coated with a protective oil film which shall be maintained until the valve is installed and put into use.
 - d. Any corrosion in evidence at the time of acceptance by the OWNER shall be removed, or the valve shall be removed and replaced.

E. Storage and Protection:

1. Special care shall be taken to prevent plastic and similar brittle items from being directly exposed to the sun, or exposed to extremes in temperature, to prevent deformation. See the individual piping specifications and Manufacturer's information for further requirements.

1.06 MAINTENANCE

- A. Special tools and the Manufacturer's standard spare parts, if required for normal operation and maintenance, shall be supplied with equipment.
- B. Provide all special tools required for normal maintenance.
- C. Tools shall be packaged in a steel case, clearly and indelibly marked on the exterior to indicate equipment for which tools are intended.
- D. Provide to the OWNER a list of all spare and replacement parts with individual prices and location where they are available.
- E. Prices shall remain in effect for a period of not less than one year after start-up and final acceptance.

PART 2 - PRODUCTS

2.01 MATERIALS AND EQUIPMENT - GENERAL

- A. Nameplates, provisions for temporary pressure gages, protection against electrolysis and anchor bolts are required.
- B. The use of a Manufacturer's name and/or model or catalog number is for the purpose of establishing the standard of quality and general configuration desired.
- C. Valves and appurtenances shall be of the size shown on the Drawings or as noted and as far as possible equipment of the same type shall be identical and from one Manufacturer.
- D. Valves and appurtenances shall have the name of the maker, nominal size, flow directional arrows, working pressure for which they are designed, and standard referenced, cast in raised letters or indelibly marked upon some appropriate part of the body.
- E. Unless otherwise noted, items shall have a minimum working pressure of 150 psi or be of the same working pressure as the pipe they connect to, whichever is higher and suitable for the pressures noted where they are installed.
- F. Joints, size, and material - unless otherwise noted or required by the ENGINEER:
 - 1. Except where noted, all joints referred to herein shall be of the same type, nominal diameter, material and with a minimum rating equal to the pipe or fittings they are connected to.

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2. Valves and appurtenances shall be of the same nominal diameter as the pipe or fittings they are connected to.
 3. All valves exposed to view, or in vaults shall have 4-inch and larger flanged ends.
- G. Provide all special adaptors as required to ensure compatibility between valves, appurtenances, and adjacent pipe.
- H. Valves and actuators located outdoors but not within a building; within maximum 2 feet above liquid; in vaults; or where otherwise noted shall be especially designed for submerged service where water may completely submerge the valve and operator. All other units shall be as a minimum weather tight.

2.02 VALVE ACTUATORS - GENERAL

- A. The valve Manufacturer shall supply and integrally, rigidly mount all actuators, including any type of manual or powered actuators, on valves at the factory. The valves and their individual actuators shall be shipped as a unit.
- B. The actuating nut for deeper valves shall be extended to come up to 4-foot-depth below finished grade.
- C. Unless otherwise noted, valves shall be manually actuated; non-buried valves shall have an operating wheel, handle or lever mounted on the operator; buried valves and those with operating nuts shall have a non-rising stem with an AWWA 2-inch nut. At least two tee handles shall be provided for all operating nuts.
- D. Except as otherwise shown on the Drawings or specified herein, all valves 3-inch diameter or larger, with the valve center line located 7 feet or more above the operating floor, shall be provided with chain wheel operators complete with chain guides and hot dipped galvanized steel chain, which loop within 4 feet of the operating floor.
- E. All actuators shall be capable of moving the valve from the full open to full close position and in reverse and holding the valve at any position part way between full open or closed.
- F. Each operating device shall have cast on it the word "OPEN" and an arrow indicating the direction of operation.
- G. Floor boxes for operating nuts recessed in concrete shall be standard cast iron type, cast-in-place, with fastening top by Clow or approved equal.

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- H. Stem guides shall be of the adjustable wall bracket type, bronze brushed, with maximum spacing of 10 feet as manufactured by Clow, Rodney Hunt, or approved equal. Extended operating nuts and/or stems shall have universal joints and pin couplings, if longer than 10 feet and a rating of at least five times the maximum operating torque. Stem adaptors shall be provided.
- I. Where required by the installation, or as specified, provide the following: extended stem; floor stand and handwheel; position indicator and etched or cast arrow to show direction of rotation to open the valve; resilient seal around stem penetration of slab.

2.03 GATE VALVES (3-INCH AND LARGER)

- A. General Requirements:
 - 1. Unless otherwise specified below, these requirements shall apply to all gate valves.
 - 2. Gate valves shall be manufactured by **AVK Brand Valves** or approved equal.
 - 3. Gate valves shall meet the requirements of AWWA C500 and AWWA C509 as applicable to the type of valve specified.
 - 4. Buried and submerged valves shall be furnished with mechanical joints and stainless-steel hardware, non-rising stem design.
 - 5. Exposed valves shall be furnished with Class 125 flanged ends and hand wheel; provide valves with outside screw and yoke.
 - 6. All-metal valves shall be manufactured of ASTM A536, Ductile Iron, with bronze mounting design.
 - 7. Rising stem valves shall be sealed with adjustable and replaceable packing; valve design must permit packing replacement under operating system pressures with only moderate leakage.
 - 8. Non-rising stem valves shall use a double O-ring stem seal, except that packing shall be used where geared operators are required.
 - 9. Except as otherwise specified, valves shall be rated at the working water pressures provided in the table below:

VALVE SIZE	PRESSURE (PSIG)
3-inch to 12-inch	250
14-inch to 20-inch	250

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24-inch and greater

250

10. All valve bodies shall be hydrostatically tested to at least twice the rated working water pressure. In addition, valves shall be seat-tested, bi-directional at the rated working pressure, with seat leakage not to exceed one fluid ounce per inch of valve diameter per hour. Provide certificates of testing.
 11. Flanged valves to have face-to-face dimensions per ANSI B16.1 and flanges per ANAI B16.10.
 12. All bonnet and packing gland bolts shall be zinc or cadmium electroplated steel; packing gland bolts shall have bronze nuts.
 13. Provide geared operator and chain wheel, chain, and chain guides for valves with handwheel centerline more than 7 feet above operating level.
 14. All valves shall be marked per AWWA Standards, including name of Manufacturer, valve size and working pressure and year of manufacture.
 15. Unless otherwise indicated, valves 12-inch and smaller shall be capable of installation in the vertical or horizontal position, sealing in both directions at the rated pressure.
 16. Valve operation shall be counterclockwise for potable water. Provide permanent label showing "OPEN" and arrows.
 17. Resilient seated valves shall be coated, interior and exterior, with fusion bonded epoxy per AWWA C550.
 18. Valves shall not be placed in handicapped ramps.
- B. Valve Requirements:
1. Double Disc (NOT USED)
 2. Double Revolving Disc (NOT USED)
 3. Solid Wedge (NOT USED)
 4. Resilient Seated:
 - a. Conform to AWWA C509. Also, UL and FM approved.
 - b. Internal and external epoxy coating of valve body, including bonnet, per AWWA C550.

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- c. Gate shall be encapsulated with synthetic rubber. It shall be bonded and vulcanized in accordance with ASTM B429 Method B.
 - d. No recesses in valve body.
- C. Buried Valves:
 - 1. Conform to the requirements above, except mechanical joint bell ends per AWWA C111. The valve shall be mechanically restrained. All exposed valve hardware (nuts, bolts, washers, etc.) including bonnet, bonnet cover, stuffing box, gear adaptor and joints shall be Type 304 stainless steel.
 - 2. Non-rising stem design, double o-ring seals for non-gearred valves and shall incorporate packing for geared valves.
 - 3. Provide valve box as detailed in Section 2.04 – Valve Boxes below, 2-inch operating nut and extension stem and stem cover.
- D. Tracer Wire:
 - 1. A 12-gauge tracer wire shall be connected for service to the main waterline tracer wire.
 - 2. The 12-gauge tracer wire shall be stripped, wrapped, and taped to valve box with pipe wrap tape that is UPC approved, completely covering wire and vertically wrapped around gate valve and valve box ending at ½-inch hole in concrete, next to valve box, as indicated on Gate Valve detail of the construction drawings.
- E. Tapping Valves and Sleeves:
 - 1. Tapping valves shall comply with the same requirements as resilient seated gate valves or double revolving disc gate valves except they shall have the flanged end and port opening modified for tapping service. Valves shall be capable of passing a full nominal sized cutter without damage to the valve. The tapping sleeve shall be gray cast iron or ductile iron mechanical joint type with the outlet flange conforming to MSS-SP- 60.
 - 2. All water valves, 4-inch and larger, shall be iron body gates, bronze trim, flanged ends, O.S. & Y. pattern, solid wedge, rising spindle, Jenkins No. 651, or Hammond 1R-1140.

2.04 VALVE BOXES

- A. Valve boxes shall be provided for all buried valves.

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- B. Valve boxes shall be placed on a 6-inch-thick concrete pad made with two #3 rebars at 6 inches off center both ways for structural stability (a total of four #3 rebars per valve box construction).
- C. All exposed edges of concrete pad shall be chamfered to ½ inch.
- D. Valve boxes shall be 24-inch long by 24-inch wide (square) with a 2,500-psi concrete minimum rating.
- E. Valve boxes shall include ½-inch hole placed in the concrete next to valve box (see drawings for detail of placement).
- F. Valve boxes shall include an adjustable 3-inch diameter bronze disc cover, marked "WATER," centered directly in the middle of the valve box with the center of the disc being 12 inches from any edge (see drawings for detail of placement).
- G. All existing and proposed valve boxes shall be adjusted to finished grade as established in field.
- H. PVC extensions shall not be used on valve box installation.

2.05 INSULATING FITTINGS

- A. Fittings shall be of type to provide control of electrolysis and equal to "Dielectric" as manufactured by Watts Regulator Co. or approved equal.

2.06 SURFACE PREPARATION AND SHOP COATINGS

- A. Notwithstanding any of these Specifications, all coatings, and lubricants in contact with non-potable water shall be certified as acceptable for use with that fluid.
- B. In case of a conflict, the requirements of this Section govern.
- C. If the Manufacturer's requirement is not to require finished coating on any interior surfaces, then Manufacturer shall so state and no interior finish coating will be required, if acceptable to the ENGINEER.
- D. The exterior surface of various parts of valves, operators, floor-stands, and miscellaneous piping shall be thoroughly cleaned of all scale, dirt, grease, or other foreign matter and thereafter one shop coat of an approved rust-inhibitive primer such as Inertol Primer No. 621 shall be applied in accordance with the instructions of the paint Manufacturer or other primer compatible with the finish coat provided.
- E. Unless otherwise noted, interior ferrous surfaces of all valves shall be given a shop finish of an asphalt varnish conforming to AWWA C509, (except

mounting faces/surfaces) or epoxy AWWA C550 with a minimum thickness of 4 mil.

- F. Ferrous surfaces obviously not to be painted shall be given a shop coat of grease or other suitable rust-resistant coating.
- G. Mounting surfaces shall be especially coated with a rust preventative.
- H. Special care shall be taken to protect uncoated items and plastic items, especially from environmental damage.

2.07 FACTORY INSPECTION, TESTING AND CORRECTION OF DEFICIENCIES

- A. Factory inspection, testing and correction of deficiencies shall be done in accordance with the referenced Standards and as noted herein.
- B. Refer to Part 1 of this Section, especially for required submission of test data to the ENGINEER.

PART 3 - EXECUTION

3.01 INSTALLATION - GENERAL

- A. All valves and appurtenances shall be installed per the Manufacturer's instructions in the locations shown, true to alignment and rigidly supported.
- B. Any damage to the above items shall be repaired to the satisfaction of the ENGINEER before they are installed.
- C. Install all brackets, extension rods, guides, the various types of operators and appurtenances as shown on the Drawings, or otherwise required.
- D. Before setting these items, the CONTRACTOR shall check all Drawings and figures which have a direct bearing on their location.
- E. The CONTRACTOR shall be responsible for the proper location of valves and appurtenances during the construction of the Work.
- F. All materials shall be carefully inspected for defects in construction and materials. All debris and foreign material shall be cleaned out of openings, etc.
- G. All valve flange covers shall remain in place until connected piping is in place.
- H. All operating mechanisms shall be operated to check their proper functioning and all nuts and bolts checked for tightness.

- I. Valves and other equipment which do not operate easily, or are otherwise defective, shall be repaired or replaced at no additional cost to the OWNER.
- J. Where installation is covered by a Referenced Standard, installation shall be in accordance with that Standard, except as herein modified, and the CONTRACTOR shall certify such. Also note additional requirements in other parts of this Specification.
- K. Unless otherwise noted, joints for valves and appurtenances shall be made up utilizing the same procedures as specified under the applicable type connecting pipe joint and all valves and other items shall be installed in the proper position as recommended by the Manufacturer.
- L. CONTRACTOR shall be responsible for verifying Manufacturer's torquing requirements for all valves.

3.02 INSTALLATION OF MANUAL OPERATIONAL DEVICES

- A. Unless otherwise noted, all operational devices shall be installed with the units of the factory, as shown on the Drawings or as acceptable to the ENGINEER to allow accessibility to operate and maintain the item and to prevent interference with other piping, valves and appurtenances.
- B. Floor boxes, valve boxes, extension stems, and low floor stands shall be installed vertically centered over the operating nut, with couplings as required and the elevation of the box top shall be adjusted to conform with the elevation of the finished floor surface or grade at the completion of the Contract.
- C. Boxes and stem guides shall be adequately supported during concrete pouring to maintain vertical alignment.

3.03 INSPECTION, TESTING AND CORRECTION OF DEFICIENCIES

- A. Take care not to over pressure valves or appurtenances during pipe testing.
- B. If any unit proves to be defective, it shall be replaced or repaired to the satisfaction of the ENGINEER.
- C. Functional Test:
 - 1. Prior to plant start-up, all items shall be inspected for proper alignment, quiet operation, proper connection, and satisfactory performance.
 - 2. All units shall be operated continuously while connected to the attached piping for at least 8 hours, without vibration, jamming, leakage, or overheating and perform the specified function.

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- D. The various pipelines in which the valves and appurtenances are to be installed are specified to be field tested.
- E. During these tests, any defective valve or appurtenance shall be adjusted, removed, and replaced, or otherwise made acceptable to the ENGINEER.
- F. Various regulating valves, strainers, or other appurtenances shall be tested to demonstrate their conformance with the specified operational capabilities and any deficiencies shall be corrected or the device replaced or otherwise made acceptable to the ENGINEER.

3.04 IDENTIFICATION OF VALVES

- A. All valves shall be designated by distinguishing numbers and/or letters on required chart(s) and/or diagram(s).
- B. The CONTRACTOR shall install approved brass tags for all designated items with numbers and/or letters on the tags corresponding to those on the chart(s) and/or diagram(s).
- C. Each valve identification tag to be minimum 19-gauge polished brass: 2-inch diameter.
- D. Each tag to designate appropriate service (1/4 inch stamped black-filled letters) and appropriate valve number (1/2 inch stamped black-filled number).
- E. Tags shall be securely fastened to valves with approved stainless-steel screws or rivets, or brass jack chain, in a manner to permit easy reading.
- F. CONTRACTOR shall prepare piping flow diagrams (or re-use those on the contract plans) indicating valve numbers, service, normal position, etc., of each valve.
- G. Diagrams shall be mounted on an ornamental iron frame with hinged plexiglass face for wall mounting. Four frames with plexiglass are required.
- H. The requirements for valve identification specified above applies equally to all valves installed under this and under other sections of these specifications.

3.05 CLEANING

- A. All items (including valve interiors) shall be cleaned prior to installation, testing, disinfection, and final acceptance.

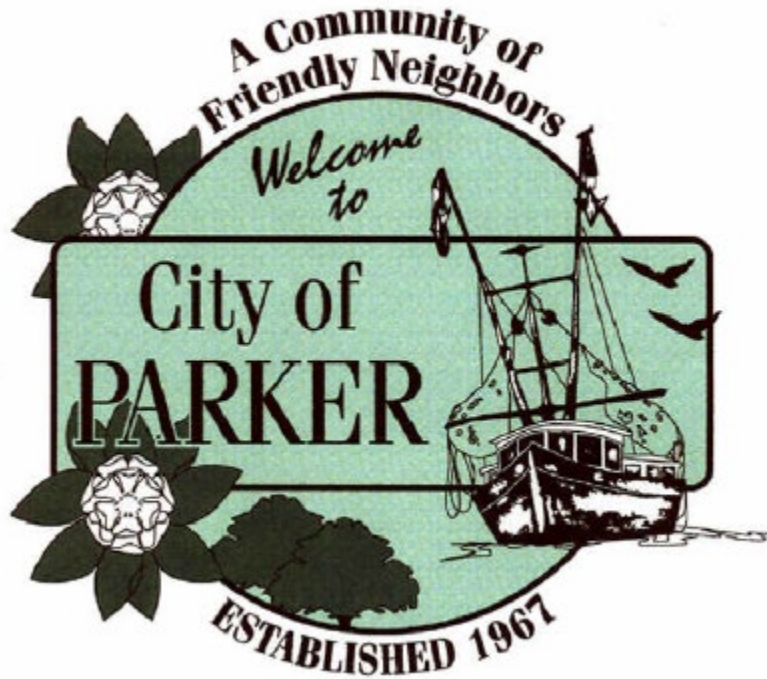
3.06 DISINFECTION

- A. Disinfection of valves and appurtenances shall be in accordance with AWWA Requirements.

3.07 SETTING VALVES AND BOXES

- A. Valves and valve boxes as specified in the preceding paragraphs shall be installed where shown on the drawings unless otherwise directed.
- B. Valves shall be set plumb with the base of the valve box centered over the valve and resting on compacted backfill.
- C. The top section of the box shall be set to allow equal movement above and below finished grade.
- D. After being correctly positioned, fill shall be carefully tamped around the valve box for a distance of 4 feet on all sides of the box.
- E. In paved areas, top of the cover shall be flush with the finished paving.
- F. In off-street areas, the cover shall be set 1-inch above existing grade unless otherwise directed by the ENGINEER and a concrete pad shall be poured around the top of the box as shown in the standard details.

END OF SECTION 15100



ATTACHMENT 1

BID FORMS

(REQUIRED FOR SUBMITTAL WITH BIDS)

BID FORM ITB NO: 2022-03

This proposal of _____, hereinafter called "BIDDER," organized and existing under the laws of the State of _____ doing business as (Insert "a corporation" or "a partnership" or "an individual" as applicable) _____ is hereby submitted to the City of Parker.

In compliance with the ADVERTISEMENT FOR BIDS, BIDDER hereby proposes to construct watermains and associated appurtenances at the locations depicted on the Construction Drawings as identified in the Instruction to Bidders of this Contract Document, as described in this BID, complete in every detail. Please see BID-FORM page 2 to complete BID FORM in detail.

BID should include all applicable taxes, shipping charges and fees as applicable.

By submission of this BID, each BIDDER certifies, and in the case of a joint BID each party thereto certifies as to its own organization, that this BID has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this BID with any other BIDDER or with any other competitor.

The Unit Contract Price is:

_____ (\$ _____)
(Words)

submitted by:

Name of BIDDER Submitting This BID

BID Prepared By: _____

SEAL: (If BID is by Corporation)

Name of Individual Who Prepared This BID

Contact Email: _____

Address: _____

Phone: _____

Signature of Authorized Representative of BIDDER:

_____ Date: _____

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BID FORM (PLEASE COMPLETE)					
#	Description	Qty	Unit	Cost	Total
1.	Mobilization/Demobilization	1	LS		
2.	Bonds and Insurance	1	LS		
3.	Erosion Control	1	LS		
4.	Testing and Flushing	1	LS		
5.	Layout and As-Builts	1	LS		
6.	Maintenance of Traffic	1	LS		
7.	8-inch PVC Water Main and Appurtenances	1	LS		
8.	8-inch PVC Water Main and Appurtenances	1	LS		
9.	8-inch FPVC Water Main and Appurtenances	1	LS		
10.	Fire Hydrant Assemblies	2	EA		
11.	Concrete Sidewalk (Remove and Replace)	1	LS		
12.	Asphalt Drive	1	LS		
13.	Restoration (i.e., grading, sodding, clean-up, and flushing)	1	LS		
Total					

BID BOND

BY THIS BOND, we _____ as
Principal and _____, a corporation,
as Surety, are bound to the City of Parker, Florida, as OWNER, in the sum of \$ _____
for the payment of which we bind ourselves, our heirs, personal representatives,
successors, and assigns, jointly and severally. THE CONDITION of this bond is such that:

1. The Principal has submitted to the OWNER a certain BID dated _____
_____.

2. If said BID shall be rejected, or, if said BID shall be accepted and the Principal shall execute and deliver a Contract and furnish bonds for the faithful performances of work and for the payment of all persons performing labor and furnishing materials in connection therewith and shall fulfill all other aspects created by the acceptance of said BID, then this obligation shall be void. Otherwise, this bond shall remain in full force and effect with it being expressly understood and agreed that the liability of the Surety and for any and all claims hereunder shall, in no event, exceed the amount of this obligation. This Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and this bond shall, in no way, be impaired or affected by any extension of time within which the OWNER may accept such BID; and Surety hereby waives notice of any such extension. Signed, sealed and delivered in three counterparts on
CORPORATE PRINCIPAL

By: _____

Attest: _____

Its: _____

Seal: _____

Acknowledged and subscribed on _____,
before the undersigned authority by _____, as the _____ of the
Corporation named as _____ Principal and with due
authorization of the Corporation. Notary Public

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SURETY

By: _____

Attest: _____

Countersigned: By: _____

Seal:

Attorney-in-Fact, State of Florida

ADDENDUM ACKNOWLEDGEMENT

I acknowledge receipt of the following addenda:

ADDENDUM NO. _____ DATED _____

ADDENDUM NO. _____ DATED _____

ADDENDUM NO. _____ DATED _____

ADDENDUM NO. _____ DATED _____

ADDENDUM NO. _____ DATED _____

Name of BIDDER: _____

Authorized Signature: _____

Printed Name: _____

Title: _____ Date: _____

It is the responsibility of the BIDDER to ensure that they have received addenda if issued.

Call (850) 215-1285 or email Mandy O'Regan, Anchor CEI (OWNER's Representative), moregan@anchorcei.com prior to submitting your BID to ensure that you have received all issued addenda.

ANTI-COLLUSION CLAUSE

BIDDER certifies that his/her response is made without prior understanding, agreement or connection with any Corporation, Firm or person submitting a response for the same services and is in all respects fair and without collusion or fraud.

Name of Firm: _____

Authorized Signature: _____

Printed Name: _____

Title: _____ Date: _____

CONFLICT OF INTEREST DISCLOSURE FORM

For purposes of determining any possible conflict of interest, all BIDDERS, must disclose if any City Council Member(s), employee(s), elected officials(s), or any of its agencies is also an owner, corporate officer, agency, employee, etc., of their BIDDER's firm.

Indicate either "yes" (a City employee, elected official, or agency is also associated with your firm), or "no" for no conflict of interest.

If yes, give person(s) name(s) and position(s) with your firm.

YES _____ NO _____

NAME(S)

POSITION(S)

Name of BIDDER's firm: _____

Authorized Signature: _____

Printed Name: _____

Title: _____

Date: _____

IDENTICAL TIE BIDS/DRUG FREE WORKPLACE

Preference shall be given to businesses with drug-free workplace programs. Whenever two or more submittals, which are equal with respect to price, quality, and service, are received by the OWNER for the procurement of commodities or contractual services, a submittal received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the awarding process. Established procedures for processing tie BIDs will be followed if none of the tied firms have a drug-free workplace program. 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 employees 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 5 days after such 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 an employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify the following: (Check one and sign in the space provided.)

_____ This firm complies fully with the above requirements.

_____ This firm does not have a drug free workplace program at this time.

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Name of BIDDER's Firm: _____

Authorized Signature: _____

Printed Name: _____

Title: _____ Date: _____

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION,
INELIGIBILITY AND VOLUNTARY EXCLUSION**

Contractor Covered Transactions

1. The prospective BIDDER of the Recipient, _____, certifies, by submission of this document, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the Recipient's contractor is unable to certify to the above statement, the prospective BIDDER shall attach an explanation to this form.

Name of BIDDER: _____

Authorized Signature: _____

Printed Name: _____

Title: _____ Date: _____

By: City of Parker

Signature: _____

Name and Title Recipient's Name: _____

44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

(To be submitted with each BID or offer exceeding \$100,000)

The undersigned [BIDDER] certifies, to the best of his or her knowledge, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the Award Documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. Section 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The BIDDER, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the contractor understands and agrees that the provisions of 31 U.S.C. Section 3801 *et seq.*, apply to this certification and disclosure, if any.

Signature of BIDDER's Authorized Official

Name and Title of BIDDER's Authorized Official Date



ATTACHMENT 2 CONDITIONS AND REQUIREMENTS

GENERAL TERMS AND CONDITIONS

1. Enough detail is given in the BID to describe the item being BID, although not written, full manufacturer's specifications are implied. Manufacturer's specifications take precedent over information within this BID if any discrepancy exists.
2. Plans, Drawings, Specifications, Special Provisions, and other documents shall be considered a part of the BID Form whether attached or not.
3. Prospective BIDDERS must be able to show that they can perform each of the various items of Work upon which they BID and that the equipment necessary for the completion of Work is available. The BIDDER shall be licensed as a CONTRACTOR when required by state law. Such license shall be in effect prior to the date and time specified for receipt of BIDs by the City of Parker.
4. Should the BIDDER to whom the award of contract was made, fail to execute any of the required and acceptable bonds, the award of contract shall be annulled, and the BID Bond posted by the BIDDER shall be retained by the OWNER, not as penalty, but as liquidated damages. Award will then be given to the next BIDDER selected by the OWNER with a qualified BID.
5. **The Work**
 - a. Intent is for the CONTRACTOR to provide for construction, completion in every detail of the Work, furnishing all labor, materials, equipment, tools, transportation, and supplies required to complete the Work in accordance with the Contract Documents.
 - b. The OWNER's Designated Representative shall have the right to make alterations in the drawings or specifications as considered necessary or desirable during the progress of the Work for satisfactory completion of the Work. No alterations shall be made which will result in a substantial change in the general plan, character, or basic scope of the Work.
 - c. Upon completion of the Work, before acceptance by the Engineer or Architect of Record and before final payment, the CONTRACTOR shall remove all equipment, surplus, discarded materials, rubbish and temporary structures and shall restore, in an acceptable manner, all property, both public and private, damaged during the performance of the Work.

6. Control of the Work

- a. At project completion, the CONTRACTOR shall furnish, on sheets not larger than 24-inches by 36-inches, as-built drawings of utility lines, stormwater pipes, and structures showing any deviation from the plans and specifications that exceed 0.1 feet in vertical elevation and 1 foot in horizontal location and any change to the type of construction material and size. The as-built drawings shall be signed and sealed by a Florida-licensed professional land surveyor or professional engineer.
- b. The CONTRACTOR shall take no advantage of any apparent error or omission which he might discover in the drawings or specifications. In the event that an error or omission is discovered by the CONTRACTOR, he shall, within 24 hours of such discovery, notify the OWNER's Designated Representative who shall then make such corrections and interpretations deemed necessary for reflecting the actual spirit, intent, and scope of the drawings and specifications.
- c. The OWNER shall have the final say on all questions, difficulties, and disputes, of whatever nature, which may arise relative to the interpretation of the drawings and specifications.
- d. The CONTRACTOR shall furnish and set slopes stakes, rough grade stakes and all other stakes necessary for construction of the project.
- e. Failure to remove or refusal by the CONTRACTOR to remove defective materials or Work or make necessary repairs to damaged Work shall be cause for the OWNER's Designated Representative to make the necessary corrections at the expense of the CONTRACTOR with such monies being deducted from the contract amount or charged against the bonds.
- f. The CONTRACTOR shall notify the OWNER's Designated Representative when the project is substantially complete. If the OWNER's Designated Representative determines the project is substantially complete, a "Certificate of Substantial Completion" will be issued by the OWNER.
- g. The CONTRACTOR shall maintain all Work in first-class condition until it has been completed as a whole and accepted by the OWNER's Designated Representative. The CONTRACTOR shall be responsible for the security and protection of all materials used in the project until a "Notice of Completion" is issued by the OWNERS.

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- h. Any written claim for compensation due to delays, additional, or extra Work shall include the following:

 - 1) For delay claims, provide a critical path schedule showing the delay is due to a controlling item of Work as well as the early start, late start, early finish, late finish, and the critical paths.
 - 2) A detailed factual statement providing dates, locations, and items of Work affected in each claim.
 - 3) The date on which actions or conditions resulting in the claim became evident.
 - 4) All pertinent documents and substance of any material oral communications relating to the claim and the name of the persons making the oral communications.
 - 5) The written claim shall identify the provisions of the Agreement which support the claim along with a detailed explanation as to why these provisions support the claim.
 - 6) A detailed breakdown of compensation sought for labor expenses, additional material, and supplies, listing of each piece of equipment and cost, any direct and indirect damages, and all documentation in support thereof.
 - 7) Equipment rental rates that are based on Blue Book Rental rates.
- i. The OWNER will not compensate the CONTRACTOR for any delays for any reason unless 5 days (excluding Saturdays, Sundays, and holidays) have elapsed from the start of Work stoppage. The first day of any claims shall be on day six of the Work stoppage. This shall apply to each Work stoppage.
- j. The OWNER expects the CONTRACTOR to use forces and equipment on any item of Work that can be completed during the delay. The CONTRACTOR's claim must show the delay is due to the controlling item of Work as shown on the critical path method schedule. After 5 workdays if the OWNER deems the delay claim to be valid, the CONTRACTOR's claim shall only be for labor, equipment and materials that are delayed due to the controlling Work item.

If the OWNER's Representative Engineer determines the CONTRACTOR forces and equipment can be used on other Work items during the delay, no compensation will be given for these forces and equipment.

- k. Unless otherwise stated in the plans or specifications, the term "install" shown in the plans and specifications shall be interpreted by the CONTRACTOR to mean the same as "furnish and install", which means the CONTRACTOR shall provide all materials, equipment, and labor to completely install the item shown in the plans or specifications.

7. Material Control

- a. Only materials conforming to the requirements and intent of the drawings and specifications will be used and all such materials not specifically identified in the plans and specifications will be approved by the Engineer or Architect of Record prior to use to perform the Work. Reference in the contract documents to a proprietary device, product, material, or fixture to establish a quality standard is not intended to limit competition. The CONTRACTOR may use any proprietary device, product, material, or fixture that in the Engineer of Record's judgment is equal, for the purpose intended.
- b. The CONTRACTOR shall ensure that OWNER personnel have entry at all times to the construction site in order to inspect and evaluate any or all materials used for performing the Work. The OWNER's Designated Representative shall have the right to sample and test any or all materials used in performing the Work. Copies of any tests accomplished by the OWNER's Designated Representative will be provided to the CONTRACTOR.
- c. Materials shall be stored as specified in the Contract Documents or as per the material manufacturer's recommendations. The protection of stored materials shall be the responsibility of the CONTRACTOR and the OWNER shall not be liable for any loss, theft, or damage to stored materials.
- d. Any materials found to be defective by the CONTRACTOR or the OWNER's Designated Representative shall be removed from the Work or place of storage at the CONTRACTOR's expense and replaced at the CONTRACTOR's expense.

Failure or refusal by the CONTRACTOR to accomplish the removal and replacement of defective materials from the Work or place of storage shall be grounds for the OWNER's Designated Representative to do same at the expense of the CONTRACTOR and such expense deducted from the contract amount or from the bond.

- e. The CONTRACTOR shall, at all times during construction, provide and maintain proper equipment and facilities to promptly remove and properly dispose of all water entering excavations and keep such excavations dry so as to obtain a satisfactory undisturbed sub-grade foundation condition until the fill, structure, or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural elevations.

- f. The CONTRACTOR shall furnish all materials and equipment and perform all Work required to install and maintain the drainage systems for handling groundwater and surface water encountered during construction of structures, pipelines, and compacted fills. The CONTRACTOR shall obtain Florida Department of Environmental Protection (FDEP) and Northwest Florida Water Management District (NFWFMD) permits for all dewatering operations. During dewatering operations all engines shall be equipped in a manner to keep pump noise to a minimum. If dewatering is required after 10:00 p.m. near residences and businesses, pump noise shall not create a nuisance to the property owners. The CONTRACTOR is solely responsible for any damages to private or public property caused by CONTRACTOR's dewatering operations. During dewatering operations, the CONTRACTOR shall notify all businesses and residences within a minimum of 300 feet of the dewatering operations to turn off all irrigation pumps. The 300-foot limit is a minimum, and the CONTRACTOR is responsible for any damage to private property, to include, but not limited to loss of plants, burned out pumps, building, pavement, sidewalk, or any other structural settlement, etc. that can be attributed to the dewatering operations. The OWNER will assume no liability nor pay for any claims, arising from the CONTRACTOR's dewatering operation.

8. CONTRACTOR Responsibilities

- a. The CONTRACTOR shall relieve the OWNER from any and all claims arising from claims by holders of trademarks, patents or copyrights used or incurred by the CONTRACTOR in performing the Work.

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- b. The CONTRACTOR shall be responsible for all damages arising out of his use of explosives when deemed necessary in the performance of the Work.
- c. The CONTRACTOR shall preserve from damage all public and private property along the line of construction and adjacent to the Work. If the CONTRACTOR fails to restore such property, the OWNER's Designated Representative, upon written notification, as deemed necessary, may proceed to repair the damaged property and the cost deducted from the contract sum.
- d. Arrangements for utilities to the site shall be accomplished by the CONTRACTOR and in doing same he shall coordinate with the appropriate utilities for the just and proper utilization of any space where construction shall entail the joint use of area under this Work and the utility construction.
- e. Final acceptance will not be given, nor will bond be released unless any and all claims against the CONTRACTOR are paid or the CONTRACTOR has otherwise been relieved of the claim.
- f. Until acceptance of the Work by the OWNER's Designated Representative, the Work shall be under charge and custody of the CONTRACTOR and he shall take every precaution against injury or damage to the Work by the action of the elements or from other causes.

9. Prosecution and Progress

- a. The CONTRACTOR shall not sublet, sell, transfer, assign or otherwise dispose of the contract or subsequent agreements of the contract without written consent of the OWNER.
- b. The CONTRACTOR shall commence Work on or after the Notice to Proceed date and shall provide sufficient resources to ensure completion of the Work within the time limit set forth. Should the CONTRACTOR fail to provide sufficient resources to assure timely progress and if he fails to perform the Work within the specified time, the OWNER shall have ground to claim default.
- c. The CONTRACTOR shall schedule his operations to minimize any inconvenience to adjacent businesses or residences. The CONTRACTOR shall take special precautions to restrict his major operations in performing the Work to what is commonly understood to be "normal" or "standard" working hours. Work performed at other periods requires preapproval from the OWNER's Designated Representative.

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- d. The CONTRACTOR shall maintain reasonable access at all times to all businesses and private residences and properties adjacent to the construction area or impacted by the construction.
- e. The OWNER's Designated Representative shall make provision for and shall schedule a pre-construction conference with the CONTRACTOR and all concerned parties in attendance.
- f. The CONTRACTOR shall provide a detailed schedule to the OWNER within 5 working days after the date of the preconstruction conference. Adherence to the CONTRACTOR's construction schedule is critical to the residences and businesses impacted by the project. The CONTRACTOR shall give the OWNER 48 hours' notice of schedule changes and shall submit a new and complete changed schedule. The OWNER will not allow any lane closure or paving operations without 48 hours' notice. The CONTRACTOR shall give the City Inspector 48 hours' notice of commencement of all major Work items.
- g. The CONTRACTOR shall assure that all supervisory personnel employed by him/her are fully qualified and competent to properly perform the Work in coordination with other trades at the Work and can perform the Work within the specified periods of time.
 - 1) The CONTRACTOR shall maintain a competent superintendent at the site at all times while Work is in progress to act as the CONTRACTOR's agent. The superintendent shall be capable of properly interpreting the Contract Documents and shall be thoroughly experienced in the type of Work being performed. The superintendent shall have full authority to receive instructions from the OWNER's Designated Representative and to execute the orders or directions of the OWNER's Designated Representative, including promptly supplying any materials, tools, equipment, labor, and incidentals that may be required. This superintendent must be at the project site to supervise subcontractors. The superintendent must speak and understand English.
 - 2) The CONTRACTOR shall designate a responsible person who speaks and understands English, and who is available at or reasonably near the worksite on a 24-hour basis, 7 days a week who is the point of contact during emergencies.

- 3) The OWNER's Designated Representative shall have the authority to suspend the Work, wholly, or in part, for such periods as may be deemed necessary due to unsuitable weather or other conditions considered unfavorable for performance of the Work.
- 4) The CONTRACTOR may be declared in default for non-progress, by the OWNER's Designated Representative, when the percentage value of dollar Work completed with respect to the total amount of contract is not within 20 percent of the time elapsed versus the total performance period.
- 5) The CONTRACTOR may subcontract for Work identified in this solicitation. The CONTRACTOR will be the prime service provider and shall be responsible for all Work performed and contract deliverables. The CONTRACTOR's workforce shall be responsible for at least 51 percent of the Work performed and provide an on-site, full-time job supervisor to manage the day-to-day job site operations and subcontractors. Proposed use of subcontractors should be included in the response to this solicitation.

10. Payments and Acceptance

- a. Payment will not be made until the Work invoiced is completed in full. If material or equipment acceptance testing is required, payment will not be made until satisfactory test results as determined by the OWNER's Designated Representative are delivered to the OWNER.
- b. The CONTRACTOR shall accept the compensation as provided in the contract as full payment for furnishing all materials and for performing all Work planned under the contract.
- c. The contract price shall include all labor, equipment, material, tools, and incidentals required for completing the Work.
- d. Subsoil conditions, if presented, must be interpreted within the limits of investigation and the anticipated normal field variances. Claims for unusual conditions or excessive amounts of fill or excavation over original estimates of the Engineer-of-Record or CONTRACTOR shall not be grounds for extra Work clauses or request.

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- e. To be paid for all quantities paid by the ton, a City Inspector must verify the delivery and receive a load ticket identifying the truck number, material and quantity of material delivered. The CONTRACTOR shall not haul such materials unless the inspector is on-site. If there has been a change in schedule, the OWNER requires 48 hours' notice to schedule inspectors.
- f. To be paid for all quantities paid by the truckload, the OWNER must have a truck chart for each truck prior to the truck being used for hauling operations. The CONTRACTOR must provide the truck chart to the City Inspector in sufficient time to allow the OWNER to verify all dimensions and volumes shown on the truck chart. A City Inspector must verify the delivery and receive (if available) a load ticket identifying the truck number, material and quantity of material hauled. The CONTRACTOR shall not haul such materials unless the Inspector is on-site. If there has been a change in schedule, the OWNER requires 48 hours' notice to schedule inspectors.
- g. The OWNER's Designated Representative retains the right to cancel portions or expand the scope of Work after a fair and just adjustment is agreed to with the CONTRACTOR.
- h. The CONTRACTOR will receive partial payment based upon the amount of Work completed as determined by the OWNER's Designated Representative, to include stored material. The OWNER will withhold retainage in the amount of 10 percent of the total Work completed at the date of the CONTRACTOR's invoice. The CONTRACTOR may reduce the retainage amount as allowed by Florida Statutes.
- i. Any partial payments will be subject to withholding by the OWNER's Designated Representative pending any unsatisfied claims brought against the CONTRACTOR for labor or materials.
- j. Any partial payments will be subject to withholding by the OWNER's Designated Representative pending any unsatisfied completion or restoration of any assertion for defective or damaged Work or materials.
- k. In the event of dispute regarding amounts due to the CONTRACTOR, the OWNER reserves the right, at any time prior to final payment on the Contract, to audit, or cause to be audited, the CONTRACTOR's original records pertaining to the Work.

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- l. Whenever the Work provided for under the Contract has been completely performed by the CONTRACTOR, and the final inspection and final acceptance has been made, and it is proven to the OWNER's Designated Representative that all claims are satisfied, the final payment, being the difference between the contract amount and summation of all previous payment less any penalties assessed, shall be paid to the CONTRACTOR. Upon final payment the CONTRACTOR shall provide the OWNER's Designated Representative a statement that he has been paid all monies due and that the Work was performed in accordance with the Contract Documents.
 - m. The payments of subcontractors, material, men, and suppliers shall comply with Section.
- 11. 255.071 of Florida Statutes.
 - a. Within 5 Working days following each payment to the CONTRACTOR, the CONTRACTOR shall pay respective amounts allowed by the OWNER for all materials, all equipment installed in the Work, all Work performed by subcontractors to the extent of each subcontractor's interest in the CONTRACTOR's amount of payment.
 - b. On monthly invoices subsequent to the first invoice submitted there shall be a signed "Waiver of Right to Claim Against the Payment Bond (Progress Payment)" indicating that invoices for equipment and material supplied and sub-CONTRACTORS have been paid by the CONTRACTOR.
 - c. On the final invoice submitted there shall be a signed "Waiver of Right to Claim Against the Payment Bond (Final Payment)" indicating that invoices for equipment and material supplied and subcontractors have been paid by the CONTRACTOR.
 - d. Date of final payment shall be the commencement of all warranties and guarantees. If the OWNER reasonably determines that the CONTRACTOR or Vendor has breached any of the warranties provided herein, then the CONTRACTOR or Vendor shall perform the necessary Work to comply with its warranties and shall pay to the OWNER its reasonable costs to investigate and then identify the breach of warranty claim.

INSURANCE REQUIREMENTS

LOSS CONTROL/SAFETY

1. Precaution shall be exercised at all times by the CONTRACTOR for the protection of all persons, including employees, and property. The CONTRACTOR shall be expected to comply with all laws, regulations or ordinances related to safety and health, shall make special effort to detect hazardous conditions and shall take prompt action where loss control/safety measures should reasonably be expected.
2. The OWNER may order work to be stopped if conditions exist that present immediate danger to persons or property. The CONTRACTOR acknowledges that such stoppage will not shift responsibility for any damages from the CONTRACTOR to the OWNER.

DRUG FREE WORKPLACE REQUIREMENTS

All contracts with individuals or organizations that wish to do business with the OWNER, a stipulation will be made in the contract or purchase order that requires CONTRACTORS, subcontractors, vendor's, or consultants to have a substance abuse policy. The employees of such CONTRACTORS, subcontractors, vendor's, or consultants will be subject to the same rules of conduct and tests as the employees of the City of Parker. In the event of an employee of a supplier of goods or services is found to have violated the Substance Abuse Policy, that employee will be denied access to the OWNER's premises and job sites. In addition, if the violation(s) is/are considered flagrant, or the OWNER is not satisfied with the actions of the CONTRACTOR, subcontractor, vendor, or consultant, the OWNER can exercise its right to bar all of the CONTRACTOR's, subcontractor's, vendor's, or consultants' employees from its premises or decline to do business with the CONTRACTOR, subcontractor, vendor, or consultant in the future. All expenses and penalties incurred by a CONTRACTOR, subcontractor, vendor, or consultant as a result of a violation of the OWNER's Substance Abuse Policy shall be borne by the CONTRACTOR, subcontractor, vendor, or consultant.

INSURANCE - BASIC COVERAGES REQUIRED

1. The CONTRACTOR shall procure and maintain the following described insurance, except for coverages specifically waived by the OWNER, on policies and with insurers acceptable to the OWNER.
2. These insurance requirements shall not limit the liability of the CONTRACTOR. All subcontractors are subject to the same coverages and limits as the CONTRACTOR.
3. The OWNER does not represent these types or amounts of insurance to be sufficient or adequate to protect the CONTRACTOR's interests or liabilities but are merely minimums.

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4. Except for Workers' Compensation and Professional Liability, the CONTRACTOR's insurance policies shall be endorsed to name the OWNER as an additional insured to the extent of the OWNER's interests arising from this Agreement or Contract or lease.
5. Except for Workers' Compensation, the CONTRACTOR waives its right of recovery against the OWNER, to the extent permitted by its insurance policies.
6. The CONTRACTOR's deductibles/self-insured retentions shall be disclosed to the OWNER and may be disapproved by the OWNER. They shall be reduced or eliminated at the option of the OWNER. The CONTRACTOR is responsible for the amount of any deductible or self-insured retention.
7. Insurance required of the CONTRACTOR or any other insurance of the CONTRACTOR shall be considered primary, and insurance of the OWNER shall be considered excess, as may be applicable to claims which arise out of the Hold Harmless, Payment on Behalf of the OWNER, Insurance, Certificates of Insurance and any Additional Insurance provisions of this Agreement or Contract or lease.

8. **WORKERS' COMPENSATION COVERAGE**

The CONTRACTOR shall purchase and maintain Workers' Compensation insurance for all Workers' Compensation obligations imposed by state law and employer's liability limits of at least **\$500,000 each accident and \$500,000 each employee/\$500,000 policy limit for disease**. The CONTRACTOR shall also purchase any other coverages required by law for the benefit of employees. The CONTRACTOR shall provide to the OWNER an Affidavit stating that he/she meets all the requirements of Florida Statute 440.02(14)(d).

9. **GENERAL, AUTOMOBILE & EXCESS OR UMBRELLA LIABILITY COVERAGE**

The CONTRACTOR shall purchase and maintain coverage on forms no more restrictive than the latest editions of the Commercial or Comprehensive General Liability and Business Auto policies of the Insurance Services Office. **Minimum limits of \$1,000,000 per occurrence** for all liability must be provided, with excess or umbrella insurance making up the difference, if any, between the policy limits of underlying policies (including employers liability required in the Workers' Compensation Coverage section) and the amount of coverage required.

10. **GENERAL LIABILITY COVERAGE Commercial General Liability - Occurrence Form Required**

Coverage A shall include bodily injury and property damage liability for premises, operations, products and completed operations, independent contractors,

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contractual liability covering this Agreement or Contract or lease, and broad form property damage, and property damage resulting from explosion, collapse or underground (x,c,u) exposures. Coverage B shall include personal injury. Coverage C, medical payments, is not required.

11. PRODUCTS/COMPLETED OPERATIONS

The CONTRACTOR is required to continue to purchase products and completed operations coverage, at least to satisfy this agreement, contract or lease, for a minimum of three years beyond the OWNER's acceptance of renovation or construction projects.

12. BUSINESS AUTO LIABILITY COVERAGE

Business Auto Liability coverage is to include bodily injury and property damage arising out of ownership, maintenance or use of any auto, including owned, non-owned and hired automobiles and employee non-ownership use.

13. EXCESS OR UMBRELLA LIABILITY COVERAGE

Umbrella Liability insurance is preferred, but an Excess Liability equivalent may be allowed.

Whichever type of coverage is provided, it shall not be more restrictive than the underlying insurance policy coverages.

14. CERTIFICATES OF INSURANCE

- a. Required insurance shall be documented in Certificates of Insurance which provide that the OWNER shall be notified at least 30 days in advance of cancellation, nonrenewal or adverse change. The Certificate Holder will be addressed as the City of Parker, 1001 Park Street, Florida 32404. All certificates, cancellation, nonrenewal or adverse change notices should be mailed to this address. Each Certificate will address the service being rendered to the OWNER by the CONTRACTOR.

The OWNER shall be named as an Additional Insured, Primary and Non-Contributory for both General Liability and Business Auto Liability with Waiver of subrogation included with respects to both General Liability and Business Auto.

- b. New Certificates of Insurance are to be provided to the OWNER at least 15 days after coverage renewals.
- c. If requested by the OWNER, the CONTRACTOR shall furnish complete

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copies of insurance policies, forms and endorsements.

- d. For the Commercial General Liability coverage, the CONTRACTOR shall, at the option of the OWNER, provide an indication of the amount of claims payments or reserves chargeable to the aggregate amount of the liability coverage.

15. RECEIPT OF INSUFFICIENT CERTIFICATES

Receipt of certificates or other documentation of insurance or policies or copies of policies by the OWNER, or by any of its representatives, which indicate less coverage than required does not constitute a waiver of the CONTRACTOR's obligation to fulfill the insurance requirements herein.

16. ADDITIONAL INSURANCE

If checked below, the OWNER requires the following additional types of insurance.

Professional Liability/Malpractice/Errors or Omissions Coverage

The CONTRACTOR shall purchase and maintain professional liability or malpractice or errors or omissions insurance with minimum limits of per occurrence. If a claim is made form of coverage is provided, the retroactive date of coverage shall be no later than _____.

The inception date of claims made coverage unless the prior policy was extended indefinitely to cover prior acts. Coverage shall be extended beyond the policy year either by a supplemental extended reporting period (ERP) of as great duration as available, and with no less coverage and with reinstated aggregate limits, or by requiring that any new policy provide a retroactive date no later than the inception date of claims made coverage.

Property Coverage for Leases

The CONTRACTOR shall procure and maintain for the life of the lease, all risk/special perils (including sinkhole) property insurance (or its equivalent) to cover loss resulting from damage to or destruction of the building and personal property/contents. The policy shall cover 100% replacement cost and shall include an agreed value endorsement to waive coinsurance.

Commercial General Liability Increased General Aggregate Limit (or separate aggregate)

Because the Commercial General Liability form of coverage includes an annual aggregate limitation on the amount of insurance provided, a separate project

aggregate limit of N/A is required by the OWNER for this Agreement or Contract.

Liquor Liability

In anticipation of alcohol being served, the CONTRACTOR shall provide evidence of coverage for liquor liability in an amount equal to the general/umbrella/excess liability coverage. If the general liability insurance covers liquor liability (e.g., host or other coverage), the CONTRACTOR's agent or insurer should provide written documentation to confirm that coverage already applies to this agreement, contract or lease. If needed coverage is not included in the general/umbrella excess liability policy(ies), the policy(ies) must be endorsed to extend coverage for liquor liability, or a separate policy must be purchased to provide liquor liability coverage in the amount required.

Owners Protective Liability Coverage

For renovation or construction contracts, the CONTRACTOR shall provide for the OWNER an OWNER's protective liability insurance policy (preferably through the CONTRACTOR's insurer) in the name of the OWNER. This is redundant coverage if the OWNER is named as an additional insured in the CONTRACTOR's Commercial General Liability insurance policy. However, this separate policy may be the only source of coverage if the CONTRACTOR's liability coverage limit is used up by other claims.

Builders Risk Coverage

Builders Risk insurance is to be purchased to cover subject property for all risks of loss (including theft and sinkhole), subject to a waiver of coinsurance, and covering off- site storage, transit and installation risks as indicated in the Installation Floater and Motor Truck Cargo insurance described hereafter, if such coverages are not separately provided. If flood and/or earthquake risks exist, flood and earthquake insurance are to be purchased.

If there is loss of income, extra expense and/or expediting expense exposure, such coverage is to be purchased. If boiler and machinery risks are involved, boiler and machinery insurance, including coverage for testing, is to be purchased.

The Builders Risk insurance is to be endorsed to cover the interests of all parties, including the OWNER and all contractors and subcontractors. The insurance is to be endorsed to grant permission to occupy.

Installation Floater Coverage

Installation Floater insurance is to be purchased when Builder's Risk insurance is inappropriate, or when Builder's Risk insurance will not respond, to cover damage

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or destruction to renovations, repairs or equipment being installed or otherwise being handled or stored by the CONTRACTOR, including off-site storage, transit and installation. The amount of coverage should be adequate to provide full replacement value of the property, repairs, additions or equipment being installed, otherwise being handled or stored on or off premises. All risks coverage is preferred.

Motor Truck Cargo Coverage

If the Installation Floater insurance does not provide transportation coverage, separate Motor Truck Cargo or Transportation insurance is to be provided for materials or equipment transported in the CONTRACTOR's vehicles from place of receipt to building sites or other storage sites. All risks coverage is preferred.

Contractor's Equipment Coverage

CONTRACTOR's Equipment insurance is to be purchased to cover loss of equipment and machinery utilized in the performance of work by the contractor. All risks coverage is preferred.

The Contract may declare self-insurance for CONTRACTOR equipment.

Fidelity/Dishonesty/Liability Coverage – Third Party

Fidelity/Dishonesty/Liability insurance is to be purchased or extended to cover dishonest acts of the Other Party's employees resulting in a loss to decedent, i.e., theft of valuables.

Fidelity/Dishonesty Coverage for Employer (Contractor)

Fidelity/Dishonesty insurance is to be purchased to cover dishonest acts of the CONTRACTOR's employees, including but not limited to theft of vehicles, materials, supplies, equipment, tools, etc., especially property necessary to work performed.

Fidelity/Dishonesty/Liability Coverage for OWNER

Fidelity/Dishonesty/Liability insurance is to be purchased or extended to cover dishonest acts of the contractor's employees resulting in loss to the OWNER.

Electronic Data Liability Insurance

The Other Party shall purchase Electronic Data Liability with limits of

Garage Liability Coverage

Garage Liability insurance is to be purchased to cover the CONTRACTOR and its employees for its garage and related operations while in the care, custody and control of the OWNER's vehicles.

Garage Keepers' Coverage (Legal Liability Form)

Garage Keepers' Liability insurance is to be purchased to cover damage or other loss, including comprehensive and collision risks, to the OWNER's vehicles while in the care, custody and control of the CONTRACTOR. This form of coverage responds on a legal liability basis, and without regard to legal liability on an excess basis over any other collectible insurance.

Damage to Premises Rented/Leased to you- (Legal Liability Form)

Provide property coverage for leased premises due to liability incurred because the insured's negligence results in fire or explosion. Specified limit of liability required.

Watercraft Liability Coverage

Because the CONTRACTOR's provision of services involves utilization of watercraft, watercraft liability coverage must be provided to include bodily injury and property damage arising out of ownership, maintenance or use of any watercraft, including owned, non-owned and hired.

Coverage may be provided in the form of an endorsement to the general liability policy, or in the form of a separate policy coverage Watercraft Liability or Protection and Indemnity.

Aircraft Liability Coverage

Because the CONTRACTOR's provision of services involves utilization of aircraft, aircraft liability coverage must be provided to include bodily injury and property damage arising out of ownership, maintenance or use of any aircraft, including owned, non-owned and hired.

The minimum limits of coverage shall be per occurrence, Combined Single Limits for Bodily Injury (including passenger liability) and Property Damage.

Pollution Legal Liability Coverage

Pollution legal liability insurance is to be purchased to cover pollution and/or environmental legal liability which may arise from this Agreement or Contract.

United States Longshoremen and Harbor Workers Act Coverage

The Workers' Compensation policy is to be endorsed to include United States Longshoremen and Harbor Workers' Act Coverage for exposures which may arise from this Agreement or Contract.

Jones Act Coverage

The Workers' Compensation policy is to be endorsed to include Jones Act Coverage for exposures which may arise from this Agreement or Contract.



ATTACHMENT 3

CONTRACT FORMS

PUBLIC CONSTRUCTION BOND

Bond No. _____(enter bond number)

BY THIS BOND, We _____, as Principal And _____ a corporation, as Surety, are bound to the City of Parker, Florida, herein called OWNER, in the sum of \$ _____ for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the Contract dated _____ between Principal and OWNER for **ITB 2022-03 – CITY OF PARKER – HIGHWAY 98 WATERMAIN DIRECTIONAL BORE AT COOPER STREET**, the Contract being made a part of this Bond by reference, at the times and in the manner prescribed in the Contract; and
2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the Work provided for in the contract; and
3. Pays OWNER all losses, damages, expenses, costs, and attorney’s fees, including appellate proceedings, that OWNER sustains because of a default by Principal under the contract; and,
4. Performs the guarantee of all Work and materials furnished under the Contract for the time specified in the Contract, then this Bond is void; otherwise, it remains in full force.

Any action instituted by a claimant under this Bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2), Florida Statutes.

Any changes in or under the Contract Documents and compliance or noncompliance with any formalities connected with the Contract or the changes does not affect Surety’s obligation under this bond.

DATED ON _____,

(Name of Principal)

By (As Attorney in Fact) (Name of Surety)

NOTICE OF AWARD

TO: _____

PROJECT DESCRIPTION:

The OWNER has considered the BIDs submitted in response to its advertised **ITB 2022-03 – CITY OF PARKER – HIGHWAY 98 WATERMAIN DIRECTIONAL BORE AT COOPER STREET.**

All interested parties are hereby notified that the BID submitted by

_____ for the **CITY OF PARKER – HIGHWAY 98 WATERMAIN DIRECTIONAL BORE AT COOPER STREET (ITB 2022-03)** project has been accepted for the Work described in the Bid Documents in the amounts of

\$ _____

As required by the Instruction to Bidders, please execute the Agreement and furnish the required CONTRACTOR’s Certificates of Insurance and Construction Bonds within 15 calendar days from the date of this notice.

You are further required to return an acknowledged copy of this Notice of Award to the OWNER with the executed Agreement and required Certificates of Insurance and Bonds within the 15 days.

If you have any questions, please contact Mandy O’Regan, Anchor CEI (OWNER’s Representative), moregan@anchorcei.com; (850) 215-1285.

Dated this _____ day of _____, 20_____.

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City of Parker

By: _____

Name: _____

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged:

By _____

This the _____ day of _____, 20____.

Name: _____

Title: _____

NOTICE TO PROCEED

DATE: _____

TO: _____

PROJECT: **ITB NO: 2022-03 - CITY OF PARKER**
HIGHWAY 98 WATERMAIN DIRECTION BORE
AT COOPER STREET

You are hereby notified to commence Work in accordance with the Agreement dated _____, 20____, on or before _____, 20____ and you are to complete the Work within **120** calendar days. The date of completion of all Work is therefore _____, 20____.

You are required to return an acknowledged copy of this Notice to Proceed to the City of Parker.

BY: **CITY OF PARKER**

Mayor Kelly

Date

ACCEPTANCE OF NOTICE

Receipt of the above Notice to Proceed is hereby acknowledged.

CONTRACTOR's Name

This the _____ day of _____, 20____.

Signature

By: _____
Type or Print Name

Title: _____

AGREEMENT

This Agreement, dated _____ is between the City of Parker, located at 1001 West Park Avenue, Parker, Florida 32404 (“OWNER”) and _____, doing business as a _____ (an individual), or (a partnership), or (a corporation), having a business address of _____ (hereinafter called “CONTRACTOR”). It should be noted that the term CONTRACTOR in this Agreement will apply to the CONTRACTOR awarded the project for **ITB 2022-03 – CITY OF PARKER – HIGHWAY 98 WATERMAIN DIRECTIONAL BORE AT COOPER STREET.**

1. **Scope of Work**

The OWNER desires to hire CONTRACTOR to provide all necessary labor, supervision, equipment, and supplies for the performance of the work in connection with the construction of **ITB 2022-03 – CITY OF PARKER – HIGHWAY 98 WATERMAIN DIRECTIONAL BORE AT COOPER STREET** (“Project”), to be located within Parker, in accordance with the Drawings and Specifications prepared by Anchor CEI, Inc. and all other Contract Documents hereafter specified.

The CONTRACTOR shall furnish, at its sole expense, all supervision, labor, equipment, tools, material, and supplies to properly and efficiently perform all of the Work required under the Contract Documents, as defined herein, and shall be solely responsible for the payment of all taxes, permits and license fees, labor fringe benefits, insurance and bond premiums, and all other expenses and costs required to complete such work in accordance with this Agreement (collectively, the “Work”).

The OWNER shall award this contract to the most qualified Contractor for the construction of a new 8-inch fusible polyvinyl chloride (FPVC) directional bore piping that crosses U.S. Highway 98 (Tyndall Parkway) at the intersection with Wood Avenue that will connect to a new 6-inch PVC which will connect to a new 8-inch PVC which will continue southwest (parallel to the existing watermain) to the Cooper Street and U.S. Highway 98 intersection where it will tie into the existing watermain. This project includes all appurtenances as detailed on the Bid Form included in this Bid Package. Please refer to the Construction Drawings included in this Bid Package for further details.

The term “Contract Documents” shall have the generally accepted meaning, including but not limited to:

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a. **ITB 2022-03 – CITY OF PARKER – HIGHWAY 98 WATERMAIN DIRECTIONAL BORE AT COOPER STREET PROJECT**, including but not limited to:

- 1) Plans and Specifications Package.
- 2) Bid Form.
- 3) Bid Bond.
- 4) Anti-Collusion Clause.
- 5) Conflict of Interest Disclosure Form.
- 6) Identical Tie Bids/Drug Free Workplace.
- 7) Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion.
- 8) Certification Regarding Lobbying.
- 9) Public Construction Bond (Payment and Performance Bond) and related bond documents.
- 10) Notice of Contest of Claim Against Payment Bond.
- 11) Waiver of Right to Claims Against Payment Bond (Progress Payment).
- 12) Waiver of Right to Claims Against Payment Bond (Final Payment).
- 13) Contractor's response to the RFP.
- 14) Insurance Requirements.
- 15) Public Construction Bond.
- 16) Notice of Award.
- 17) Notice to Proceed.
- 18) Agreement.
- 19) Waiver of Right to Claim Against the Payment Bond (Progress Payment).

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- 20) Waiver of Right to Claim Against the Payment Bond (Final Payment).
- 21) Contract Change Orders.
- 22) Addenda:
 - No. __, dated _____, 20__.
 - No. __, dated _____, 20__.

The Contract Documents also include any written amendments to any of the above signed by the party to be bound by such amendment. The Contract Documents are sometimes referred to herein as the "Agreement."

In the case of any conflict between the provisions of this Agreement and another Contract Document, the following priority for interpretation of those document provisions shall be followed:

- a. The provisions of this Agreement shall first prevail.
- b. The bid form and accompanying bidder submittals shall be next.
- c. The RFP and attachments shall be the final priority.

In the event of a conflict within or between any other document or documents comprising the Contract Documents, the OWNER alone shall be entitled to select the provision which shall apply.

2. Term

This Contract shall commence within 10 calendar days after the date of receipt of the "Notice to Proceed" to CONTRACTOR(s). The CONTRACTOR(s) for each project listed in Item 1 above shall achieve Final Completion of the Work within **60** calendar days of the required commencement date, except to the extent the period for Final Completion is extended pursuant to the terms of the Contract Documents ("Contract Time"). Final Completion of the Work for each project shall be achieved by CONTRACTOR within the time period set forth in the executed Notice to Proceed. The CONTRACTOR agrees to pay the OWNER, liquidated damages, in the sum of \$100.00 for each calendar day that expires after the Contract Time for Final Completion.

3. Contract Price

The CONTRACTOR agrees to perform all of the Work described in the Contract Documents and comply with the terms therein for the sum of \$_____ as shown in the bid schedule included within the Bid Form, as said amount may be hereafter adjusted pursuant to the terms of the Contract Documents (“Contract Price”).

4. Payments

- a. Notwithstanding anything contained herein to the contrary, all payments shall be made in accordance with Florida Statute 218.70, et seq. CONTRACTOR shall use AIA G702 – Application for Payment form for all pay requests to the OWNER. At least 10 days before submitting the first Application for Payment, the CONTRACTOR shall submit to the OWNER a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the OWNER shall require from time to time. It is anticipated the schedule of values substantially will be based upon the CONTRACTOR’s completed Bid Form. This schedule, unless objected to by the OWNER, shall be used as a basis for reviewing the CONTRACTOR’s Applications for Payment. On or before the 25th of each month, the CONTRACTOR will submit to the OWNER an Application for Payment filled out and signed by the CONTRACTOR covering the Work performed since the previous month’s Application for Payment. Invoices received after the 25th day of each month shall be considered for payment as part of the next month’s Application for Payment.

CONTRACTOR’s Application for Payment shall be in such form and contain such detail and backup as the OWNER reasonably may require.

Payment by the OWNER to the CONTRACTOR of the statement amount shall be made within 25 days after approval is submitted to the OWNER. Ten percent (10%) retainage shall be held at the discretion of the OWNER; the 10% retainage shall be paid at the completion of the Work. Provided, however, nothing in this Section shall preclude or limit the OWNER’s right to withhold payment as otherwise permitted by the terms of the Contract Documents or as permitted by law. Payments of these monthly invoices shall in no way imply approval or acceptance of the Work.

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- b. Each Application for Payment shall be accompanied by a “Waiver of Right to Claim Against the Payment Bond (Progress Payment)” in a form identified in the Contract Documents for all materials, labor, equipment, services and other bills associated with that portion of the Work payment is being requested in that Application for Payment. Further, each payment request shall be accompanied by a claim release and waiver in the form approved by the OWNER from all Subcontractors and suppliers evidencing their payment in full through the previous month’s Application for Payment. Also, each payment request shall be accompanied by an updated Construction Schedule, a list inventorying all stored materials, a monthly progress status report, and any other document reasonably requested by the OWNER. The OWNER shall not be required to make payment until and unless such releases, documents and information are furnished by the CONTRACTOR. Further, if the CONTRACTOR is withholding any portion of a payment to any Subcontractor or supplier for any labor, services, or materials for which the OWNER has paid CONTRACTOR, the CONTRACTOR agrees to refund such money to the OWNER upon demand by the OWNER.
- c. The OWNER shall review each Application for Payment submitted by the CONTRACTOR and shall make recommendations to the OWNER as to the proper amounts, if any, which may be owed to the CONTRACTOR thereunder. The OWNER shall have the right to refuse to approve payment amounts, or portions thereof, requested by the CONTRACTOR in an Application for Payment, or rescind any amount previously approved, and the OWNER may withhold any payments otherwise due to the CONTRACTOR under this Agreement or any other agreement between the OWNER and CONTRACTOR, to the extent it is reasonably necessary, to protect the OWNER from any expense, cost or loss attributable to:
- 1) Defective or deficient Work not properly remedied in accordance with the terms of the Contract Documents.
 - 2) The filing or reasonable evidence indicating the probable filing of third-party claims against the OWNER attributable to the fault or neglect of CONTRACTOR.
 - 3) The CONTRACTOR’s failure to make timely and proper payments to all Subcontractors and suppliers.
 - 4) Reasonable evidence that the remaining Work cannot be completed for the unpaid Contract Price balance.

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- 5) Reasonable evidence indicating that the remaining Work cannot be completed within the remaining Contract Time.
 - 6) The CONTRACTOR's failure to satisfactorily prosecute the Work in accordance with the requirements of the Contract Documents.
 - 7) Any other material breach of the requirements of the Contract Documents by CONTRACTOR.
- d. The OWNER shall have the right, but not the obligation, to take any corrective action the OWNER deems appropriate to cure any of the above noted items, at the CONTRACTOR's expense, if such items are not cured by the CONTRACTOR to the OWNER's reasonable satisfaction within 3 days after CONTRACTOR's receipt of written notice from the City.
- e. In the event that there is a dispute in the amount of the Application for Payment, then only the disputed amount shall be held until resolved and the undisputed amount shall be paid within the time limits as stated within Section 4 – Payment of this Agreement and the progress of the project shall not be interrupted. Both parties agree that best efforts be made to resolve the disputed amount.
- f. The OWNER may reject a payment request, in whole or in part, submitted by the CONTRACTOR if such payment request is not submitted in strict accordance with the requirements of Section 4 – Payments of this Agreement. In such event, the OWNER shall notify the CONTRACTOR in writing within 20 business days after receipt of such Application for Payment that such request for payment, or portion thereof, has been rejected and the reasons for such rejection. If CONTRACTOR resubmits a revised Application for Payment correcting, in the OWNER's unfettered determination, the deficiency specified in the rejection notice, then the OWNER shall pay the CONTRACTOR the corrected portion of the payment request within 10 business days after the date the revised Application for Payment is received and approved by the OWNER.
- g. Prior to Final Completion, the OWNER may use any completed or substantially completed portions of the Work. Such use shall not constitute an acceptance of such portions of the Work.

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- h. Final Payment - Upon completion and acceptance of the Work, the City shall issue a certificate attached to the final Application for Payment that states the Work has been fully performed in accordance with the requirements of the Contract Documents and that the City recommends final payment in the amount reflected in the attached final Application for Payment. The OWNER shall make final payment to CONTRACTOR within 30 days after the Work is finally accepted by the OWNER, provided that CONTRACTOR first, and as an explicit condition precedent to the accrual of CONTRACTOR's right to final payment, shall have furnished the OWNER with a properly executed and notarized final release in the form reasonably required by the OWNER, as well as a duly-executed copy of the surety's consent of release of the Public Construction Bond for final payment and such other documentation that may be required by the Contract Documents, the City.
- i. The acceptance by the CONTRACTOR of final payment shall be and shall operate as a full release and waiver of any and all claims by CONTRACTOR against the OWNER arising out of this Agreement or otherwise relating to one the individual Projects, except those identified in writing by the CONTRACTOR as unsettled in its final Application for Payment. Any payment, however, final, or otherwise shall not release the CONTRACTOR or its sureties from any obligations under the Contract Documents. Neither the acceptance of the Work nor payment by the OWNER shall be deemed to be a waiver of the OWNER's right to enforce any obligations of the CONTRACTOR hereunder or to the recovery of damages for defective Work not discovered by the City at the time of final inspection.
- j. No error or oversight in the making of payment or completion certificates shall relieve the CONTRACTOR from its obligation to do and complete the Work in accordance with the requirements of the Contract Documents.
- k. Payments to Subcontractors - The CONTRACTOR shall promptly, but not later than 15 days after receipt of payment from the OWNER, pay all the amount due subcontractors less a retainage of 10 percent (10%). If there should remain items to be completed, the CONTRACTOR and the OWNER shall list those items required for completion and the CONTRACTOR shall require the retainage of a sum equal to 150% of the estimated cost of completing any unfinished items, provided that said unfinished items are separately listed and the estimated cost of completing any unfinished items likewise separately listed. Thereafter, the CONTRACTOR shall pay to the Subcontractors, monthly the amount retained for each incomplete item after

each of said items is completed. Before issuance of final payment without any retainage, the Subcontractor shall submit satisfactory evidence that all payrolls, material bills and other indebtedness connected with each individual Project has been paid or otherwise satisfied, warranty information is complete, as-built markups have been submitted and instruction for the OWNER's operating and maintenance personnel is complete. Final payment may be made to certain select Subcontractors whose Work is satisfactorily completed prior to the total completion of the Project but only upon approval of the City.

5. Independent CONTRACTOR

The CONTRACTOR shall at all times, relevant to this Agreement, be an independent CONTRACTOR and maintain control over and have sole responsibility for CONTRACTOR's employees and other personnel. In no event shall the CONTRACTOR, nor any employees or sub-contractors under it, be considered to be employees, servants, or agents of the City of Parker.

6. Contractor's Personnel

Contractor's employees and personnel shall be qualified and experienced to perform the portions of the Work to which they have been assigned. CONTRACTOR has the exclusive right to hire and terminate its employees and may transfer or reassign any of its employees to other work of the CONTRACTOR. The direction of the work of CONTRACTOR's employees shall be under the exclusive control of CONTRACTOR. If the OWNER objects to the presence or performance of any employee of CONTRACTOR, CONTRACTOR shall remove such employee from OWNER premises.

7. Cooperation

The CONTRACTOR agrees to perform each phase of the Work at the scheduled time and in the scheduled sequence. The CONTRACTOR will cooperate with the City as requested and specifically allow the City to inspect the performance of the Work of this Agreement.

8. Direct Purchasing

This Agreement does not include direct purchasing requirements.

9. Records / Audits

The OWNER is a public agency subject to Chapter 119, Florida Statutes. The CONTRACTOR shall comply with Florida's Public Records Law. Specifically, the CONTRACTOR shall:

- a. Keep and maintain public records required by the OWNER in order to perform the service.
- b. Upon request from the OWNER's custodian of public records, provide the OWNER 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, F.S. or as otherwise provided by law.
- c. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the Agreement if the CONTRACTOR does not transfer the records to the OWNER.
- d. Upon completion of the Agreement, transfer, at no cost to the OWNER, all public records in possession of the CONTRACTOR, or keep and maintain public records required by the OWNER to perform the service. If the CONTRACTOR transfers all public records to the OWNER upon completion of the contract, the CONTRACTOR shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the CONTRACTOR keeps and maintains public records upon completion of the contract, the CONTRACTOR shall meet all applicable requirements for retaining public records.

All records electronically stored must be provided to the OWNER, upon request from the OWNER's custodian of public records in a format that is compatible with the information technology systems of the OWNER.

- e. During the term of the Agreement, the CONTRACTOR shall maintain all books, reports and records in accordance with generally accepted accounting practices and standards for records directly related to this Agreement. The form of all records and reports shall be subject to the approval of the City's Auditor. The CONTRACTOR agrees to make available to the City's Auditor, during normal business hours and in the City, all books of account, reports and records relating to this contract.

10. Public Records Custodian

If the CONTRACTOR has questions regarding the application of Chapter 119, Florida Statutes, to the CONTRACTOR's duty to provide public records relating to this contract, contact the City of Parker at 1001 West Park Avenue, Parker, Florida 32404, via phone at (850) 871-4101 or e-mail at tjeffreys@cityofparker.com.

11. (This section intentionally left blank)

12. Laws, Rules and Regulations

a. General Laws:

- 1) CONTRACTOR agrees to comply, at its own expense, with all Federal, State and local laws, codes, statutes, ordinances, rules, administrative orders, regulations and requirements applicable to the Project, including but not limited to those dealing with safety (including, but not limited to, the Trench Safety Act, Chapter 553, Florida Statutes).
- 2) If CONTRACTOR observes that the Contract Documents are at variance therewith, it shall promptly notify the OWNER in writing.
- 3) The CONTRACTOR shall give all notices required of it by law and shall comply with all Federal, State and local laws, ordinances, rules and regulations governing CONTRACTOR's performance of this Agreement and the preservation of public health and safety.
- 4) Upon request by the OWNER, CONTRACTOR shall provide proof of such compliance to the OWNER.

b. Illegal Alien Labor:

- 1) The CONTRACTOR shall comply with all provisions State and Federal law regarding the hiring and continued employment of aliens not authorized to work in the United States. CONTRACTOR shall not knowingly employ or contract with an illegal alien to perform Work under this Agreement or enter into an Agreement with a subcontractor that fails to certify to the CONTRACTOR that the subcontractor is in compliance with such laws.

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- 2) The CONTRACTOR agrees that it shall confirm the employment eligibility of all employees through participation in E-Verify or an employment eligibility program approved by the Social Security Administration and will require the same of any subcontractors.
- 3) The CONTRACTOR shall pay all cost incurred to initiate and sustain the verification programs.

c. Termination for Cause:

Failure of the CONTRACTOR to comply with the provision of this section shall constitute grounds for the OWNER to immediately terminate this Agreement for cause and declare the CONTRACTOR to be non-responsible for bidding or proposing on future contracts for 1 year from the date the City notifies the CONTRACTOR of such non-compliance.

13. Insurance

During the term of this Agreement, the CONTRACTOR will purchase and maintain insurance and comply with the OWNER's Drug Free Workplace and Insurance Requirements which are incorporated herein by reference.

14. Hold Harmless and Indemnification

- a. To the maximum extent permitted by Florida law, the CONTRACTOR shall indemnify and hold harmless the OWNER, and its officers and employees, from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees to the extent caused by the negligence, recklessness, or intentional wrongful conduct of the CONTRACTOR and persons employed or utilized by the CONTRACTOR.
- b. The parties understand and agree that such indemnification by the CONTRACTOR relating to any matter which is the subject of this Agreement shall extend throughout the term of this Agreement and any statutes of limitations thereafter.
- c. The CONTRACTOR's obligation shall not be limited by or in any way to any insurance coverage or by any provision in or exclusion or omission from any policy of insurance.

15. Duty to Pay Defense Costs

- a. The CONTRACTOR agrees to reimburse and pay on behalf of the OWNER the cost of the OWNER's legal defense, through and including all appeals, and to include all attorneys' fees, costs, and expenses of any kind for any and all:
 - 1) Claims described in the Hold Harmless and Indemnification paragraph, or
 - 2) Other claims arising out of the CONTRACTOR's performance of the Agreement and in which the OWNER has prevailed.
- b. The OWNER shall choose its legal defense team, experts, and consultants and invoice the CONTRACTOR accordingly for all fees, costs and expenses upon the conclusion of the claim.
- c. Such payment on the behalf of the OWNER shall be in addition to any and all other legal remedies available to the OWNER and shall not be considered to be the OWNER's exclusive remedy.
- d. This section survives termination or expiration of this Agreement.

16. Notices

All notices required or made pursuant to this Agreement shall be in writing and, unless otherwise required by the express terms of this Agreement, may be given either:

- a. by mailing same by United States mail with proper postage affixed thereto, certified, return receipt requested, or
- b. by sending same by Federal Express, Express Mail, Airborne, Emery, Purolator, UPS or other expedited mail or package delivery, or
- c. by hand delivery to the appropriate address as herein provided. Notices to the OWNER required hereunder shall be directed to the following address:

If to the **OWNER**:

City of Parker
1001 West Park Avenue
Parker, Florida 32404
(850) 871-4104

If to the CONTRACTOR:

The CONTRACTOR shall notify the OWNER of any change to its address. The Purchasing Department will disseminate the address change to all applicable departments and agencies including Finance. The CONTRACTOR's notification of address change is sufficient if sent by email or facsimile.

17. Assignment

The CONTRACTOR shall not assign in whole or in part any part of the Work of this Agreement except with prior written consent of the OWNER.

18. Successors and Assigns

This Agreement shall be binding on all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

19. Entire Agreement

All proposals, negotiations and representations regarding the work of this Agreement are merged in this instrument. Any amendment or modification of this Agreement shall be in writing and signed by the duly authorized representatives of the parties.

20. No Waiver

The waiver by the OWNER of, or the OWNER's failure to demand strict performance of, any obligation of the CONTRACTOR shall not be construed to waive or limit the full and faithful performance by the CONTRACTOR of another of its obligations or of the same obligation in the future.

21. Severability

Should any provision of the Agreement be determined by a court with jurisdiction to be unenforceable, such a determination shall not affect the validity or enforceability of any other section or part thereof.

22. Termination for Cause

- a. If the CONTRACTOR fails to comply with any of the terms and conditions of this Agreement, the OWNER may give notice, in writing, to the CONTRACTOR of any or all deficiencies claimed. The notice will be sufficient for all purposes if it describes the default in general terms. If all defaults are not cured and corrected within a reasonable period as specified in the notice, the OWNER may, with no further notice, declare this Agreement to be terminated.

The CONTRACTOR will thereafter be entitled to receive payment for those services reasonably performed to the date of termination, less the amount of reasonable damages suffered by the OWNER by reason of the CONTRACTOR's failure to comply with this Agreement.

- b. Notwithstanding the above, the CONTRACTOR is not relieved of liability to the OWNER for damages sustained by the OWNER by virtue of any breach of this Agreement by the CONTRACTOR and the OWNER may withhold any payments to the CONTRACTOR for the purpose of setoff until such time as the amount of damages due the OWNER from the CONTRACTOR is determined.
- c. Failure of the CONTRACTOR to comply with the provision of Section 12 Laws, Rules, and Regulations shall constitute grounds for the OWNER to immediately terminate this Agreement for cause and declare the CONTRACTOR to be non-responsible for bidding or proposing on future Agreements for 1 year from the date the OWNER notifies the CONTRACTOR of such non-compliance.
- d. This Agreement may be terminated by the OWNER if the successful bidder (CONTRACTOR) is found to have submitted a false certification as required under section 215.471 (5), Florida Statutes, been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List or been engaged in business operations in Cuba or Syria.

23. Governing Law & Venue

This Agreement is governed by the laws of the State of Florida. The proper venue for any action regarding this contract is in the appropriate Court in Bay County, Florida.

CITY OF PARKER
HIGHWAY 98 WATERMAIN DIRECTIONAL BORE AT COOPER STREET

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the day and year first written above.

Executed by:

PARKER CITY COUNCIL

By: _____
Andrew Kelly, Mayor

Approved as to form:

CONTRACTOR

By: _____
(Authorized Representative)

Its: _____

State of _____ County of _____

This Agreement was acknowledged and subscribed before me the undersigned notary this _____ day of _____, 202____, by _____, as _____ of _____ and with proper authority, and who is personally known by me or produced identification of

_____.

Notary Public

Notary Public

**WAIVER OF RIGHT TO CLAIM AGAINST THE PAYMENT BOND
(PROGRESS PAYMENT)**

The undersigned, in consideration of the sum of \$ _____, hereby waives its right to claim against the payment bond for labor, services, or materials furnished through _____ (insert date) to _____ (insert the name of contractor) on the job of the City of Parker, for improvements to the following described project:

ITB NO: 2022-03
CITY OF PARKER
HIGHWAY 98 WATERMAIN DIRECTIONAL BORE
AT COOPER STREET
(Project Name)

This waiver does not cover any retention, or any labor, services, or materials furnished after the date specified.

CONTRACTOR: _____

By: _____

Printed Name: _____

Title: _____

Date: _____

WAIVER OF RIGHT TO CLAIM AGAINST THE PAYMENT BOND

(FINAL PAYMENT)

The undersigned, in consideration of the final payment in the amount of \$ _____, hereby waives its right to claim against the payment bond for labor, services, or materials furnished to _____ (insert the name of contractor) on the job of the City of Parker for improvements to the following described project:

ITB NO: 2022-03
CITY OF PARKER
HIGHWAY 98 WATERMAIN DIRECTIONAL BORE
AT COOPER STREET
(Project Name)

This waiver does not cover any retention, or any labor, services, or materials furnished after the date specified.

CONTRACTOR: _____

By: _____

Printed Name: _____

Title: _____

Date: _____