OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16
&
6” WATER MAIN REPLACEMENT

CITY OF JACKSONVILLE BEACH
JACKSONVILLE BEACH, FLORIDA

CITY BID NO. 1819-15

Prepared For:
City of Jacksonville Beach

Prepared By:
Public Works Department
1460A Shetter Avenue
Jacksonville Beach, FL 32250

JUNE 2019
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INVITATION TO BID

CITY OF JACKSONVILLE BEACH
Jacksonville Beach, FL

Sealed bids in triplicate, subject to the terms and conditions specified in this invitation, will be received until 2:00 p.m., July 31, 2019, and then opened publicly by the Property & Procurement Division, 1460A Shetter Avenue, 1st Floor, Jacksonville Beach, Florida, 32250 for furnishing the following:

BID INVATATION NO. 1819-15, OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6” WATER MAIN REPLACEMENT

Bid documents will also be available on the City of Jacksonville Beach’s website at: http://www.jacksonvillebeach.org/government/departments/finance/bidrfp-rfq-listings

Please submit triplicate completed Bid Proposal Forms in one sealed envelope clearly marked with bid number and bid name. Place the sealed envelope within another sealed envelope clearly marked in the same manner as the first envelope. This is done to prevent accidental opening of the sealed bids.

A Mandatory Pre-Bid On-Site Meeting will not be held on this project. No verbal interpretations will be made of any bid documents. Requests for such interpretations shall be made in writing by July 19, 2019. Interpretations will be in the form of an addendum and issued to all bidders by July 24, 2019 on the City’s website.

If you require further information regarding this bid, please contact Luis Flores at 904-247-6226.

CITY OF JACKSONVILLE BEACH

Luis Flores
Property & Procurement
The City of Jacksonville Beach is inviting qualified contractors to bid for the construction of an **OFFSITE 12” WELL HEADER FOR WTP 1, WELL 16** specified as the Base Bid and the **REPLACEMENT OF 6” WATER MAIN** specified as the Alternate 1 Bid. The work consists of furnishing all labor, equipment and materials required for the following construction:

**Base Bid-Offsite 12” Well Header for WTP 1, Well No. 16:** This portion of the project involves the installation of approximately 2260 LF of new 12 inch PVC (DR25) well header to be located within the right-of-ways of 2nd Ave. North and 11th St. North between 10th St. North and 8th Ave. North. The westerly half of 11th St. North as well as the easterly +/-50 Ft. of pavement within 2nd to 8th Avenues North which intersect 11th St. North will be removed & replaced as part of the construction. Portions of local resident’s yards, driveways, sidewalks, lead walks located along the route that are affected by the new construction will also be reconstructed. Other incidental work will include the installation of miscellaneous valves, fittings, temporary sampling taps, flushing and disinfection of the new main, shop drawing submittals, traffic control, erosion control, excavating & backfilling of trenches, replacing damaged irrigation systems resulting from the new construction, density & compaction testing, bacteriological sampling & obtaining clearances from regulatory agencies, as-built drawing submittals, invoicing and any other miscellaneous items not specifically listed but necessary to complete the project.

**Alternate 1 Bid-6” Water Main Replacement within 11th St. North:** This portion of the project involves the installation of approximately 1620 LF of new 6” PVC (DR18) water main located within 11th St. North between 4th Ave. North and 8th Ave. North. Other incidental work will include the installation of miscellaneous valves, fire hydrants, fittings, temporary sampling taps, flushing and disinfection of the new main, cutting, plugging, abandoning and/or removing of existing water mains, shop drawing submittals, traffic control, erosion control, excavating & backfilling of trenches, replacing damaged irrigation systems resulting from the new construction, density & compaction testing, bacteriological sampling & obtaining clearances from regulatory agencies, transferring existing water services, as-built drawing submittals, invoicing and any other miscellaneous items not specifically listed but necessary to complete the project.

Bids shall be submitted to the Purchasing Agent for the City of Jacksonville Beach, on BID forms furnished for that purpose in accordance with the contract documents, drawings and specifications. Drawings and specifications will only be available through the City of Jacksonville Beach’s website at [http://www.jacksonvillebeach.org/government/departments/finance/didrfp-rfq-listings](http://www.jacksonvillebeach.org/government/departments/finance/didrfp-rfq-listings)

Deadline for the receipt of sealed bids has been set for **July 31, 2019 at 2:00 p.m.** Send sealed bids by mail to Purchasing & Procurement Division, 1460A Shetter Avenue, 1st Floor, Jacksonville Beach, Florida 32250. No bid will be considered unless sealed and filed with the City of Jacksonville Beach, Purchasing & Procurement Division, prior to the time set forth above and accompanied by the bidders bond, payable to the City of Jacksonville Beach, Florida for five percent (5%) of the amount of the bid; to be forfeited as liquidated damages in the event that the bid is accepted and the bidder fails to enter promptly into a written contract and furnish the required performance bond and insurance certificates. Bids arriving after the designated time will be returned unopened.

No bids shall be withdrawn for a period of ninety (90) days after the opening of bids. The owner reserves the right to reject any or all bids and to waive any informality in any bid and to readvertise for bids.

**BIDS** must be submitted in a sealed envelope and be marked on the outside of the envelope:

**SEALED BID**

**FOR:** City Bid Number: 1819-15 Offsite 12” Well Header for WTP 1, Well No.16 & 6” WM Replacement

**BID OPENING DATE:** July 31, 2019
1.1 PROJECT DESCRIPTION

The work in this project consists of furnishing all labor, materials, equipment, tools, transportation, services and incidentals necessary to construct the work specified in the Base Bid and Alternate 1 Bid listed below and as shown on the design drawings:

Base Bid-Offsite 12” Well Header for WTP 1, Well No. 16: This portion of the project involves the installation of approximately 2350 LF of new 12 inch PVC (DR25) well header to be located within the right-of-ways of 2nd Ave. North and 11th St. North between 10th St. North and 8th Ave. North. The westerly half of 11th St. North as well as the easterly +/-50 Ft. of pavement within 2nd and 8th Avenues North which intersect 11th St. North will be removed & replaced as part of the construction. Portions of local resident’s yards, driveways, sidewalks, lead walks located along the route that are affected by the new construction will also be reconstructed. Other incidental work will include the installation of miscellaneous valves fittings, temporary sampling taps, flushing and disinfection of the new main, shop drawing submittals, traffic control, erosion control, excavating & backfilling of trenches, replacing damaged irrigation systems resulting from the new construction, density & compaction testing, bacteriological sampling & obtaining clearances from regulatory agencies, as-built drawing submittals & approvals, invoicing and any other miscellaneous items not specifically listed but necessary to complete the project.

Alternate 1 Bid-6” Water Main Removal & Replacement within 11th St. North: This portion of the project involves the installation of approximately 1700 LF of new 6” PVC (DR18) water main located within 11th St. North between 4th Ave. North and 8th Ave. North. Other incidental work will include the installation of miscellaneous valves, fire hydrants, fittings, temporary sampling taps, flushing and disinfection of the new main, cutting, plugging, abandoning and/or removing of existing water mains, shop drawing submittals, traffic control, erosion control, excavating & backfilling of trenches, replacing damaged irrigation systems resulting from the new construction, density & compaction testing, bacteriological sampling & obtaining clearances from regulatory agencies, as-built drawing submittals, invoicing and any other miscellaneous items not specifically listed but necessary to complete the project.

All work shall be in accordance with the Drawings and Specifications prepared by the City of Jacksonville Beach Public Works Department and entitled:

Bid No: 1819-15 OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6” WM REPLACEMENT

   A. The project is located in Jacksonville Beach.

1.2 DEFINED TERMS

   A. Terms used in the Instruction to Bidders are defined and have the meanings assigned to them in the General Conditions.

1.3 COPIES OF BIDDING DOCUMENTS

   A. Only complete sets of Bidding Documents will be issued and shall be used in preparing Bids. Neither the CITY nor the ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets.

   B. Completed sets of Bidding Documents may be obtained in the manner and at the location stated in the Advertisement for Bids. The deposit is non-refundable.

1.4 QUALIFICATIONS OF BIDDERS

   A. Each bid must contain either evidence of the Bidder’s qualifications to do business in the area where the projects are located or covenant to obtain such qualifications prior to award of Contract.

   B. To demonstrate his qualifications to perform the Work, each bidder will be required to provide evidence as to his previous successful contractual and technical experience in similar work including references,
INSTRUCTIONS AVAILABLE TO BIDDERS

description, and volume of present commitments, evidence of possession of, or covenant to obtain prior to award of Contract, valid state, county, and local licenses covering all operations and all areas of political jurisdiction involved in the Work of this project and such other data as may be requested by the CITY. The apparent low Bidder may be required to provide evidence as to his financial status prior to the project being awarded by the city council.

C. Contractor must be able to exhibit to the City of Jacksonville Beach that he can perform a minimum of 30% of the total contract work with their own labor work force.

1.5 DISQUALIFICATIONS OF BIDDERS

A. One Proposal: Only one Proposal from an individual firm, partnership or corporation under the same or under different names will be considered. If it is believed that a Bidder is interested in more than one Proposal for the work involved, all Proposals in which such a Bidder is interested will be rejected.

B. Collusion Among Bidders: If it is believed that collusion exists among the Bidders, the Proposals of all participants in such collusion will be rejected and no participants in such collusion will be considered in future Proposals for the same work.

1.6 EXAMINATION OF SITE CONDITIONS

A. Each Bidder, by and through the submission of his Bid, agrees that he shall be held responsible for having theretofore examined the site, the location of all proposed work and for having satisfied himself from his own personal knowledge and experience or professional advice as to the character and location of the site, the nature of the ground, surface and subsurface, the water elevations, location of buried utilities and any other conditions surrounding and affecting the work, any obstructions, the nature of any existing construction, and all other physical characteristics of the job, in order that he may include in the prices which he bids all costs pertaining to the work and thereby provide for the satisfactory completion thereof, including the removal, relocation, or replacement of any objects or obstruction which may be encountered in doing the proposed work.

B. Any records of contours, obstructions, and other subsurface investigations shown on the Drawings or included hereinafter, were made solely for design purposes for the work; and the CITY and his ENGINEER do not warrant, guarantee or represent that said data is correct with respect to actual subsurface conditions; therefore, the Bidder, by and through the submission of his Bid, affirms that he has made, or has caused to be made, his own test holes and/or other investigations of such subsurface conditions , and/or that he has otherwise satisfied himself with respect to such conditions; and, should the Bidder be awarded the Contract, he agrees that he will make no claims against the CITY or his ENGINEER if, in carrying out the work, he finds that the actual conditions do not conform to those indicated. The CITY will, upon request, provide each Bidder with reasonable access to the site to conduct such tests and investigations, as each Bidder deems necessary for submission of his Bid. If a Bidder obtains such access he shall restore the site to the condition existing prior to conducting said tests and investigations.

C. The Bidder, in preparing his Bid, shall take into consideration that work by other contractors may be in progress at or near the site during the performance of the work to which the bid relates and that he will be expected, should he be awarded a Contract, to avoid interference with work done by such other contractors and to coordinate his work with other contractors at the site.

1.7 EXAMINATION OF CONTRACT DOCUMENTS

A. Each Bidder shall carefully examine the Drawings and Specifications and other contract documents, and inform himself thoroughly regarding any and all conditions and requirements, including the construction schedule, that may in any manner affect cost, progress or performance of the work to be performed under
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INSTRUCTIONS AVAILABLE TO BIDDERS

the Contract. Ignorance on the part of the CONTRACTOR will in no way relieve him of the obligations and responsibilities assumed under the Contract.

B. Should a Bidder find discrepancies or ambiguities in, or omissions from, the Drawings or Specifications, or should he be in doubt as to their meaning, he shall at once notify the ENGINEER.

1.8 INTERPRETATIONS, CLARIFICATIONS AND ADDENDA

No oral interpretations will be made to any Bidder as to the meaning of the Contract Documents. Any inquiry or request for interpretation received by July 19, 2019 will be given consideration. All such changes or interpretations will be made in writing in the form of an addendum and, if issued, will sent by available means to all known prospective Bidders prior to the established bid opening date. Each Bidder shall acknowledge receipt of such addenda in the space provided therefor in the Proposal form. In case any Bidder fails to acknowledge receipt of such addenda or addendum, his Bid will nevertheless be construed as though it had been received and acknowledged and the submission of his Bid will constitute acknowledgement of the receipt of same. All addenda are a part of the Contract Documents and each Bidder will be bound by such addenda, whether or not received by him. It is the responsibility of each Bidder to verify that he has received all addenda issued before Bids are opened.

1.9 INTERPRETATION OF QUANTITIES

In the case of unit price items, the quantities of work to be done and the materials to be furnished under this Contract, as given in the Proposal, are to be considered as approximate only and are to be used solely for the comparison of Bids received. The CITY and/or his ENGINEER do not expressly or by implication represent that the actual quantities involved will correspond exactly therewith; nor shall the Bidder plead misunderstanding or deception because of such estimate or quantities or of the character, location, or other conditions pertaining to the work. Payment to the CONTRACTOR will be made only for the actual quantities of work performed or material furnished in accordance with the Drawings and other Contract Documents, and it is understood that the quantities may be increased or diminished as provided in the General Conditions without in any way invalidating any of the unit or lump sum prices bid.

1.10 ALTERNATES

When certain items of equipment and/or materials are specified and/or described as the product of a particular manufacturer together with any required additional information such as model number, size or catalog number, only such specific items may be used in preparing the Bid.

1.11 GOVERNING LAWS AND REGULATIONS

A. The Bidder is required to be familiar with and shall be responsible for complying with all federal, state and local laws, ordinances, rules and regulations that in any manner affect the work.

B. The Bidder shall include in his bid prices all sales, consumer, use and other taxes required to be paid in accordance with the law of the place of the project.

1.12 PREPARATION OF BIDS

A. Signature of the Bidder: The Bidder must sign the Proposal forms in the space provided for the signature. If the Bidder is an individual, the words “doing business as ________________________”, or “Sole Owner” must appear beneath such signature. In the case of a partnership, the signature of at least one of the partners must follow the firm name and the words “Member of the Firm” should be written beneath such signature. If the Bidder is a corporation, the title of the officer signing the Proposal on behalf of the corporation must be stated and evidence of his authority to sign the Proposal must be submitted. The Bidder shall state in the Proposal the name and address of each person interested therein.
B. Basis for Bidding: The price bid for each item shall be on a lump sum or unit price basis according to the form of the Proposal. The bid prices shall remain unchanged for the duration of the Contract and no claims for cost escalation during the progress of the work will be considered.

C. Price Bid: The total price bid for the work shall be the aggregate of the lump sum prices bid and/or unit prices multiplied by the appropriate estimated quantities for the individual items and shall be stated in figures in the appropriate place on the Proposal Form. In the event that there is a discrepancy on the Proposal Form due to unit price extensions or additions, the corrected extensions and additions shall be used to determine the project bid amount.

1.13 SUBMISSION OF BIDS

A. Each Proposal bid must be submitted on the Proposal Form as furnished, together with a suitable bid security as herein described.

B. The Proposal and bid security, if required, must be submitted in a sealed envelope, which shall be marked so as to clearly indicate its contents and the name of the Bidder. If forwarded by mail, the above mentioned envelope shall be enclosed in another envelope addressed to the entity and address stated in the Advertisement for Bids, and preferably by special delivery, registered mail; if forwarded otherwise than by mail, it shall be delivered to the same address. Proposals will be received until the date and hour stated in the Advertisement for Bids.

C. Each Bidder must submit with his Proposal an accompanying letter in which he shall list the names and addresses of his major subcontractors together with the services they will supply. These subcontractors will be subject to review as to their competency by the CITY prior to award of Contract and shall be one of the considerations in determining the successful Bidder. After award of Contract, no change in subcontractors shall be made unless approved by the CITY after a request for such a change has been submitted in writing by the CONTRACTOR, which shall include the reasons for such request.

D. Each Bidder shall submit with his Proposal the required evidence of his qualifications and experience as outlined in Article 1.4. The apparent low Bidder may be required to provide evidence as to his financial status, previous successful contractual and technical experience in similar work including references, description, and volume of present commitments, evidence of possession of, or covenant to obtain prior to award of Contract, valid state, county, and local licenses covering all operations and all areas of political jurisdiction involved in the Work of this project and such other data as may be requested by the CITY.

1.14 BID SECURITY

A. Each Proposal must be accompanied by a cashier’s check or Bid Bond in an amount not less than five percent (5%) of the amount of the Bid. The bid security of all Bidders will be returned within ten (10) days after the CITY and the accepted Bidder have executed the written Contract and the accepted Bidder has filed an acceptable bond. If ninety (90) days have passed after the date of the receipt of the Bids and no Contract has been awarded, the bid security of any Bidder will be returned on demand, provided that the Bidder has not been notified of the acceptance of his Bid.

B. Attorneys-in-Fact who sign Bid Bonds must file with such bonds a certified copy of their Power of Attorney to sign said Bonds.

C. Failure of the accepted Bidder to execute a Contract and file acceptable bonds as provided herein within ten (10) days after a written Notice of Award has been given shall be just cause for the annulment of the award and forfeiture of the bid security to the CITY, which forfeiture shall be considered not as a penalty, but in liquidations of damages sustained. Award may then be made to another Bidder or all Bids may be rejected.

1.15 WITHDRAWAL OF BID
A. Any Bid may be withdrawn prior to the time scheduled in the Advertisement for Bids for the opening thereof. A Bid may also be withdrawn ninety (90) days after the date of the opening of the Bids, provided that the Bidder has not been notified that his Bid has been accepted.

1.16 MODIFICATION OF BIDS

A. Written bid modification will be accepted from Bidders if addressed to the entity and address indicated in the Advertisement for Bids and received prior to Bid due time and date.

B. A Bidder may modify his Bid by telegraphic communication at any time prior to the scheduled closing time for receipt of Bids, provided such telegraphic communication is received prior to the closing time, and provided further, that CITY is satisfied that a written communications of the telegraphic modification over the signature of the Bidder was mailed prior to the closing time. The telegraphic communication should not reveal bid price, but should provide the addition or subtraction or other modification so that the final prices or terms will not be known until the sealed Bid is opened. If written confirmation is not received within two days from the closing time, no consideration will be given to the telegraphic modification.

1.17 RECEIPT AND OPENING OF BIDS

A. Bids will be received until the designated time and will be publicly opened and read aloud at the appointed time and place stated in the Advertisement for Bids. The person whose duty is to open them will decide when the specified time has arrived and no Bids received thereafter will be considered. No responsibility will be attached to anyone for the premature opening of a Bid not properly addressed and identified. Bidders or their authorized agents are invited to be present.

1.18 DETERMINATION OF SUCCESSFUL BIDDER

A. For the purpose of award, the correct summation of the lump sum prices and/or of the products of the estimated quantities shown in the Proposal and the unit prices will be considered the Bid. The amounts then will be compared and the results of such comparison made available to the public. Until the final award of the Contract, the CITY does not bind himself to accept the minimum Bid stated herein, but reserves the right to reject any and all Bids and to waive technical errors and irregularities as may be deemed best for the interests of the CITY. Bids, which contain modifications, are incomplete, unbalanced, conditional, obscure, or which contain additions not requested or irregularities of any kind, or which do not comply in every respect with the Instructions to Bidders, and the Contract Documents, may be rejected at the option of the CITY. In project bids that have multiple parts and/or alternates, Bidders must submit a price for all parts/alternates within the bid proposal. The CITY may elect to award the contract based on the base bid and any alternate(s) in the best interest of the CITY.

1.19 AWARD OF CONTRACT

A. The CITY reserves the right to reject any or all Bids, or any part of any Bid and/or alternate(s), to waive any informality in any Bid, or to re-advertise for all or part of the work contemplated. The CITY reserves the right, prior to award of Contract, to delete from the scope of the project any item or any combination of items from the total bid price for the project. If Bids are found to be acceptable by the CITY, written notice will be given to the lowest responsible Bidder of the acceptance of his Proposal and of the award of the Contract to him.

B. If a Bidder to whom a Contract is awarded forfeits his bid security and the award of the Contract is annulled, the CITY may then award the Contract to another Bidder or the work may be re-advertised or may be constructed by day labor as the CITY decides.

C. The Contract will be awarded to the lowest responsible qualified Bidder complying with the applicable conditions of the Contract Documents. The Contract will be awarded to one (1) bidder for the Base Bid and/or the Alternate No. 1 work, whichever is in the best interest of the City pending funding availability.
D. The ability of a Bidder to obtain a performance bond shall not be regarded as the sole test of such Bidder’s competence or responsibility.

E. The CITY also reserves the right to reject the Proposal of a Bidder who has previously failed to perform properly or to complete Contracts of a similar nature on time.

1.20 EXECUTION OF CONTRACT

A. The Bidder to whom a Contract is awarded will be required to return to the CITY, three (3) executed counterparts of the prescribed Contract together with the required Performance and Payment Bonds and the required Certificates of Insurance within ten (10) days from the date of Notice of Acceptance of the Bidder’s Proposal.

1.21 PERFORMANCE AND PAYMENT BONDS

A. Simultaneously with his delivery of the executed Contract to the CITY, a Bidder to whom a Contract has been awarded must deliver to the CITY executed Performance and Payment Bonds on the prescribed forms each in an amount of one-hundred percent (100%) of the total amount of the accepted Bid, as security for the faithful performance of his Contract and for the payment of all persons performing labor or furnishing materials in connection therewith. The Performance and Payment Bonds shall have as the surety thereon only such surety company or companies as are authorized to write bonds of such character and amount under the laws of the State of Florida and with a resident agent in the county in which the project is located. The Attorney-in-Fact, or other officer who signs the Performance and Payment Bonds for a surety company must file with such bonds a certified copy of his Power-of-Attorney authorizing him to do so.

B. The Performance and Payment Bonds shall remain in force for one (1) year from the date of final acceptance of the work as a protection to the CITY against losses resulting from latent defects in materials or improper performance of work under Contract, which may appear or be discovered during that period.

C. Qualification of Sureties shall be as described in the General Conditions.

1.22 CERTIFICATES OF INSURANCE

Simultaneously with his delivery of the executed Contract to the CITY, the Bidder to whom a Contract has been awarded shall deliver to the CITY the required Certificate of Insurance and endorsements on the prescribed form certifying insurance coverage in amounts not less than the limits of liability and coverages provided in Section 500: Contract Agreement, or required by law, whichever is greater.
Existing Conditions: Existing utilities have been shown on the Drawings insofar as information is reasonably available; however, it will be the Contractor's responsibility to preserve all existing utilities whether shown on the Drawings or not. If utility conflicts are encountered by the Contractor during construction, he shall give sufficient notice to the City so that he may make the necessary adjustments. Damage to any utilities, which, in the opinion of the City and Engineer, is caused by carelessness on the part of the Contractor, shall be repaired at the Contractor's expense. Any delays ensuing from this damage will be considered inexcusable. Utility contacts are listed in Section 1000: Project Requirements.
SECTION 00300
BID PROPOSAL FORM

Date: ________________

Proposal of Bidder: __________________________________________

Business Address: ____________________________________________

Project Name: City Bid No: 1819-15 OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6” WM REPLACEMENT

To: City of Jacksonville Beach
    Purchasing Department
    1460A Shetter Avenue
    Jacksonville Beach, Florida 32250

The undersigned, as Bidder, hereby declares that the only person or persons interested in the Proposal, as principal or principals, is or are named herein and that no other person than herein mentioned has any interest in the Proposal of the Contract to which the work pertains; that this Proposal is made without connection or arrangement with any other person, company, or parties making a bid or proposal and that the Proposal is in all respects fair and made in good faith without collusion or fraud.

The Bidder further declares that he has examined the site of the work and that from personal knowledge and experience, or that he has made sufficient test holes and/or other subsurface investigations to fully satisfy himself that such site is a correct and suitable one for this work and he assumes full responsibility therefor; that he has examined the Drawings and Specifications for the work and from his own experience or from professional advice that the Drawings and Specifications are sufficient for the work to be done and he has examined the other Contract Documents and all addenda relating thereto, and that he has satisfied himself fully, relative to all matters and conditions with respect to the work to which this Proposal pertains.

The Bidder proposes and agrees, if this Proposal is accepted, to contract with the City of Jacksonville Beach, Florida, in the form of contract specified, to furnish all necessary materials, equipment, machinery, tools, apparatus, transportation, and labor and to perform all work necessary to complete the work specified in the Proposal and other Contract Documents.

The Bidder further proposes and agrees to comply in all respects with the time limits for commencement and completion of the work as stated in the Contract Form.

The Bidder further agrees that the deductions for liquidated damages, as stated in the Contract Form, constitute fixed, agreed, and liquidated damages to reimburse the City for additional costs to the City resulting from the work not being completed within the time limit stated in the Contract Form.

The Bidder further agrees to execute a contract and furnish satisfactory Performance and Payment Bonds, each in the amount of one-hundred percent of the Contract price, and the required Certificates of Insurance, within ten consecutive calendar days after written notice being given by the City of the award of the Contract, and the undersigned agrees that in case of failure on his part to execute the said Contract and Performance and Payment Bonds within the ten consecutive calendar days after the award of the Contract, the bid guarantee accompanying his bid and the money payable thereon shall be paid to the City as liquidation of damages sustained by the City; otherwise, the bid guarantee shall be returned to the undersigned after the Contract is signed and the Performance and Payment Bonds are filed.

The undersigned agrees to accept in full compensation for completion of the project in full compliance with the Contract Documents, the total of the lump sum prices and extended unit prices for the items named in the following schedule. It is understood that the unit prices quoted or established for a particular item are to be used for computing the amount to be paid to the Contractor, based on the quantities actually constructed as determined by the applicable measurement and payment portion of the specifications.

Bidder’s General Contractor’s License No. ____________________________________________

00300- 1

Bidder ____________________________________________________________

City Bid No: 1819-15
Bidder’s Underground Utility License No._____________________________________

Authorized Company Representative Signature: ______________________________________

Name and Address of Surety or Sureties who will sign Bonds:

Performance Bond ___________________________________________________________

Payment Bond ______________________________________________________________

For authorized addition or deletion of quantities of work items to/from those indicated by the contract documents, the above unit prices shall apply.

Acknowledgement is hereby made of the following Addenda received since issuance of Plans and Specifications:

Addendum No. ______ Dated: ______   Addendum No. ________ Dated: ______
Addendum No. ______ Dated: ______   Addendum No. ________ Dated: ______
Addendum No. ______ Dated: ______   Addendum No. ________ Dated: ______

Bid Document Checklist: The following documents are to be completed, signed and submitted as part of the Project Bid Proposal Documents. Failure to provide the listed documents may be cause for rejection of the submitted bid.

- [ ] Section 00301–A Subcontractor Listing
- [ ] Section 00301–B Required Disclosure
- [ ] Section 00301–C Letter of Compliance with the Florida Trench Safety Act
- [ ] Section 00301–D Bid Award Notice
- [ ] Section 00301–E Signed Drug-free Workplace Compliance Form
- [ ] Section 00301–F Non-Bankruptcy Affidavit
- [ ] Section 00410 - Bid Bond
- [ ] Section 00480 - Signed Non-collusion Affidavit
- [ ] Copy of Occupational License
- [ ] Completed and Signed W-9 Form – may be obtained on line from www.irs.gov
- [ ] Documentation to demonstrate his qualifications to perform the work as required in Section 00200 – Instructions Available to Bidders, Section 1.4 – Qualifications Of Bidders, Paragraph B.

Please check off each document and attach to the Bid Proposal Form.

BID SCHEDULE

00300- 2

Bidder

City Bid No: 1819-15
# BASE BID-OFFSITE 12” WELL HEADER FOR WELL NO. 16:

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>UNIT PRICE</th>
<th>TOTAL AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Remove Exist. 2” Thick Asphalt Pavement &amp; 6” Base</td>
<td>3,250</td>
<td>SY</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>2.</td>
<td>F &amp; I 2” Asphalt Pavement (SP 9.5 w/Max 15% RAP)</td>
<td>3,250</td>
<td>SY</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>3.</td>
<td>F &amp; I 6” Thick Crusherete Sub-Base</td>
<td>3,250</td>
<td>SY</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>4.</td>
<td>F &amp; I Stabilized Sub-Grade</td>
<td>3,250</td>
<td>SY</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>5.</td>
<td>F &amp; I 24” Wide White Thermo-plastic Pav’t Stop Bar Markings</td>
<td>80</td>
<td>LF</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>6.</td>
<td>Remove &amp; Replace Exist. 6” Thick Concrete Driveways</td>
<td>100</td>
<td>SY</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>7.</td>
<td>Remove Exist. 12” Plug and Connect to Exist 16”x12” Reducer</td>
<td>1</td>
<td>EA</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>8.</td>
<td>F &amp; I 12” DI MJ Gate Valve w/Box &amp; Cover</td>
<td>3</td>
<td>EA</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>9.</td>
<td>F &amp; I 2” Below Grade Flushing Valve Ass’y</td>
<td>1</td>
<td>EA</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>10.</td>
<td>F &amp; I 1” Temp. Sample Tap</td>
<td>3</td>
<td>EA</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>11.</td>
<td>F &amp; I 12” DI MJ 11.25 Bend</td>
<td>2</td>
<td>EA</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>12.</td>
<td>F &amp; I 12” DI MJ 22.5 Bend</td>
<td>2</td>
<td>EA</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>13.</td>
<td>F &amp; I 12” DI MJ 45 Bend</td>
<td>36</td>
<td>EA</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>14.</td>
<td>F &amp; I 12” DI MJ 90 Bend</td>
<td>1</td>
<td>EA</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>15.</td>
<td>F &amp; I 12” DI MJ Cap Tapped 2”</td>
<td>1</td>
<td>EA</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>16.</td>
<td>F &amp; I 12” PVC (DR25) Well Header</td>
<td>2,260</td>
<td>LF</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>17.</td>
<td>Remove &amp; Replace Exist. (Bermuda/St. Augustine)</td>
<td>750</td>
<td>SY</td>
<td>__________</td>
<td>__________</td>
</tr>
<tr>
<td>18.</td>
<td>Performance/Payment Bonds (1.5% Max. of Items 1-18 above)</td>
<td>1</td>
<td>LS</td>
<td>__________</td>
<td>__________</td>
</tr>
</tbody>
</table>

**SUB-TOTAL BID PRICE**

BASE BID (Items Nos. 1-18)  
(In Words)

00300- 3

Bidder

Jacksonville Beach Specification Revision 4-3-18  
City Bid No: 1819-15
### ALTERNATE 1-6" WATER MAIN REPLACEMENT:

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>UNIT PRICE</th>
<th>TOTAL AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Remove/Dispose of Exist. 2&quot; Water Main</td>
<td>25</td>
<td>LF</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>2.</td>
<td>Remove/Dispose of Exist. 6&quot; Water Main</td>
<td>100</td>
<td>LF</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>3.</td>
<td>Remove/Dispose Exist. Fire Hydrant Ass’y</td>
<td>1</td>
<td>EA</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>4.</td>
<td>Abandon Existing 2” &amp; 6” Valves w/Box &amp; Covers</td>
<td>11</td>
<td>EA</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>5.</td>
<td>Cut &amp; Plug Exist. 2” Water Mains</td>
<td>1</td>
<td>EA</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>6.</td>
<td>Cut &amp; Plug Exist. 6” Water Mains</td>
<td>6</td>
<td>EA</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>7.</td>
<td>Transfer Exist. 1” Water Services-Short-Sided (By Open Cut Method)</td>
<td>8</td>
<td>EA</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>8.</td>
<td>Transfer Exist. 1” Water Services-Long Sided (By Closed Faced Jacking or Directional Drilling Method)</td>
<td>17</td>
<td>EA</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>9.</td>
<td>F &amp; I 12”x 6” SS Tapping Saddle &amp; Valve w/ Box &amp; Cover</td>
<td>1</td>
<td>EA</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>10.</td>
<td>F &amp; I 6” x 6” SS Tapping Saddle &amp; Valve w/Box &amp; Cover</td>
<td>1</td>
<td>EA</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>11.</td>
<td>F &amp; I 6” DI MJ Gate Valve w/Box &amp; Cover</td>
<td>8</td>
<td>EA</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>12.</td>
<td>F &amp; I 1” Temp. Sample Tap</td>
<td>6</td>
<td>EA</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>13.</td>
<td>F &amp; I 16”x 6” Fire Hydrant Ass’y</td>
<td>2</td>
<td>EA</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>14.</td>
<td>F &amp; I 16” DI MJ 22.5 Bend</td>
<td>2</td>
<td>EA</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>15.</td>
<td>F &amp; I 16” DI MJ 45 Bend</td>
<td>33</td>
<td>EA</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>16.</td>
<td>F &amp; I 16” DI MJ 90 Bend</td>
<td>6</td>
<td>EA</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>17.</td>
<td>F &amp; I 16”x 6” DI MJ Tee</td>
<td>4</td>
<td>EA</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>18.</td>
<td>F &amp; I 16” DI MJ Sleeve &amp; Connect To Exist. 6” Water Main</td>
<td>4</td>
<td>EA</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>19.</td>
<td>F &amp; I 16” PVC (DR18) Water Main</td>
<td>1,620</td>
<td>LF</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>20.</td>
<td>Remove &amp; Replace Exist. (Bermuda/St. Augustine)</td>
<td>165</td>
<td>SY</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>21.</td>
<td>Remove &amp; Replace Exist. 6” Thick Concrete Sidewalk</td>
<td>10</td>
<td>SY</td>
<td>_________</td>
<td>____________</td>
</tr>
<tr>
<td>22.</td>
<td>Performance/Payment Bonds (1.5% Max. of Items 1-22 above)</td>
<td>1</td>
<td>LS</td>
<td>_________</td>
<td>____________</td>
</tr>
</tbody>
</table>

**SUB-TOTAL BID PRICE– ALTERNATE 1 BID (Items Nos. 1-22)**

---

**Bidder:**

---

Jacksonville Beach Specification Revision 4-3-18

City Bid No: 1819-15
(In Words) ____________________________________________

TOTAL BID PRICE– BASE
BID (Items Nos. 1-18) PLUS
ALTERNATE 1 BID
(Items Nos. 1-22) ____________
(In Words) ____________________________________________
SCOPE:

This project includes, but is not limited to the following major work items:

CITY BID NO: 1819-15 OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6” WM REPLACEMENT

LOCATION:

The job sites are located in Jacksonville Beach, Florida. Description is as follows:

Base Bid-Offsite 12” Well Header for WTP 1, Well No. 16: This portion of the project involves the installation of approximately 2260 LF of new 12 inch PVC (DR25) well header to be located within the right-of-ways of 2nd Ave. North and 11th St. North between 10th St. North and 8th Ave. North. The westerly half of 11th St. North as well as the easterly +/-50 Ft. of pavement within 2nd and 8th Avenues North which intersect 11th St. North will be removed & replaced as part of the construction. Portions of local resident’s yards, driveways, sidewalks, lead walks located along the route that are affected by the new construction will also be reconstructed. Other incidental work will include the installation of miscellaneous valves fittings, temporary sampling taps, flushing and disinfection of the new main, shop drawing submittals, traffic control, erosion control, excavating & backfilling of trenches, replacing damaged irrigation systems resulting from the new construction, density & compaction testing, bacteriological sampling & obtaining clearances from regulatory agencies, as-built drawing submittals, invoicing and any other miscellaneous items not specifically listed but necessary to complete the project.

INTENT:

The intent of this portion of the project is to provide the City of Jacksonville Beach with complete and operable well header and roadway as called for in the Specification and as shown on the Contract Drawings.

Alternate 1 Bid-6” Water Main Replacement within 11th St. North: This portion of the project involves the installation of approximately 1620 LF of new 6” PVC (DR18) water main located within 11th St. North between 4th Ave, North & 8th Ave. North. Other incidental work will include the installation of miscellaneous valves, fire hydrants, fittings, temporary sampling taps, flushing and disinfection of the new main, cutting, plugging, abandoning and/or removing of existing water mains, shop drawing submittals, traffic control, erosion control, excavating & backfilling of trenches, replacing damaged irrigation systems resulting from the new construction, density & compaction testing, bacteriological sampling & obtaining clearances from regulatory agencies, transferring existing water services, as-built drawing submittals, invoicing and any other miscellaneous items not specifically listed but necessary to complete the project.

INTENT:

The intent of this portion of the project is to provide the City of Jacksonville Beach with complete and operable water main and roadway as called for in the Specification and as shown on the Contract Drawings.

END OF SECTION
List proposed Subcontractors to be used for this Project regardless of racial or gender grouping in accordance with Section 00200 – Instructions Available To Bidders: Paragraph 1.13 – Submission of Bids. C. Of the City Jacksonville Beach Specifications.

<table>
<thead>
<tr>
<th>Firm Name</th>
<th>Address and Telephone number</th>
<th>Trade</th>
<th>Estimate Dollar Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Project Title: ________________________________

Contractor: ________________________________

Address: ________________________________

City, State: ________________________________

*Use additional sheets if necessary. END OF SECTION
SECTION 00301-B
REQUIRED DISCLOSURE

The following disclosure is of all material facts pertaining to any felony conviction or any pending felony charges in the last three (3) years in this State or any other state or the United States against (1) bidder, (2) any business entity related to or affiliated with bidder, or (3) any present or former owner of bidder or of any such related or affiliated entity. This disclosure shall not apply to any person or entity which is only a stockholder, which person or entity owns twenty (20) percent or less of the outstanding shares of a bidder whose stock is publicly owned and traded:

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________

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________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________

Signed: ___________________________ Title: ___________________________

Contractor: ___________________________

END OF SECTION
SECTION 00301C
LETTER OF COMPLIANCE WITH
THE FLORIDA TRENCH SAFETY ACT

NAME OF BIDDER: ___________________________  

TO: ___________________________________________  ’ OWNER

______________________________________________

RE: City Bid No: 1819-15 OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6” WM REPLACEMENT  
(Contract Title)

GENTLEMEN:

This letter is written to give assurances that as Contractor for the above-noted construction, we will comply with the applicable trench safety standards during the Work of this Contract.

We have considered the costs per linear foot for Trench Safety Measures and the cost per square foot for special shoring requirements, and have incorporated these costs into the various items on the Bid Form.

Consistent with the Florida, “Trench Safety Act”, the following are separately-stated components of the various items:

<table>
<thead>
<tr>
<th>Trench Safety Measure Description</th>
<th>Unit of</th>
<th>Quantity</th>
<th>Unit of</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. ____________________________</td>
<td>_______</td>
<td>_____________</td>
<td>_________</td>
<td>______________</td>
</tr>
<tr>
<td>B. ____________________________</td>
<td>_______</td>
<td>_____________</td>
<td>_________</td>
<td>______________</td>
</tr>
<tr>
<td>C. ____________________________</td>
<td>_______</td>
<td>_____________</td>
<td>_________</td>
<td>______________</td>
</tr>
<tr>
<td>D. ____________________________</td>
<td>_______</td>
<td>_____________</td>
<td>_________</td>
<td>______________</td>
</tr>
</tbody>
</table>

In case quantities for Trench Safety Measures are understated, we shall provide the required quantities paid for by the margin already built into the Contract price, and in case quantities are overstated we will retain the excess amount and add it to changes in our margin. This provision shall in no way affect the Conditions of Contract relating to changes in the work or adjustments for differences between estimated Quantities in the Bid Form and measure-in-place completed work.

In case we subcontract any portion of the Work, which is subject to the “Trench Safety Act”, we will be responsible for obtaining cost data and assurances of compliance with applicable trench safety standards from the subcontractor.

NAME OF BIDDER: ___________________________  

Sincerely,

______________________________________________  , CONTRACTOR

______________________________________________

(Authorized Signature)
BID AWARD NOTICE FORM

1. Company Name
2. Address Name
3. City, State and Zip
4. Attention: ________________________________
5. Phone: ___________________________   Fax: ____________________________
6. E-mail address: _________________________________________________________

PLEASE PRINT CLEARLY

Bids were received and awarded for Bid No. 1819-15 per attached award memorandum and Bid tabulation sheet(s).

If awarded Bid please do not proceed with any orders or services prior to receiving an official City of Jacksonville Beach Purchase Order.

Thank you for your bid.

Sincerely,

CITY OF JACKSONVILLE BEACH
/s/Luis Flores
Purchasing & Procurement Division
SECTION 00301-E
DRUG-FREE WORKPLACE COMPLIANCE FORM

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

1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2) Inform employees about the dangers of drug abuse in the workplace, the business’s policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation and employee assistance programs and the penalties that may be imposed upon employees for drug abuse violations.

3) Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4) In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after 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 any employee who is so convicted.

6) Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

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

____________________________________
Vendor’s Signature

(Word/Drug Free)
STATE OF ____________________)  

SS

COUNTY OF ____________________)  

______________________________________________________ is an officer and member of the firm of ______________________________________, being first duly sworn, deposes and states that;

1. The subsequent certification statement is a true and accurate statement as of the date shown below.

2. The affiant understands that the intentional inclusion of false, deceptive or fraudulent statements on this Non-Bankruptcy Affidavit constitutes fraud; and, that the City of Jacksonville Beach, Florida, considers such action on the part of the affiant to constitute good cause for denial, suspension, revocation, disqualification, or rejection of the bid for City Bid No: 1819-15 OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6” WM REPLACEMENT, City of Jacksonville Beach, FL

3. Certification Statement: This is to certify that the aforementioned firm has not filed for bankruptcy in the past seven (7) years and that no owner/officer or principal of the aforementioned firm has filed for bankruptcy personally in the past seven (7) years or has been an owner/officer or principal of a firm which has filed for bankruptcy in the past seven (7) years.

________________________________
Affiant Signature

Sworn to before me this ___ day of ________________, 2019 by ____________________________.
(Name of affiant)

He/She is personally known to me or has produced ____________________ as identification.

________________________________
Signature of Notary

________________________________        ____________________________
Notary’s Printed Name   Expiration of Notary’s Commission

Affix Seal Here:
KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, ___________________________________________ as Principal, and ___________________________________________ as Surety, are hereby held and firmly bound unto the City of Jacksonville Beach as City in the penal sum of, (5 percent of the Contract Bid) ________________ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed, this _____ day of ___________________________, 2019.

The condition of the above obligation is such that whereas the Principal has submitted to the City a certain Bid, attached hereto and hereby made a part hereof to enter into a contract in writing, for the City of Jacksonville Beach, City Bid No: 1819-15 OFFSITE 12” WELL HEADER FOR WTP1, WELL NO. 16 & 6” WM REPLACEMENT City of Jacksonville Beach, FL

NOW THEREFORE,

(a) If said Bid shall be rejected, or in the alternate,

(b) If said principal shall not withdraw said bid within ninety (90) days after date of opening of the same, and shall within ten (10) days after the prescribed forms are presented to him for signature, enter into a written contract with the City in accordance with the bid as accepted, and give bonds with good and sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment of such contract, then this obligation shall be void; otherwise the same shall remain in force and effect, it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be no way impaired or affected by an extension of the time within which the City may accept such Bid; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the above bounded parties have executed this instrument under their several seals, this ______ day of ____________, A.D., 2019, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

WITNESS: (If Sole Cityship or Partnership, two (2) Witnesses required.)
(If Corporation, Secretary only will attest and affix seal.)

PRINCIPAL:

WITNESSES:

Name of Firm

Signature of Authorized Officer
(Affix Seal)

Title

Business Address

City State
SURETY:

WITNESS:

______________________________

Corporate Surety

______________________________

Attorney-in-Fact
(Affix Seal)

______________________________

Business Address

______________________________

City State

Name of Local Insurance Agency

______________________________

I, ___________________________________________, certify that I am the Secretary of the Corporation named as Principal in the within bond; that __________________________________, who signed the said bond on behalf of the Principal, was then ____________________________  of said corporation; that I know his signature, and his signature hereto is genuine; and that said bond was duly signed, sealed, and attested for and in behalf of said corporation by authority of its governing body.

(Corporate Secretary Seal)

STATE OF FLORIDA                )

ss

COUNTY OF                           )

Before me, a Notary Public duly commissioned, qualified and acting, personally appeared __________________________________ to me well known, who being by me first duly sworn upon oath, says that he is the Attorney-in-Fact, for the ____________________________ and that he has been authorized by ____________________________ to execute the foregoing bond on behalf of the Contractor named therein in favor of the City, the ____________________________

Subscribed and sworn to before me this ________ day of _____________, 2019, A.D.

(Attach Power-of-Attorney to original Bid Bond)

______________________________

Notary Public

State of Florida-at-Large

My Commission Expires: ____________

END OF SECTION
STATE OF )
SS
COUNTY OF )

______________________________, being first duly sworn deposes and says that:

1. He (it) is the ____________________________, of the Bidder that has submitted the attached Bid;

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

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

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

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

By: _______________________________________

Sworn and subscribed to before me this __________ day of _______________________,

2019, in the State of ________________________, County of ________________________.

______________________________ Notary Public

My Commission Expires: _________________________
CONTRACT AGREEMENT

THIS AGREEMENT made and entered into this ___ day of 2019 by and between the CITY OF JACKSONVILLE BEACH, FLORIDA, a municipality organized and existing under the laws of the State of Florida, hereinafter called CITY, and ______________________, hereinafter called CONTRACTOR:

WITNESSETH:

CITY and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

Article 1: Scope of Work

CONTRACTOR shall complete all work as specified or indicated in the Contract Documents. The Work is generally described as follows:

City Bid No: 1819-15  OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6” WM REPLACEMENT FOR THE CITY OF JACKSONVILLE BEACH, FLORIDA.

All Work shall be performed in accordance with the Specifications titled “OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6” WM REPLACEMENT. Services shall be for all materials, equipment and services, including labor to perform the installation, of which the requirements and scope of services is detailed in:

Exhibit “A”, “Bid Form, Project Plans and Specifications, “OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6” WM REPLACEMENT”.

Article 2: CITY’S Responsibility

Access to Work Area: The CITY shall provide the CONTRACTOR access to all areas in which services are to be performed.

Article 3: Terms of Agreement
The CONTRACTOR shall complete the Base Bid contract within one hundred and twenty (120) consecutive calendar days after Notice to Proceed is given. If the CONTRACTOR is awarded both the Base Bid and Alternate No. 1 Bid he shall be granted a total of one hundred and fifty (150) consecutive calendar days to complete the work after the Notice to Proceed is given.

It is mutually agreed that time is of the essence and should the CONTRACTOR fail to complete the work within the specified time, or any authorized extension thereof, there shall be deducted from the compensation otherwise to be paid to the CONTRACTOR, and the CITY will retain the amount of Five Hundred Dollars ($500) per calendar day as fixed, agreed, and liquidated damages for each calendar day elapsing beyond the specified time for completion or any authorized extension thereof, which sum shall represent the actual damages which the CITY will have sustained by failure of the CONTRACTOR to complete the work within the specified time; it being further agreed that said sum is not a penalty, but is the stipulated amount of damages sustained by the CITY in the event of such default by the CONTRACTOR.

Article 4: Nonexclusive Contract

Nothing herein is intended nor shall be construed as creating any exclusive arrangement with the CONTRACTOR. This Contract shall not restrict the CITY from acquiring similar, equal or like goods and/or services from other entities or sources.

Article 5: Payment to Contractor

The CONTRACTOR agrees to provide services as described in the CONTRACT DOCUMENTS and comply with the terms therein.

5.1 For Basic Services: CITY shall pay CONTRACTOR for Contractual Services performed or furnished under the

 Exhibit “A”, “Bid Form, Project Plans and Specifications, “OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6” WM REPLACEMENT”.

5.2 For Additional Services: Notwithstanding the scope of work enumerated in

 Exhibit “A”, “Bid Form, Project Plans and Specifications, “OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6” WM REPLACEMENT”.

Page 2 of 16
The CONTRACTOR will, upon written request from the CITY, provide any and all other services normally falling within the services offered by the CONTRACTOR. In advance of performance of additional services, CITY and CONTRACTOR shall agree in writing to the additional services and negotiated price, consistent with the type of services requested.

5.3 Invoices.

A. Preparation of Invoices: Invoices will be prepared by CONTRACTOR in triplicate on AIA Documents G702 and G703 and submitted to CITY by CONTRACTOR unless otherwise agreed. The amount billed in each invoice will be calculated as set forth herein. Ten percent (10%) retainage will be withheld until such time as the project has been 50% completed at which time, the retainage will be reduced to 5% until all As-Built plans, Release of Liens and all other required close-out documents are provided to and approved by the CITY.

B. Payment of Invoices: Invoices are due and payable within 30 days of receipt.

C. Disputed Invoices: In the event of a disputed or contested invoice, only that portion so contested may be withheld from payment, and the undisputed portion will be paid.

5.4 Payment Upon Termination: In the event of termination, CONTRACTOR will be entitled to be paid for all services performed or furnished through the effective date of termination.

5.5 Records of CONTRACTOR’S cost: Records of CONTRACTOR’S cost pertinent to CONTRACTOR’S compensation under this Agreement shall be kept in accordance with generally accepted accounting practices. Upon the CITY’S request, copies of such records will be made available by the CONTRACTOR to the CITY, at no cost to the CITY.

Article 6: Standards of Performance

CONTRACTOR and CITY shall comply with applicable Laws, Regulations, and CITY-mandated standards. This Agreement is based on these requirements as of its Effective Date and includes the attached:

Exhibit “A”, “Bid Form, Project Plans and Specifications, “OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6” WM REPLACEMENT”.

Changes to these requirements after the Effective Date may be the basis for modifications to CONTRACTOR’S scope of work, times of performance, or compensation.
Article 7: Contractor as Independent Contractor

It is expressly agreed and understood that the CONTRACTOR is in all respects, an independent contractor as to the WORK and is in no respect an agent, servant, or employee of the CITY. This Agreement specifies the WORK to be done by the CONTRACTOR, but the method to be employed to accomplish the WORK shall be the responsibility of the CONTRACTOR.

Article 8: Subcontracting

CONTRACTOR may subcontract services to be performed hereunder with prior approval of the CITY. No such approval will be construed as making the CITY a party of or to such subcontract, or subjecting the CITY to liability of any kind to any subcontract. No subcontract shall, under any circumstances, relieve the CONTRACTOR of its liability and obligation under this Agreement; and despite any such subcontracting, the CITY shall deal through the CONTRACTOR, and subcontractors will be dealt with as workers and representatives of the CONTRACTOR.

Article 9: Authorized Project Representatives

Upon the execution of this Agreement, CONTRACTOR and CITY shall designate specific individuals to act as representatives with respect to the services to be performed or furnished by CONTRACTOR and responsibilities of CITY under this Agreement. Such individuals shall have authority to transmit instructions, receive information, and render decisions relative to the WORK on behalf of each respective party.

Article 10: Inspection of Work

The CONTRACTOR shall furnish the CITY or the CITY’S representative with every reasonable opportunity for determining whether or not the WORK is performed in accordance with the requirements of this Agreement. The CITY may appoint persons to inspect the CONTRACTOR’S operations, equipment, and performance, and the CONTRACTOR shall permit these persons to make such inspections.

Article 11: Right to Require Performance

The failure of either the CITY or CONTRACTOR at any time to require performance by
SECTION 00500
CITY/CONTRACTOR CONTRACT AGREEMENT

CONTRACT AGREEMENT for City Bid No. 1819-15  TITLE: OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6” WM REPLACEMENT

City of Jacksonville Beach, Property and Procurement

the other party of any provisions hereof shall in no way affect the right of the performing party thereafter to enforce the same. Nor shall waiver by such party of any breach of any provision hereof be taken or held to be a waiver of any succeeding breach of such provision or as a waiver of any provision itself.

Article 12: Extraordinary Occurrences

It is agreed that in no event shall the CITY or CONTRACTOR be liable or responsible to each other or to other persons for damages resulting from deficiencies or delays in the work herein provided for, where such deficiencies or delays result from Acts of God, fire, natural disaster, or any other cause not within reasonable control of the CITY or the CONTRACTOR. The CONTRACTOR recognizes the essential nature of the services to be performed hereunder and will use its best efforts to discharge its functions despite such extraordinary occurrences.

Article 13: Insurance

13.1 Hold Harmless: The CITY shall be held harmless against all claims for bodily injury, disease, death, personal injury, and damage to property or loss of use resulting there from, to the extent caused by the CONTRACTOR, unless such claims are a result of the CITY’S sole negligence.

13.2 Payment on Behalf of the CITY: The CONTRACTOR agrees to pay on behalf of the CITY, the CITY’S legal defense, for all claims described herein. Such payment on behalf of the CITY shall be in addition to all other legal remedies available to the CITY and shall not be considered to be the CITY’s exclusive remedy.

13.3 Loss Control/Safety: Precaution shall be exercised at all times by the CONTRACTOR for the protection of all persons, employees, and property. The CONTRACTOR shall comply with all laws, regulations and ordinances related to safety and health, shall make special efforts to detect hazardous conditions, and shall take prompt action where loss control and safety measures should reasonably be expected.

13.4 Proof of Carriage of Insurance & Naming CITY as Additional Insured. The CONTRACTOR shall furnish the City with satisfactory proof of carriage of insurance required herein. The CONTRACTOR shall name the City of Jacksonville Beach (CITY) as additional insured on the CONTRACTOR’s, and any sub-consultant’s or sub-contractor’s Public Liability, Property Damage and Comprehensive Automobile Liability Insurance Policies. The additional insured shall be provided the same coverage as the
primary insured for losses arising from work performed by the CONTRACTOR or its sub-
consultant’s or subcontractor’s. The proof of carriage or a copy of all policies shall be 
required prior to commencement of any work under this Contract.

The CITY 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 CITY.

13.5 **Insurance Requirements.** **Basic Coverage’s Required:** During the term of this contract, 
the CONTRACTOR shall procure and maintain the following-described insurance and/or
self-insurance except for coverage’s specifically waived by the CITY. All policies and
insurers must be acceptable to the CITY.

These insurance requirements shall not limit the liability of the CONTRACTOR. The
CITY does not represent these types of amounts of insurance to be sufficient or adequate
to protect the CONTRACTOR’S interests or liabilities, but are merely minimums.

A. **Workers Compensation Coverage is required.**

The CONTRACTOR and all subcontractors shall purchase and maintain worker’s 
compensation insurance for all workers compensation obligations imposed by state
law with employers’ liability limits of at least $100,000 each accident, $100,000 each
employee and $500,000 policy limit for disease.

The CONTRACTOR and all subcontractors shall also purchase any other coverage’s 
required by law for the benefit of employees.

B. **General Liability Coverage is required for all Contractors and Subcontractors.**

Commercial General Liability in Occurrence Form.

Coverage A shall include Bodily Injury and Property Damage coverage for liability 
claims arising from premises, operations, contractual liability, independent
Contractors, products and complete operations and including but not limited to 
coverage for claims resulting from explosion, collapse, or underground (x,c,u)
exposures (if any).

Coverage B shall include personal injury and **is required**
Coverage C, medical payments **is not required.**

Amounts:  
- Bodily Injury: $1,000,000 each occurrence  
  $1,000,000 aggregate  
- Property Damage: $1,000,000 each occurrence  
  $1,000,000 aggregate

C. **Products and Completed Operations are required for Contractor and all Subcontractors.**

Amounts:  
- $1,000,000 aggregate

D. **Business Auto Liability Coverage is required for Contractor and all Subcontractors.**

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

Amounts:  
- Bodily Injury: $1,000,000 each occurrence  
  $1,000,000 aggregate  
- Property Damage: $1,000,000 each occurrence  
  $1,000,000 aggregate

E. **Professional Liability is not required.**

F. **Pollution Liability required of all Contractors and Subcontractors.**

The CITY requires Pollution/Environmental Liability insurance covering cleanup costs including on-site discovery and third party liability, on-site and off-site third party pollution liability coverage, natural resources damage coverage.

Limits of Liability:  
- $1,000,000 each pollution event limit  
- $1,000,000 aggregate policy limit

G. **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 coverage.

H. Claims Made Coverage – No Gap

If any of the required liability insurance is provided on a “claims made” form, such coverage shall extend for a period of not less than 36 months following completion of the contract. In the event of termination of a claims made policy, extended coverage may be provided by assurance that extended discovery coverage of at least 36 months will be purchased from the expiring insurer, or by assurance that the succeeding insurer will provide retroactive coverage with an inception date of at least on or before the effective date of this contract.

I. Certificates of Insurance

Required insurance shall be documented in Certificates of Insurance which provide that the CITY shall be notified at least thirty (30) calendar days in advance of cancellation, non-renewal, or adverse change.

New Certificates of Insurance are to be provided to the CITY at least fifteen (15) calendar days prior to coverage renewals.

If requested by the CITY, the CONTRACTOR shall furnish complete copies of the CONTRACTOR’s insurance policies, forms, and endorsements.

For Commercial General Liability coverage, the CONTRACTOR shall at the option of the CITY, provide an indication of the amount of claims, payments, or reserves chargeable to the aggregate amount of liability coverage. NOTE: Any sub-contractors approved by the CITY shall be required to provide proof of insurance identical in amounts as required by the contact to perform related services. All coverage’s shall name the CITY as “additional insured”.

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

**Article 14: Termination**
The obligation to provide further services under this Agreement may be terminated:

14.1 For cause. By either the CITY or CONTRACTOR upon 30 days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party.

14.2 For convenience. By the CITY, effective upon the receipt of notice by CONTRACTOR. The CITY’S performance and obligation to pay under this Agreement is contingent upon an annual appropriation by the City Council.

Article 15: Indemnification

A: General Indemnity. To the fullest extent permitted by law, CONTRACTOR shall hold harmless, indemnify and pay on behalf of the CITY, CITY’s officers, directors, partners, agents, contractors, and employees from and against any and all costs, losses, and damages, including claims for bodily injury, disease, death, personal injury and damage to property or loss of use resulting therefrom, and for professional liability, (including, but not limited to all fees and charges of contractors, architects, attorneys, and other professionals, and all court, arbitration, or other resolution costs) caused by the negligent acts or omissions of CONTRACTOR or CONTRACTOR’s officers, directors, partners, agents, contractors, employees, and CONTRACTOR’s consultants, agents, and contractors in the performance and furnishing of CONTRACTOR’s services under this Agreement, unless such claims are a result of the CITY’s sole negligence. Such payments on behalf of the CITY shall be in addition to all other legal remedies available to the CITY and shall not be considered to be the CITY’s exclusive remedy.

B: Copyright and Intellectual Property Rights. At CONTRACTOR’s expense as described herein, CONTRACTOR shall indemnify, defend and hold CITY and its affiliates and their respective directors, officers, employees, and contractors and agents harmless from and against any claims that any of the professional services allegedly infringe a patent, copyright, trademark, trade secrets or other intellectual property right by defending against such claim and paying all amounts that a court awards or that CONTRACTOR agrees to in settlement of such claim. CONTRACTOR shall also reimburse the CITY for all reasonable expenses incurred by the CITY in respect of each claim. To qualify for such defense and payment, CITY must: (i) give CONTRACTOR prompt written notice of such claim; and (ii) allow CONTRACTOR to control, and fully co-operate with CITY
in the defense and all related negotiations. CONTRACTOR’s obligation under this 
Section in conditional upon CITY’s agreement that, if the professional services 
become, or in CONTRACTOR’s opinion (as stated in writing to CITY by 
CONTRACTOR) is likely to become the subject of an infringement claim, then 
CITY shall permit CONTRACTOR, at CONTRACTOR’s expense, either to 
procure the right for CITY to continue to use such intellectual property contained 
in the professional services or to replace or modify it so that it becomes non- 
infringing and retains in all material respects comparable functionality in the 
CITY’s environment. CONTRACTOR shall have no obligation with respect to any 
claim to the extent it is based on (i) CITY’s use of the intellectual property 
contained in the professional services in violation of this Agreement; (ii) 
modifications or user controlled features not authorized by CONTRACTOR; (iii) 
custom programming for which CONTRACTOR does not develop the 
specifications or where the code at issue is supplied by CITY. This subsection states 
CONTRACTOR’s entire obligation regarding intellectual property right 
infringement.

Article 16: Notices

Any notice required under this Agreement will be in writing, addressed to the appropriate 
party at its address on the signature page and given personally, or by registered or certified 
mail postage prepaid, or by a commercial courier service. All notices shall be effective 
upon date of receipt.

Article 17: Survival

All express representations, indemnifications, or limitations of liability included in this 
Agreement will survive its completion or termination for any reason.

Article 18: Severability

Any provision or part of the agreement held to be void or unenforceable under any Laws 
or Regulations shall be deemed stricken, and all remaining provisions shall continue to be 
valid and binding upon the CITY and CONTRACTOR, who agree that the Agreement shall 
be reformed to replace such stricken provision or part thereof with a valid and enforceable 
provision that comes as close as possible to expressing the intention of the stricken 
provision.
Article 19: Waiver

Non-enforcement of any provision by either party shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Agreement.

Article 20: Headings

The headings used in this Agreement are for general reference only and do not have special significance.

Article 21: Contract Documents

The Contract Documents which comprise the entire Agreement between the CITY and CONTRACTOR consist of the following, which are made a part thereof:


21.2 Exhibit “A”, “Bid Form, Project Plans and Specifications, “OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16” in total.

21.3 Attachment “B”: Bid Proposal Packet submitted by Contractor in response to Exhibit “A”, “Bid Form, Project Plans and Specifications, “OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6” WM REPLACEMENT”, including, but not limited to:

A. Addendum numbers __ through __ inclusive.

B. Change Orders, Field Orders or written amendments duly delivered after execution of Agreement.


There are no Contract Documents other than those listed above in this Article 21. The Contract Documents may only be altered, amended, or repealed in accordance with the Terms and Conditions.
Article 22: Governing Law

This agreement shall be governed by the laws of the State of Florida. Both parties agree that the courts of the State of Florida shall have jurisdiction of any claim arising in connection with this agreement. In the event of litigation arising out of this agreement, the prevailing party shall be entitled to the award of attorney’s fees and costs at both the trial and appellate level.

Article 23: Materials and Services

The professional fees for the CONTRACTOR’s services are set forth on the “Fee Schedule” as contained in the CONTRACTOR’s submitted proposal and made part hereof.

Expenses for all work and services performed as provided within this Agreement will be estimated in advance and submitted to the City for approval prior to performance. Furthermore, any expenses above the initial estimated expenses must be approved in advance by the City.

Article 25: General Terms

The Contractor shall hold harmless and defend the City, its officers, agents, and employees from and against all losses and all claims, demands, payments, suits, actions, recoveries, and judgments of every nature and description and all costs, including attorney fees, arising under this Agreement, including claims for property damage and claims for injury to or death of persons arising out of or occurring as a result of any act or omission of the City, its officers, agents, or employees in the performance of its obligation to the City, other than claims arising from the intentional or negligent acts or omissions of the City, its officers, agents, or employees.

The Contractor without exception shall indemnify and hold harmless the City, its officers, agents, and employees from liability of any nature or kind, including costs and expenses for, or on account of, any copyrighted, patented, or unpatented invention, process, or article manufactured or used in the performance of this Agreement, including use by the City.

It is agreed that all materials and information furnished to the Contractor by the City or to the City by the Contractor shall remain confidential, except to the extent that such materials
and information have become a matter of public record, and such materials and information shall not be divulged except as required under this Agreement or by the Laws of the State of Florida.

Article 26. Public Records Law Chapter 119 Florida Statutes

The Parties acknowledge that the CITY is a governmental entity subject to the Florida Public Records Law, as governed by Chapter 119, Florida Statutes. In accordance with Section 119.0701, Florida Statutes, the following provisions are included in this contract:

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR’S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT THE CITY OF JACKSONVILLE BEACH, CITY CLERK’S OFFICE:
TELEPHONE NUMBER: 904-247-6250 EXT # 11
EMAIL ADDRESS: CITYCLERK@JAXBCHFL.NET
MAILING ADDRESS: 11 NORTH THIRD STREET
JACKSONVILLE BEACH, FL 32250

The CONTRACTOR must keep and maintain public records required by the CITY to perform the service. The CONTRACTOR acknowledges that upon request from the CITY, the CONTRACTOR must provide the CITY with a copy of the requested records or allow the record to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law. The CONTRACTOR must 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 contract if The CONTRACTOR does not transfer the records to the CITY. Upon completion of the contract, The CONTRACTOR shall transfer, at no cost to the CITY, all public records in their possession OR keep and maintain all public records required by the CITY to perform the service contemplated herein. If The CONTRACTOR transfers all public records to the CITY upon completion of the contract, The CONTRACTOR shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If The
CONTRACT AGREEMENT for City Bid No. 1819-15  TITLE: OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6” WM REPLACEMENT

City of Jacksonville Beach, Property and Procurement

CONTRACTOR keeps and maintains the public records upon completion of the contract, The CONTRACTOR shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the CITY, upon request from the CITY, in a format that is compatible with the CITY’s information technology systems.

The CONTRACTOR acknowledges that a request to inspect or copy public records relating to a CITY’s contract for services must be made directly to the CITY. If the CITY does not possess the requested records, the CITY shall immediately notify The CONTRACTOR of the request, and The CONTRACTOR must provide the records to the CITY or allow the records to be inspected or copied within a reasonable time. If The CONTRACTOR fails to provide the public records to the CITY within a reasonable time it may be subject to penalties under s. 119.10, Florida Statutes. The CONTRACTOR acknowledges its potential liability pursuant to Section 119.0701(4), Florida Statutes, if the CITY has to seek legal action to compel The CONTRACTOR to produce public records relating to a CITY’s contract for services.

**Article 27: Dispute Resolution**

27.1 CITY and CONTRACTOR agree to negotiate all disputes between them in good faith for a period of 30 days from the date of notice prior to exercising their rights under other provisions of this Agreement, or under law.

27.2 This Section shall survive completion or termination of this Agreement.

--------------------------- NOTHING ELSE FOLLOWS ON THIS PAGE -------------------
IN WITNESS WHEREOF, the parties hereto have signed this Agreement in triplicate. One counterpart each has been delivered to CITY and CONTRACTOR. All portions of the Contract Document have been signed or identified by CITY and CONTRACTOR on their behalf.

This agreement will be effective on ________________.

CITY: CITY OF JACKSONVILLE BEACH, FLORIDA

BY: ________________________________  William C. Latham, Mayor

BY: ________________________________  Michael J. Staffopoulos, City Manager

ATTEST: ________________________________  Date Signed: ________________
   Laurie Scott, City Clerk

CONTRACTOR: ________________________________

BY: ________________________________

PRINTED NAME: ________________________________

TITLE: ________________________________

(CORPORATE SEAL)

ATTEST: ________________________________  Date Signed: ________________

PRINTED NAME: ________________________________
<table>
<thead>
<tr>
<th>CITY:</th>
<th>CONTRACTOR:</th>
</tr>
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<tbody>
<tr>
<td>Address for Giving Notices:</td>
<td>Address for Giving Notices:</td>
</tr>
<tr>
<td>City of Jacksonville Beach</td>
<td></td>
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<tr>
<td>1460A Shetter Avenue</td>
<td></td>
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<tr>
<td>Jacksonville Beach, Florida 32250</td>
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<tr>
<td>Designated Representative (Article 9):</td>
<td>Designated Representative (Article 9):</td>
</tr>
<tr>
<td>Name: J. David Millinor, P.E.</td>
<td>Name: __________________</td>
</tr>
<tr>
<td>Title: Director of Public Works</td>
<td>Title: __________________</td>
</tr>
<tr>
<td>Phone Number: (904) 247-6219</td>
<td>Phone Number: ____________</td>
</tr>
</tbody>
</table>
STATE OF FLORIDA )
COUNTY OF )

KNOW ALL MEN BY THESE PRESENTS that

_________________________________ as Principal, hereinafter called CONTRACTOR,
_________________________________ as Surety, hereinafter called Surety, are held and firmly bound unto the CITY of
Jacksonville Beach as Obligee, hereinafter called CITY, in the amount of

Dollars ($_________________ ) equal to 100% of the total contract price, for the payment whereof CONTRACTOR and Surety
bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these
presents.

WHEREAS, CONTRACTOR has by written agreement dated __________________, 2019, entered into a
Contract with CITY for:

CITY OF JACKSONVILLE BEACH
City Bid No: 1819-15 OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6” WM
REPLACEMENT

in accordance with Drawings and Specifications prepared by City of Jacksonville Beach, Florida, which Contract is
by reference made a part hereof and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION ARE SUCH, that, if the Principal shall
in all respects promptly and faithfully perform and comply with the terms and conditions of said Contract and his
obligations thereunder and shall indemnify the CITY and the Consulting Engineer and save either or all of them
harmless against and from all costs, expenses and damages arising from the performance of said Contract or the repair
of any work thereunder, then this obligation shall be void; otherwise, this Bond shall remain in full force and effect,
in accordance with the following terms and conditions:

A. The Principal and Surety jointly and severally agree to pay the CITY any difference between the sum to
which the said Principal would be entitled on the completion of the Contract, and that sum which the CITY
may be obliged to pay for the completion of said work by Contract or otherwise, and any damages, direct or
indirect or consequential, which the said CITY may sustain on account of such work, or on account of the
failure of said CONTRACTOR to properly and in all things, keep and execute all of the provisions of said
Contract.

B. And this Bond shall remain in full force and effect for a period of one (1) year from the date of acceptance
of the project by the CITY and shall provide that the CONTRACTOR guarantees to repair or replace for said
period of one (1) year all work performed and materials and equipment furnished that were not performed or
furnished according to the terms of the Contract, and shall make good, defects thereof which have become
apparent before the expiration of said period of one (1) year. If any part of the project, in the judgment of
the CITY, for the reasons above stated needs to be replaced, repaired or made good during that time, the
CITY shall so notify the CONTRACTOR in writing. If the CONTRACTOR refuses or neglects to do such
work within five (5) days from the date of service of such Notice, the CITY shall have the work done by
others and the cost thereof shall be paid by the CONTRACTOR or his Surety.

C. And the said Surety, for value received hereby stipulates and agrees that no change, extension of time,
alteration or addition to the terms of the Contract or to the work to be performed thereunder or the
specifications accompanying the same shall in any way affect its obligations on this bond, and it does hereby
waive Notice of any change, extension of time, alteration or addition to the terms of the Contract or to the
work or to the Specifications.

D. All Bonds shall be in the form prescribed by the Contract Documents or other form approved by Owner. All
else notwithstanding, the terms of all Payment Bonds shall be substantially in the form prescribed by Chapter
255, Florida Statutes. All Bonds shall be executed by Contractor and a Surety licensed to transact such
business in the State of Florida and named on the current list of “Companies Holding Certificates of Authority
as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Circular
Number 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. The Surety shall have an A.M. Best Financial Performance rating of no less than “A-.” Contractor will cause the Bonds to be recorded with the Clerk of the Circuit Court in the county in which the Work is to be performed. Failure of the Contractor to deliver required Bonds in the form prescribed may constitute an event justifying termination for cause. The expense for all Bonds shall be Contractor’s responsibility.

IN WITNESS WHEREOF, the above bounded parties executed this instrument under their several seals, this______
day of _______________ 2019 A.D., the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

WITNESS: (If Sole CITYship or Partnership, two (2) Witnesses required).
(If Corporation, Secretary only will attest and affix seal).

PRINCIPAL:

________________________________________
(Affix
Signature of Authorized Officer Seal)

WITNESSES:

________________________________________
Name

________________________________________
Business Address

________________________________________
CITY State

SURETY:

________________________________________
Corporate Surety

WITNESS:

________________________________________
Name

________________________________________
Business Address

________________________________________
CITY State

________________________________________
Name of Local Insurance Agency
CERTIFICATES AS TO CORPORATE PRINCIPAL

I, ___________________________, certify that I am the Secretary of the Corporation named as Principal in the within bond; that _____________________ who signed the said bond on behalf of the Principal, was then _______________ of said Corporation; that I know his signature, and his signature hereto is genuine; and that said bond was duly signed, sealed, and attested for and in behalf of said Corporation by authority of its governing body.

___________________________
Secretary (Corporate Seal)

STATE OF FLORIDA       )
 ss                      
COUNTY OF ____________)   )

Before me, a Notary Public, duly commissioned, qualified and acting, personally appeared _____________________ to me well known, who being by me first duly sworn upon oath, says that he is the Attorney-in-Fact, for the ___________________________ and that he has been authorized by ___________________________ to execute the foregoing bond on behalf of the CONTRACTOR named therein in favor of the ___________________________.

Subscribed and sworn to before me this ____ day of _________________, 2019, A.D.

(Attach Power of Attorney)

Notary Public
State of Florida-at-Large

My Commission Expires: ________
STATE OF FLORIDA) ss

COUNTY OF                                  )

KNOW ALL MEN BY THESE PRESENTS that ______________________________
________________________________________ as Principal, hereinafter called CONTRACTOR, and
________________________________________________________ as Surety, hereinafter called Surety, are held
and firmly bound unto CITY of Jacksonville Beach, as Obligee, hereinafter called CITY, in the amount of
____________________________________________________ Dollars ($____________________) in lawful
money of the United States, equal to one hundred percent (100%) of the total Contract price for the payment whereof
CONTRACTOR and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly
and severally, firmly by these presents.

WHEREAS, CONTRACTOR has by written agreement dated __________________________, 2019,
entered into a Contract with CITY for:

CITY OF JACKSONVILLE BEACH
City Bid No: 1819-15 OFFSITE 12” WELL HEADER FOR WTP 1, WELL NO. 16 & 6”
WM REPLACEMENT

in accordance with Drawings and Specifications prepared by City of Jacksonville Beach, Florida, which Contract is
by reference made a part hereof and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION ARE SUCH, that, if the Principal shall
promptly make payments to all claimants, as herein below defined, then this obligation shall be void; otherwise, this
Bond shall remain in full force and effect, subject to the following terms and conditions:

A. A claimant is defined as any person supplying the Principal with labor, material and supplies, used
directly or indirectly by the said Principal or any subcontractor in the prosecution of the work
provided for in said Contract, and is further defined in Section 713.01 of the Florida Statutes.

B. The above named Principal and Surety hereby jointly and severally agree with the CITY that every
claimant as herein defined, who has not been paid in full before the expiration of a period of ninety
(90) days after performance of the labor or after complete delivery of materials and supplies by such
claimant, may sue on this Bond for the use of such claimant, prosecute the suit to final judgment for
such sum or sums as may be justly due claimant, and have execution thereon. The CITY shall not
be liable for the payment of any costs or expenses of any such suit.

C. No suit or action shall be commenced hereunder by any claimant:

1. Unless claimant, other than one having a direct contract with the Principal, shall within
forty-five (45) days after beginning to furnish labor, materials or supplies for the
prosecution of the work, furnish the Principal with a notice that he intends to look to this
bond for protection.

2. Unless claimant, other than one having a direct contract with the Principal, shall within
ninety (90) days after such claimant's performance of the labor or complete delivery of
materials and supplies, deliver to the Principal written notice of the performance of such
labor or delivery of such material and supplies and the nonpayment therefor.

3. After the expiration of one (1) year from the performance of the labor or completion of
delivery of the materials and supplies; it being understood, however, that if any limitation
embodied in this Bond is prohibited by any law controlling the construction hereof such
limitations shall be deemed to be amended so as to be equal to the minimum period of
limitation permitted by such law.

4. Other than in a state court of competent jurisdiction in and for the county or other political
subdivision of the state in which the project, or any part thereof, is situated, or in
the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere.

D. The Principal and the Surety jointly and severally, shall repay the CITY any sum which the CITY may be compelled to pay because of any lien for labor or materials furnished for any work included in or provided by said Contract.

E. The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration of or addition to the terms of the Contract or to the work to be performed thereunder or the Specifications applicable thereto shall in any way affect its obligations on this Bond, and the Surety hereby waives notice of any such change, extension of time, alterations of or addition to the terms of the Contract, or to the work or to the Specifications.

F. All Bonds shall be in the form prescribed by the Contract Documents or other form approved by Owner. All else notwithstanding, the terms of all Payment Bonds shall be substantially in the form prescribed by Chapter 255, Florida Statutes. All Bonds shall be executed by Contractor and a Surety licensed to transact such business in the State of Florida and named on the current list of “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Circular Number 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. The Surety shall have an A.M. Best Financial Performance rating of no less than “A-.” Contractor will cause the Bonds to be recorded with the Clerk of the Circuit Court in the county in which the Work is to be performed. Failure of the Contractor to deliver required Bonds in the form prescribed may constitute an event justifying termination for cause. The expense for all Bonds shall be Contractor’s responsibility.

IN WITNESS WHEREOF, the above bounded parties executed this instrument under their several seals, this ______ day of _____________ 2019, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

WITNESS: (If Sole CITYship or Partnership, two (2) Witnesses required).
(If Corporation, Secretary only will attest and affix seal).

PRINCIPAL:

______________________________
(Signature of Authorized Officer)

(Affix Seal)

WITNESSES:

______________________________
Title

______________________________
Business Address

______________________________
CITY State

SURETY:

______________________________
Corporate Surety

(Affix Seal)

WITNESS:

______________________________
(Affix Seal)

Attorney-in-Fact
CERTIFICATES AS TO CORPORATE PRINCIPAL

I, __________________________, certify that I am the Secretary of the Corporation named as Principal in the within bond; that __________________ who signed the said bond on behalf of the Principal, was then ______________ of said Corporation; that I know his signature, and his signature hereto is genuine; and that said bond was duly signed, sealed, and attested for and in behalf of said Corporation by authority of its governing body.

___________________________
Secretary (Corporate Seal)

STATE OF FLORIDA )
ss
COUNTY OF )

Before me, a Notary Public, duly commissioned, qualified and acting, personally appeared ________________________ to me well known, who being by me first duly sworn upon oath, says that he is the Attorney-in-Fact, for the ____________________________ and that he has been authorized by ______________________ to execute the foregoing bond on behalf of the CONTRACTOR named therein in favor of the ____________________.

Subscribed and sworn to before me this ___ day of ____________, 2019, A.D.

(Attach Power of Attorney)  _______________________________
Notary Public
State of Florida-at-Large
My Commission Expires:________________________
SECTION 00630
INSURANCE REQUIREMENTS

INSURANCE REQUIREMENTS

GENERAL PROVISIONS

Hold Harmless: The City shall be held harmless against all claims for bodily injury, disease, death, personal injury, and damage to property or loss of use resulting there from, to the extent caused by the Contractor, unless such claims are a result of the City’s sole negligence.

Payment on Behalf of the City: The Contractor agrees to pay on behalf of the City, the City’s legal defense, for all claims described herein.

Such payment on behalf of the City shall be in addition to all other legal remedies available to the City and shall not be considered to be the City’s exclusive remedy.

Loss Control/Safety: Precaution shall be exercised at all times by the Contractor for the protection of all persons, employees, and property. The Contractor shall comply with all laws, regulations and ordinances related to safety and health, shall make special efforts to detect hazardous conditions, and shall take prompt action where loss control and safety measures should reasonably be expected.

PROOF OF CARRIAGE OF INSURANCE & NAMING CITY AS ADDITIONAL INSURED

The Contractor shall furnish the City with satisfactory proof of carriage of insurance required herein. The Contractor shall name the City of Jacksonville Beach (City) as additional insured on the Contractor’s, and any sub-consultant’s or sub-contractor’s Public Liability, Property Damage and Comprehensive Automobile Liability Insurance Policies. The additional insured shall be provided the same coverage as the primary insured for losses arising from work performed by the Contractor or its sub-consultant’s or sub-contractor’s. The proof of carriage or a copy of all policies shall be required prior to commencement of any work under this Contract.

The CITY 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 Organization.

INSURANCE REQUIREMENTS:

Insurance Requirements:

Basic Coverages Required: During the term of this contract, the Contractor shall procure and maintain the following-described insurance and/or self-insurance except for coverage’s specifically waived by the City. All policies and insurers must be acceptable to the City.

These insurance requirements shall not limit the liability of the Contractor. The City does not represent these types of amounts of insurance to be sufficient or adequate to protect the Contractor’s interests or liabilities, but are merely minimums.

All insurers must carry a current A M Best rating of at least A-.

Worker's Compensation Coverage is required.

The CONTRACTOR shall purchase and maintain worker's compensation insurance for all worker's compensation obligations imposed by state law and employers liability limits of at least $100,000.00 each accident, $100,000.00 each employee and $500,000.00 policy limit for disease.

The CONTRACTOR shall also purchase any other coverages required by law for the benefit of employees.
General Liability Coverage is required for Contractors and all subcontractors.

Commercial General Liability in Occurrence Form.

Coverage A shall include Bodily Injury and Property Damage coverage for liability claims arising from premises, operations, contractual liability, independent Contractors, products and complete operations and including but not limited to coverage for claims resulting from explosion, collapse, or underground (x,c,u) exposures (if any).

Coverage B shall include personal injury and is required.

Coverage C, medical payments is not required.

Amounts:
- Bodily Injury: $1,000,000 Each Occurrence
- Property Damage: $1,000,000 Each Occurrence

Products and Completed Operations are required.

Amounts: $1,000,000 Aggregate

Professional Liability Not required.

Business Auto Liability Coverage is required.

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.

Amounts:
- Bodily Injury: $1,000,000 Each Occurrence
- Property Damage: $1,000,000 Each Occurrence

Professional Liability Not required.

Professional liability coverage shall include liability for the providing or failure to provide professional services.

Pollution Liability Required of Contractors and all subcontractors

The City requires Pollution/Environmental Liability insurance covering cleanup costs including on-site discovery and third party liability, on-site and off-site third party pollution liability coverage, natural resources damage coverage.

Limits of Liability: $1,000,000 Each Pollution Event Limit

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.

Limits of Liability:
- $1,000,000 Each Occurrence
- $1,000,000 Aggregate
Claims Made Coverage – No Gap

If any of the required professional or pollution liability insurance is provided on a “claims made” form, such coverage shall extend for a period of not less than 36 months following completion of the contract. In the event of termination of a claims made policy, extended coverage may be provided by assurance that extended discovery coverage of at least 36 months will be purchased from the expiring insurer, or by assurance that the succeeding insurer will provide retroactive coverage with an inception date of at least on or before the effective date of this contract.

Certificates of Insurance.

Required insurance shall be documented in Certificates of Insurance which provide that the CITY shall be notified at least 30 days in advance of cancellation, nonrenewal or adverse change.

New Certificates of Insurance are to be provided to the CITY at least 15 days prior to coverage renewals.

If requested by the CITY, the CONTRACTOR shall furnish complete copies of the CONTRACTOR's insurance policies, forms and endorsements.

For Commercial General Liability coverage, the Contractor shall at the option of the City, provide an indication of the amount of claims, payments, or reserves chargeable to the aggregate amount of liability coverage. NOTE: Any sub-contractors approved by the City shall be required to provide proof of insurance identical in amounts as required by the contact to perform related services. All coverages shall name the City as “additional insured”.

Receipt of certificates or other documents of insurance or policies or copies of policies by the City, or by any of its representatives, which indicate less coverage than required will not constitute a waiver of the successful proposer(s)’ obligation to fulfill the insurance requirements herein.
ARTICLE 1 - DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents the following terms have the meanings indicated which are applicable to both the singular and plural thereof:

Addenda: Written or graphic instruments issued prior to the opening of Bids, which clarify, correct or change the bidding documents or the Contract Documents.

Agreement: The written agreement between CITY and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

Application for Payment: The form accepted by ENGINEER which is to be used by CONTRACTOR in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

Bid: The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

Bidding Documents: The Advertisement or Invitation to Bid, Instructions to Bidders, the Bid Form, and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

Bonds: Bid, performance and payment bonds and other instruments of security.

Change Order: A document which is signed by CONTRACTOR and CITY and directs or authorizes an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.

Contract Documents: The Bidding Documents, Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post-Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all amendments, modifications and supplements issued pursuant to paragraphs 3.4 and 3.5 on or after the Effective Date of the Agreement.

Contract Price: The moneys payable by CITY to CONTRACTOR under the Contract Documents as stated in the Agreement (subject to the provisions of paragraph 11.9.1, in the case of Unit Price Work).

Contract Time: The number of days (computed as provided in paragraph 16.2) or the date stated in the Agreement for the completion of the Work.

CONTRACTOR: The person, firm or corporation with whom CITY has entered into the Agreement.

Defective: An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment (unless responsibility for the protection thereof has been assumed by CITY at Substantial Completion in accordance with paragraph 14.8 or 14.10).

Drawings: The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by ENGINEER and are referred to in the Contract Documents.

Effective Date of the Agreement: The date indicated in the Agreement on which it becomes effective, but if no such date is indicated it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
ENGINEER: The person, firm or corporation named as such in the Agreement, or as otherwise designated by the CITY.

Field Order: A written order issued by ENGINEER which orders minor changes in the Work in accordance with paragraph 9.5 but which does not involve a change in the Contract Price or Contract Time.

General Requirements: Sections of Division 1 of the Specifications.

Laws and Regulations; Laws or Regulations: Laws, rules, regulations, ordinances, codes and/or orders.

Notice of Award: The written notice to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions precedent enumerated therein, within the time specified, CITY will sign and deliver the Agreement.

Notice to Proceed: A written notice given to CONTRACTOR fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR'S obligations under the Contract Documents.

CITY: The public body or authority, corporation, association, firm or person with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be provided.

Partial Utilization: Placing a portion of the Work in service for the purpose for which it is intended (or a related purpose) before reaching Substantial Completion for all the Work.

Project: The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

Project Manual: The title of the bound documentary information prepared for a construction project and includes bidding requirements, conditions of contract and product specifications.

Resident Project Representative: The authorized representative of ENGINEER or CITY who is assigned to the site or any part thereof.

Shop Drawings: All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for CONTRACTOR to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams, and other information prepared by a Supplier and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.

Specifications: Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

Subcontractor: An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

Substantial Completion: The point at which, in the opinion of ENGINEER as evidenced by ENGINEER's definitive certificate of Substantial Completion, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, that it can be utilized for the purposes for which it is intended; or if there be no such certificate issued, when final payment is due in accordance with paragraph 14.13. The terms "substantially complete" and "substantially completed" as applied to any Work refer to Substantial Completion thereof.

Supplementary Conditions: The part of the Contract Documents which amends or supplements these General Conditions.

Supplier: A manufacturer, fabricator, supplier, distributor, materialman or vendor.
Underground Facilities: All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

Unit Price Work: Work to be paid for on the basis of unit prices.

Work: The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the act of and results of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

Work Directive Change: A written directive to CONTRACTOR, issued on or after the Effective Date of the Agreement ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed as provided in paragraph 4.2 or 4.3 or to emergencies under paragraph 6.22. A Work Directive Change may not change the Contract Price or the Contract Time, but is evidence that the parties expect that the change directed or documented by a Work Directive Change will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Time as provided in paragraph 10.2

Written Amendment: A written amendment of the Contract Documents, signed by CITY and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the non-engineering or nontechnical rather than strictly Work-related aspects of the Contract Documents.

ARTICLE 2 - PRELIMINARY MATTERS

Delivery of Bonds:

2.1 When CONTRACTOR delivers the executed Agreements to CITY, CONTRACTOR shall also deliver to CITY such Bonds as CONTRACTOR may be required to furnish in accordance with paragraph 5.1.

Copies of Documents:

2.2 CITY shall furnish to CONTRACTOR up to five copies (unless otherwise specified in the Supplementary Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

Commencement of Contract Time; Notice to Proceed:

2.3 The Contract Time shall commence to run on the date indicated in the Notice to Proceed. In no event will the starting date included in the Notice to Proceed be later than the seventy-fifth day after the Effective Date of the Agreement.

Starting the Project:

2.4 CONTRACTOR shall start to perform the Work on the date when the Contract Time commences to run, but no work shall be done at the site prior to the date on which the Contract Time commences to run.

Before Starting Construction:

2.5 Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from ENGINEER before
proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to CITY or ENGINEER for failure to report any conflict, error or discrepancy in the Contract Documents, unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

2.6 Within ten days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), CONTRACTOR shall submit to ENGINEER for review:

2.6.1. an estimated progress schedule indicating the starting and completion dates of the various stages of the Work;

2.6.2 a preliminary schedule of Shop Drawing submissions; and

2.6.3 a preliminary schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work, which will be confirmed in writing by CONTRACTOR at the time of submission.

2.7 Before any Work at the site is started, CONTRACTOR shall deliver to CITY, with a copy to ENGINEER, certificates showing the existence of insurance (and other evidence of insurance required by CITY and/or the Contract Documents) which CONTRACTOR is required to purchase and maintain in accordance with paragraphs 5.3 and 5.4.

Preconstruction Conference:

2.8 Before CONTRACTOR starts the Work at the site, a conference attended by CONTRACTOR, ENGINEER and others as appropriate will be held to discuss the schedules referred to in paragraph 2.6, to discuss procedures for handling Shop Drawings and other submittals and for processing Applications for Payment, and to establish a working understanding among the parties as to the Work.

Finalizing Schedules:

2.9 At least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER and others as appropriate will be held to finalize the schedules submitted in accordance with paragraph 2.6. The finalized progress schedule will be acceptable to ENGINEER as providing an orderly progression of the Work to completion within the Contract Time, but such acceptance will neither impose on ENGINEER responsibility for the progress or scheduling of the Work nor relieve CONTRACTOR from full responsibility therefor. The finalized schedule of Shop Drawing submissions will be acceptable to ENGINEER as providing a workable arrangement for processing the submission. The finalized schedule of values will be acceptable to ENGINEER as to form and substance.

ARTICLE 3 - CONTRACT DOCUMENTS, INTENT, AMENDING, REUSE

Intent:

3.1 The Contract Documents comprise the entire agreement between CITY and CONTRACTOR concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

3.2 It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents, as being required to produce the intended result will be supplied whether or not specifically called for. When words, which have a well-known technical or trade meaning are used to describe Work, materials or equipment, such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the Laws or Regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or Laws or Regulations in effect at the time of opening of Bids (or, on
the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of CITY, CONTRACTOR or ENGINEER, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to ENGINEER, or any of ENGINEER's consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provision of paragraph 9.15 or 9.16. Clarifications and interpretations of the Contract Documents shall be issued by ENGINEER as provided in paragraph 9.4. The Agreement shall take precedence over all Contract Documents. The various Contract Documents shall be given precedence, in case of conflicts, error or discrepancy as follows: Agreement Modifications, Agreement, Technical Specifications, Supplementary Conditions, General Conditions, and Drawings. In the event of inconsistencies in the same order of precedence, the more expensive and/or stringent will be required. Full size details shall take precedence over scale drawings and large scale drawings shall take precedence over small scale drawings. Dimensions given in figures shall take precedence over scaled dimensions. Actual job dimensions shall take precedence over scale and figure dimensions on the drawings.

3.3 If, during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, CONTRACTOR shall so report to ENGINEER in writing at once and, before proceeding with the Work affected thereby, shall obtain a written interpretation or clarification from ENGINEER; however, CONTRACTOR shall not be liable to CITY or ENGINEER for failure to report any conflict, error or discrepancy in the Contract Documents unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

Amending and Supplementing Contract Documents:

3.4 The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:

3.4.1 a Written Amendment,

3.4.2 a Change Order (pursuant to paragraph 10.4), or

3.4.3 a Work Directive Change (pursuant to paragraph 10.1).

As indicated in paragraphs 11.2 and 12.1, Contract Price and Contract Time may only be changed by a Change Order or a Written Amendment.

3.5 In addition, the requirements of the Contract Documents may be supplemented and minor variations and deviations in the Work may be authorized, in one or more of the following ways:

3.5.1 a Field Order (pursuant to paragraph 9.5),

3.5.2 ENGINEER's approval of a Shop Drawing or sample (pursuant to paragraphs 6.26 and 6.27), or

3.5.3 ENGINEER's written interpretation or clarification (pursuant to paragraph 9.4).

Reuse of Documents:

3.6 Neither CONTRACTOR nor any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with CITY shall have or acquire any title to or CITYship rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER; and they shall not reuse any of them on extensions of the Project or any other project without written consent of CITY and ENGINEER and specific written verification or adaptation by ENGINEER.

ARTICLE 4 - AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS
SECTION 00700
GENERAL CONDITIONS

Availability of Lands:

4.1 CITY shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by CITY, unless otherwise provided in the Contract Documents. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

Physical Conditions:

4.2.1 Explorations and Reports:

Reference is made to the Supplementary Conditions for identification of those reports of explorations and tests of subsurface conditions at the site that have been utilized by ENGINEER in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such reports, but not upon nontechnical data, interpretations or opinions contained therein or for the completeness thereof for CONTRACTOR's purposes including means, methods, techniques, sequences and procedures of construction. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to subsurface conditions at the site.

4.2.2 Existing Structures:

Reference is made to the Supplementary Conditions for identification of those drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities referred to in paragraph 4.3) which are at or contiguous to the site that have been utilized by ENGINEER in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such drawings, but not for the completeness thereof for CONTRACTOR's purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to physical conditions in or relating to such structures.

4.2.3 Report of Differing Conditions:

If CONTRACTOR believes that:

4.2.3.1 any technical data on which CONTRACTOR is entitled to rely as provided in paragraphs 4.2.1 and 4.2.2 is inaccurate, or

4.2.3.2 any physical condition uncovered or revealed at the site differs materially from that indicated, reflected or referred to in the Contract Documents,

CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work in connection therewith (except in an emergency as permitted by paragraph 6.22), notify CITY and ENGINEER in writing about the inaccuracy or difference.

4.2.4 ENGINEER's Review:

ENGINEER will promptly review the pertinent conditions, determine the necessity of obtaining additional explorations or tests with respect thereto and advise CITY in writing (with a copy to CONTRACTOR) of ENGINEER's findings and conclusions.

4.2.5 Possible Document Change:

If ENGINEER concludes that there is a material error in the Contract Documents or that because of newly discovered conditions a change in the Contract Documents is required, a Work Directive Change or a Change Order will be issued as provided in Article 10 to reflect and document the consequences or the
inaccuracy of difference.

4.2.6 Possible Price and Time Adjustments:

In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, or any combination thereof, will be allowable to the extent that they are attributable to any such inaccuracy or difference. If CITY and CONTRACTOR are unable to agree as to the amount or length thereof, a claim may be made therefor as provided in Articles 11 and 12.

Physical Conditions -- Underground Facilities:

4.3.1 Shown or Indicated:

The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is based on information and data furnished to CITY or ENGINEER by the CITYs of such Underground Facilities or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

4.3.1.1 CITY and ENGINEER shall not be responsible for the accuracy or completeness of any such information or data; and,

4.3.1.2 CONTRACTOR shall have full responsibility for reviewing and checking all such information and data, for locating all Underground Facilities shown or indicated in the Contract Documents, for coordination of the Work with the CITYs of such Underground Facilities during construction, for the safety and protection thereof as provided in paragraph 6.20 and repairing any damage thereto resulting from the Work, the cost of all of which will be considered as having been included in the Contract Price.

4.3.2 Not Shown or Indicated:

If an Underground Facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of, CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work affected thereby (except in an emergency as permitted by paragraph 6.22), identify the CITY of such Underground Facility and give written notice thereof to that CITY and to CITY and ENGINEER. ENGINEER will promptly review the Underground Facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the Underground Facility, and the Contract Documents will be amended or supplemented to the extent necessary. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility as provided in paragraphs 6.20.

Reference Points:

4.4 CITY will provide engineering surveys to establish reference points for construction as indicated on the Drawings which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work (unless otherwise specified in the General Requirements, Division I), shall protect and preserve the established reference points and shall make no changes or relocations without prior written approval of CITY. CONTRACTOR shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grade or locations, and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified personnel.

ARTICLE 5 - BONDS AND INSURANCE

Performance and Other Bonds:
SECTION 00700
GENERAL CONDITIONS

5.1 CONTRACTOR shall furnish performance and payment Bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, except as otherwise provided by Law or Regulation or by the Contract Documents. CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions. All Bonds shall be in the forms prescribed by the Contract Documents.

5.1.1 The following requirements shall be met by all surety companies furnishing bid, performance, payment or other type of bonds:

5.1.1.1. The Surety shall be rated as "A" or better as to General Policyholders Rating and Class X or better as to Financial Category by Best's Key Rating Guide, published by Alfred M. Best Company, Inc., of 75 Fulton Street, New York, New York, 10038.

5.1.1.2. The Surety shall be listed on the U. S. Department of Treasury, Fiscal Service, Bureau of Government Financial Operations, Circular 570 (latest Revision) entitled, "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies", and be authorized to do business in the state where the Project is located.

5.1.1.3. All Surety Companies are subject to approval and may be rejected by the CITY without cause, in the same manner that bids may be rejected.

5.1.2 Limitations: Bonding Limits or Bonding Capacity refer to the limit or amount of Bond acceptable on any one risk.

5.1.2.1. The bonding limit of the Surety shall not exceed ten percent (10%) of the policyholder surplus (capital and surplus) as listed by the aforementioned Best's Key Rating Guide, on any one risk (penalty or amount of any one bond).

5.1.3 Requirements:

5.1.3.1. Policy Holders Surplus is required to be five (5) times the amount of any one bond.

5.1.3.2. The Agent countersigning the bond shall be resident in the County where the Project is located and/or other counties that are acceptable to the CITY.

5.2 If the surety on any Bond furnished by CONTRACTOR is declared a bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of paragraph 5.1, CONTRACTOR shall within five days thereafter substitute another Bond and Surety, both of which must be acceptable to CITY.

Contractor's Liability Insurance:

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

5.3.1 Claims under workers' or workmen's compensation, disability benefits and other similar employee benefit acts;

5.3.2 Claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;

5.3.3 Claims for damages because of bodily injury, sickness or disease, or death of any CONTRACTOR's employees;
5.3.4 Claims for damages insured by personal injury liability coverage which are sustained (a) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (b) by any other person for any other reason;

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

5.3.6 Claims arising out of operation of Laws or Regulations for damages because of bodily injury or death of any person or for damage to property; and

5.3.7 Claims for damages because of bodily injury or death of any person or property damage arising out of the CITYship, maintenance or use of any motor vehicle.

The insurance required by this paragraph 5.3 shall include the specific coverages and be written for not less than the limits of liability and coverages provided in the Supplementary Conditions, or required by law, whichever is greater. The comprehensive general liability insurance shall include completed operations insurance. All of the policies of insurance so required to be purchased and maintained (or the certificates or other evidence thereof) shall contain a provision or endorsement that the coverage afforded will not be cancelled, materially changed or renewal refused until at least thirty days' prior written notice has been given to CITY and ENGINEER by certified mail. All such insurance shall remain in effect until final payment and at all times thereafter when CONTRACTOR may be correcting, removing or replacing defective Work in accordance with paragraph 13.12. In addition, CONTRACTOR shall maintain such completed operations insurance for at least two years after final payment and furnish CITY with evidence of continuation of such insurance at final payment and one year thereafter.

**Contractual Liability Insurance:**

5.4 The comprehensive general liability insurance required by paragraph 5.3 will include contractual liability insurance applicable to CONTRACTOR's obligations under paragraphs 6.30 and 6.31.

**Property Insurance:**

5.5 Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall purchase and maintain property insurance upon the Work at the site to the full insurable value thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall include the interests of CITY, CONTRACTOR, Subcontractors, ENGINEER and ENGINEER's consultants in the Work, all of whom shall be listed as insured's or additional insured parties, shall insure against the perils of fire and extended coverage and shall include "all risk" insurance for physical loss and damage including theft, vandalism and malicious mischief, collapse and water damage, and such other perils as may be provided in the Supplementary Conditions, and shall include damages, losses and expenses arising out of or resulting from any insured loss or incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers, architects, attorneys, and other professionals). If not covered under the "all risk" insurance or otherwise provided in the Supplementary Conditions, CONTRACTOR shall purchase and maintain similar property insurance on portions of the Work stored on and off the site or in transit when such portions of the Work are to be included in an Application for Payment.

5.6 CONTRACTOR shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of CITY, CONTRACTOR, Subcontractors, ENGINEER AND ENGINEER's consultants in the Work, all of whom shall be listed as insured or additional insured parties.

5.7 All the policies of insurance (or the certificates or other evidence thereof) required to be purchased and maintained by CONTRACTOR in accordance with paragraphs 5.5 and 5.6 will contain a provision or endorsement that the coverage afforded will not be cancelled or materially changed or renewal refused until at least thirty days' prior written notice has been given to CITY by certified mail and will contain waiver provisions in accordance with paragraph 5.10.2.
5.8 CITY shall not be responsible for purchasing and maintaining any property insurance to protect the interests of CONTRACTOR, Subcontractors or others in the Work to the extent of any deductible amounts that are provided in the Supplementary Conditions. The risk of loss within the deductible amount will be borne by CONTRACTOR, Subcontractor or others suffering any such loss and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

5.9 If CITY requests in writing that other special insurance be included in the property insurance policy, CONTRACTOR shall, if possible, include such insurance and cost thereof will be charged to CITY by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the site, CONTRACTOR shall in writing advise CITY whether or not such other insurance has been procured by CONTRACTOR.

Waiver of Rights:

5.10.1. CITY and CONTRACTOR waive all rights against each other for all losses and damages caused by any of the perils covered by the policies of insurance provided in response to paragraphs 5.5 and 5.6 and any other property insurance applicable to the Work, and also waive all such rights against the Subcontractors, ENGINEER, ENGINEER's consultants and all other parties named as insured's in such policies for losses and damages so caused. As required by paragraph 6.11, each subcontract between CONTRACTOR and a Subcontractor will contain similar waiver provisions by the Subcontractor in favor of CITY, CONTRACTOR, ENGINEER, ENGINEER's consultants and all other parties named as insureds.

5.10.2 CITY and CONTRACTOR intend that any policies provided in response to paragraphs 5.5 and 5.6 shall protect all of the parties insured and provide primary coverage for all losses and damages caused by the perils covered thereby. Accordingly, all such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any of the parties named as insured’s or additional insured’s, and if the insurers require separate waiver forms to be signed by ENGINEER or ENGINEER's consultant, CITY will obtain the same, and if such waiver forms are required of any Subcontractor, CONTRACTOR will obtain the same.

Acceptance of Insurance:

5.11 If CITY has any objection to the coverage afforded by or other provisions of the insurance required to be purchased and maintained by CONTRACTOR on the basis of its not complying with the Contract Documents, CITY shall notify CONTRACTOR in writing thereof within ten days of the date of delivery of such certificates to CITY in accordance with paragraph 2.7. CONTRACTOR shall provide to the CITY such additional information in respect of insurance provided as the CITY may reasonably request. Failure by CITY to give any such notice of objection within the time provided shall constitute acceptance of such insurance purchased by the CONTRACTOR as complying with the Contract Documents.

Partial Utilization - Property Insurance:

5.12. If CITY finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, such use or occupancy may be accomplished in accordance with paragraph 14.10; provided that no such use or occupancy shall commence before the insurers providing the property insurance have acknowledged notice thereof and in writing effected the changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be cancelled or lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

Supervision and Superintendence:

6.1. CONTRACTOR shall supervise and direct the WORK competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and
procedures of construction, but CONTRACTOR shall not be responsible for the negligence of others in the design or selection of a specific means, methods, technique, sequence or procedure of construction which is indicated in and required by the Contract Documents. CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.

6.2 CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to CITY and ENGINEER except under extraordinary circumstances. The superintendent will be CONTRACTOR's representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

Labor, Materials and Equipment:

6.3 CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday without CITY's written consent given after prior written notice to ENGINEER.

6.4 Unless otherwise specified in the General Requirements, CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

6.5 All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable Supplier except as otherwise provided in the Contract Documents; but no provision of any such instructions will be effective to assign to ENGINEER, or any of ENGINEER's consultants, agents or employees, any duty of authority to undertake responsibility contrary to the provisions of paragraph 9.15 or 9.16.

Adjusting Progress Schedule:

6.6 CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.9) adjustments in the progress schedule to reflect the impact thereon of new developments; these will conform generally to the progress schedule then in effect and additionally will comply with any provision of the General Requirements applicable thereto.

Substitutes or "Or-Equal" Item:

6.7.1. Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other Suppliers may be accepted by ENGINEER if sufficient information is submitted by CONTRACTOR to allow ENGINEER to determine that the material or equipment proposed is equivalent or equal to that named. The procedure for review by ENGINEER will include the following as supplemented in the General Requirements. Requests for review of substitute items of material and equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall make written application to ENGINEER for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will state that the evaluation and acceptance of the proposed substitute will not prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not acceptance of the substitute for
use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with CITY for work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by ENGINEER in evaluating the proposed substitute. ENGINEER may require CONTRACTOR to furnish at CONTRACTOR's expense additional data about the proposed substitute.

6.7.2 If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to ENGINEER, if CONTRACTOR submits sufficient information to allow ENGINEER to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in paragraph 6.7.1 as applied by ENGINEER and as may be supplemented in the General Requirements.

6.7.3 ENGINEER will be allowed a reasonable time within which to evaluate each proposed substitute. ENGINEER will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without ENGINEER's prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. CITY may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute. ENGINEER will record time required by ENGINEER and ENGINEER's consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not ENGINEER accepts a proposed substitute, CONTRACTOR shall reimburse CITY for the charges of ENGINEER and ENGINEER's consultants for evaluating each proposed substitute.

Concerning Subcontractors, Suppliers and Others:

6.8.1 CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization (including those acceptable to CITY and ENGINEER as indicated in paragraph 6.8.2), whether initially or as a substitute, against whom CITY or ENGINEER may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

6.8.2 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers or other persons or organizations (including those who are to furnish the principal items of materials and equipment) to be submitted to CITY in advance of the specified date prior to the Effective Date of the Agreement for acceptance by CITY and ENGINEER and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, CITY's or ENGINEER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the bidding documents or the Contract Documents) of any such Subcontractor, Supplier or other person or organization so identified may be revoked on the basis of reasonable objection after due investigation, in which case CONTRACTOR shall submit an acceptable substitute, the Contract Price will be increased by the difference in the cost occasioned by such substitution and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by CITY or ENGINEER of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of CITY or ENGINEER to reject defective Work.

6.9 CONTRACTOR shall be fully responsible to CITY for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR's own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between CITY or ENGINEER and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of CITY or ENGINEER to pay or to see to the payment of any money's due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.
SECTION 00700
GENERAL CONDITIONS

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

6.11 All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of CITY and ENGINEER and contains waiver provisions as required by paragraph 5.10. CONTRACTOR shall pay each Subcontractor a just share of any insurance moneys received by CONTRACTOR on account of losses under policies issued pursuant to paragraphs 5.5 and 5.6.

Patent Fees and Royalties:

6.12 CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified in the Contract Documents for use in the performance of the Work and if to the actual knowledge of CITY or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by CITY in the Contract Documents. CONTRACTOR shall indemnify and hold harmless CITY and ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses, and expenses (including attorneys' fees and court costs) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product or device not specified in the Contract Documents, and shall defend all such claims in connection with any alleged infringement of such rights.

Permits:

6.13 Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. CITY shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or if there are no Bids on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility CITYs for connections to the Work, and CITY shall pay all charges of such utility CITYs for capital costs related thereto such as plant investment fees.

Laws and Regulations:

6.14.1 CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither CITY nor ENGINEER shall be responsible for monitoring CONTRACTOR's compliance with any Laws or Regulations.

6.14.2 If CONTRACTOR observes that the Specifications or Drawings are at variance with any Laws or Regulations, CONTRACTOR shall give ENGINEER prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in paragraph 3.4. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such Laws or Regulations, and without such notice to ENGINEER, CONTRACTOR shall bear all costs arising therefrom; however, it shall not be CONTRACTOR's primary responsibility to make certain that the Specifications and Drawings are in accordance with such Laws and Regulations.

Taxes:

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

Use of Premises:
6.16 CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the Project site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area or to the CITY or occupant thereof on of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against CITY or ENGINEER by any such CITY or occupant because of the performance of the Work, CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim by arbitration or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold CITY and ENGINEER harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against CITY or ENGINEER to the extent based on a claim arising out of CONTRACTOR's performance of the Work.

6.17 During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work, CONTRACTOR shall remove all waste materials, rubbish, and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by CITY. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

6.18 CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

Record Documents:

6.19 CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Directive Changes, Field Orders and written interpretations and clarifications (issued pursuant to paragraph 9.4) in good order and annotated to show all changes made during construction. These record documents together with all approved samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, samples and Shop Drawings will be delivered to ENGINEER for CITY. Final acceptance of the project will be withheld until delivery of the documents is made to the ENGINEER.

Safety and Protection:

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

6.20.1 all employees on the Work and other persons and organizations who may be affected thereby;

6.20.2 all the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and

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

CONTRACTOR shall comply with all applicable Laws and Regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify CITY's of adjacent property and of Underground Facilities and utility CITY's when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property. All damage, injury or loss to any property referred to in paragraph 6.20.2 or 6.20.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier or any other person or organization directly or indirectly employed
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by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, shall be
remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to
the acts or omissions of CITY or ENGINEER or anyone employed by either of them or anyone for whose acts
either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence
of CONTRACTOR). CONTRACTOR's duties and responsibilities for the safety and protection of the Work shall
continue until such time as all the Work is completed and ENGINEER has issued a notice to CITY and
CONTRACTOR in accordance with paragraph 14.13 that the Work is acceptable (except as otherwise expressly
provided in connection with Substantial Completion).

6.21 CONTRACTOR shall designate a responsible representative at the site whose duty shall be the prevention of
accidents. This person shall be CONTRACTOR's superintendent unless otherwise designated in writing by
CONTRACTOR to CITY.

Emergencies:

6.22 In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto,
CONTRACTOR, without special instruction or authorization from ENGINEER or CITY, is obligated to act to
prevent threatened damage, injury or loss. CONTRACTOR shall give ENGINEER prompt written notice if
CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have
been caused thereby. If ENGINEER determines that a change in the Contract Documents is required because of
the action taken in response to an emergency, a Work Directive Change or Change Order will be issued to document
the consequences of the changes or variations.

Shop Drawings and Samples:

6.23 After checking and verifying all field measurements and after complying with applicable procedures specified in
the General Requirements, CONTRACTOR shall submit to ENGINEER for review and approval in accordance
with the accepted schedule of Shop Drawings submissions (see paragraph 2.9), or for other appropriate action if so
indicated in the Supplementary Conditions, eight copies (unless otherwise specified in the General Requirements)
of all Shop Drawings, which will bear a stamp or specific written indication that CONTRACTOR has satisfied
CONTRACTOR's responsibilities under the Contract Documents with respect to the review of the submission.
Shop Drawings submitted without this stamp or specific written indication will be returned without action. All
submissions will be identified as ENGINEER may require. The data shown on the Shop Drawings will be complete
with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to
enable ENGINEER to review the information as required.

6.24 CONTRACTOR shall also submit to ENGINEER for review and approval with such promptness as to cause no
delay in Work, all samples required by the Contract Documents. All samples will have been checked by and
accompanied by a specific written indication that CONTRACTOR has satisfied CONTRACTOR's responsibilities
under the Contract Documents with respect to the review of the submission and will be identified clearly as to
material, Supplier, pertinent data such as catalog numbers and the use for which intended.

6.25.1 Before submission of each Shop Drawing or sample CONTRACTOR shall have determined and verified
all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog
numbers, and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample
with other Shop Drawings and samples and with the requirements of the Work and the Contract
Documents.

6.25.2 At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of each
variation that the Shop Drawings or samples may have from the requirements of the Contract Documents,
and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to
ENGINEER for review and approval of each such variation.

6.26 ENGINEER will review and approve with reasonable promptness Shop Drawings and samples, but ENGINEER's
review and approval will be only for conformance with the design concept of the Project and for compliance with
the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences
or procedures of construction (except where a specific means, method, technique, sequence or procedure of
construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make corrections required by ENGINEER, and shall return the required number of corrected copies of Shop Drawings and submit as required new samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by ENGINEER on previous submittals. Shop Drawings and submittal data will be reviewed two times, thereafter all further review time will be charged to the CONTRACTOR.

6.27 ENGINEER's review and approval of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of submission as required by paragraph 6.25.2 and ENGINEER has given written approval of each such variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing or sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the provisions of paragraph 6.25.1.

6.28 Where a Shop Drawing or sample is required by Specifications, any related Work performed prior to ENGINEER's review and approval of the pertinent submission will be the sole expense and responsibility of CONTRACTOR.

Continuing the Work:

6.29 CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with CITY. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by paragraph 15.5 or as CONTRACTOR and CITY may otherwise agree in writing.

Indemnification:

6.30 To the fullest extent permitted by Laws and Regulations CONTRACTOR shall indemnify and hold harmless CITY and ENGINEER and their consultants, agents and employees from and against all claims, damages, losses and expenses, direct, indirect or consequential (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court costs) arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom and (b) is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder or arises by or is imposed by Law and Regulations regardless of the negligence of any such party.

6.31 In any and all claims against CITY or ENGINEER or any of their consultants, agents or employees by any employee of CONTRACTOR, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.30 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any such Subcontractor or other person or organization under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts.

6.32 The obligations of CONTRACTOR under paragraph 6.30 shall not extend to the liability of ENGINEER, ENGINEER's consultants, agents or employees arising out of the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs or specifications.

ARTICLE 7 - OTHER WORK

Related Work at Site:

7.1 CITY may perform other work related to the Project at the site with CITY's own forces, have other work performed by utility CITYs or let other direct contracts therefor which shall contain General Conditions similar to these. If
the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to CONTRACTOR prior to starting any such other work.

7.2 CONTRACTOR shall afford each utility CITY and other contractor who is a party to such a direct contract (or CITY, if CITY is performing the additional work with CITY's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the Work with theirs. CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility CITYs and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between CITY and such utility CITYs and other contractors.

7.3 If any part of CONTRACTOR's Work depends for proper execution or results upon the work of any such other contractor or utility CITY (or CITY), CONTRACTOR shall inspect and promptly report to ENGINEER in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. CONTRACTOR's failure so to report will constitute an acceptance of the other work as fit and proper for integration with CONTRACTOR's Work except for latent or non-apparent defects and deficiencies in the other work.

Coordination:

7.4 If CITY contracts with others for the performance of other work on the Project at the site, the person or organization who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified in the Supplementary Conditions, and the specific matters to be covered by such authority and responsibility will be itemized, and the extent of such authority and responsibilities will be provided, in the Supplementary Conditions. Unless otherwise provided in the Supplementary Conditions, neither CITY nor ENGINEER shall have any authority or responsibility in respect of such coordination.

ARTICLE 8 - CITY'S RESPONSIBILITIES

8.1 CITY shall issue all communications to CONTRACTOR through ENGINEER.

8.2 CITY shall furnish the data required of CITY under the Contract Documents promptly and shall make payments to CONTRACTOR promptly after they are due as provided in paragraphs 14.4 and 14.13.

8.3 CITY's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to CITY's identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and in existing structures which have been utilized by ENGINEER in preparing the Drawings and Specifications.

8.4 CITY is obligated to execute Change Orders as indicated in paragraph 10.4.

8.5 CITY's responsibility in respect of certain inspections, tests and approvals is set forth in paragraph 13.4.

8.6 In connection with CITY's right to stop Work or suspend Work, see paragraphs 13.10 and 15.1. Paragraph 15.2 deals with CITY's right to terminate services of CONTRACTOR under certain circumstances.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

CITY's Representative:

9.1 ENGINEER will be CITY's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as CITY's representative during construction are set forth in the Contract Documents and shall not be extended without written consent of CITY and ENGINEER.
Visits to Site:

9.2 ENGINEER will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in substantial accordance with the Contract Documents. ENGINEER will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. ENGINEER's efforts will be directed toward providing for CITY a greater degree of confidence that the Work will conform to the Contract Documents. On the basis of such visits and on-site observations as an experienced and qualified design professional, ENGINEER will keep CITY informed of the progress of the Work and will endeavor to guard CITY against defects and deficiencies in the Work.

Project Representation:

9.3 If CITY and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in observing the performance of the Work. The duties, responsibilities and limitations of authority of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions. If CITY designates another agent to represent CITY at the site who is not ENGINEER's agent or employee, the duties, responsibilities and limitations of authority of such other person will be as provided in the Supplementary Conditions.

Clarifications and Interpretations:

9.4 ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as ENGINEER may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If CONTRACTOR believes that a written clarification or interpretation justifies an increase in the Contract Price or an extension of the Contract Time and the parties are unable to agree to the amount or extent thereof, CONTRACTOR may make a claim therefor as provided in Article 11 or Article 12.

Authorized Variations in Work:

9.5 ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents, which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order and will be binding on CITY, and also on CONTRACTOR who shall perform the Work involved promptly. If CONTRACTOR believes that a Field Order justifies an increase in the Contract Price or an extension of the Contract Time and the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a claim therefor as provided in Article 11 or 12.

Rejecting Defective Work:

9.6 ENGINEER will have authority to disapprove or reject Work, which ENGINEER believes to be defective (see 13.14) and will also have authority to require special inspection or testing of the Work as provided in paragraph 13.9, whether or not the Work is fabricated, installed or completed. ENGINEER shall notify the CONTRACTOR in writing of any disapproval and/or rejection.

Shop Drawings, Change Orders and Payments:

9.7 In connection with ENGINEER's responsibility for Shop Drawings and samples, see paragraphs 6.23 through 6.28 inclusive.

9.8 In connection with ENGINEER's responsibilities as to Change Orders, see Articles 10, 11 and 12.

9.9 In connection with ENGINEER's responsibilities in respect of Applications for Payment, etc., see Article 14.
Determination for Unit Prices:

9.10 ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decisions thereon will be final and binding upon CITY and CONTRACTOR, unless, within ten days after the date of any such decision, either CITY or CONTRACTOR delivers to the other party to the Agreement and to ENGINEER written notice of intention to appeal from such a decision.

Decisions on Disputes:

9.11 ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and claims under Articles 11 and 12 in respect of changes in the Contract Price or Contract Time will be referred initially to ENGINEER in writing with a request for a formal decision in accordance with this paragraph, which ENGINEER will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter will be delivered by the claimant to ENGINEER and the other party to the Agreement promptly (but in no event later than thirty days) after the occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim.

9.12 When functioning as interpreter and judge under paragraphs 9.10 and 9.11, ENGINEER will not show partiality to CITY or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to paragraphs 9.10 and 9.11 with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.16) will be a condition precedent to any exercise by CITY or CONTRACTOR of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such claim, dispute or other matter.

Limitations on ENGINEER's Responsibilities:

9.13 Neither Engineer's authority to act under this Article 9 or elsewhere in the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

9.14 Whenever in the Contract Documents the term "as ordered", "as directed", "as required", "as allowed", "as approved", or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper" or "satisfactory" or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the Work, it is intended that such requirement, direction, review, or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to ENGINEER any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 9.15 and 9.16.

9.15 ENGINEER will not be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and ENGINEER will not be responsible for CONTRACTOR's failure to perform or furnish the Work in accordance with the Contract Documents.

9.16 ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

ARTICLE 10 - CHANGES IN THE WORK

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

10.2 If CITY and CONTRACTOR are unable to agree as to the extent, if any, of an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Work Directive Change, a claim may be made therefor as provided in Article 11 or Article 12.

10.3 CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraphs 3.4 and 3.5, except in the case of an emergency as provided in paragraph 6.22.

10.4 CITY and CONTRACTOR shall execute appropriate Change Orders (or Written Amendments) covering:

10.4.1 changes in the Work which are ordered by CITY pursuant to paragraph 10.1, are required because of acceptance of defective Work under paragraph 13.13 or correcting defective Work under paragraph 13.14, or are agreed to by the parties;

10.4.2 changes in the Contract Price or Contract Time which are agreed to by the parties; and

10.4.3 changes in the Contract Price or Contract Time which embody the substance of any written decision rendered by ENGINEER pursuant to paragraph 9.11; provided that, in lieu of executing any such Change Order (or Written Amendment), an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.29.

10.5 If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Time) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility, and the amount of each applicable Bond will be adjusted accordingly.

ARTICLE 11 - CHANGES OF THE CONTRACT PRICE

11.1 The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

11.2 The Contract Price may only be changed by a Change Order or by a Written Amendment. Any claim for an increase or decrease in the Contract Price shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within sixty days after such occurrence (unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by claimant's written statement that the amount claimed covers all known amounts (direct, indirect and consequential) to which the claimant is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Price shall be determined by ENGINEER in accordance with paragraph 9.11 if CITY and CONTRACTOR cannot otherwise agree on the amount involved. No claim for an adjustment in the Contract Price will be valid if not submitted in accordance with this paragraph 11.2.

11.3 The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

11.3.1 Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit price to the quantities of the items involved (subject to the provisions of paragraphs 11.9.1 through
11.9.2, inclusive).

11.3.2 By mutual acceptance of a lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 11.6.2.1).

11.3.3 On the basis of the Cost of the Work (determined as provided in paragraphs 11.4 and 11.5) plus a CONTRACTOR's Fee for overhead and profit (determined as provided in paragraphs 11.6 and 11.7).

Cost of the Work:

11.4 The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by CITY, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5;

11.4.1 Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by CITY and CONTRACTOR. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise, and payroll taxes, workers' or workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing Work after regular working hours, on Saturday, Sunday or legal holidays, shall be included in the above to the extent authorized by CITY.

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

11.4.3 Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. If required by CITY, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to CONTRACTOR and shall deliver such bids to CITY who will then determine, with the advice of ENGINEER, which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a Fee, the Subcontractor's Cost of the Work shall be determined in the same manner as CONTRACTOR's Cost of the Work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

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

11.4.5 Supplemental costs including the following:

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

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

11.4.5.3 Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements, approved by CITY with the advise of ENGINEER, and the costs of transportation, loading, unloading, installation,
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dismantling and removal thereof - all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work. Rental of Contractor's or other's equipment at the site shall be for hours used only.

11.4.5.4 Sales, consumer, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

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

11.4.5.6 Losses and damages (and related expenses), not compensated by insurance or otherwise, to the Work or otherwise sustained by CONTRACTOR in connection with the performance and furnishing of the Work provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of CITY. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR's Fee. If, however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid for services a fee proportionate to that stated in paragraph 11.6.2.

11.4.5.7 The cost of utilities, fuel and sanitary facilities at the site.

11.4.5.8 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

11.4.5.9 Cost of premiums for additional Bonds and insurance required because of changes in the Work.

11.5 The term Cost of the Work shall not include any of the following:

11.5.1 Payroll costs and other compensation of CONTRACTOR's officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR's principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 11.4.1 or specifically covered by paragraph 11.4.4 - all of which are to be considered administrative costs covered by the CONTRACTOR's Fee.

11.5.2 Expenses of CONTRACTOR's principal and branch offices other than CONTRACTOR's office at the site.

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

11.5.4 Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 11.4.5.9 above).

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

11.5.6 Other overhead or general expense costs of any kind and the costs of any item not specifically and
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expressly included in paragraph 11.4.

CONTRACTOR's Fee:

11.6 The CONTRACTOR's Fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

11.6.1 a mutually acceptable fixed fee; or if none can be agreed upon,

11.6.2 a fee based on the following percentages of the various portions of the Cost of the Work;

11.6.2.1 for costs incurred under paragraphs 11.4.1 and 11.4.2, the CONTRACTOR's Fee shall be fifteen percent;

11.6.2.2 for costs incurred under paragraph 11.4.3, the CONTRACTOR's Fee shall be five percent; and if a subcontract is on the basis of Cost of the Work plus a Fee, the maximum allowable to CONTRACTOR on account of overhead and profit of all Subcontractors shall be fifteen percent;

11.6.2.3 no fee shall be payable on the basis of costs itemized under paragraphs 11.4.4, 11.4.5, and 11.5;

11.6.2.4 the amount of credit to be allowed by CONTRACTOR to CITY for any such change which results in a net decrease in cost will be the amount of the actual net decrease plus a deduction in CONTRACTOR's Fee by an amount equal to ten percent of the net decrease; and

11.6.2.5 when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's Fee shall be computed on the basis of the net change in accordance with paragraphs 11.6.2.1 through 11.6.2.4 inclusive.

11.7 Whenever the cost of any Work is to be determined pursuant to paragraph 11.4 or 11.5, CONTRACTOR will submit in form acceptable to ENGINEER an itemized cost breakdown together with supporting data.

Cash Allowances:

11.8 It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be done by such Subcontractors or Suppliers and for such sums within the limit of the allowances as may be acceptable to ENGINEER. CONTRACTOR agrees that:

11.8.1 The allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

11.8.2 CONTRACTOR's costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances. No demand for additional payment on account of any thereof will be valid.

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

Unit Price Work:

11.9.1 Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by
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CONTRACTOR will be made by ENGINEER in accordance with Paragraph 9.10

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

ARTICLE 12 - CHANGE OF CONTRACT TIME

12.1 The Contract Time may only be changed by a Change Order or a Written Amendment. Any claim for an extension or shortening of the Contract Time shall be based on written notice delivered by the party making the claim to the other party and to ENGINEER promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within sixty days after such occurrence (unless ENGINEER allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by ENGINEER in accordance with paragraph 9.11 if CITY and CONTRACTOR cannot otherwise agree. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this paragraph 12.1.

12.2 The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if a claim is made therefor as provided in paragraph 12.1. Such delays shall include, but not be limited to, acts or neglect by CITY or others performing additional work as contemplated by Article 7, or to fires, floods, labor disputes, epidemics, abnormal weather conditions or acts of God.

12.3 All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 12 shall exclude recovery for damages for delay by either party.

ARTICLE 13 - WARRANTY AND GUARANTEE: TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

Warranty and Guarantee:

13.1 CONTRACTOR warrants and guarantees to CITY that all Work will be in accordance with the Contract Documents and will not be defective. Prompt notice of all defects shall be given to CONTRACTOR. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 13.

Access to Work:

13.2 ENGINEER and ENGINEER's representatives, other representatives of CITY, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide proper and safe conditions for such access.

Tests and Inspections:

13.3 CONTRACTOR shall give ENGINEER timely notice of readiness of the Work for all required inspections, tests or approvals.

13.4 If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) to specifically be inspected, tested or approved, CONTRACTOR shall assume full responsibility therefor, pay all costs in connection therewith and furnish ENGINEER the required certificates of inspection, testing or approval. CONTRACTOR shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with CITY's or ENGINEER's acceptance of a Supplier of materials or equipment proposed to be incorporated in the Work, or of materials or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work. The cost of all inspections, tests and approvals in addition to the above which are required by the Contract Documents shall be paid by CITY (unless otherwise specified).
13.5 All inspections, tests or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to CITY and CONTRACTOR (or by ENGINEER if so specified).

13.6 If any Work (including the work of others) that is to be inspected, tested or approved is covered without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation. Such uncovering shall be at CONTRACTOR's expense unless CONTRACTOR has given ENGINEER timely notice of CONTRACTOR's intention to cover the same and ENGINEER has not acted with reasonable promptness in response to such notice.

13.7 Neither observations by ENGINEER nor inspections, tests or approvals by others shall relieve CONTRACTOR from CONTRACTOR's obligations to perform the Work in accordance with the Contract Documents.

Uncovering Work:

13.8 If any Work is covered contrary to the written request of ENGINEER, it must, if requested by ENGINEER, be uncovered for ENGINEER's observations and replaced at CONTRACTOR's expense.

13.9 If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose or otherwise make available for observation, inspection or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, CONTRACTOR shall bear all direct, indirect and consequential costs of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, if required (including but not limited to fees and charges of engineers, architects, attorneys and other professionals).

CITY May Stop the Work:

13.10 If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, CITY may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of CITY to stop the Work shall not give rise to any duty on the part of CITY to exercise this right for the benefit of CONTRACTOR or any other party.

Correction or Removal of Defective Work:

13.11 If required by ENGINEER, CONTRACTOR shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by ENGINEER, remove it from the site and replace it with non-defective Work. CONTRACTOR shall bear all direct, indirect and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) made necessary thereby.

One Year Correction Period:

13.12 If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, CONTRACTOR shall promptly, without cost to CITY and in accordance with CITY's written instructions, either correct such defective Work, or, if it has been rejected by CITY, remove it from the site and replace it with non-defective Work. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, CITY may have the defective Work corrected or the rejected Work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) will be paid by CONTRACTOR. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Written Amendment.
Acceptance of Defective Work:

13.13 If, instead of requiring correction or removal and replacement of defective Work, CITY prefers to accept it, CITY may do so. CONTRACTOR shall bear all direct, indirect and consequential costs attributable to CITY's evaluation of and determination to accept such defective Work (such costs to be approved by ENGINEER as to reasonableness and to include but not limited to fees and charges of engineers, architects, attorneys and other professionals). If any such acceptance occurs prior to ENGINEER's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and CITY shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, CITY may make a claim therefor as provided in Article 11. If the acceptance occurs after such recommendation, an appropriate amount will be paid by CONTRACTOR to CITY.

CITY May Correct Defective Work:

13.14 If CONTRACTOR fails within a reasonable time after written notice of ENGINEER to proceed to correct and to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraphs 13.11, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, CITY may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph CITY shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, CITY may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which CITY has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow CITY, CITY's representatives, agents and employees such access to the site as may be necessary to enable CITY to exercise the rights and remedies under this paragraph. All direct, indirect and consequential costs of CITY in exercising such rights and remedies will be charged against CONTRACTOR in an amount approved as to reasonableness by ENGINEER, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and CITY shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, CITY may make a claim therefor as provided in Article 11. Such direct, indirect and consequential costs will include but not be limited to fees and charges of engineers, architects, attorneys and other professionals, all court costs and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR's defective Work. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by CITY of CITY's rights and remedies hereunder.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

Schedule of Values:

14.1 The schedule of values established as provided in paragraph 2.9 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to ENGINEER. Progress payments on account of Unit Price Work will be based on the number of units completed.

Application for Progress Payment:

14.2 At least twenty days before each progress payment is scheduled (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice or other documentation warranting that CITY has received the materials and equipment free and clear of all liens, charges, security interests and encumbrances (which are hereinafter in these General Conditions referred to as "Liens") and evidence that the materials and equipment are covered by appropriate property insurance and other
arrangements to protect CITY's interest therein, all of which will be satisfactory to CITY. The amount of retainage with respect to progress payments will be 10 percent except as otherwise provided in the Supplementary Conditions.

**CONTRACTOR's Warranty of Title:**

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

**Review of Applications for Progress Payment:**

14.4 ENGINEER will, within ten days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to CITY, or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application. Ten days after presentation of the Application for Payment with ENGINEER's recommendation, the amount recommended will (subject to the provisions of the last sentence of paragraph 14.7) become due and when due will be paid by CITY to CONTRACTOR.

14.6 ENGINEER's recommendation of final payment will constitute an additional representation by ENGINEER to CITY that the conditions precedent to CONTRACTOR's being entitled to final payment as set forth in paragraph 14.13 have been fulfilled.

14.7 ENGINEER may refuse to recommend the whole or any part of any payment if, in ENGINEER's opinion, it would be incorrect to make such representations to CITY. ENGINEER may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in ENGINEER's opinion to protect CITY from loss because:

14.7.1 the Work is defective, or completed Work has been damaged requiring correction or replacement,

14.7.2 the Contract Price has been reduced by Written Amendment or Change Order,

14.7.3 CITY has been required to correct defective Work or complete Work in accordance with paragraph 13.14, or

14.7.4 of ENGINEER's actual knowledge of the occurrence of any of the events enumerated in paragraphs 15.2.1 through 15.2.9 inclusive.

CITY may refuse to make payment of the full amount recommended by ENGINEER because claims have been made against CITY on account of CONTRACTOR's performance or furnishing of the Work or Liens have been filed in connection with the Work or there are other items entitling CITY to a set-off against the amount recommended, including liability for liquidated damages payable by the CONTRATOR, but CITY must give CONTRACTOR immediate written notice (with a copy to ENGINEER) stating the reasons for such action.

**Substantial Completion:**

14.8 When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify CITY and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Within a reasonable time thereafter, CITY, CONTRACTOR and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons thereof. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to CITY a tentative certificate of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. CITY shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes
that the Work is not substantially complete, ENGINEER will within fourteen days after submission of the tentative certificate to CITY notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of CITY's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said fourteen days execute and deliver to CITY and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from CITY. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to CITY and CONTRACTOR a written recommendation as to division of responsibilities pending final payment between CITY and CONTRACTOR with respect to security, operation, safety, maintenance, heat, utilities, insurance and warranties. Unless CITY and CONTRACTOR agree otherwise in writing and so inform ENGINEER prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on CITY and CONTRACTOR until final payment.

14.9 CITY shall have the right to exclude CONTRACTOR from the Work after the date of Substantial Completion, but CITY shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

Partial Utilization:

14.10 Use by CITY of any finished part of the Work, which has specifically been identified in the Contract Documents, or which CITY, ENGINEER and CONTRACTOR agree constitutes a separately functioning and useable part of the Work that can be used by CITY without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following:

14.10.1 CITY at any time may request CONTRACTOR in writing to permit CITY to use any such part of the Work which CITY believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees, CONTRACTOR will certify to CITY and ENGINEER that said part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify CITY and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, CITY, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify CITY and CONTRACTOR in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of paragraphs 14.8 and 14.9 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

14.10.2 CITY may at any time request CONTRACTOR in writing to permit CITY to take over operation of any such part of the Work although it is not substantially complete. A copy of such request will be sent to ENGINEER and within a reasonable time thereafter CITY, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion and will prepare a list of items remaining to be completed or corrected thereon before final payment. If CONTRACTOR does not object in writing to CITY and ENGINEER that such part of the Work is not ready for separate operation by CITY, ENGINEER will finalize the list of items to be completed or corrected and will deliver such list to CITY and CONTRACTOR together with a written recommendation as to the division of responsibilities pending final payment between CITY and CONTRACTOR with respect to security, operation, safety, maintenance, utilities, insurance, warranties and guarantees for that part of the Work which will become binding upon CITY and CONTRACTOR at the time when CITY takes over such operation (unless they shall have otherwise agreed in writing and so informed ENGINEER). During such operation and prior to Substantial Completion of such part of the Work, CITY shall allow CONTRACTOR reasonable access to complete or correct items on said list and to complete other related Work.

14.10.3 No occupancy or separate operation of part of the Work will be accomplished prior to compliance with
the requirements of paragraph 5.14 in respect of property insurance.

Final Inspection:

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

Final Application for Payment:

14.12 After CONTRACTOR has completed all such corrections to the satisfaction of ENGINEER and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents (as provided in paragraph 6.19) and other documents - all as required by the Contract Documents, and after ENGINEER has indicated that the Work is acceptable (subject to the provisions of paragraph 14.16), CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to CITY) of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by CITY, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which CITY or CITY's property might in any way be responsible, have been paid or otherwise satisfied; and consent of the surety, if any, to final payment. If any Subcontractor or Supplier fails to furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to CITY to indemnify CITY against any Lien.

Final Payment and Acceptance:

14.13 If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation - all as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application to CITY for payment. Thereupon ENGINEER will give written notice to CITY and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.16. Otherwise, ENGINEER will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application. Thirty days after presentation to CITY of the Application and accompanying documentation, in appropriate form and substance, and with ENGINEER's recommendation and notice of acceptability, the amount recommended by ENGINEER will become due and will be paid by CITY to CONTRACTOR.

14.14 If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed and if ENGINEER so confirms, CITY shall, upon receipt of CONTRACTOR's final Application for Payment and recommendation of ENGINEER, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by CITY for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.1, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to ENGINEER with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

CONTRACTOR's Continuing Obligation:

14.15 CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by ENGINEER, nor the issuance
of a certificate of Substantial Completion, nor any payment by CITY to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by CITY, nor any act of acceptance by CITY nor any failure to do so, nor any review and approval of a Shop Drawing or sample submission, nor the issuance of a notice of acceptability by ENGINEER pursuant to paragraph 14.13, nor any correction of defective Work by CITY will constitute an acceptance of Work not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents (except as provided in paragraph 14.16).

Waiver of Claims:

14.16 The making and acceptance of final payment will constitute:

14.16.1 a waiver of all claims by CITY against CONTRACTOR, except claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.11 or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it will not constitute a waiver by CITY of any rights in respect of CONTRACTOR's continuing obligations under the Contract Documents; and

14.16.2 a waiver of all claims by CONTRACTOR against CITY other than those previously made in writing and still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

CITY May Suspend Work:

15.1 CITY may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and ENGINEER which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if CONTRACTOR makes an approved claim therefor as provided in Articles 11 and 12.

CITY May Terminate:

15.2 Upon the occurrence of any one or more of the following events:

15.2.1 if CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency;

15.2.2 if a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

15.2.3 if CONTRACTOR makes a general assignment for the benefit of creditors;

15.2.4 if a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR's creditors;

15.2.5 if CONTRACTOR admits in writing an inability to pay its debts generally as they become due;

15.2.6 if CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment
or failure to adhere to the progress schedule established under paragraph 2.9 as revised from time to time);

15.2.7 if CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;

15.2.8 if CONTRACTOR disregards the authority of ENGINEER; or

15.2.9 if CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

CITY may, after giving CONTRACTOR (and the surety, if there be one) seven days' written notice and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which CITY has paid CONTRACTOR but which are stored elsewhere, and finish the Work as CITY may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct, indirect and consequential costs of completing the Work (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court costs) such excess will be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the difference to CITY. Such costs incurred by CITY will be approved as to reasonableness by ENGINEER and incorporated in a Change Order, but when exercising any rights or remedies under this paragraph CITY shall not be required to obtain the lowest price for the Work performed.

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

15.4 Upon seven days' written notice to CONTRACTOR and ENGINEER, CITY may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, CONTRACTOR shall be paid for all Work executed and any expense sustained plus reasonable termination expenses, which will include, but not be limited to, direct, indirect and consequential costs (including but not limited to, fees and charges of engineers, architects, attorneys and other professionals and court costs).

CONTRACTOR May Stop Work or Terminate:

15.5 If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety days by CITY or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within thirty days after it is submitted, or CITY fails for thirty days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days' written notice to CITY and ENGINEER, terminate the Agreement and recover from CITY payment for all Work executed and any expense sustained plus reasonable termination expenses. In addition and in lieu of terminating the Agreement, if ENGINEER has failed to act on an Application for Payment or CITY has failed to make any payment as aforesaid, CONTRACTOR may upon seven days' written notice to CITY and ENGINEER stop the Work until payment of all amounts then due. The provision of this paragraph shall not relieve CONTRACTOR of the obligations under paragraph 6.29 to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with CITY.

ARTICLE 16 - MISCELLANEOUS

Giving Notice:

16.1 Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.
Computation of Time:

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

16.2.2 A calendar day of twenty-four hours measured from midnight to the next midnight shall constitute a day.

General:

16.3 Should CITY or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 16.3 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

16.4 The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 6.30, 13.1, 13.12, 13.14, 14.3 and 15.2 and all of the rights and remedies available to CITY and ENGINEER thereunder, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Contract Documents will survive final payment and termination or completion of the Agreement.

END OF SECTION
SECTION 00800
SPECIAL CONDITIONS

1.1 NOTICES
A. In conformance with the requirements of the General Conditions all notices or other papers required to be
delivered by the CONTRACTOR to the CITY shall be delivered to the office of the Dennis Dupries,
Construction Project Manager, Public Works Department, 1460A Shetter Ave, Jacksonville Beach,
Florida 32250.

1.2 LAYING OUT THE WORK
A. Prior to commencement of construction the Engineer will have established horizontal control throughout the
site, which the CONTRACTOR shall use in laying out the work. The CONTRACTOR shall be responsible
for establishing all lines and grades together with all reference points as required by the various trades for all
work under this Contract. All required layout shall be done using competent and experienced personnel under
the supervision of a Land Surveyor registered in the State of Florida.
B. The CONTRACTOR shall provide all labor and instruments and stakes, templates, and other materials
necessary for marking and maintaining all lines and grades. The lines and grades shall be subject to any
checking the CITY or Engineer may decide necessary.
C. No separate cost item is provided for laying out the work, the cost of which shall be included in the unit prices
for items in the Proposal.

1.3 CONTRACTOR'S OFFICE - N/A
A. The CONTRACTOR shall provide and maintain an office with telephone facilities where he or a responsible
representative of his organization may be reached at any time while work is in progress.

1.4 OBSTRUCTIONS
A. All water pipes, sanitary sewer pipes, storm drains, forcemains, gas or other pipe, telephone or power cables
or conduits, curbs, sidewalks, all house services and all other obstructions, whether or not shown, shall be
temporarily removed from, or supported across utility line excavations. Where it is necessary to temporarily
interrupt house or business services, the CONTRACTOR shall notify the CITY or occupant, both before the
interruption and again immediately before service is resumed. Before disconnecting any pipes or cables, the
CONTRACTOR shall obtain permission from the CITY, or shall make suitable arrangements for their
disconnection by the CITY. The CONTRACTOR shall be responsible for any damage to any such pipes,
conduits or cables, and shall restore them to service promptly as soon as the work has progressed past the
point involved. Approximate locations of known water, sanitary, drainage, power and telephone installations
along the route of new pipelines or in the vicinity of new work are shown, but must be verified in the field by
the CONTRACTOR. The CONTRACTOR shall uncover these pipes, ducts, cables, etc., carefully by hand,
prior to installing new utility lines. Any discrepancies or necessary changes may be made to permit
installation of new pipe. These conditions are supplemental to general requirements elsewhere in these
specifications. Where fences, walls or other man-made obstructions exist illegally in the public right-of-way, the
CITY shall have them removed upon adequate prior notice by the CONTRACTOR.

1.5 DAMAGE TO EXISTING STRUCTURES AND UTILITIES
A. The CONTRACTOR shall be responsible for and make good all damage to pavement beyond the limits of
this Contract, buildings, telephone or other cables, water pipes, sanitary pipes, survey monuments or other
structures which may be encountered, whether or not shown on the Drawings.
B. Information shown on the Drawings as to the location of existing utilities has been prepared from the most
reliable data available to the Engineer. This information is not guaranteed, however, and it shall be the
CONTRACTOR's responsibility to determine the location, character and depth of any existing utilities. He
shall assist the utility companies, by every means possible to determine said locations. Extreme caution shall
be exercised to eliminate any possibility of any damage to utilities resulting from his activities.
C. The CONTRACTOR shall be entirely responsible and liable for all damage or injury as a result of his operations to all other adjacent public and private property, structures of any kind and appurtenances thereto met with during the progress of the work.

D. The cost of protection, replacement in their original locations and conditions or payment of damages for injuries to such adjacent public and private property and structures affected by the work, whether or not shown on the Drawings, and the removal, relocation and reconstruction of such items called for on the drawings or specified shall be included in the various Contract Items and no separate payments will be made therefor.

E. CONTRACTOR is expressly advised that the protection of buildings, structures, tunnels, tanks, pipelines, etc., and related work adjacent and in the vicinity of his operations, wherever they may be, is solely his responsibility.

F. Conditional inspection of buildings or structures in the immediate vicinity of the project which may reasonably be expected to be affected by the Work shall be performed by and be the responsibility of the CONTRACTOR.

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

1.6 ADJUSTMENTS OF UTILITY CASTINGS, COVERS AND BOXES

A. All existing utility castings, including valve boxes, junction boxes, manholes, hand holes, pull boxes, inlets and similar structures in the areas of construction that are to remain in service shall be adjusted by the CONTRACTOR to bring them flush with the surface of the finished work.

1.7 TESTS

A. The CONTRACTOR will pay for all required tests including pressure leakage tests. Generally, tests will be concrete, LBR proctors, compaction and density tests, and pressure leakage tests. On pipe, the manufacturer's or supplier's certificate that the material meets the requirements of the specification will be accepted subject to verification by the CITY's Engineer. Water required for leakage tests shall be furnished and paid for by CONTRACTOR.

1.8 RECORD DRAWINGS

A. During the entire construction operation, the CONTRACTOR shall maintain records of all deviations from the Drawings and Specifications and shall prepare therefrom "record" drawings showing correctly and accurately all changes and deviations from the work made during construction to reflect the work as it was actually constructed. These drawings shall conform to recognized standards of drafting, shall be neat and legible. Upon completion of the project, the "record" drawings shall be submitted to the Engineer on Auto-CAD 2010 or latest version. All inverts and locations shall be certified by a Land Surveyor registered in Florida. Final As-builts which have been reviewed and approved by the Engineer shall be submitted to the Jacksonville Beach Public Works Department in the following formats:

- 2 Discs in Auto-Cad, Version 2016
- 2 sets of blue-line drawings (full size)-signed/sealed
- 2 Discs in PDF format.

1.9 SUBSURFACE INVESTIGATION

A. The CONTRACTOR shall be responsible for having determined to his satisfaction, prior to the submission
of his bid, the nature and location of the work, the conformation of the ground, the character and quality of
the substrata, the types and quantity of materials to be encountered, the nature of the ground water conditions,
the character of equipment and facilities needed preliminary to and during execution of the work, the general
and local conditions and all other matters which can in any way affect the work under this contract. The prices
established for the work to be done will reflect all costs pertaining to the work. Any claims for extras based
on substrata or ground water table conditions will not be allowed.

1.10 WORK SCHEDULES AND OVERTIME

A. No work shall be done between the hours of 8:00 p.m. and 8:00 a.m., nor on Saturday, Sunday, or legal
holidays observed by the CITY in any case, without the CITY's written approval.

1.11 CITY'S PROJECT REPRESENTATIVE

A. A CITY's Project Representative will be assigned to all utility projects.

B. The Project Representative shall inspect all construction and materials, and shall inspect preparation,
fabrication or manufacture of components, and materials and supplies.

C. The Project Representative is not authorized to revoke, alter or waive any requirements of the specifications,
but is authorized and expected to call to the attention of Engineer and/or CONTRACTOR any failure of work
or materials to conform to the Drawings and Specifications. Inspectors shall have no authority to permit
deviation from or to modify any of the provisions of the Drawings or Specifications without the written
permission or instruction of the CITY with the concurrence of the Engineer, or to delay the CONTRACTOR
by failure to observe the materials and work with reasonable promptness.

D. The Project Representative shall have the authority to reject materials or suspend the work until questions of
issue can be resolved to the CITY's satisfaction.

E. The Project Representative shall in no case act as foreman, give advice or perform other duties for the
CONTRACTOR nor interfere with the management of the work.

F. Project Representative will make routine passes to inspect such items as thrust blocks, materials on site, and
clearances between conflicting lines. Scheduled inspections are also required for jacking and boring
operations, stream or ditch crossings and any time a connection is to be made to the CITY's system.

1.12 SURFACE RESTORATION

A. Disturbed surfaces shall be restored to equal or better condition than the original. Where detailed, the
Drawings show minimum requirements.

B. For driveways and public roads, restoration to the CITY's highway standards is the minimum requirement.

1.13 NOTIFICATION TO LOCAL RESIDENTS

A. At least five (5) days before the start of construction, the CONTRACTOR shall notify local residents along
the route of the project of the work to be performed by distributing a flyer describing the work to be performed.

1.14 MODIFICATIONS TO THE GENERAL CONDITIONS, SECTION 00700

A. Article 1:

1. Whenever the term ENGINEER is used it is construed to mean ARCHITECT/ENGINEER where the
contract involves a building.

2. CITY'S REPRESENTATIVE: A person appointed by the CITY to observe the work performed and the
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materials furnished by the CONTRACTOR. Unless otherwise stated, the person will be an employee of the CITY, not the ENGINEER.

3. PROJECT REPRESENTATIVE: Same as CITY'S REPRESENTATIVE.

B. Article 2:

1. Amend paragraph 2.8 to read as follows:

Before CONTRACTOR starts the Work at the site, a conference attended by CITY, CONTRACTOR, ENGINEER and others as appropriate will be held to discuss the schedules referred to in paragraph 2.6, to discuss procedures for handling Shop Drawings and other submittals and for processing Applications for Payment, and to establish a working understanding among the parties as to the Work.

C. Article 6:

1. Amend paragraph 6.7.3 to read as follows:

ENGINEER will be allowed a reasonable time within which to evaluate each proposed substitute. CITY will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without CITY's prior written acceptance, which will be evidenced by either a Change Order or an approved Shop Drawing. CITY may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute. ENGINEER will record time required by ENGINEER and ENGINEER's consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not CITY accepts a proposed substitute, CONTRACTOR shall reimburse CITY for the charges of ENGINEER and ENGINEER's consultants for evaluating each proposed substitute.

END OF SECTION
The Application for Payment shall be made on an original A1A Document G702. Contractor shall attach supporting documentation to this form as necessary.
PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: The work to be done consists of the furnishing of all labor, materials and equipment, and the performance of all work included in this Contract and as described in Section 00300A Scope of Services.

B. Work Includes:

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

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

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

4. The CONTRACTOR shall restore all City and private property, damaged by construction, to its original condition as soon as practical. In addition, access to businesses located adjacent to the project site must be maintained at all times.

5. The CONTRACTOR shall make exploratory excavations at all intersections of proposed work and existing utilities. If there is a potential conflict, the CONTRACTOR is to notify the Engineer immediately. Information on the obstruction to be furnished by the CONTRACTOR shall include: location, elevation, utility type, material and size.

6. The CONTRACTOR shall pay for all inspections during the progress of the Work required and provided by the CITY of all existing public utilities paralleling or crossing the Work, as shown on the Drawings. All such inspection fees shall be considered as part of the general cost of doing the Work and shall be included in the lump sum price as provided in the bid form for the Contract.

C. Public Utility Installations and Structures:

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

2. The Contract Documents contain data relative to existing public utility installations and structures
above and below the ground surface. These data are not guaranteed as to their completeness or accuracy and it is the responsibility of the CONTRACTOR to make his own investigations to inform himself fully of the character, condition and extent of all such installations and structures as may be encountered and as may affect the construction operations.

3. The CONTRACTOR shall protect all public utility installations and structures from damage during the work. Access across any buried public utility installation or structure shall be made to avoid any damage to these facilities. All required protective devices and construction shall be provided by the CONTRACTOR at his expense. All existing public utilities damaged by the CONTRACTOR shall be repaired by the CONTRACTOR, at his expense. No separate payment shall be made for such protection or repairs to public utility installations or structures.

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

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

6. The CONTRACTOR shall, at all times in performance of the work, employ acceptable methods and exercise reasonable care and skill so as to avoid unnecessary delay, injury, damage or destruction of public utility installations and structures; and shall, at all times in the performance of the work, avoid unnecessary interference with, or interruption of, public utility services, and shall cooperate fully with the CITY’s thereof to that end.

7. The CONTRACTOR shall give written notice to CITY and other governmental utility departments and other CITY’s of public utilities of the location of his proposed construction operations, at least forty-eight (48) hours in advance of breaking ground in any area or on any unit of the work. This can be accomplished by making the appropriate contact with the following utility companies:

City of Jacksonville Beach
Construction Coordination
Dennis Dupries: (904) 509-0268

Water & Sewer
City of Jacksonville Beach
Department of Public Works
Number: (904) 247-6273

American Telephone & Telegraph Co.
Tony Pellegrini (904) 727-1546
Locates: 800-432-4770
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Cable
Comcast Cable
James Graham: (904) 509-6472
Mr. Hand: (904) 380-6214 or (904) 545-6557

Electric
City of Jacksonville Beach-Beaches Energy
Don Cuevas: (904) 270-1686

Ferrellgas Company
Number: (904) 246-7316

TECO Peoples Gas
Ben Mobley: (904) 545-8958

8. The maintenance, repair, removal, relocation or rebuilding of public utility installations and
structures, when accomplished by the CONTRACTOR as herein provided, shall be done by methods
approved by the CITY’s of such utilities.

1.02 DRAWINGS AND PROJECT MANUAL

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

B. Copies Furnished to CONTRACTOR:

1. After the Contract has been executed, the CONTRACTOR will be furnished with three (3) prints of
the signed & sealed contract design drawings (24 inches by 36 inches) and Project Manuals (including
Contract Requirements and Specifications), all Addenda and one (1) Auto Cad, Release 16 Disc with
all project documents in PDF format.

2. The CONTRACTOR shall furnish each of the subcontractors, manufacturers, and material suppliers
such copies of the Contract Documents as may be required for their work. All copies of the Contract
Documents shall be printed from the reproducible sets furnished to the CONTRACTOR. All costs
of reproduction and printing shall be borne by the CONTRACTOR.

C. Supplementary Drawings:

1. When, in the opinion of the Engineer, it becomes necessary to explain more fully the work to be done
or to illustrate the work further or to show any changes which may be required, drawings known as
Supplementary Drawings, with specifications pertaining thereto, will be prepared by the Engineer
and the CONTRACTOR will be furnished with one (1) signed & sealed print (24 inches by 36 inches)
and one (1) Auto Cad, Release 16 Disc with all revised project documents in PDF format.

2. The Supplementary Drawings shall be binding upon the CONTRACTOR with the same force as the
Contract Drawings. Where such Supplementary Drawings require either less or more than the
estimated quantities of work, credit to the CITY or compensation therefor to the CONTRACTOR
shall be subject to the terms of the Agreement.

D. CONTRACTOR to Check Drawings and Data:

1. The CONTRACTOR shall verify all dimensions, quantities, and details shown on the Drawings,
Supplementary Drawings, schedules, Specifications, or other data received from the Engineer, and
shall notify him of all errors, omissions, conflicts, and discrepancies found therein. Failure to
discover or correct errors, conflicts or discrepancies shall not relieve the CONTRACTOR of full
responsibility for unsatisfactory work, faulty construction or improper operation resulting therefrom.
nor from rectifying such conditions at his own expense. He will not be allowed to take advantage of any errors or omissions, as full instructions will be furnished by the Engineer, should such errors or omissions be discovered.

2. All schedules are given for the convenience of the Engineer and the CONTRACTOR and are not guaranteed to be complete. The CONTRACTOR shall assume all responsibility for the making of estimates of the size, kind, and quality of materials and equipment included in work to be done under the Contract.

E. Specifications: The Technical Specifications consist of three (3) parts: General, Products and Execution. The General part of a section contains General Requirements, which govern the work. Products and Execution Parts modify and supplement the General Requirements by detailed requirements for the work and shall always govern whenever there appears to be a conflict.

F. Intent:

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

2. 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, the interpretation of these Specifications shall be made upon that basis.

1.03 MATERIALS AND EQUIPMENT

A. Manufacturer:

1. The names of proposed manufacturers, material suppliers and dealers who are to furnish materials, fixtures, equipment, appliances or other fittings shall be submitted to the Engineer for approval, as early as possible, to afford proper investigation and checking. Such approval must be obtained before Shop Drawings will be checked. No manufacturer will be approved for any materials to be furnished under this Contract unless he shall be of good reputation and have a plant of ample capacity. He shall, upon the request of the Engineer, be required to submit evidence that he has manufactured a similar product to the one specified and that it has been previously used for a like purpose for a minimum of five (5) years to demonstrate its satisfactory performance.

2. All transactions with the manufacturers or subcontractors shall be through the CONTRACTOR, unless the CONTRACTOR shall request and at the Engineer's option, that the manufacturer or subcontractor deal directly with the Engineer. Any such transactions shall not in any way release the CONTRACTOR from his full responsibility under this Contract.

3. Any two (2) or more pieces of material or equipment of the same kind, type or classification, and being used for identical types of service, shall be made by the same manufacturer.

4. Major pieces of equipment are listed in the Bid Proposal and are required to be named as part of said Bid Proposal.

B. Delivery:
1. The CONTRACTOR shall deliver materials in ample quantities to insure the most speedy and uninterrupted progress of the work so as to complete the work within the allotted time.

2. The CONTRACTOR shall also coordinate deliveries in order to avoid delay in, or impediment of, the progress of the work of any related CONTRACTOR.

C. Tools and Accessories:

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

2. Spare parts shall be furnished as specified herein and as recommended by the manufacturer necessary for the operation of the equipment, not including materials required for routine maintenance.

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

D. Service of Manufacturer’s Engineer:

1. The Contract prices for equipment shall include the cost of furnishing a competent and experienced engineer or superintendent who shall represent the manufacturer and shall assist the CONTRACTOR, when required, to install, adjust, test and place in operation, the equipment in conformity with the Contract Documents.

2. After the equipment is placed in permanent operation by the CITY, the CONTRACTOR shall make all adjustments and tests required by the Engineer to prove that such equipment is in proper and satisfactory operating condition, and shall instruct operating personnel as may be designated by the CITY in the proper operation and maintenance of such equipment.

1.04 INSPECTION AND TESTING

A. General:

1. For tests specified to be made by the CONTRACTOR, the testing personnel shall make the necessary inspections and tests and the reports thereof shall be in such form as will facilitate checking to determine compliance with the Contract Documents. Five (5) copies of the reports shall be submitted and authoritative certification thereof must be furnished to the Engineer as a prerequisite for the acceptance of any material or equipment.

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

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

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

B. Costs:

1. All inspection and testing of materials furnished under this Contract will be provided by the CONTRACTOR, unless otherwise expressly specified.

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

3. Materials and equipment submitted by the CONTRACTOR as the equivalent to those specifically named in the Contract may be tested by the CITY for compliance. The CONTRACTOR shall reimburse the CITY for the expenditures incurred in making such tests of materials and equipment which are rejected for non-compliance.

C. Inspection of Materials:

1. The CONTRACTOR shall give notice in writing sufficiently in advance of his intention to commence the manufacture or preparation of materials especially manufactured or prepared for use in or as part of the permanent construction. Such notice shall contain a request for inspection, the date of commencement and the expected date of completion of the manufacture or preparation of materials. Upon receipt of such notice, the CITY will arrange to have a representative present at such times during the manufacture as may be necessary to inspect the materials or he will notify the CONTRACTOR that the inspection will be made at a point other than the point of manufacture.

2. The CONTRACTOR must comply with these provisions before shipping any material. Such inspection shall not release the CONTRACTOR from the responsibility for furnishing materials meeting the requirements of the Contract Documents.

D. Certificate of Manufacture:

1. When inspection is waived or when the CITY so requires, the CONTRACTOR shall furnish to him authoritative evidence in the form of Certificate of Manufacture that the materials to be used in the work have been manufactured and tested in conformity with the Contract Documents.

2. These certificates shall be notarized and shall include copies of the results of physical tests and chemical analyses, where necessary, that have been made directly on the product or on similar products of the manufacturer.

E. Shop Tests:

1. Each piece of equipment for which pressure, duty, capacity, rating, efficiency, performance, function or special requirements are specified shall be tested in the shop of the maker in a manner which shall conclusively prove that its characteristics comply fully with the requirements of the Contract Documents.

2. No such equipment or materials shall be shipped to the work site until the Engineer notifies the CONTRACTOR, in writing, that the results of such tests are approved.

3. Five (5) copies of the manufacturer's actual test data and interpreted results thereof, accompanied by a certificate of authenticity sworn to by a responsible official of the manufacturing company and/or independent laboratory, shall be submitted to the Engineer for approval.

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

F. Start Up Tests:

1. As soon as conditions permit, the CONTRACTOR shall furnish all labor, materials, and instruments and shall make start-up tests of equipment.

2. If the start-up tests disclose any equipment furnished under this Contract, which does not comply with the requirements of the Contract Documents, the CONTRACTOR shall, prior to demonstration tests, make all changes, adjustments and replacements required. The furnishing CONTRACTOR shall assist in the start-up tests as applicable.

G. Demonstration Tests:

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

2. The CONTRACTOR shall furnish labor, fuel, energy, water and all other materials, equipment and instruments necessary for all demonstration tests, at no additional cost to the CITY. The furnishing CONTRACTOR shall assist in the demonstration tests as applicable.

H. Final Inspection: During such final inspections, the work shall be clean and free from standing water. In no case will the final estimate be prepared until the CONTRACTOR has complied with all requirements set forth and the Engineer and CITY have made their final inspection with the CONTRACTOR of the entire work and are satisfied that the entire work is properly and satisfactorily constructed in accordance with the requirements of the Contract Documents.

### 1.05 TEMPORARY STRUCTURES

A. Temporary Fences: If during the course of the work, it is necessary to remove or disturb any fence or part thereof, the CONTRACTOR shall provide a suitable temporary fence at his own expense.

B. Responsibility for Temporary Structures: In accepting the Contract, the CONTRACTOR assumes full responsibility for the sufficiency and safety of all temporary structures or work and for any damage which may result from their failure or their improper construction, maintenance or operation and will indemnify and save harmless the CITY from all claims, suits or actions and damages or costs of every description arising by reason of failure to comply with the above provisions.

### 1.06 TEMPORARY SERVICES

A. Accident Prevention:

1. Precautions shall be exercised at all times for the protection of person and property. The safety provisions of applicable laws, building and construction codes shall be observed.

2. The CONTRACTOR shall comply with the U.S. Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (PL 91-596), and under Section 107 of the contract work. Hours and Safety Standards Act (PL 91-54), except where state and local safety standards have been approved by the Secretary of Labor in accordance with provisions of the Occupational Safety and Health Act, shall be complied with.

B. First Aid: The CONTRACTOR shall keep upon the site, at each location where work is in progress, a completely equipped first aid kit and shall provide ready access thereto at all times when persons are employed on the work.
1.07 LINES AND GRADES

A. Grade:

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

2. The Engineer will establish bench marks and base line controlling points. Reference marks for lines and grades as the work progresses will be located by the CONTRACTOR to cause as little inconvenience to the prosecution of the work as possible. The CONTRACTOR shall so place excavation and other materials as to cause no inconvenience in the use of the reference marks provided. He shall remove any obstructions placed by him contrary to this provision.

B. Surveys:

1. The CONTRACTOR shall furnish and maintain, at his own expense, stakes and other such materials.

2. The CONTRACTOR shall check such reference marks by such means as he may deem necessary and, before using them, shall call the Engineer's attention to any inaccuracies.

3. The CONTRACTOR shall, at his own expense, establish all working or construction lines and grades as required from the reference marks set by the survey, and shall be solely responsible for the accuracy thereof. He shall, however, be subject to the check and review by the Engineer.

C. Safeguarding Marks:

1. The CONTRACTOR shall safeguard all points, stakes, grade marks, monuments and bench marks made or established on the work, bear the cost of re-establishing them if disturbed, and bear the entire expense of rectifying work improperly installed due to not maintaining or protecting or to removing without authorization such established points; stakes and marks.

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

1.08 ADJACENT STRUCTURES AND LANDSCAPING

A. Responsibility:

1. The CONTRACTOR shall also be entirely responsible and liable for all damage or injury as a result of his operations to all other adjacent public and private property, structures of any kind and appurtenances thereto met with during the progress of the work.

2. The cost of protection, replacement in their original locations and conditions or payment of damages for injuries to such adjacent public and private property and structures affected by the work, whether or not shown on the Drawings, and the removal, relocation and reconstruction of such items called for on the Plans or specified shall be included in the various Contract items and no separate payments will be made therefor.

3. CONTRACTOR is expressly advised that the protection of buildings, structures, tunnels, tanks, pipelines, etc. and related work adjacent and in the vicinity of his operations, wherever they may be,
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is solely his responsibility.

4. Conditional inspection of buildings or structures in the immediate vicinity of the project which may reasonably be expected to be affected by the Work shall be performed by and be the responsibility of the CONTRACTOR.

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

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

B. Protection of Trees: All trees and shrubs shall be adequately protected by the CONTRACTOR with boxes or otherwise in accordance with ordinances governing the protection of trees. No excavated materials shall be placed so as to injure such trees or shrubs. Trees or shrubs destroyed by the CONTRACTOR or his employees shall be replaced by him with new stock of similar size and age, at its proper season and at the sole expense of the CONTRACTOR.

C. Lawn Areas: Lawn areas shall be left in as good condition as before the starting of the work. Where sod is to be removed, it shall be carefully removed, and later replaced, or the area where sod has been removed shall be restored with new sod. Before beginning construction, CONTRACTOR shall prepare a video tape along the path of construction showing the date, time, and right-of-way conditions for submission to the Engineer.

D. Restoration of Fences:

1. Any fence, or part thereof, that is damaged or removed during the course of the work shall be replaced or repaired by the CONTRACTOR and shall be left in as good a condition as before the starting of the work.

2. The manner in which the fence is repaired or replaced and the materials used in such work shall be subject to the approval of the CITY.

3. The cost of all labor, materials, equipment, and work for the replacement or repair of any fence shall be deemed included in the appropriate Contract item or items, or if no specific item is provided therefore, as part of the overhead cost of the work, and no additional payment will be made therefor.

E. Restoration of Irrigation Sprinkler Systems:

CONTRACTOR shall contact each property along the route of new piping and construction and locate any existing irrigation/sprinkler systems. CONTRACTOR shall be responsible for the repair/replacement of any damaged irrigation/sprinkler systems on private property or City R/W’s due to work being performed by CONTRACTOR or subcontractors. The CONTRACTOR shall have three (3) working days to repair the damaged irrigation/sprinkler system from the date of damage. If the irrigation/sprinkler system has not been repaired within the three (3) working days, the Engineer/City will notify the CONTRACTOR in writing that the CONTRACTOR has five (5) additional days in which to repair the damaged irrigation/sprinkler system or the City will authorize the property CITY of said damage area to have the system repaired by an independent irrigation/sprinkler company and that cost will be deducted.
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from the CONTRACTOR’s final contract price.

1.09 PROTECTION OF WORK AND PUBLIC

A. Barriers and Lights:
   1. During the prosecution of the work, the CONTRACTOR shall install and maintain at all times such barriers and lights as will effectually prevent accidents.
   2. The CONTRACTOR shall provide suitable barricades, red lights, "danger" or "caution" or "street closed" signs and safety personnel at all places where the work causes obstructions to the normal traffic or constitutes in any way a hazard to the public.

B. Noise:
   1. The CONTRACTOR shall eliminate noise to as great an extent as practicable at all times. Air compressing plants shall be equipped with silencers and the exhaust of all gasoline motors or other power equipment shall be provided with mufflers. The CONTRACTOR shall construct sound barriers as necessary to eliminate noise.
   2. In the vicinity of hospitals and schools, special care shall be used to avoid noise or other nuisances. The CONTRACTOR shall strictly observe all local regulations and ordinances covering noise control.
   3. Except in the event of an emergency, no work shall be done between the hours of 8:00 p.m. and 8:00 a.m., or on Sundays or legal holidays without written permission of the CITY. If the proper and efficient prosecution of the work requires operations during the night, the written permission of the CITY shall be obtained before starting such items of the work.

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

D. Dust Prevention: The CONTRACTOR shall prevent dust nuisance from his operations or from traffic by keeping the roads clean and/or construction areas sprinkled with water at all times.

1.10 CUTTING AND PATCHING:

A. The CONTRACTOR shall do all cutting, fitting or patching of his portion of the work that may be required to make the several parts thereof join and coordinate in a manner satisfactory to the Engineer and in accordance with the Drawings and Specifications.

B. The work must be done by competent workmen skilled in the trade required by the restoration.

1.11 CLEANING

A. During Construction:
   1. During construction of the work, the CONTRACTOR shall, at all times, keep the site of the work and adjacent premises as free from material, debris and rubbish as is practicable and shall remove the same from any portion of the site if, in the opinion of the CITY, such material, debris, or rubbish constitutes a nuisance or is objectionable.
   2. The CONTRACTOR shall remove from the site all of his surplus materials and temporary structures.
when no further need therefore develops. CONTRACTOR shall be responsible and liable for all spillage and incur all associated costs including, but not limited to, costs related to repair and maintenance resulting from damages thereof.

B. Final Cleaning:

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

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

1.12 MISCELLANEOUS

A. Protection Against Siltation and Bank Erosion:

1. The CONTRACTOR shall arrange his operations and construct erosion control devices to minimize siltation and bank erosion on construction sites and on existing or proposed water courses and drainage channels.

2. The CONTRACTOR, at his own expense, shall remove any siltation deposits and correct any erosion problems as directed by the Engineer, which results from his construction operations.

B. Protection of Wetland Areas:

1. The CONTRACTOR shall properly dispose of all surplus material, including soil, in accordance with local, state and federal regulations.

2. Under no circumstances shall surplus material be disposed of in wetland areas as defined by the Florida Department of Environmental Protection, or the St. Johns River Water Management District.

C. Existing Facilities: The work shall be so conducted to maintain existing facilities in operation insofar as is possible.

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

E. Cooperation with Other Contractors and Forces:

1. During progress of work under this Contract, it may be necessary for other Contractors and persons employed by the CITY to work in or about the project.

2. The CITY reserves the right to put such other Contractors to work and to afford such access to the Site of the Work to be performed hereunder at such times as the CITY deems proper.

3. The CONTRACTOR shall not impede or interfere with the work of such other Contractors engaged in or about the work and shall so arrange and conduct his work that such other Contractors may complete their work at the earliest date possible.

F. Construction shall be conducted and shall result in construction of the improvements of this project in full
accordance with the conditions of the Permits granted for the Project.

G. The work of others may interface with the work by the CONTRACTOR. The CONTRACTOR is responsible to meet and coordinate this work with that of others so that the CITY obtains a safe, efficient, timely completion of all work constructed. No additional time or compensation will be granted for this coordination of efforts.

PART 2- PRODUCTS (NOT USED)

PART 3- EXECUTION (NOT USED)

END OF SECTION
1.1 GENERAL

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

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

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

1.2 MEASUREMENT

The quantities for payment under this Contract shall be determined by actual measurement of the completed items, in place, ready for service and accepted by the CITY, in accordance with the applicable method of measurement therefor contained herein. A representative of the CONTRACTOR shall witness all field measurements.

1.3 NON-PAYMENT ITEMS

A. Maintenance of Traffic (MOT): Measurement of various items required for implementing and maintaining an approved MOT plan throughout the duration of this project will not be made for payment and all associated costs of the related items shall be included in the unit price of new pipe installed.

B. Color Audio-Video Taping: Measurement for pre-construction color audio-video taping will not be made for payment and all associated costs of the related items shall be included in the unit price of pipe installed.

C. Construction Photographs: Measurement for construction photographs will not be made for payment and all associated costs of the related items shall be included in the unit price of pipe installed.

D. Temporary Erosion Control: Measurement of various items required for implementing and maintaining a FDEP approved erosion control system throughout the duration of this project will not be made for payment and all associated costs of the related items shall be included in the unit price of new pipe installed.

E. As-Built Drawings: Measurement of various items required to prepare and submit As-Built drawings to the COJB for approval, after the construction of this project is completed will not be made for payment and all associated costs of the related items shall be included in the unit price of new pipe installed.

1.4 ASPHALT RELATED PAY ITEMS
SECTION 01025
MEASUREMENT AND PAYMENT

A. Pavement Replacement - Type SP-9.5 (Coarse Mix) Asphaltic Concrete Surface Course:
   1. Measurement of Type SP-9.5 (Coarse Mix) asphaltic concrete surface course will be the actual area of the surface course placed, not to exceed the maximum trench width plus the added width of surfacing as shown on the Drawings.
   2. Payment for Type SP-9.5 (Coarse Mix) asphaltic concrete surface course for pavement restoration will be made at the Contract unit price per square yard for the respective thickness, which price shall be full compensation for all necessary preparation, tack coat, placing and compaction of surface course, all necessary labor, materials, equipment and transportation. All thicknesses of asphaltic concrete surface courses will be classified under this item for payment purposes.

B. Limerock/Crushcrete Base:
   1. Measurement of 6-inch limerock/crushcrete will be the actual quantity of compacted limerock/crushcrete used.
   2. Payment for limerock/crushcrete will be made at the Contract unit price per square yard which shall be full compensation for all necessary preparation, placing and compaction, testing, all necessary labor, equipment and transportation.

C. 12” Stabilized Subgrade:
   1. Payment for the 12” stabilized subgrade will be made at the Contract unit price per square yard which shall be full compensation for all necessary preparation, placing and compaction, testing, all necessary labor, equipment and transportation.

D. Concrete Driveway/Sidewalk Restoration - 6” Thickness (3000 PSI with Commercial Grade Fibermesh):
   1. Measurement of Portland cement concrete driveway restoration will be the actual areas reconstructed and accepted, not to exceed the maximum pay limits as specified in the details.
   2. Payment for Portland cement driveway restoration will be made at the Contract unit price per square yard, which price shall be full compensation for labor, materials, and all operations necessary for the cutting, removal and replacement of all Portland cement concrete driveways satisfactorily restored.

E. Thermoplastic Pavement Markings:
   1. Measurement of Pavement Markings will be based on linear feet and width of pavement markings that are installed.
   2. Payment will include all work necessary to place the pavement markings.

F. Solid Sod Replacement:
   1. Measurement of Solid Sod Replacement will be the actual area sodded and accepted, not to exceed the maximum pay limits as specified in the details.
   2. Payment for Solid Sod Replacement will be made at the Contract unit price per square yard for 12” Well Header for WTP 1, Well No. 16 & 6” WM Replacement.
SECTION 01025
MEASUREMENT AND PAYMENT

the item, which price shall be full compensation for all materials, tools, equipment, labor and all work necessary to establish the sod, including fertilizer and water. No payment will be made unless the placement of sod is directed by the Engineer and the sod becomes established.

1.5 STORMWATER RELATED PAY ITEMS (N/A)

1.6 EXCAVATING, BACKFILLING & COMPACTING RELATED PAY ITEMS

A. Fill Material: Payment for Fill Material shall be made at the Contract unit price per cubic yard (compacted in-place survey volume) for the item, which price and payment shall be full compensation for all tools, equipment, labor, transportation, fill material, placement and compaction of material to final grades shown on Contract Drawings, and all work necessary to complete the item as specified. No payment will be made unless the placement of fill material is directed by the Engineer.

1.7 WATER MAIN & WELL HEADER RELATED PAY ITEMS

A. New Water Service Connections:
   1. The number of service connections of each of the types to be paid for will be determined by the actual count of units installed and accepted.
   2. Payment for New Water Main Service Connections will be made at the Contract unit price per each for the respective types, which price shall be full compensation for furnishing and installing service saddle, connection to the watermain, 1” water service tubing, 1” corporation stop, 1” curb stop, meter box and other incidentals necessary to complete this item.
   3. All long-side water services will be bored or close-faced jacked under the road. Open cut will be allowed on short-side services ONLY.

B. New Water Service Transfer Connections:
   1. The number of service transfer connections of each of the types to be paid for will be determined by the actual count of units installed and accepted.
   2. Payment for New Water Main Service Transfer Connections will be made at the Contract unit price per each for the respective types, which price shall be full compensation for furnishing and installing service saddle, connection to the watermain, 1” water service tubing, 1” corporation stop, 1” curb stop, new meter box and lid, connection to the existing water service meter and other incidentals necessary to complete this item.

C. Furnish & Install Gate Valve/ Tapping Saddle and Valve:
   1. Measurement for payment of gate valves will be the number of each type and size constructed and accepted.
   2. Payment for gate valves will be made at the Contract unit price per each for each gate valve constructed which price and payment shall be full compensation for all excavation, dewatering and sheeting, concrete, masonry, frames and covers, backfill and all other work required or
SECTION 01025
MEASUREMENT AND PAYMENT

specified for their satisfactory installation.

D. Furnish & Install PVC Water Main & Well Header (Sub-items dependent on size and type)

1. Measurement of PVC water main & well header shall be the horizontal distance in linear feet measured along the centerline of the pipe.

2. Payment for PVC water main & well header will be made at the Contract unit price per linear foot for the respective size and type which price and payment shall be full compensation for all mobilization, pre-construction video, construction photographs, clearing, grubbing, excavation, dewatering, sheeting, pipe bedding, backfill and compaction, for all pipe and other materials, testing, disinfection, for all equipment, for all existing shrubbery, fencing, sprinkler systems, and miscellaneous landscaping disturbed by construction, and all other work necessary to complete the installation as specified.

3. Any restoration outside the limits shown on the Drawings or specified elsewhere will be at the CONTRACTOR’s expense.

E. Furnish & Install Ductile Iron Fittings for Water Main & Well Header (Sub-items dependent on size and type)

1. Measurement of ductile iron pipe fittings water main of each type and size of fitting constructed and accepted.

2. Payment for ductile iron pipe fittings for water main & well header will be made at the Contract unit price per each for the item satisfactorily installed, and such payment shall include full compensation for all fittings, other materials, supports, joining, and all equipment and all other work necessary to complete an acceptable installation. All work associated with excavation, backfill, restoration, testing, disinfection, and joint restraint will be paid for under paragraph D.

F. Fire Hydrant Assembly (Complete)

1. The number of fire hydrants to be paid for will be determined by the actual count of units furnished, installed and accepted. Payment for the relocation and/or reconnection of existing fire hydrants will be determined by the actual number of units relocated and/or reconnected at the Contract unit price per each for the item.

2. Payment for Fire Hydrants will be made at the Contract unit price per each for the item, which price and payment shall be full compensation for furnishing, installing and testing the hydrant, complete with mainline tee, the pipe stub from the main to the hydrant, gate valve with valve box, hydrant, hydrant extension (if required), joint restraints, to make a complete and operational fire hydrant assembly.

3. Payment for the relocation and/or reconnection of existing fire hydrants shall include the tee but not the pipe stub or the gate valve. Payment for the pipe stub and the gate valve will be determined by the actual quantity installed and will be paid at the Contract unit price per each for the item.

G. Existing Water Main Removal

1. Measurement of removal of existing water mains shall be the horizontal distance in linear feet measured along the centerline of the pipe.

2. Payment for removal of existing water mains will be made at the Contract unit price per linear foot.
foot, which price and payment shall be full compensation for all mobilization, clearing, grubbing, excavation, dewatering, sheeting, pipe removal and disposal, cutting existing pipe, backfill and compaction, for all equipment, for all existing shrubbery, fencing, and miscellaneous landscaping disturbed by construction, and all other work necessary to complete the installation as specified.

3. Any restoration outside the limits shown on the Drawings or specified elsewhere will be at the CONTRACTOR’s expense.

1.8 SEWAGE MANHOLES (N/A)

1.9 GRAVITY SEWERS (N/A)

1.10 SEWAGE FORCE MAINS (N/A)

END OF SECTION
PART 1 - GENERAL

A. The Contractor shall obtain and pay for all permits and licenses related to his work, including but not limited to, Duval County Permitting and the City of Jacksonville Beach, as provided for in Section 00700: General Conditions except as otherwise provided herein.

B. Permits by Owner: The Owner prior to the advertisement of the project has applied for permits with the following agencies:

N/A

(Refer to Table 01065A for permit information.)

C. Dewatering Permit: Within fourteen (14) calendar days of issuance of Notice to Proceed, the Contractor shall submit a dewatering plan for construction. This plan will be used in support of the Contractor's application for a permit from St. Johns River Water Management District (SJRWMD) for said project and shall outline means of dewatering for construction, water control and disposal, water quality protection, the means and methods of construction for the project, restoration of the site, and other pertinent information that may be required by SJRWMD. Consult with SJRWMD and include their requirements for additional information in the dewatering plan.

Table 01065A
PERMIT INFORMATION

The following permits have been obtained or will be obtained by the Owner prior to construction:

<table>
<thead>
<tr>
<th>Permit</th>
<th>Permit No.</th>
<th>Issue Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDEP-12” Offsite Well Header</td>
<td>0128730-144-DS</td>
<td>JUNE 4, 2019</td>
</tr>
<tr>
<td>6” Water Main Replacement</td>
<td>No Permit Req’d</td>
<td>N/A</td>
</tr>
</tbody>
</table>

END OF SECTION
PART 1 - GENERAL

1.01 PUBLIC NUISANCE

A. The CONTRACTOR shall not create a public nuisance including, but not limited to, encroachment on adjacent lands, flooding of adjacent lands, or excessive noise.

B. Sound levels measured by the Engineer or CITY’s personnel shall not exceed 80 dBA from 8:00 a.m. to 8:00 p.m. This sound level shall be measured at the exterior of the nearest exterior wall of the nearest residence. Levels at the equipment shall not exceed 85 dBA at any time. Sound levels in excess of these values are sufficient cause to have the work halted until equipment can be quieted to these levels. Work stoppage by the Engineer or CITY for excessive noise shall not relieve the CONTRACTOR of the other portions of this specification including, but not limited to, completion dates and bid amounts.

C. No extra charge may be made for time lost due to work stoppage resulting from the creation of a public nuisance.

1.02 SUSPENSION OF WORK

During inclement weather, all work, which might be damaged or rendered inferior by such weather conditions, shall be suspended. The orders and decisions of the Engineer as to suspensions shall be final and binding. During suspension of the work from any cause, the work shall be suitably covered and protected so as to preserve it from injury by the weather or otherwise; and, if the Engineer shall so direct, rubbish and surplus materials shall be removed.

1.03 SPECIAL REQUIREMENTS

The following requirements shall govern:

A. No additional payment will be made for pumping or other difficulties encountered due to ground water.

B. The CONTRACTOR shall, prior to interrupting a utility service (water, sewer, etc.) for the purpose of making cut-ins to the existing lines or for any other purposes, contact the CITY and make arrangements for the interruption, which will be satisfactory to the CITY.

C. All equipment delivered to the job site shall be properly protected from dirt, dust, dampness, water and any other condition detrimental to the life of the equipment from the date of delivery to the time that control of the equipment is assumed by the CITY. If any equipment is delivered to the job site before any building thereon is enclosed, it shall be housed in a temporary, structurally rigid, watertight, climate controlled enclosure.

D. Certain information regarding the reputed presence, size, character and location of existing underground structures, pipes and conduits have been shown on the Contract Drawings. There is no certainty of the accuracy of this information, and the location of underground structures shown may be inaccurate and other obstructions than those shown may be encountered. The CONTRACTOR hereby distinctly agrees that the CITY and Engineer are not responsible for the correctness or sufficiency of the information given; that in no event is this information to be considered as a part of the Contract; and that consideration for equitable compensation will be made for conditions materially different from those shown on the Drawings, as determined by the CITY/Engineer.

1.04 PUMPING

A. The CONTRACTOR, with his own equipment, shall do all pumping necessary to prevent floatation of any part of the structures during construction operations.

B. The CONTRACTOR shall, for the duration of the contract and with his own equipment, pump out water and wastewater, which may seep or leak into the structures. Operating areas shall be kept dry at all times. The extent of pumping required in non-operating areas will be determined by the Engineer.
SECTION 01100
SPECIAL PROJECT PROCEDURES

1.05 FLORIDA DEPARTMENT OF TRANSPORTATION RIGHTS-OF-WAY

A. The CONTRACTOR shall strictly adhere to the requirements of the Florida Department of Transportation where construction work is in a right-of-way under the jurisdiction of the State of Florida.

B. The CONTRACTOR shall take care to avoid any unreasonable traffic conflicts due to the work in the road rights-of-way.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION
PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope of Work:

1. The CONTRACTOR shall submit to the Engineer for review and approval, 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.

2. Within thirty (30) calendar days after the Effective Date of the Agreement, the CONTRACTOR shall submit to the Engineer a complete list of preliminary Data on items for which Shop Drawings are to be submitted. Included in this list shall be the names of all proposed manufacturers furnishing specified items. Review of this list by the Engineer shall in no way expressed or implied relieve the CONTRACTOR from submitting complete Shop Drawings and providing materials, equipment, etc., fully in accordance with the Specifications. This procedure is required in order to expedite final review of Shop Drawings.

3. The CONTRACTOR is to maintain an accurate updated submittal log and will bring this log to each scheduled progress meeting with the CITY and the Engineer. This log should include the following items:

   a. Submittal-Description and Number assigned.
   b. Date to Engineer.
   c. Date returned to CONTRACTOR (from Engineer).
   d. Status of Submittal (Approved as Noted, Rejected/Resubmit).
   e. Date of Re-submittal and Return (as applicable).
   f. Date material release (for fabrication).
   g. Projected date of fabrication.
   h. Projected date of delivery to site.
   i. Status of O&M manuals submittal.
   j. Specification Section.
   k. Drawings Sheet Number.

1.2 CONTRACTOR'S RESPONSIBILITY

A. It is the duty of the CONTRACTOR to check all drawings, Data and Samples prepared by or for him before submitting them to the Engineer for review. Each and every copy of the Drawings and Data shall bear the CONTRACTOR's stamp showing that they have been so checked. Shop Drawings submitted to the Engineer without the CONTRACTOR's stamp will be returned to the CONTRACTOR for conformance with this requirement. Shop Drawings shall indicate any deviations in the submittal from requirements of the Contract Documents. If the CONTRACTOR takes exception to the specifications, the CONTRACTOR shall note the exception in the letter of transmittal to the Engineer.

B. Determine and verify:

1. Field measurements.
2. Field construction criteria.
3. Catalog numbers and similar Data.
4. Conformance with Specifications.

C. The CONTRACTOR shall furnish the Engineer a schedule of Shop Drawings submittals fixing the respective dates for the submission of Shop and Working Drawings, the beginning of manufacture, testing
SECTION 01340
SHOP DRAWINGS, WORKING DRAWINGS, AND SAMPLES

and installation of materials, supplies and equipment. This schedule shall indicate those that are critical to the progress schedule.

D. The CONTRACTOR shall not begin any of the work covered by a Shop Drawing, Data, or a Sample returned for correction until a revision or correction thereof has been reviewed and returned to him, by the Engineer, with approval.

E. The CONTRACTOR shall submit to the Engineer all drawings and schedules sufficiently in advance of construction requirements to provide no less than thirty (30) calendar days for checking and appropriate action from the time the Engineer receives them.

F. All submittals shall be accompanied with a transmittal letter prepared in duplicate containing the following information:

1. Date.
2. Project Title and Number.
3. CONTRACTOR's name, address, phone and fax numbers.
4. The number of each Shop Drawing, Project Data, and Sample submitted.

G. The CONTRACTOR shall submit four (4) copies of descriptive or product Data submittals to complement Shop Drawings for the Engineer plus the number of copies which the CONTRACTOR requires returned. The Engineer will retain four (4) sets. All blueprint Shop Drawings shall be submitted with one (1) set of Mylar reproducibles and four (4) sets of prints. The Engineer will review the blueprints and return to the CONTRACTOR the set of marked-up Mylar reproducibles with appropriate review comments.

H. The CONTRACTOR shall be responsible for and bear all costs of damages, which may result from the ordering of any material or from proceeding with any part of work prior to the completion of the review by the Engineer of the necessary Shop Drawings.

I. The CONTRACTOR shall be fully responsible for observing the need for and making any changes in the arrangement of piping, connections, wiring, manner of installation, etc., which may be required by the materials/equipment he proposed to supply both as pertains to his own work and any work affected under other parts, headings, or divisions of drawings and specifications.

1.3 ENGINEER'S REVIEW OF SHOP DRAWINGS

A. The Engineer's review of Shop Drawings, Data and Samples submitted by the CONTRACTOR will cover only general conformity to the Specifications, external connections, and dimensions, which affect the installation. The Engineer's review and exceptions, if any, will not constitute an approval of dimensions, quantities, and details of the material, equipment, device, or item shown.

B. The review of drawings and schedules will be general, and shall not be construed:

1. As permitting any departure from the Contract requirements.
2. As relieving the CONTRACTOR of responsibility for any errors, including details, dimensions, and materials.
3. As approving departures from details furnished by the Engineer, except as otherwise provided herein.

C. If the drawings or schedules as submitted describe variations per Paragraph 1.02A. herein, and show a departure from the Contract requirements which the Engineer finds to be in the interest of the CITY and to be so minor as not to involve a change in Contract Price or time for performance, the Engineer may return the reviewed drawings without noting an exception.

01340-2
D. When reviewed by the Engineer, each of the Shop Drawings will be identified as having received such review being so stamped and dated. Shop Drawings stamped "REVISE AND RESUBMIT" and with required corrections shown will be returned to the CONTRACTOR for correction and re-submittal.

E. Re-submittals will be handled in the same manner as first submittals. On re-submittals the CONTRACTOR shall direct specific attention, in writing or on re-submittal Shop Drawings, to revisions other than the corrections requested by the Engineer on previous submissions. The CONTRACTOR shall make any corrections required by the Engineer.

F. If the CONTRACTOR considers any correction indicated on the drawings to constitute a change to the Contract Drawings or Specifications, the CONTRACTOR shall give written notice thereof to the Engineer.

G. Shop Drawings and submittal Data shall be reviewed by the Engineer for each original submittal and first and second re-submittal; thereafter review time for subsequent re-submittals shall be charged to the CONTRACTOR in accordance with the terms of the Engineer's Agreement with the CITY.

H. When the Shop Drawings have been completed to the satisfaction of the Engineer, the CONTRACTOR shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.

I. No partial submittals will be reviewed. Submittals not complete will be returned to the CONTRACTOR for re-submittal. Unless otherwise specifically permitted by the Engineer, make all submittals in groups containing all associated items for:

2. Processes.
3. As indicated in specific Specifications Sections.

All drawings, schematics, manufacturer's product Data, certifications and other Shop Drawing submittals required by a system specification shall be submitted at one time as a package to facilitate interface checking.

1.4 SHOP DRAWINGS

A. When used in the Contract Documents, the term "Shop Drawings" shall be considered to mean CONTRACTOR's plans for materials and equipment, which become an integral part of the project. These drawings shall be complete and detailed. Shop Drawings shall consist of fabrication, erection and setting drawings and schedule drawings, manufacturer's scale drawings, and wiring and control diagrams. Cuts, catalogs, pamphlets, descriptive literature, and performance and test data, shall be considered only as supportive to required Shop Drawings as defined above. As used herein, the term "manufactured" applies to standard units usually mass-produced; and "fabricated" means items specifically assembled or made out of selected materials to meet individual design requirements.

B. Manufacturer's catalog sheets, brochures, diagrams, illustrations and other standard descriptive data shall be clearly marked to identify pertinent materials, product or models. Delete information, which is not applicable to the Work by striking or cross-hatching.

C. Drawings and schedules shall be checked and coordinated with the work of all trades involved, before they are submitted for review by the Engineer and shall bear the CONTRACTOR's stamp of approval as evidence of such checking and coordination. Drawings or schedules submitted without this stamp of approval shall be returned to the CONTRACTOR for resubmission.

D. Each Shop Drawing shall have a blank area 3-1/2 inches by 3-1/2 inches, located adjacent to the title block. The title block shall display the following:
SECTION 01340
SHOP DRAWINGS, WORKING DRAWINGS, AND SAMPLES

1. Project Title and Number.
2. Name of project building or structure.
3. Number and title of the Shop Drawing.
4. Date of Shop Drawing or revision.
5. Name of CONTRACTOR and subCONTRACTOR submitting drawing.
6. Supplier/manufacturer.
7. Separate detailer when pertinent.
8. Specification title and number.
10. Application Contract Drawing Number.

E. If Shop Drawings show variations from Contract requirements because of standard shop practice or for other reasons, the CONTRACTOR shall describe such variations in his letter of transmittal. If acceptable, proper adjustment in the Contract shall be implemented where appropriate. If the CONTRACTOR fails to describe such variations, he shall not be relieved of the responsibility for executing the work in accordance with the Contract, even though such drawings have been reviewed.

F. Data on materials and equipment include, without limitation, materials and equipment lists, catalog data sheets, cuts, performance curves, diagrams, materials of construction and similar descriptive material. Materials and equipment lists shall give, for each item thereon, the name and location of the supplier or manufacturer, trade name, catalog reference, size, finish and all other pertinent Data.

G. 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.

H. Only the Engineer will utilize the color "red" in marking Shop Drawing submittals.

1.5 WORKING DRAWINGS

A. When used in the Contract Documents, the term "Working Drawings" shall be considered to mean the CONTRACTOR's plan for temporary structures such as temporary bulkheads, support of open cut excavation, support of utilities, ground water control systems, forming and falsework; for underpinning; and for such other work as may be required for construction but does not become an integral part of the Project.

B. Copies of Working Drawings as noted in Paragraph 1.05A. above, shall be submitted to the Engineer where required by the Contract Documents or requested by the Engineer, and shall be submitted at least thirty (30) calendar days (unless otherwise specified by the Engineer) in advance of their being required for work.

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

1.6 SAMPLES

A. The CONTRACTOR shall furnish, for the approval of the Engineer, Samples required by the Contract Documents or requested by the Engineer. Samples shall be delivered to the Engineer as specified or directed. The CONTRACTOR shall prepay all shipping charges on Samples. Materials or equipment for which Samples are required shall not be used in work until approved by the Engineer.

B. Samples shall be of sufficient size and quantity to clearly illustrate:
SECTION 01340
SHOP DRAWINGS, WORKING DRAWINGS, AND SAMPLES

1. Functional characteristics of the product, with integrally related parts and attachment devices.

2. Full range of color, texture and pattern.

3. A minimum of two (2) Samples of each item shall be submitted.

C. Each Sample shall have a label indicating:

1. Name of Project.
2. Name of CONTRACTOR and SubCONTRACTOR.
3. Material or Equipment Represented.
4. Place of Origin.
5. Name of Producer and Brand (if any).
6. Location in Project.

(Samples of finished materials shall have additional marking that will identify them under the finished schedules.)

D. The CONTRACTOR shall prepare a transmittal letter in triplicate for each shipment of Samples containing the information required in paragraph 1.06B. above. He shall enclose a copy of this letter with the shipment and send a copy of this letter to the Engineer. Approval of a Sample shall be only for the characteristics or use named in such approval and shall not be construed to change or modify any Contract requirements.

E. Approved Samples not destroyed in testing shall be sent to the Engineer or stored at the site of the work. Approved Samples of the hardware in good condition will be marked for identification and may be used in the work. Materials and equipment incorporated in work shall match the approved Samples. Samples, which failed testing or were not approved, will be returned to the CONTRACTOR at his expense, and if so requested at time of submission.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION
PART 1 - GENERAL

1.1 DESCRIPTION OF WORK:

Progress video discs shall be made at periodic intervals, not to exceed 30 days showing the extent and progress of the work performed as of that date. Video discs shall be taken at each location of work on the day ending period for which partial payment is requested during the development of stages and condition of work and as directed by the Engineer. Typical pipeline work shall be video recorded at different stages of construction at the direction of the Engineer.

A. Initial video disc inspection of existing conditions shall be taken no later than 14 calendar days after notice to proceed and prior to beginning of any construction.

B. At each specified time, take video discs of each major area of work.

C. Final video discs shall be submitted and approved by the Engineer/CITY prior to final acceptance and payment.

1.2 QUALITY ASSURANCE

A. Video Camera Operator: The operator may be an employee of the CONTRACTOR and must be completely familiar with the proper operation of the camcorder and video recorder. Employ operator only after review of his qualifications by Engineer.

1.3 SUBMITTALS

A. Submit qualifications and experience record of operator.

B. Video discs shall be submitted to the Engineer at the time of each payment request and shall be the property of the CITY.

PART 2 - PRODUCTS

2.1 DVD VIDEO: Audio-video DVD digital media.

2.2 CAMCORDER: The video camcorder shall have minimum 8:1 200 m lens with macro features, external light, 2-lux capability.

2.3 AT THE END OF THE PROJECT: All video discs with index based on elapsed time of tape shall become the property of the CITY.

PART 3 - EXECUTION

3.1 GENERAL

A. The following location information shall be provided on color audio-video disc recording.

1. Audio: Each recording shall begin with a verbal description of the current date, project name and municipality and be followed by the general location, name of the street, viewing side and direction of progress.

2. Video: Transparent information must appear on the viewing screen. This information will consist of the date and time of recording. The date information will contain the month, day and year.

3. Digital: To preclude the possibility of tampering or editing in any manner, all video recordings must by electronic means, display continuously and simultaneously generated transparent digital information to include the date and time of recording. The date information will include the month, day and year.

B. The video coverage shall include all surface features located within the zone of influence of construction supported by appropriate audio description. Audio description shall be made...
SECTION 01381
CONSTRUCTION VIDEO DISCS

simultaneously with video coverage. Such coverage shall include, but not be limited to, all existing driveways, sidewalks, fences, curbs, ditches, roadways, landscaping, trees, culverts, headwalls, retaining walls, or buildings located within such zone of influence. Particular and detailed attention shall be given to any defects noted, such as cracks, disturbed areas, damaged items, or as may be required by the Engineer. It is the intent of this coverage to accurately and clearly document pre-existing conditions and especially any items that could result in construction claims. The excavation areas shall be physically marked with high visibility fluorescent paint prior to video recording. The markings shall include the job number and stationing.

C. The zone of influence shall be defined as an area within 30 feet of the proposed work.

D. The CONTRACTOR shall be able to televise and video record areas with paved roads, along co-owned easements through parks, lawns, and open fields. If video recording on private property, the CONTRACTOR shall give the CITY sufficient prior notice of such entry so that property CITYs may be advised of and their permission obtained for the work.

E. To produce the proper detail and perspective, adequate lighting will be required to fill in the shadow area caused by trees, utility poles, road signs and other such objects in residential areas or as directed by the Engineer.

F. Houses and buildings shall be identified visually by house number, when visible, in such a manner that structures of the proposed system, manholes on a sewer system and hydrants on a water system can be located by reference.

G. The rate of speed in the general direction of travel of the conveyance used during video recording shall not exceed 48 feet per minute in residential areas, nor exceed 100 feet per minute in non-residential areas. Panning rates and zoom-in, zoom-out rates shall be controlled sufficiently such that during playback will produce clarity of the object viewed. The playback picture shall be in focus and be of extreme clarity at all times.

H. All video recording shall be done during times of good visibility. No video recording shall be done during periods of visible precipitation unless otherwise authorized by the Engineer.

I. The CITY shall have the authority to designate what areas may be omitted or added for audio-video coverage.

J. All discs (cassettes and cases) shall be properly identified by disc number, location and project name and municipality in a manner acceptable to the CITY.

K. A record of the contents of each disc shall be supplied by an index sheet identifying each segment in the recording by location, i.e., roll number, street or road viewing, elapsed time of recording (no counter numbers), viewing side, point starting from, traveling direction and ending destination point.

L. Any portion of the video recording not conforming to specifications shall be rejected.

M. Any recorded coverage not acceptable to the CITY shall be refilmed at no additional charge. The CONTRACTOR shall reschedule unacceptable coverage five (5) days after being notified.

N. All video recording shall be performed by CONTRACTOR and reviewed prior to construction.

O. One original and one copy are to be provided. Original to CITY and one copy to Engineer.

3.2 PROGRESS CONSTRUCTION VIDEO

A. Submit video discs on a monthly basis to accompany each request for progress payment to the Engineer.

END OF SECTION
PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope of Work: Provide temporary facilities required which may include but are not necessarily limited to the following:

1. By CONTRACTOR:
   a. Telephone
   b. Temporary water service.
   c. Temporary sanitary facilities.
   d. Temporary electrical service.

1.2 TEMPORARY WATER

A. Furnish and Install Temporary Water Service for use Throughout Construction Period.

1. Water for construction purposes.
2. Water for other purposes.
   a. Testing.
   b. Temporary sanitary facilities.
   c. Cleaning.

B. Maintain Adequate Volume of Water for All Purposes.

C. Water Source:

1. Potable water may be obtained from the City of Jacksonville Beach water distribution system. Potable water used shall be separately metered and protected with approved back flow prevention devices. Potable water used will be billed to the CONTRACTOR at the rate established by the CITY.

D. Maintain Strict Supervision of use of Temporary Services.

1. Enforce conformance with applicable codes and standards.
2. Enforce sanitary practices.
3. Prevent waste of water.
4. Prevent the abuse of services.

E. Costs of Installation and Operation: Pay costs for water used by all trades, including costs of installation, maintenance, and removal of pipe and equipment.

F. Requirements of Regulatory Agencies:

1. Obtain, pay for permits, fees, deposits required by governing authorities.
2. Comply with federal, state, and local codes.

1.3 TEMPORARY ELECTRICITY

A. Furnish and Install Temporary Electric Power Service for Construction needs Throughout Construction Period.
1. Power centers for miscellaneous tools and equipment used in construction work.
   a. Locate so that power is available at any desired point with no more than 100 feet extension.
   b. Provide weatherproof distribution box with grounded outlets.
   c. Provide circuit breaker protection for all outlets.
   d. Provide equipment grounding continuity for entire system.
   e. Users shall provide grounded, Underwriters Laboratories, Inc. (UL) approved extension cords from power center to point of operations.

2. Power for Construction Equipment.

3. Power for testing and checking equipment.

4. Power for welding units and for other equipment having special power requirements.

B. Capacity:
   1. Adequate electrical service for construction use by all trades during construction period.
   2. Notify Power Company if unusually heavy loads such as welding, and other special power requirements, will be connected.
      a. Provide special circuits for heavy load requirements.
      b. Do not overload any circuit.

C. Power Source:
   1. Supplier: City of Jacksonville Beach.
   2. Provide power of correct voltage, phase and frequency, as required, to project site.

D. Maintain Strict Supervision of use of Temporary Services.
   1. Enforce conformance with applicable standards.
   2. Enforce safe practices.
   3. Prevent abuse of services.

E. Costs of Installation and Operation: Pay costs of temporary electrical power used, including costs of installation, meter, maintenance, and removal of temporary services from point of connection.

F. Requirements of Regulatory Agencies:
   1. Obtain and pay for permits as required by governing authorities.
   2. Comply with applicable codes.
      d. Federal, state and local codes and utility company regulations.

1.4 TEMPORARY SANITARY FACILITIES
A. Provide Temporary Sanitary Facilities at the Job Site. The location of the temporary facilities shall be agreeable to the City of Jacksonville Beach and shall not create a public nuisance.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General:
   1. Materials may be new or used, but must be adequate for purpose required, sanitary and must not violate requirements of applicable codes.

2.2 ELECTRICITY

A. Provide Required Facilities, Including Transformers, Conductors, Poles, Conduits, Raceways, Breakers, Fuses and Switches.

B. Provide Appropriate Enclosures for Environment in which used, in Compliance with NEMA Standards.

2.3 TEMPORARY SANITARY FACILITIES

A. Toilet Facilities
   1. Portable chemical toilets.
   2. Toilet Tissue: Provide at each toilet, on suitable dispenser.

PART 3 - EXECUTION

3.1 GENERAL

A. Install work in a neat and orderly manner.

B. Make structurally sound throughout.

C. Maintain to provide continuous service.

D. Modify and extend service as work progress requires.

3.2 TEMPORARY WATER

A. Locate piping and outlets.
   1. Provide service convenient to work stations.
   2. Avoid interference with:
      a. Traffic and work areas.
      b. Materials handling equipment.
      c. Storage areas.

B. Do not run piping on floor or on ground.

C. When necessary to maintain pressure, provide temporary pumps, tanks, and compressors.

3.3 TEMPORARY ELECTRICITY
SECTION 01500
TEMPORARY FACILITIES

A. Service and distribution may be overhead or underground. Contractor shall coordinate with Beaches Energy Services the installation of temporary electrical service.

B. Locate to avoid interference with:
   1. Traffic and work areas.
   2. Cranes.
   3. Material handling equipment.
   4. Storage areas.

C. Do not run branch circuits on floor or on ground.

D. Wire all safety devices specified for final operation of equipment.

E. Check operation of safety devices.

3.4 TEMPORARY SANITARY FACILITIES

A. Portable Toilets:
   1. Erect securely, and anchor to prevent dislocation.
   2. Service as often as necessary to prevent accumulation of wastes, and creation of unsanitary conditions.

B. Washing Facilities: Provide faucet and drain facilities.

3.5 REMOVAL

A. Completely remove temporary materials and equipment upon completion of construction.

B. Clean and repair damage caused by installation and restore to specified, or original condition.

END OF SECTION
PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope of Work:

1. The Work specified in this Section consists of designing, providing, maintaining and removing temporary erosion and sedimentation controls as necessary.

2. Temporary erosion controls include, but are not limited to, grassing, mulching, setting, watering and reseeding on-site surfaces and soil and borrow area surfaces and providing interceptor ditches at ends of berms and at those locations which will ensure that erosion during construction will be either eliminated or maintained within acceptable limits as established by the applicable regulations.

3. Temporary sedimentation controls include, but are not limited to; silt dams, traps, barriers, and appurtenances at the foot of sloped surfaces which will ensure that sedimentation pollution will be either eliminated or maintained within acceptable limits as established by the CITY.

4. CONTRACTOR is responsible for providing effective temporary erosion and sediment control measures during construction or until final controls become effective.

B. Related Work Described Elsewhere:

Loaming, Seeding and Mulching: Section 02922.

PART 2 - PRODUCTS

2.1 EROSION CONTROL

A. Loaming, Seeding and Mulching is specified in Section 02922.

B. Netting shall be fabricated of material acceptable to the CITY.

2.2 SEDIMENTATION CONTROL

A. Bales shall be clean, seed-free cereal hay type.

B. Netting shall be fabricated of material acceptable to the CITY.

C. Filter stone shall be crushed stone which conforms to Florida Department of Transportation (FDOT) specifications.

D. Concrete block shall be hollow, non-load bearing type.

E. Concrete - exterior grade not less than one inch thick.

PART 3 - EXECUTION

3.1 EROSION CONTROL

A. Minimum procedures for grassing are:

1. Scarify slopes to a depth of not less than 6 inches and remove large clods, rock, stumps, roots larger than 1/2 inch in diameter and debris.
2. Sow seed within 24 hours after the ground is scarified with either mechanical seed drills or rotary hand seeders.

3. Apply mulch loosely and to a thickness of between 3/4 inch and 1-1/2 inches.

4. Apply netting over mulched areas on sloped surfaces.

5. Roll and water seeded areas in a manner, which will encourage sprouting of seeds and growing of grass. Reseed areas, which exhibit unsatisfactory growth. Backfill and seed eroded areas.

3.2 SEDIMENTATION CONTROL

Install and maintain silt dams, traps, barriers, and appurtenances as shown on the approved descriptions and working drawings. Hay bales, which deteriorate and filter stone, which is dislodged, shall be replaced.

3.3 PERFORMANCE

Should any of the temporary erosion and sediment control measures employed by the CONTRACTOR fail to produce results which comply with the requirements of the State of Florida, the CITY or Engineer, CONTRACTOR shall immediately take whatever steps are necessary to correct the deficiency at his own expense.

END OF SECTION
PART 1 - GENERAL

1.1 DESCRIPTION

A. SCOPE OF WORK:
   1. Execute cleaning, during progress of the Work and at completion of the Work as required by Section 00700: General Conditions.

B. RELATED REQUIREMENTS DESCRIBED ELSEWHERE:
   2. Each Specification Section: Cleaning for specific Products or Work.

1.2 DISPOSAL REQUIREMENTS

Conduct cleaning and disposal operations to comply with codes, ordinances, regulations, and anti-pollution laws.

PART 2 - PRODUCTS

A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.

B. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.

C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.1 DURING CONSTRUCTION

A. Execute daily cleaning to keep the Work, the site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations or personal activities.

B. Provide on-site containers for the collection of waste materials, debris and rubbish.

C. Remove waste materials, debris and rubbish from the site as needed and dispose of at legal disposal areas away from the site.

3.2 DUST CONTROL

A. Clean interior spaces prior to the start of finish painting and continue cleaning on an as-needed basis until paint is finished.

B. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly-coated surfaces.

3.3 FINAL CLEANING

A. Employ skilled workmen for final cleaning.

B. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.

C. Prior to final completion, or CITY occupancy, CONTRACTOR shall conduct an inspection of sight-exposed interior and exterior surfaces and all work areas, to verify that the entire Work is clean.

END OF SECTION
PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope of Work: Maintain at the site for the CITY one (1) record copy of:
   - Drawings.
   - Specifications.
   - Addenda.
   - Change Orders and other modifications of the Contract.
   - Engineer’s Field Orders or written instructions.
   - Approved Shop Drawings, Working Drawings and Samples.
   - Field Test Records.
   - Construction photographs.

B. Related Requirements Described Elsewhere:
   - Shop Drawings, Working Drawings and Samples: Section 01340.

1.2 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Store documents and samples in CONTRACTOR’s field office apart from documents used for construction.
B. Provide files and racks for storage of documents.
C. Provide locked cabinet or secure storage space for storage of samples.
D. File documents and samples in accordance with CSI format with section numbers as provided herein.
E. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
F. Make documents and samples available at all times for inspection by the Engineer.
G. As a prerequisite for Progress payments, the CONTRACTOR is to exhibit the currently updated “Record Documents” for review by the Engineer and CITY.

1.3 MARKING DEVICES

Provide felt tip marking pens for recording information in the color code designated by the Engineer.

1.4 RECORDING

A. Label each document “PROJECT RECORD” in neat large printed letters.
B. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.
C. Drawings: Legibly mark to record actual construction:
   - All underground piping with elevations and dimensions. Changes to piping location. Horizontal and vertical Locations of underground utilities and appurtenances, referenced to permanent surface improvements. Actual installed pipe material, class, etc.
   - Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
D. Field changes of dimension and detail.
E. Changes made by Change Order.
F. Details not on original Contract Drawings.
G. Equipment and piping relocations.
H. Specifications and Addenda: Legibly mark each section to record:
   - Manufacturer, trade name, catalog number of Supplier of each product and item of equipment actually installed.
I. Changes made by Change Order.
SECTION 01720
PROJECT RECORD DOCUMENTS

M. Shop Drawings (after final review and approval): Provide five (5) sets of record drawings for each process equipment, piping, electrical system and instrumentation system.

1.5 SUBMITTAL

A. At Contract closeout, after review by the engineer and the city staff, the CONTRACTOR shall deliver Record Documents to the Engineer for the CITY, the following:

B. The record as-built drawings shall be submitted to the Engineer in Auto-CAD, Release 2016. Two (2) CD’s in ACAD format, two (2) CD’s in PDF format, and two (2) sets of blue-line drawings signed/sealed (full size).

C. Accompany submittal with transmittal letter in duplicate, containing:

1. Date.
2. Project title and number.
3. CONTRACTOR’s name and address.
4. Title and number of each Record Document.
5. Signature of CONTRACTOR or his authorized representative.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION
PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope of Work:
   1. Compile specified warranties and bonds, as in Article 5 and 13 of Section 00700: General Conditions and as specified in these Specifications.
   2. Co-execute submittals when so specified.
   3. Review submittals to verify compliance with Contract Documents.
   4. Submit to the Engineer for review and transmittal to CITY.

B. Related Work Described Elsewhere:
   1. Instruction to Bidders: Bid Bonds.
   3. General Conditions: Section 00700.
   4. Special Project Procedures: Section 01100.

1.2 SUBMITTAL REQUIREMENTS

A. Assemble warranties, bonds and service and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.

B. Number of original signed copies required: Two (2) each.

C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.
   1. Product of work item.
   2. Firm, with name of principal, address and telephone number.
   4. Date of beginning of warranty, bond or service and maintenance contract.
   5. Duration of warranty, bond or service maintenance contract.
   6. Provide information for CITY's personnel:
      a. Proper procedure in case of failure.
      b. Instances, which might affect the validity of warranty or bond.
   7. CONTRACTOR, name of responsible principal, address and telephone number.

1.3 FORM OF SUBMITTALS

A. Prepare in duplicate packets.
B. Format:
SECTION 01740
WARRANTIES AND BONDS

1. Size 8-1/2 inches by 11 inches, punch sheets for standard three-post binder. Fold larger sheets to fit into binders.

2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS".
   List:
   a. Title of Project.
   b. Name of CONTRACTOR.

C. Binders: Commercial quality, three-post binder, with durable and cleanable plastic covers and maximum post width of two (2) inches.

1.4 WARRANTY SUBMITTALS REQUIREMENTS

A. For all major pieces of equipment, submit a warranty from the equipment manufacturer. The manufacturer's warranty period shall be concurrent with the CONTRACTOR's for one (1) year, unless otherwise specified, commencing at the time of final acceptance by the CITY.

B. The CONTRACTOR shall be responsible for obtaining certificates for equipment warranty for all major equipment specified under Divisions 11: Equipment; and 15: Mechanical; and which has at least a 1 hp motor or which lists for more than $1,000. The Engineer reserves the right to request warranties for equipment not classified as major. The CONTRACTOR shall still warrant equipment not considered to be "major" in the CONTRACTOR's one-year warranty period even though certificates of warranty may not be required.

C. The CITY shall incur no labor or equipment cost during the guarantee period.

D. Guarantee shall cover all necessary labor, equipment and replacement parts resulting from faulty or inadequate design, improper assembly or erection, defective workmanship and materials, leakage, breakage or other failure of all equipment and components furnished by the manufacturer.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)
PART 1 – GENERAL

1.1 DESCRIPTION

A. Scope of Work:

This section describes the work included in clearing the pipeline rights-of-way for construction operations.

B. Related Work Specified Elsewhere:

1. General Conditions: Section 00700.

2. Excavating, Backfilling, and Compacting: Section 02200.

C. Clearing Within Existing Rights-Of-Way:

Adhere to requirements of agency issuing permits for construction within its right-of-way.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

A. Clearing: Remove and dispose of trees, snags, stumps, shrubs, brush, limbs, and other vegetative growth within the easement areas as required for trenching and installation of pipe. Remove all evidence of their presence from the surface (to a depth of twelve (12) inches below the surface) including sticks and branches. Remove and dispose of trash piles and rubbish. Protect trees, shrubs, and vegetative growth and fencing, which, are not required to be removed. The Contractor will be responsible to obtain any clearing permits required by all local laws, codes, and ordinances and comply with any tree mitigation requirements pertaining to the clearing permit.

B. Trees and Shrubbery: Inspect the rights-of-way as to the nature, location, size, and extent of vegetative material to be removed or preserved, as specified herein. Preserve in place trees that are specifically shown on the Drawings and specified herein to be preserved.

C. Preservation of Trees, Shrubs, and Other Plant Material:

1. All plant materials (trees, shrubbery, and plants) beyond the easement and right-of-way limits shall be saved and protected from damage resulting from the work. No filling, excavating, trenching, or stockpiling of materials will be permitted within the drip lines of these plant materials. The drip line is defined as a circle drawn by extending a line vertically to the ground from the outermost branches of a plant or group of plants. To prevent soil compaction within the drip line area, no equipment will be permitted within this area.

2. Cut and remove tree branches where such cutting is necessary to effect construction operation. Remove branches other than those required to effect the work to provide a balanced appearance of any tree. Scars resulting from the removal of branches shall be treated with a tree sealant.

D. Disposal of Clearing Debris: Do not burn combustible materials. Remove all cleared material from the worksite and dispose of in accordance with all local laws, codes, and ordinances.

END OF SECTION
PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope of Work: This section describes the work included in clearing, grubbing, stripping, and otherwise preparing the project site for construction operations.

B. Clearing: Remove and dispose of shrubs, brush, limbs, and other vegetative growth. Remove all evidence of their presence from the surface including sticks and branches. Remove and dispose of trash piles and rubbish that collects during construction. Protect trees, shrubs, vegetative growth, and fencing, which are not designed for removal. Clearing operations shall be conducted so as to prevent damage to existing structures and installations, and to those under construction, so as to provide for safety of employees and others.

C. Grubbing: Grubbing shall consist of the complete removal of all stumps, roots larger than 1-1/2 inches in diameter, matted roots, brush, timber, logs, and any other organic or metallic debris remaining after clearing not suitable for construction purposes, resting on, under or protruding through the surface of the ground to a depth of 18 inches below the subgrade. All depressions excavated below the original ground surface for or by the removal of such objects, shall be refilled with suitable materials and compacted to a density conforming to the surrounding ground surface.

D. Stripping: Remove and dispose of all organics and sod, topsoil, grass, and grass roots, and other objectionable material remaining after clearing and grubbing from the areas designated to be stripped. Grass and grass roots in areas to be excavated or filled upon shall be stripped off to a depth of 4 inches. In areas so designated, topsoil shall be stockpiled. Topsoils so stockpiled shall be protected until it is placed as specified. Any topsoil remaining after all work is in place shall be disposed of by the Contractor unless directed otherwise by the Engineer.

PART 2 - MATERIALS

2.1 GENERAL

A. Trees and Shrubbery: Existing trees, shrubbery, and other vegetative material may not be shown on the Drawings. Inspect the site as to the nature, location, size, and extent of vegetative material to be removed or preserved, as specified herein. Preserve, in place, trees that are specifically shown on the drawings and not designated to be removed.

B. Preservation of Trees, Shrubs, and Other Plant Material:

1. All plant materials (trees, shrubbery, and plants) beyond the limits of clearing and grubbing shall be saved and protected from damage resulting from the work. No filling, excavating, trenching, or stockpiling of materials will be permitted within the drip line of these plant materials. The drip line is defined as a circle drawn by extending a line vertically to the ground from the outermost branches of a plant or group of plants. To prevent soil compaction within the drip line area no equipment will be permitted within this area.

2. When trees are close together, restrict entry to area with drip line by fencing. In areas where no fence is erected, the trunks of all trees 2 inches or greater in diameter shall be protected by encircling the trunk entirely with boards held securely by 12-gauge wire and staples. This protection shall extend from ground level to a height of 6 feet. Cut and remove tree branches where such cutting is necessary to affect construction operation. Remove branches other than those required to affect the work to provide a balanced appearance of any tree. Scars resulting from the removal of branches shall be treated with a tree sealant.
PART 3 - EXECUTION

3.1 GENERAL

A. Clearing and Grubbing Limits: All excavation and embankment areas associated with the new stormwater system shall be cleared and grubbed to 2 feet below excavated surface.

B. Disposal of Clearing and Grubbing Debris: Do not burn combustible materials. Remove all cleared and grubbed material from the work site and dispose of in accordance with all local laws, codes, and ordinances.

C. Areas to be Stripped: All excavation and embankment areas associated with new structures shall be stripped. Stockpile areas shall be stripped.

D. Disposal of Strippings: Remove all stripped material and dispose off-site, unless otherwise directed to stockpile material.
PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: The work to be performed under this section shall include the design and installation of a temporary dewatering system until completion of construction to remove storm and subsurface waters from structure or utility trench excavations as required.

1.02 QUALITY ASSURANCE

A. Qualifications: The temporary dewatering system shall be designed by a firm who regularly engages in the design of dewatering systems and who is fully experienced, reputable and qualified in the design of such dewatering systems. The firm shall have a successful record of operation for a minimum of five (5) years prior to bid date. The design firm shall supply the Engineer with previous installation details of at least three (3) successful dewatering operations of a similar nature in the State of Florida.

B. In lieu of experience, the Contractor shall provide a performance and warranty bond for 1.0 times the total installed cost of the temporary dewatering system. This bond shall be executed prior to award and/or contract execution.

C. Standards: The dewatering of any excavation areas and the disposal of water during construction shall be in strict accordance with all local and state government rules and regulations. If a consumptive use permit is required by SJRWMD, the Contractor shall be responsible for preparing, submitting, and paying any applicable fees for said permit. The cost for obtaining this permit shall be included in the unit price items in the bid and no separate or additional payment will be made.

D. If a NPDES permit is required the Contractor shall prepare, submit, obtain and pay for the permit application fees associated with obtaining this permit. The cost for obtaining this permit shall be included in the unit price items in the bid form and no separate or additional payment will be made.

1.03 SUBMITTALS

A. Submit to the Engineer for review, the proposed methods of construction, including dewatering, excavation, bedding, filling, compaction and backfilling for the various portions of the Work. Review shall be for method only. The Contractor shall remain responsible to the adequacy and safety of the methods.

B. Submittals shall be in accordance with Section 01340, and shall include the following:

1. Design Notes and Drawings.
2. Descriptive literature of the temporary dewatering system.
3. Layout of all piping involved.
4. Observation well locations.

PART 2 - PRODUCTS

2.01 GENERAL

A. The equipment specified herein shall be standard dewatering equipment of proven ability as designed and manufactured by firms having experience in the design and production of such equipment. The equipment furnished shall be designed, constructed and installed in accordance with the best practices and methods.

B. Only “Silent Pac” type of dewatering pumps will be used.

PART 3 – EXECUTION
3.01 GENERAL

A. The Contractor shall be required to monitor the performance of the dewatering system during the progress of the Work and require such modifications as may be required to assure that the systems will perform satisfactorily. The dewatering system shall be designed in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at the bottom of the trench or excavation for the structures and pipeline, and the dewatering system shall be designed to meet the requirements as specified herein.

B. Dispose of water in a manner to avoid damage to property. Maintain excavation "in-the-dry" condition until backfill has been placed and compacted. Whatever the nature of unstable material encountered, or the groundwater conditions, drainage shall be complete and effective.

3.02 DEWATERING, DRAINAGE AND FLOTATION

A. Water levels will normally vary from season to season. No claims for extras based on groundwater table conditions will be allowed.

B. The Contractor shall construct and place all pipelines, structures, concrete work, fill, backfill and bedding material in-the-dry. In addition, the Contractor shall make the final 24 inches of excavation for this work in-the-dry and not until the water level as indicated by groundwater observation wells is a minimum of 24 inches below proposed bottom of excavation. For purposes of this Contract, in-the-dry is defined as ±2% of the optimum moisture content of the soil.

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

D. Dewatering shall at all times be conducted in such a manner as to preserve the natural undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation.

E. It is expected that wellpoints will be required for pre-drainage of the soils prior to final excavation for most of the in-ground structures or piping and for maintaining the lowered groundwater level until construction has been completed to such an extent that the structure, pipeline or fill will not be floated or otherwise damaged. Wellpoints shall be surrounded by suitable filter sand and no fines shall be removed by pumping. Pumping from wellpoints shall be continuous and standby pumps shall be provided.

F. The Contractor shall furnish all materials and equipment and perform all work required to install and maintain the drainage systems he proposed for handling groundwater and surface water encountered during construction of structures, pipelines and compacted fills.

G. The Contractor's proposed method of dewatering shall include operating groundwater observation wells to be used to determine the water level during construction. Observation wells shall be installed at structures and along pipelines at locations as approved by the Engineer prior to their installation.

H. Prior to excavation, the Contractor shall submit his proposed method of dewatering and maintaining dry conditions to the Engineer for approval. However, such approval shall not relieve the Contractor of the responsibility for the satisfactory performance of the system. The Contractor shall be responsible for correcting any disturbance of natural bearing soils or damage to structures caused by an inadequate dewatering system or by interruption of the continuous operation of the system as specified.

I. As part of his request for approval of a dewatering system, the Contractor shall demonstrate the adequacy of the proposed system and wellpoint filter sand by means of a test installation. Discharge water shall be clean, with no visible soil particles in a one quart sample.
J. Continuous pumping will be required as long as water levels are required to be below natural levels.

3.03 OBSERVATION WELLS

A. Prior to excavation, the Contractor shall install groundwater observation wells at locations to be approved by the Engineer adjacent to structures under construction for the purpose of measuring water levels during excavation. The observation well shall consist of screen, casing and cap of approved size and material of construction. The observation well shall be placed in a 2-1/2 inch bore hole which shall be carried to an elevation at least 24 inches below final subgrade. The annular space surrounding the intake point and the rise pipe shall be sealed in such a way as to prevent infiltration from surface water. The observation well shall be developed in such a manner as to ensure proper indication of subsurface water levels adjacent to the structure.

B. The Contractor shall be responsible for maintaining the observation wells and for observing and recording the elevation of groundwater in them until adjacent structure is completed and backfilled. Each observation well shall be observed and recorded daily. Measurements shall be supplied daily to the Engineer. The Engineer may require that the observation wells reflect true groundwater levels by adding water to the well, recording the drop in the level from the time the water was added. A plugged observation well shall be redeveloped as necessary to indicate true groundwater levels.

3.04 PROTECTION AND SITE CLEAN-UP

A. At all times during the progress of the Work the Contractor shall use all reasonable precautions to prevent either tampering with the system or the entrance of foreign material.

B. Immediately upon completion of the dewatering system, the Contractor shall remove all of his equipment, materials, and supplies from the site of the work, remove all surplus materials and debris, fill in all holes or excavations, and grade the site to elevations of the surface levels which existed before work started. The site shall be thoroughly cleaned and approved by the Engineer.

3.04 PERMITS

A. Contractor shall be responsible for obtaining all permits/approvals for the dewatering operations from all applicable federal, state and local agencies, including but not limited to, the withdrawal and disposal/discharge of water from the dewatering operations.

END OF SECTION
SECTION 02200
EXCAVATING, BACKFILLING AND COMPACTING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope of Work: The work included under this Section consists of clearing, excavating, removal and replacement of unsuitable materials with suitable fill materials, grading and backfilling as required for the construction of the structures, piping and appurtenances as shown on the Drawings and specified herein.

B. Related Work Described Elsewhere:

1. Dewatering: Section 02140
2. Pavement Removal and Replacement: Section 02574
3. Solid Sodding: Section 02934

C. Plan For Earthwork: The Contractor shall be responsible for having determined to his satisfaction, prior to the submission of his bid, the conformation of the ground, the character and quality of the substrata, the types and quantities of materials to be encountered, the nature of the groundwater conditions, the prosecution of the work, the general and local conditions and all other matters which can in any way affect the work under this Contract. Prior to commencing the excavation, the Contractor shall submit a plan of his proposed operations to the Engineer for review. The Contractor shall consider, and his plan for excavation shall reflect, the equipment and methods to be employed in the excavation. No claims for extras based on substrata or groundwater table conditions will be allowed.

1.2 QUALITY ASSURANCE

A Testing Laboratory employed by the Contractor will make such tests as are specified. The Contractor shall schedule his work so as to permit a reasonable time for testing before placing succeeding lifts and shall keep the laboratory informed of his progress. Costs for all testing shall be paid by the Contractor, including any and all tests, which have to be repeated because of the failure of the tested material to meet specifications. Testing Laboratory or Contractor shall provide a map of all test locations. All testing shall be done in the presence of the Engineer or the City Representative. The contractor shall also employ the services of a Geotechnical Engineer. In the event should unsuitable materials be encountered during excavation, the Geotechnical Engineer shall perform all required testing necessary to determine the extent of the unsuitable materials and recommend what remedies shall be necessary including the removal and replacement of unsuitable materials with suitable fill materials. The removal and replacement of unsuitable materials with suitable fill materials shall be paid for at the unit prices established in the Bid Form.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General:

1. All fill and backfill material shall be subject to the approval of the Engineer.

2. All fill and backfill material shall be free of organic material, trash, or other objectionable material. The Contractor, at no additional cost to the City of Jacksonville Beach, shall remove excess or unsuitable material from the job site.

B. Common Fill Material: Common fill shall be sand and shall not contain stones, rock, concrete or other rubble larger than 2 inches in diameter. It shall have physical properties, which allow it to be easily spread and compacted.
PART 3 - EXECUTION

3.1 PREPARATION

A. General: To the maximum extent possible, preserve existing trees and structures within the limits of construction. Any structure that must be disturbed due to contractor operations shall be returned to its original condition.

3.2 EXCAVATION

A. Excavating for Utilities:

1. Immediately document the location, elevation, size, material type and function of all new subsurface installations, and utilities encountered during the course of construction.

2. Excavation equipment operators and other concerned parties shall be familiar with subsurface obstructions as shown on the Drawings and located in the field and should anticipate the encounter of unknown obstructions during the course of work.

3. Encounters with subsurface obstructions shall be hand excavated.

4. Excavation and dewatering shall be accomplished by methods, which preserve the undisturbed state of the suborder soils. Suborder soils which become soft, loose, “quick” or otherwise unsatisfactory for support of structures as a result of inadequate dewatering or other construction methods, shall be removed and replaced by crushed stone as required by the Engineer at the Contractor’s expense.

5. All pavements shall be cut for removal with saws and approved power tools.

6. Excavated material shall be stockpiled in such a manner as to prevent nuisance conditions. Surface drainage shall not be hindered.

7. All locations and elevations as required herein must be permanently documented by the Contractor on the Record Drawings prior to the Engineer’s approval of the Application for Payment for that work.

3.3 DRAINAGE

A. The Contractor shall at all times during construction provide ample means and devices with which to remove promptly and dispose promptly of all water entering trench and structure excavations and shall keep said excavations acceptably dry, until the structures to be built therein are completed. All water pumped or drained from the Work shall be disposed of in a suitable manner without damage to storm sewer, pavement, pipes, electrical conduits, or any other work and without damage to surrounding property and in accordance with pertinent rules and regulations.

B. Drainage Shall Be Adequate: No pipe shall be laid in water and no water shall be allowed to rise above the bottom of any pipe while it is being jointed, except as otherwise permitted in writing. No masonry shall be placed in water and no water shall be allowed to rise over masonry until the concrete or mortar has attained its initial set. Nor shall water be allowed to run over the completed masonry for four days. In no event shall water be allowed to rise so as to set up unequal pressures in the structures until the concrete or mortar has set at least 24 hours and also, until any danger of flotation has been removed.

C. Dewatering, if required, shall be continued during construction to keep the ground water below the level of the backfill at all times until the backfill is completed.

3.4 FILL AND COMPACTION
SECTION 02200
EXCAVATING, BACKFILLING AND COMPACTING

A. All pipe trenches shall be backfilled with suitable material compacted to 95% (98% under all pavement) of ASTM D1557 in 6 inch lifts. The material should exhibit moisture content within ± 2 percent of the Modified Proctor optimum moisture content (AASHTO T-180) during the compaction operations. Special care shall be taken on each side of the pipes and to 12 inches above pipe. All trench work shall be in compliance with Florida Chapter 90-96 “Trench Safety Act”.

B. Field density tests shall be determined in each layer of backfill at the following locations:
   1. Every 200 feet.
   2. Every street crossing.
   3. Every structure location
   4. Other locations as determined by the Resident Project Representative.

C. Excavations shall be backfilled to the original grade or as indicated on the Drawings. Deviation from this grade because of settling shall be corrected. Backfill operation shall be performed to comply with all rules and regulations and in such a manner that it does not create a nuisance or safety hazard.

3.5 SHEETING, SHORING, AND BRACING

A. The Contractor shall provide and install such sheeting and shoring as may be required to support the sides of any excavation to prevent earth movement that could endanger the work or workmen, or any existing structures, or to confine the construction within a specified area such as an easement or street right-of-way. It shall be the Contractor’s responsibility to place this sheeting and shoring for such protective purposes without the Engineer’s instructions. Pipeline sheeting shall extend a minimum of three feet below pipe or structure. In the process of extraction of sheeting, the use of vibratory type pile drivers (as opposed to impact type) shall be limited to that sheeting driven no greater than five (5) feet below the pipe invert.

B. For excavations less than ten (10) feet in depth, the Contractor shall provide and install such sheeting and shoring as he may deem necessary. Such sheeting and shoring will be considered as being for the Contractor’s convenience and benefit and all costs of furnishing, driving, and removing same shall be borne by him. Sheetin for excavations less than ten (10) feet in depth may be timber or steel at the Contractor’s option, unless specified on the Contract Drawings and Documents, or specified by the Engineer.

C. Unless otherwise directed by the Engineer, all timber sheeting shall be cut off a minimum of 30 inches below grade and left in place, with proper bracing to provide lateral support. Timber sheeting, bracing and shoring above the cut-off elevation shall be removed by careful extraction so as not to endanger other structures or property. All voids left shall be immediately backfilled with approved materials and compacted.

D. Steel sheeting shall be required for all excavations ten (10) feet or more in depth and at such other locations as may be indicated on the drawings. Steel sheeting may be completely removed when sufficient backfill has been placed to prevent damage to the work and/or existing structures. Care shall be exercised to prevent the opening of voids during the extraction process.

E. Steel sheeting shall be left in place when so authorized by the Engineer. The top of steel sheeting left in place shall be no less than 30 inches below grade unless otherwise shown on the Drawings, or directed by the Engineer.

F. Steel drag shields or trench boxes may be used, location, fabrication and operation subject to written approval of the Engineer, and shall be Steel Safety Shield manufactured by Safety Shoring Shields, Inc., 155 North Dean Street, Englewood, New Jersey, 07861; Efficiency Trench Box manufactured by Efficiency Production, Inc. 2360 East Jolly Road, Okemos, Michigan 48864; or approved equal. Voids left by the advancement of the shield shall be carefully backfilled and compacted in accordance with trench backfill requirements.

END OF SECTION
1.1 SCOPE OF WORK

The Contractor shall furnish all materials, labor, supervision, and equipment required for the orderly demolition, abandonment, removal, and/or salvaging of existing structures, piping, valves, fittings, appurtenances, and other equipment, as shown on the drawings and described herein. All references to industry standards (AWWA, ASTM, etc.) shall be to latest version unless otherwise noted.

1.2 GENERAL REQUIREMENTS

Structures, equipment, piping and other improvements to be demolished or removed shall be as detailed on the drawings. Demolition shall be accomplished in a neat and careful manner so as not to damage adjacent structures, or unnecessarily interfere with existing operations. Fill shall be provided to match existing grades and the area spot sodded and grassed or replacement pavement provided as specified in these specifications.

1.3 ABANDONMENT

A. Pipelines

1. Abandonment by Plugging

When called for on the Contract Drawings, abandoned mains shall be plugged with a plugged fitting at points specified. All plugs shall be appropriately sized and shall conform to the piping being plugged.

2. Abandonment by Grout Filling

When called for on the Contract Drawings, the abandoned main shall be grout filled by pumping a grout mixture into the main with an approved grout. The main shall be completely filled, leaving no voids or air spaces. Grout mix shall be as specified in this specification section.

3. Abandonment by Sealing

All below grade pipe to be abandoned by sealing, either as noted on the Contract Drawings or as a result of demolition of a structure, shall be sealed with grout, Class "C" concrete or brick and mortar. The grout, concrete or brick and mortar shall extend into the pipe for at least 12 inches, forming a solid waterproof plug completely bonded to the pipe.

4. Abandonment of Asbestos Pipe

Abandonment of asbestos piping shall be by either grout filling or sealing. While cutting asbestos pipe the operator must wear a HEPA type particle mask and adhere to all applicable safety standards for handling asbestos containing material.

B. Structures

The structure shall be removed to a point 36 inches below grade or as noted on the drawings. The remaining structure shall be filled with AASTHO Class A-3 soil, free of organic matter or other deleterious material, compacted to 100% of maximum density as determined by the Laboratory Standard Procter Test, ASTM D698. A tolerance of minus 2% will be allowed in the compactive effort. All pipes leading in and out of the structure to be abandoned shall be sealed or grout filled in accordance with this specification section and as indicated on the Contract Drawings. The portion of the structure to be removed shall be removed from the site and disposed of at an approved disposal facility.

1.4 REMOVAL

A. Pipelines

1. Below Grade
When called for on the Contract Drawings, removal of existing pipelines shall mean complete removal of the existing pipeline and disposal of the pipe and appurtenances (valves, fittings, thrust blocks, etc.) not indicated to be salvaged. Backfill and compaction shall conform to Section 2200, Excavating, Backfilling and Compacting of this specification.

2. Above Grade

All existing piping and appurtenances (valves, fittings, etc.) located above ground shall be removed to a minimum of 36 inches below the finish grade. The abandoned pipe ends, below grade, shall be sealed with Class "C" concrete or completely grout filled as specified in this section and as indicated on the Contract Drawings.

3. Asbestos Pipe

Removal of asbestos pipe shall be in accordance with Sections 4.1.1 and 4.1.2 above. While cutting asbestos pipe, the operator must wear a HEPA type particle mask and adhere to all applicable safety standards for handling asbestos containing material. Asbestos pipe may be disposed of in an approved landfill site.

B. Structures

Removal of existing structures, where designated on the drawings, shall be the complete removal of the existing structures. The existing structures shall be removed from the site. Any or all existing pipes in and out of the structure to be removed shall be plugged, grout filled, sealed or connected to the new structure as specified and as indicated on the Contract Drawings. The void left by the structure removal shall be filled and compacted in accordance with Section 02200, Excavating, Backfilling and Compacting of this specification.

1.5 DISPOSAL OF DEBRIS

All material not salvable shall be considered debris and disposed of by hauling to an approved disposal site. The Contractor shall be responsible for the disposition of all debris.

1.6 SALVAGEABLE MATERIAL

All equipment, piping, fittings, valves and appurtenances to be removed or abandoned shall be inspected by the City of Jacksonville Beach or its representative immediately prior to removal or abandonment. The City of Jacksonville Beach’s decision as to the salvageable material shall be final. Such material which is, in the opinion of the City of Jacksonville Beach or its representative, salvable shall be removed and transported to a location within the limited of the City of Jacksonville Beach as designated by the representative for the City of Jacksonville Beach. If the equipment is not wanted by the City of Jacksonville Beach, the Contractor shall become the owner of the equipment and shall dispose of same. Under no circumstances may existing structures, piping or equipment be removed or demolished without obtaining approval from the City of Jacksonville Beach or its representative. The Contractor shall be responsible for transporting the salvable material to the desired location.

1.7 GROUT MIX

Grout for filling abandoned mains shall consist of at least 15 percent Portland Cement by volume and shall be mixed to a consistency suitable for pumping. Sand used in the mixture shall be composed only of hard, strong, durable, uncoated grains of quartz and shall be free from extraneous substances.

END OF SECTION
PART 1 – GENERAL

1.01 WORK INCLUDED

A. Furnish all labor, materials, equipment, tools and transportation and perform all work necessary for the construction of asphalt concrete surface courses composed of a mixture of aggregates, mineral filler and asphalt cement properly applied upon a prepared base, in accordance with these Specifications and in conformity with the lines, grades, thickness and typical cross sections shown on the Drawings. SP-9.5, Traffic Level C, asphaltic concrete for all surface courses shall be used as specified in the construction plans. Place asphaltic concrete pavement around drain inlets and catch basins manhole covers and valve boxes by hand methods.

1.02 QUALITY ASSURANCE

A. Standards: Comply with the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2015, and Supplemental Specifications thereto, hereinafter referred to as FDOT Specifications and hereby made a part of this Contract to the extent they are applicable thereto and shall be as binding upon the Contractor as though reproduced herein in their entirety.

B. Complete and submit laboratory analysis by a Certified Testing Laboratory on all materials in accordance with Section 01340 and obtain materials acceptance by the Engineer, prior to placement.

C. Submit manufacturer’s/supplier’s certificates of compliance with Specifications for all materials proposed.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Materials shall be in accordance to FDOT Specifications 334 and 337.

PART 3 – EXECUTION

3.01 TRANSPORTATION OF MIXTURE

A. Transport the mixture in tight vehicles previously cleaned of all foreign material and, if necessary, cover each load with a waterproof canvas cover of sufficient dimensions to protect it from weather conditions. Thinly coat the inside surface of the truck bodies with soapy water, or a mixture of water with not more than five percent of lubricating oil, but no excess of either. After the truck bodies are coated and before any mixture is placed therein, raise them so that all excess water will drain out. Do not use kerosene, gasoline or similar products to prevent adhesion.

3.02 LIMITATIONS FOR SPREADING

A. Spread the mixture only when the surface is properly prepared and is intact, firm, cured and dry. Do not spread the mixture when the air temperature is less than 40°F, or when the spreading cannot be finished and compacted in daylight hours. Ensure that the temperature of the mix at the time of spreading is not less than that recommended by FDOT Specifications for the particular work.

3.03 PLACING MIXTURE

B. Place the mixture in accordance with FDOT Specifications, Section 330-6.
3.04 COMPACTING MIXTURE

A. Compact the mixture in accordance with FDOT Specifications, Section 330-7.

3.05 JOINTS

A. Form joints in accordance with FDOT Specifications, Section 330-8.

3.06 SURFACE REQUIREMENTS

A. Form joints in accordance with FDOT Specifications, Section 330-9.

3.07 FIELD QUALITY CONTROL

A. Surface Requirements:

1. For the purpose of testing the finished surface, provide a 10-foot straightedge and a standard template cut to the true cross section of the road and designate an employee whose duty it is to handle the straightedge and template in checking all rolled surfaces, under the direction of the Engineer.

2. Construct the finished surface such that it will not vary more than ¼-inch from the template cut to the cross section of the road, nor more than 3/16-inch from the 10 foot straightedge applied parallel to the center line of the pavement. Correct any irregularity of the surface exceeding the above limits. Repair depressions which may develop after the initial rolling by loosening or removing the mixture and adding new material to bring the areas to a true surface. Skin patching will not be accepted. Remove such portions of the completed pavement as are defective in surface compaction or in composition, or that do not comply with all other requirements of these Specifications, and replace with suitable mixture, properly laid in accordance with these Specifications and at no cost to the Owner.

B. Thickness Requirements: Verify by core boring that the thickness of the compacted asphaltic concrete surface course is not less that that shown on the Drawings. Remove and replace to the required thickness any surface course found to be deficient.

C. Testing: Give timely notice to the testing laboratory, engaged by the contractor as described in Section 01410, of readiness for the required density and other tests. Pay for all retesting required due to non-compliance until satisfactory results are obtained.

D. Protection of Pavement: After the completion of the pavement, allow no vehicular traffic of any kind on the pavement until it has set sufficiently to prevent rutting or other distortion.

3.08 PAVEMENT REMOVAL AND REPLACEMENT PERFORMANCE

A. Removals:

1. Pavement Removal:
   a. Where existing pavement is to be removed, the surface shall be mechanical saw cut prior to each trench excavation, leaving a uniform and straight edge, with minimum disturbance to the remaining adjacent surfacing. The width of cut for this phase of existing pavement removal shall be minimal.
   b. Immediately following the specified backfilling and compaction, a temporary sand seal coat surface shall be applied to the cut areas. This temporary surfacing shall provide a smooth traffic surface with the existing roadway and shall be maintained until final restoration. Said surfacing will remain for 10 days in order to assure the stability of the
SECTION 02574
PAVING, SURFACING, PAVEMENT REMOVAL AND REPLACEMENT

backfill under normal traffic conditions. Following this period and prior to 15 days after application, the temporary surfacing shall be removed and final roadway surface restoration accomplished.

c. In advance of final restoration, the temporary surfacing shall be removed and the existing pavement mechanically sawed straight and clean to the stipulated dimensions. Following the above operation, the Contractor shall proceed immediately with final pavement restoration in accordance with these requirements.

2. Sidewalk, Drive and Curb Removal: Concrete sidewalks, curbs, combination curb and gutter, walks, drive ribbons, or driveways shall be removed by initially sawing the structure, with a suitable power saw, as specified above for pavement. When a formed joint in the concrete exists within 3 feet of the proposed saw cut and parallels the proposed saw cut, the removal line shall be extended to the formed joint. After sawing, the material shall be removed.

B. Restorations:

1. General: Street or roadway pavement cut and removed in connection with trench excavation shall be replaced or restored in equal or better condition than the original and as shown on the Drawings. The Drawings indicate minimum requirements.

2. Pavement Restoration – Asphalitic concrete shall be SP - 9.5 Traffic Level C, a minimum of 2 inches thick over a minimum of 6-inches of Crush-crete base, LBR 100, 100% maximum density, AASHTO T-180.

3. Driveway Restoration – Asphalt: Driveway pavement with base cut and removed in connection with trench excavation shall be replaced or restored as specified above for street or roadway pavement, except that in no case shall new driveway base course be less than 6 inches in thickness and the asphalitic concrete shall be SP-9.5, Traffic Level C asphalitic concrete, 2-inches thick. Muck or unsuitable material found under existing driveway construction will not be removed or replaced.

4. Concrete, Sidewalk, Walkway, Driveway, Driveway Ribbon and Curb Restoration:
   a. Concrete sidewalks, walkways, driveways, driveway ribbons and curbs required to be removed for the installation of facilities under this Contract shall be restored. Concrete shall be monolithic construction and shall be 3000 PSI for sidewalks and walkways and 3000 PSI for driveways, driveway ribbon, curb and curb and gutter combination restoration, ready-mixed concrete with commercial grade fiber-mesh.
   b. Replaced portions of these items shall conform to the lines, grades, and cross sections of the removed portions. Concrete sidewalks and walkways shall be of 6-inch thickness; concrete driveways and driveway ribbons shall be 6-inch thickness. Replaced concrete curb and/or gutter shall joint neatly to the remaining section.

5. Unsurfaced streets, alleys and driveways shall be restored with 8 inches of compacted base material placed in the top of trench.

END OF SECTION
1.1 GENERAL

A. Scope of Work
The Contractor shall furnish and install a potable water piping system, complete, tested and ready for operation. The work shall also include such connections, reconnections, temporary service and all other provisions in regard to the existing operation and modification as is required to perform the new work. All references to Industry Standards (ASTM, ANSI, AWWA, etc.) shall be to the latest revision unless otherwise stated. Only those materials included in the City of Jacksonville Beach Standard Water and Sewer Specifications, Details and Testing shall be installed. All materials shall be new unless specifically called for otherwise.

B. Shop Drawing Submittals
Complete shop drawings, actual catalog data, brochures and descriptive literature will be required and shall meet the requirements of the City of Jacksonville Beach Water and Sewer Standards. The Engineer may at any time require the Contractor to provide a complete detailed shop drawing submittal for any material which may, in the Engineer's opinion, not be in compliance with the City of Jacksonville Beach Water and Sewer Standards.

1. The Contractor shall submit for the approval of the Engineer four (4) copies, plus as many additional copies as he may need for his files of all shop and setting drawings and schedules required for the work.

2. The Contractor shall submit all drawings and schedules sufficiently in advance of construction requirements to allow ample time for checking, correcting, resubmitting, and rechecking; no claim by the Contractor for delays arising from his failure in this respect shall be allowed.

3. All shop drawings submitted must bear the stamp of approval of the Contractor as evidence that the drawings have been checked by the Contractor. Any drawings without this stamp of approval shall not be considered and will be returned to the Contractor for resubmission. If documents vary from the requirements of the Contract Documents because of standard shop practice or other reason, the Contractor shall make mention in such letter of variation in his letter of transmittal in order that, if acceptable, suitable action may be taken for proper adjustment; otherwise, the Contractor shall not be relieved of the responsibility of executing the work in accordance with the Contract Documents even though such shop drawings have been approved.

4. Where a shop drawing is submitted by the Contractor indicates a departure from the Contract which the Engineer deems to be a minor adjustment in the interest of the City and which does not involve a change in Contract Price or extension of time, the Engineer will approve the drawings.

5. The approval by the Engineer of shop drawings will be general and shall not relieve the Contractor from the responsibility for inherent error which may exist.

2.1 MATERIALS

All material shall be free from defects impairing strength and durability, shall be of the best commercial quality for the purpose specified, and shall have structural properties sufficient to safely sustain or withstand strains and stresses to which it is normally subjected and be true to detail.

A. Pipe
Pipe for potable water lines in sizes up to and including 48 inches shall be ductile iron, or polyvinyl chloride (PVC) as shown on the drawings and as herein specified. Pipe for potable water lines larger than 48 inches shall be ductile iron. Pipe to be used as a casing in sizes 4 inches and larger shall be welded steel pipe as shown on the drawings and as herein specified. Pipe to be installed underground shall be push-on joint type. Pipe installed on bridges, piles or other above ground installations shall be restrained joint ductile iron pipe or flanged ductile iron pipe as described in these specifications. PVC pipe shall not be used in above ground applications. Underground pipe shall be furnished in nominal 18 or 20 foot laying lengths unless indicated otherwise on the drawings. Pipe shall be cut to length as required to fit installation conditions. Pipe sizes and applications shall conform to the following chart.
### SECTION 02660
**WATER DISTRIBUTION SYSTEM**

<table>
<thead>
<tr>
<th>PIPE</th>
<th>PIPE SIZE</th>
<th>JOINT TYPE</th>
<th>APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ductile Iron</td>
<td>3 inches and larger</td>
<td>Mechanical joint, push-on joint, flanged joint, ball joint, etc.</td>
<td>water mains and services-3 inches &amp; 4 inches for services only</td>
</tr>
<tr>
<td>DR18</td>
<td>4 inches thru 48 inches</td>
<td>Push-on joint</td>
<td>Water mains and services-4 inches for services only, Well Headers Only</td>
</tr>
<tr>
<td>DR25</td>
<td>12inch (Well Header)</td>
<td>Push-on joint</td>
<td>Water mains only</td>
</tr>
<tr>
<td>SDR 21 PVC</td>
<td>2 inches only</td>
<td>Push-on joint</td>
<td>Polyethylene smaller than 3 inches</td>
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<tr>
<td>Polyethylene</td>
<td>2 inches and smaller</td>
<td>No joints in pipe</td>
<td>services only</td>
</tr>
<tr>
<td>Galvanized</td>
<td>smaller than 3 inches</td>
<td>I.P.T.</td>
<td></td>
</tr>
<tr>
<td>Steel</td>
<td>4 inches and larger</td>
<td>Welded</td>
<td>casing only</td>
</tr>
</tbody>
</table>

1. **Ductile Iron Pipe (N/A This Project)**

   Ductile iron pipe wall thickness and pressure class shall conform to ANSI Specification ANSI A21.50 (AWWA C150) and ANSI A21.51 (AWWA C151) with pressure class 150 as a minimum. Pipe shall also be certified by ISO 9000 by an accredited registrar. Each length shall be clearly marked with the name of the manufacturer, location of the foundry, pressure rating, thickness or pressure class, nominal pipe diameter, weight of pipe without lining and length. All pipe furnished by the manufacturer shall be cast and machined at one foundry location to assure quality control and provide satisfactory test data. All ductile iron pipes shall be externally coated and internally lined as specified in this section. All ductile iron pipe shall be color coded blue by field painting a blue stripe, 3 inches wide, along the crown of the pipe barrel.

2. **Polyvinyl Chloride Pressure Pipe**

   a. Water mains 4” and larger shall be constructed of Polyvinyl Chloride (PVC) pipe with a dimension ratio (DR) of 18 suitable for a working pressure of 150 PSI at 73.4 F. Pipe shall conform to AWWA Standard C900 for Polyvinyl Chloride Pressure Pipe, 4” through 12” for water distribution, latest edition or revision. Pipe shall be manufactured to cast iron equivalent diameters.

   b. Water mains and fittings smaller than 4” shall be Polyvinyl Chloride (PVC) pipe SDR 21 PR 200 and shall conform to ASTM D2241, latest revision. The pipe shall have a gasketed bell with rubber ring conforming to ASTM F477. Fittings for 2” water mains shall be compatible with the type pipe specified except for flushing connections which shall use solvent weld fittings. Pipe for flushing connections shall be Polyvinyl Chloride (PVC) pipe, Schedule 40 and shall conform to ASTM D1785.

   c. Fittings for four inch (4”) and larger pipe shall be ductile iron and shall conform to the type of pipe being installed. The fittings shall have a minimum working pressure of 150 psi. Fittings shall be cement lined in accordance with AWWA C104/ANSI A21.4 American National standard for Cement-Mortar Lining for Ductile-Iron pipe and Fittings for Water and shall be furnished with an external asphaltic coating.

   d. Buried Warning and Identification Tape: Polyethylene plastic and metallic core or metallic-faced, acid and alkali-resistant, polyethylene plastic warning tape manufactured specifically for warning and identification of buried utility lines. Provide tape on rolls, three inch (3”) minimum width, color coded as specified below for the intended utility with warning and identification imprinted in bold black letters continuously over the entire tape length. Warning and identification to read, “CAUTION, BURIED (intended service) LINE BELOW” or similar working. Color and printing shall be permanent, unaffected by moisture or soil.

   **Warning Tape Color Codes: Blue (Water Systems)**

   Tape shall be manufactured with integral wires, foil backing, or other means of enabling detection by a metal detector when tape is buried up to three feet (3’) deep. All water mains shall be provided with
12 gauge continuous wire on top of water main. All 12 gauge wiring shall be terminated inside valve boxes or at a maximum of 475’ intervals with a minimum of 36 inches excess wiring rolled up inside the valve box.

3. Steel Casing Pipe (N/A This Project)

Pipe to be used as a casing shall conform to either ASTM Standard A139 for “Electric Fusion (arc) Welded Steel Pipe” with a minimum yield strength of 35,000 psi or “API Specification API-5LX, Grade X-42 Welded Steel Pipe”. Wall thickness shall meet the requirements of the latest Revision of the American Railway Engineering Association Manual of Recommended Practice or the Florida Department of Transportation Standard Specification for Road and Bridge Construction. For street uses which are not DOT or railroad, use DOT casing thickness unless otherwise indicated by Engineer. All pipe furnished by the manufacturer shall be cast and machined at one foundry location to assure quality control and provide satisfactory test data.

B. Service Lines

1. Polyethylene Tubing

All services 2 inches and smaller shall be polyethylene tubing. Tubing shall be manufactured of PE 3408, High Density Polyethylene (HDPE), in accordance with AWWA C901, ASTM D1248, ASTM D2239, ASTM D2737 and ASTM D302660. The tubing shall have a minimum working pressure of 200 psi. Polyethylene tubing shall be copper tube size SDR9 and shall be colored blue. HDPE pipe shall have ultraviolet (UV) inhibitors for protection against direct sunlight for 4 years. Inserts for polyethylene tubing shall be 316 stainless steel. Tubing shall be approved for use with potable water by the National Sanitation Foundation (NSF-14) and shall be continuously marked at intervals of not more than two feet with the following:

a. Nominal size
b. Pressure rating
c. NSF seal
d. Manufacturer's name or trademark
e. Standard dimension ratio
f. ASTM specification

C. Fittings

Fittings shall have joints that match the type of pipe furnished except as follows or as otherwise specified. Fittings on 2 inch PVC pipe may be PVC with push-on bell type joint or solvent weld. Fittings 3 inches and larger on push-on joint pipe installed underground shall be ductile iron with mechanical joint ends or PVC with restrained push-on bell type joint. Fittings 3 inches and larger installed above ground shall be ductile iron with flanged ends or restrained joints unless shown otherwise on the drawings. Fittings for fire hydrant laterals shall be ductile iron, including tee to lateral.

<table>
<thead>
<tr>
<th>FITTING MATERIAL</th>
<th>FITTING SIZE</th>
<th>JOINT TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ductile Iron</td>
<td>3 inches and larger</td>
<td>mechanical joint, flanged joint, ball joint</td>
</tr>
<tr>
<td>PVC DR18</td>
<td>4 inch through 8 inch</td>
<td>push on joint</td>
</tr>
<tr>
<td>SCH 40</td>
<td>2 inches only</td>
<td>solvent weld</td>
</tr>
<tr>
<td>SCH 80</td>
<td>2 inches only</td>
<td>solvent weld, threaded</td>
</tr>
<tr>
<td>SDR 21</td>
<td>2 inches only</td>
<td>push on joint</td>
</tr>
<tr>
<td>Polyethylene</td>
<td>2 inches only</td>
<td>butt fused, compression joint</td>
</tr>
<tr>
<td>Galvanized</td>
<td>2 inches only</td>
<td>I.P.T.</td>
</tr>
</tbody>
</table>

1. Ductile Iron Fittings
SECTION 02660
WATER DISTRIBUTION SYSTEM

Ductile iron fittings shall have a minimum working pressure of 150 psi. Fittings shall conform to ANSI Specification A21.10 (AWWA C110), A21.11 (AWWA C111), A21.15 (AWWA C115) and/or A21.53 (AWWA C153). Fittings shall also be certified by ISO 9000 by an accredited registrar. Compact fittings shall normally be installed. Long body fittings shall be used where the drawings specifically call for long body fittings, where compact fittings are not available, or at the option of the Contractor when the laying length is not controlled by compact fitting patterns. All fittings shall be UL/FM approved and shall conform to NSF Standard 61 as applicable. All fittings furnished by the approved manufacturer shall be cast and machined at one foundry location to assure quality control and provide satisfactory test data. Fittings shall have cast on them the pressure rating, nominal diameter of openings, manufacturer’s name, foundry location, plant code and degrees or fraction of the circle. Cast letters and figures shall be on the outside body of the fitting. The may require random ductile testing of manufacturer’s fittings. All ductile iron fittings shall be externally coated and internally lined as specified in this section.

a. Ductile iron Integral Restraint Joint (IRJ) fittings in sizes 4” through 12” shall meet or exceed the applicable standards cited in this specification. Fittings shall be manufactured of ductile iron (65.45.12) and shall conform to the material and performance requirements of ANSI/AWWA C153/A21.53. Fittings shall be designed for use on ductile iron pipe conforming to ANSI/AWWA C151/A21.51 and PVC pipe conforming to AWWA C900. All fittings shall be provided with integral restraint joints and have seals conforming to ASTM F 477 and the physical testing requirements of AWWA C111. All fittings shall be internally and externally coated with fusion bonded epoxy coatings to the requirements of ANSI/AWWA C116/A21.16. Assembly of fitting joints shall not require beveling of the plain end of a cut pipe and shall not require the use jacks or power equipment to force the pipe end past the gasket. Fittings shall be manufactured by (Ebba Iron Restrainers, Uni-flange, or Mega-lugs.), or engineer approved equal

2. Polyvinyl Chloride Fittings

Fittings that are 2 inch may be PVC with push-on bell type joint or PVC with solvent weld joints as outlined in chart of Section 2.3. Fittings that are 4 inch and larger shall be restrained push on bell joint. Restraints shall be in accordance with this specification regarding installation and material. The fittings shall conform to the appropriate sections of these specifications for PVC pipe and PVC pipe joints.

a. PVC 1120, Class 150, DR18 Fittings (N/A THIS PROJECT)

PVC fittings 4 inch thru 8 inch may be used with PVC C900 pipe. Fittings shall be PVC injection molded, made from materials meeting or exceeding the requirements of cell class 12454-B material as defined in ASTM D1784. All PVC fittings must comply with, or exceed, AWWA C907. All fittings must be designed to the pressure class of DR18, with a pressure rating of 150 psi and a 2.5 to 1 factor of safety. Virgin materials only shall be used in the manufacture of PVC pressure fittings. These fittings must have UL-FM approval and shall comply with or exceed all ASTM Standards for PVC fittings. All fittings must have NSF-61 approval. The elastomeric gasket shall comply with the requirements specified in ASTM F477.

b. PVC 1120, SDR 21, Fittings

SDR 21 fittings shall be injection molded, push on bell type with electrometric rubber seals in accordance with ASTM D3139. Seals shall conform to ASTM F477.

c. PVC 1120, Schedule 40 And Schedule 80 Fittings

Schedule 40 and schedule 80 fittings shall have solvent weld joints and shall be in accordance with ASTM D2672.

d. Polyethylene Fittings

All polyethylene fittings shall comply with NSF-14 requirements. All fittings and couplings shall be thermoplastic nylon 6/6 material suitable for working pressure of 200 psi. Joints on all thermoplastic fittings shall be compression type with 360-degree restraint or threaded as required for a complete installation.
SECTION 02660
WATER DISTRIBUTION SYSTEM

3. Nonstandard Fittings and Wall Castings (N/A This Project)

Fittings having nonstandard dimensions and cast specifically for this project shall be of approved design. They shall be manufactured to meet the requirements of the same specifications and shall have the same diameter and thickness as standard fittings, but their laying lengths and types of ends shall be determined by their positions in the pipelines and by the particular piping to which they connect. Wall castings shall be of the size and types indicated on the drawings. Flanges, facing, and drilling shall conform to the 125-pound American National Standard. Flanges shall be drilled and tapped for studs. Other dimensions shall be substantially equal to corresponding parts of standard bell and spigot fittings.

4. Tapping Sleeves

a. Stainless Steel

Stainless steel tapping sleeves may be used on 4 inch pipe and larger. Stainless steel tapping sleeves shall be all 304 stainless steel, including flanges, bolts and nuts and shall be rated for 150 psi minimum operating pressure and 200 psi minimum test pressure. The tapping sleeve shall have a pilot flange recessed for tapping per MSS SP-60. The pilot flange shall be pressure rated Class D according to ANSI B16. Each sleeve shall be supplied with a flange gasket bonded to the flange. The body gasket shall be a full circle, grid pattern, covering the entire length of the sleeve, cloth reinforced, with attached stainless steel bridge to support the gasket at the lugs. The gasket shall be made of SBR rubber or similar material, compounded for use with water, salt solution, mild acids, bases and sewage. The sleeve shall have a 3/4 inch NPT bronze or stainless steel test plug. All welds shall conform to ASTM A380 and shall be fully passivated.

D. Joints

Type of joint used shall be approved by the Engineer prior to installation. Joints shall be made in accordance with approved printed instructions of the manufacturer, and shall be absolutely watertight.

1. Mechanical Joints

All jointing materials for mechanical joints shall be provided by the pipe and/or fitting manufacturer. Material assembly and bolting shall be in accordance with ANSI Specification A21.11 (AWWA C111). All glands shall be made of ductile iron only.

2. Push-On Joints

a. Ductile Iron

Push-on joints shall be in accordance with ANSI Specification A21.11 (AWWA C111). All joint material shall be provided by the pipe manufacturer and installation shall be in accordance with the manufacturer's recommended practice.

b. Polyvinyl Chloride (PVC)

PVC pipe joints shall be the manufacturer's standard push-on bell type with rubber sealing ring in accordance with ASTM D3139. Electrometric gaskets shall conform to ASTM F477.

3. Ball and Socket Joints (N/A This Project)

Where sub-aqueous joints are indicated, joints shall be bolted or boltless flexible ball and socket joints conforming to the pressure and thickness requirements of ANSI A21.10 (AWWA C110) and ANSI A21.51 (AWWA C151) and shall be capable of providing a maximum deflection of fifteen degrees at each joint. Joints and gasket material shall be manufacturer's standard. The specific type joint shall be as shown on the drawings and/or as approved by the Engineer. Installation shall be in accordance with the manufacturer's recommended practice.
4. Flanged Joints

Ductile iron flanged joints shall conform to ANSI A21.10 (AWWA C110) and ANSI A21.15 (AWWA C115). Flanges shall be in accordance with ANSI Specification B16.1, Class 125 with any special drilling and tapping as required to insure correct alignment and bolting. Screwed flanges shall be screwed in tight at the foundry before they are faced and drilled. Flanges for flanged joints and flanged specials shall be integrally cast at right angles to the axis, accurately faced, and drilled smooth and true. Gaskets shall be rubber ring type, cloth inserted, minimum thickness of 1/8 inch and shall be used on all flanges. The entire gasket, including the retainer and sealing ring, shall be one continuous piece. Retainers glued together will not be accepted. Flanged joints shall be made with bolts, bolt studs with a nut on each end, or studs with nuts where the flange is tapped. The number and size of bolts shall conform to the same ANSI standard as the flanges. All flange bolts and nuts shall be 316 stainless steel. Bolt studs shall be of the same quality as machine bolts. Bolts shall be tightened so as to distribute evenly the stress in the bolts and bring the pipe in alignment. The Contractor shall provide suitable filling rings where the layout of the flange piping is such as to necessitate their use. In materials, workmanship, facing and drilling, such rings shall conform to ANSI B16.1 Class 125.

5. Machined Surfaces

Machined surfaces shall be cleaned and coated with a suitable rust preventive coating at the shop immediately after being machined.

6. Steel Casing Pipe Joints

Steel casing pipe joints shall be electric fusion (arc) welded by operators whose qualifications meet the requirements of the American Welding Society Standard procedures and in conformance with AWWA C206.

7. Polyvinyl Chloride Solvent Weld Joints

Pipe joints for schedule 40 or schedule 80 pipe shall be solvent weld joints. The solvent cement shall comply with ASTM D2564. The joint shall be made in accordance with ASTM D2855. The joint shall conform to ASTM D2672.

8. Polyethylene Joints

Polyethylene joints shall be butt-fused, done with polyethylene fittings or brass compression fittings.

9. Restrained Joints

a. Restrainers

The restrainer shall be manufactured of ductile iron and shall meet or exceed all the requirements of ANSI A21.11 (AWWA C111) and ASTM A536. The restrainer system shall provide anchoring of PVC pipe to mechanical joint fittings or bell to spigot PVC pipe joints. Restraints shall provide a full 360 degree contact with sufficient gripping action to secure the clamp to the pipe and be designed so that restraint action is increased as a result of increases in line pressure. The restrainer shall accommodate the full working pressure rating of the pipe plus surge allowance.

b. Retainer Glands

Retainer glands shall be manufactured of ductile iron grade 64-42-10, ASTM A536 or the pre-approved equal and shall be designed to fit standard mechanical joint bells conforming to applicable sections of ANSI A21.10 (AWWA C110), ANSI A21.11 (AWWA C111) and ANSI A21.53 (AWWA C153). The restraining device shall be rated for the full working pressure of the pipe type used including surge allowance and a 2:1 safety factor. Mechanical restraints shall include a restraining mechanism which, when actuated, imparts a wedging action against the pipe, increasing its resistance as the pressure increases. The restraint shall be compatible with the type of joint being installed. The joint deflection shall not exceed 80% of the pipe manufacturer’s recommended maximum deflection. Deflection, if necessary shall be made before tightening the set screws. Bolts and set screws shall be tightened alternately, 180 degrees apart, to the torque recommended by the manufacturer. Retainer glands having set screws that make point contact with the pipe without using a pad to disperse point
loading shall not be used on PVC pipe. The restraining device shall not damage or lower the working pressure of the pipe installed. Retainer glands shall be either Ebba Iron or Mueller.

10. Flange Adapters

Flange adapters shall be ductile iron manufactured to ASTM A536 standards. Bolt circles and bolt holes shall meet ANSI B16.1 for 125 pounds. Adapter flanges shall meet or exceed all test requirements of AWWA C900, ASTM D2241 and ASTM D1599.

11. Pipe Couplings

The Contractor shall furnish and install pipe couplings as required to complete the work. Pipe couplings used to join two pieces of ductile iron pipe or PVC pipe shall be sized to match the outside diameter of the pipeline. Transition couplings shall be used to join pipes of different outside diameters. The coupling sleeve shall be manufactured of ductile iron conforming to ASTM A536 and be coated with 14 mils of epoxy. The bolts shall be manufactured of a metal of high corrosion resistance and shall conform to ANSI 21.11 (AWWA C111). Gaskets shall be wedge-type and manufactured of virgin SBR for water and sewer service. The installation of all couplings shall be in accordance with manufacturer's recommendations. After installation, all coupling surfaces including bolts and nuts shall be coated with an approved coating as specified in this section of these specifications. Couplers and adapters for polyethylene pipe shall be brass conforming to AWWA C800 and shall be female IPT, pack joint or compression nut.

12. Full Circle Repair Clamps

Full circle repair clamps shall have type 304 stainless steel shells, lugs, bolts, nuts and washers as per ASTM A193, A194, A240, or shall have type 304 stainless steel shells per ASTM A240, ductile iron lugs as per ASTM A536, and 304 stainless steel bolts, washers and nuts. Gaskets for both types shall be virgin SBR as per ASTM D2000 for water and sewer service.

E. Corrosion Protection for Ductile Iron Pipe

1. Interior Lining

The interior of all ductile iron pipe, fittings and specials shall be thin cement lined. The lining shall comply with ANSI Standard A21.4 (AWWA C104).

2. Exterior Coating

All ductile iron pipe and fittings except on bridges or as otherwise noted, shall receive an exterior bituminous coating as specified in ANSI A21.51. The finished coating shall be continuous smooth, neither brittle when cold nor sticky when exposed to the sun, and be strongly adherent to the fitting. All bolts, nuts, studs and other uncoated parts of joints for underground installation shall be coated with asphalt or coal-tar prior to backfilling. Pipes crossing under ditches, culverts, rivers, creeks, etc., shall be considered as buried pipe. All ductile iron pipe shall be color coded blue by field painting a blue stripe, 3 inches wide, along the crown of the pipe barrel.

3. Polyethylene Wrap (N/A This Project)

In areas where soils are corrosive in nature, ductile iron pipe, fittings, valves and other appurtenances shall be protected with polyethylene wrap or tubing. The Contractor shall furnish and install polyethylene tube or wrap for ductile iron pipe at the locations shown on the construction drawings.

a. Material

The polyethylene material shall meet or exceed the requirements of AWWA C105 in all respects. The wrap shall be virgin, high density polyethylene, 4 mils thick minimum. The polyethylene wrap shall be white with 2 each, 6 inch wide, continuous blue tapes located at the 2:00 and 10:00 o’clock position on the pipe.

b. Installation

Although not intended to be a water-tight enclosure, the polyethylene shall prevent contact between the pipe and the surrounding backfill. Installation shall be done according to one of the methods described in AWWA C105, subject to approval by the Engineer and the manufacturer.
F. Piping Supports (N/A THIS PROJECT)

1. The Contractor shall furnish and install all supports necessary to hold the piping and appurtenances in a firm, substantial manner at the lines and grades indicated on the drawings or as specified.

2. Piping within pumping stations shall be adequately supported from floors, walls, ceilings or beams. Supports from the floor shall be by approved saddle stands or suitable concrete piers as indicated or approved. Pipe saddles shall be shaped to fit the pipe with which they will be used and shall be capable of screw adjustment. Concrete piers shall conform accurately to the bottom one-third to one-half of the pipe. Piping along walls shall be supported by approved wall brackets with attached pipe rolls or saddles or by wall brackets with adjustable hanger rods. For piping supported from the ceiling, approved rod hangers of a type capable of screw adjustment after erection of the piping and with suitable adjustable concrete inserts or beam clamps shall be used. If required, piping supports shall be placed so as to provide a uniform slope in the pipe without sagging. Supports shall be located wherever necessary, and in no case shall they exceed 8 feet on centers for ductile iron pipe and 4 feet on centers for PVC pipe.

3. Casing Spacers (N/A This Project)

Casing spacers shall be a two piece prefabricated unit by a single manufacturer. All casing spacers in a single casing pipe crossing shall be by the same manufacturer. Casing spacers shall have a shell made from either 304 stainless steel, 14 gauge mild steel which has been heat fusion coated with PVC plastic, (PVC coating shall be .01 inch thick over the entire band including the runner studs) or high density polyethylene. Casing spacers on 16 inch and smaller carrier pipe shall have 8 inch wide steel bands and casing spacers on 18 inch and larger carrier pipe shall have 12 inch wide steel bands, except high density polyethylene spacers shall have high density polyethylene bands. All casing spacers for 14 inch and smaller pipe size shall have four 10 gauge or 14 gauge steel risers with runners and casing spacers for 16 inch and larger pipe shall have six 10 gauge or 14 gauge steel risers with runners (two top and four bottom), except high density polyethylene spacers shall have one riser for every diameter inch of carrier pipe. The runners (risers) shall be either glass reinforced plastic, UHMW polymer or high density polyethylene. All nuts, bolts and washers shall be 304 stainless steel. All risers over 2 inches in height shall be reinforced. Wooden skids are not an acceptable alternate.

G. Material Warranty

The manufacturer of materials furnished on the project shall supply to the City of Jacksonville Beach, a one (1) year unconditional warranty. The warranty shall be limited to the material which shall constitute complete replacement and delivery to the site of materials only to replace defective materials with new materials conforming to the specifications. This warranty is contingent upon determination of failure by a private independent testing laboratory. The testing shall prove that the failure was caused by failure of the material. The testing laboratory shall be selected by and agreed upon by both parties involved. This warranty is in addition to any warranty required for pipe linings herein before specified.

H. Material Testing

The City of Jacksonville Beach requires all materials furnished to conform to the following standards. The entire product of any manufacturer or of any one part may be rejected when, in the opinion of the City of Jacksonville Beach, the methods of manufacture fail to secure uniform results acceptable to the requirements of these specifications. Pipe and materials shall be tested in, and for conformity with, the latest editions of the following:

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ductile Iron Pipe</td>
<td>ANSI A21.50 (AWWA C150)</td>
</tr>
<tr>
<td>and Fittings</td>
<td>ANSI A21.51 (AWWA C151)</td>
</tr>
<tr>
<td></td>
<td>ANSI A21.53 (AWWA C153)</td>
</tr>
</tbody>
</table>
3.1 INSTALLATION

A. Reference Points and Layout

The Contractor shall be responsible for setting all grade, lines and levels. The Contractor or Contractor’s Surveyor will provide centerline of construction; the engineer will provide a reference benchmark. Any reference points, points of intersection, property corners, or bench marks, which are disturbed during construction, shall be restored by a Land Surveyor registered to practice in the State of Florida, and all costs thereof shall be borne by the Contractor. The Contractor shall assume all responsibility for the correctness of the grade and alignment stakes.

B. Handling and Cutting Pipe

Every care shall be taken in handling and laying pipe and fittings to avoid damaging the pipe, scratching or marring machined surfaces, and abrasion of the pipe coating. Any fitting showing a crack and any fitting or pipe which has received a severe blow that may have caused an incipient fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work. In any pipe showing a distinct crack in which it is believed there is no incipient fracture beyond the limits of the visible crack, the cracked portion, if so approved by the City of Jacksonville Beach, may be cut off before the pipe is laid so that the pipe used shall be perfectly sound. The cut shall be made in the sound barrel at a point at least 12 inches from the visible limits of the crack. Except as otherwise approved, all cutting shall be done with a power driven cut off saw. All cut ends shall be examined for possible cracks caused by cutting.

C. Pipe Installation

1. General Requirements

Water mains shall be constructed of the materials specified and as shown on the drawings. All PVC C900/C905 pipe shall be laid in accordance with AWWA C605. Pipe and fittings shall be carefully handled to avoid damage, and if feasible, while they are suspended over the trench before lowering, they shall be inspected for defects and to detect cracks. Defective, damaged or unsound pipe or fittings shall be rejected. Each section of the pipe shall rest upon the pipe bed for the full length of its barrel, with recesses excavated to accommodate bells and joints. Any pipe which has its grade or joint disturbed after laying shall be taken up and re-laid. All precautions shall be taken to prevent sand or other foreign material from entering the pipe during installation. If necessary, a heavy, tightly woven canvas bag of suitable size shall be placed over each end of the pipe before lowering into the trench and left there until the connection is made.
made to the adjacent pipe. Any time the pipe installation is not in progress, the open ends of pipe shall be closed by a watertight plug or other method approved by the Engineer. Plugs shall remain in pipe ends until all water is removed from the trench. Any sand or foreign material that enters the pipe shall be removed from the pipe immediately. No pipe shall be installed when trench conditions (standing water, excess mud, etc.) or the weather (rain, etc.) is unsuitable for such work, except by permission of the Engineer. Any section of pipe already laid which is found to be defective or damaged shall be replaced with new pipe.

2. Pipe Cover

The cover over all piping shall be a minimum of 30 inches in unpaved areas and 36 inches in paved areas with a maximum of 60 inches unless specifically approved otherwise. Cover for pipe under pavement shall be measured from the finished grade. Any reduction in pipe cover will require approval from the City of Jacksonville Beach and the Engineer. Greater depths will be permitted where required to miss obstructions only. Lines shall be located as shown on the drawings. The Contractor shall investigate well in advance of pipe laying any conflicts which may require readjustments in planned locations and advise the Engineer of the results of these investigations so that the Engineer may give instructions as to the modifications required. Refer to Section 02200 for backfill and compaction requirements.

3. Installation of Iron Piping

All iron pipe and fittings shall be laid in accordance with the pipe manufacturer’s recommendations and the American Water Works Association Specification AWWA C600.

4. Thrust Restraint

All non-flanged fittings and valves shall be restrained using one of the following methods:

a. Mechanical restraint at fittings and valves and mechanical restraint along adjacent joints of pipe to a length as specified in the following table.

All M.J. Fittings must be restrained using either Ebba Iron Restrainers, Uni-flange, or Mega-lugs. Rod restraints will be approved on an individual basis only.

No thrust blocks will be used without prior approval of City of Jacksonville Beach Public Works Department.

CHART “F”

<table>
<thead>
<tr>
<th>NOMINAL PIPE SIZE (INCHES)</th>
<th>11 1/4° Horizontal Elbow</th>
<th>22 1/2° Horizontal Elbow</th>
<th>45° Horizontal Elbow</th>
<th>90° Horizontal Elbow</th>
<th>Horizontal Tees</th>
<th>Horizontal Plugs and Valves</th>
<th>45° Vertical Offset Upper length/lower length</th>
<th>22 1/2° Vertical Offset Upper length/lower length</th>
<th>Reducer (to 1 size smaller) Length on Larger Size Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>20</td>
<td>20 - run 1 – branch</td>
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<td>20 / 3</td>
<td>8 / 1</td>
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## SECTION 02660
WATER DISTRIBUTION SYSTEM

### MINIMUM LENGTH TO BE RESTRAINED ON EACH SIDE OF FITTING (FEET)

<table>
<thead>
<tr>
<th>NOMINAL PIPE SIZE (INCHES)</th>
<th>11 1/4° Horizontal Elbow</th>
<th>22 1/2° Horizontal Elbow</th>
<th>45° Horizontal Elbow</th>
<th>90° Horizontal Elbow</th>
<th>Horizontal Tees</th>
<th>Horizontal plugs and valves</th>
<th>45° Vertical Offset Upper length/low per length</th>
<th>22 1/2° Vertical Offset Upper length/lower length</th>
<th>Reducer (to 1 size smaller) Length on Larger Size Side</th>
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</thead>
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**NOTE:** Table assumptions: PVC pipe, Safety Factor = 1.5, Soil = GM or SM, 3 ft. bury depth to top of pipe, trench type 3, branch on tee is one size smaller than run of tee size and 20 feet of pipe is installed past the tee on the run side (smaller branch sizes must be calculated by the engineer). Vertical offsets are 3 feet deep on top and 8 feet deep on bottom. Reducers are calculated for one size reduction. Test pressure of 150 psi.

The use of thrust blocks shall be limited to situations such as point repair where exposing several joints of pipe is not feasible due to existing ground conditions and also must be used with mechanical joint restraining devices when, in the judgment of the Engineer, the nature and criticality of an installation is such as to require positive assurance of stability. Concrete collars with tie rods may be used on dead end lines at the Contractor’s discretion.

Concrete used for this purpose shall be 2,500 psi minimum. When applicable, schedule and details for the required thrust blocks are included on the drawings. The use of thrust blocks will only be approved by the City of Jacksonville Beach for special conditions.

5. **Joint Restraints within Carrier Pipe (N/A This Project)**

   All joints within steel casing pipe shall be restrained with mechanical restraining devices. End joints shall be tie rodded, with the ends of the rods welded to the end of the casing.

6. **Casing Spacer Installation (N/A This Project)**

   All carrier pipes in casings shall utilize casing spacers installed on the carrier pipe, inside the casing pipe. Casing spacers shall be installed one foot on both sides of each carrier pipe joint, and at ten feet intervals along the carrier pipe for pipe up to 48 inches. For carrier pipes larger than 48 inches, casing placement...
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shall be as recommended by the casing spacer manufacturer. A casing spacer shall also be installed within two feet of each of the ends of the casing pipe.

D. Water Main and Non-Water Main Separation Requirements

1. Horizontal Separation between Underground Water Mains and Sanitary or Storm Sewers, Wastewater or Stormwater Force Mains, Reclaimed Water Pipelines, and On-Site Sewage Treatment and Disposal Systems.
   a. New or relocated, underground water mains shall be laid to provide a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed storm sewer, stormwater force main, or pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C.
   b. New or relocated, underground water mains shall be laid to provide a horizontal distance of at least three feet, and preferably ten feet, between the outside of the water main and the outside of any existing or proposed vacuum-type sanitary sewer.
   c. New or relocated, underground water mains shall be laid to provide a horizontal distance of at least six feet, and preferably ten feet, between the outside of the water main and the outside of any existing or proposed gravity-or pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C. The minimum horizontal separation distance between water mains and gravity-type sanitary sewers shall be reduced to three feet where the bottom of the water main is laid at least six inches above the top of the sewer.
   d. New or relocated, underground water mains shall be laid to provide a horizontal distance of at least ten feet between the outside of the water main and all parts of any existing or proposed “on-site sewage treatment and disposal system” as defined in Section 381.0065 (2), F.S., and Rule 64E-6.002, F.A.C.

2. Vertical Separation between Underground Water Mains and Sanitary or Storm Sewers, Wastewater or Stormwater Force Mains, and Reclaimed Water Pipelines
   a. New or relocated, underground water mains crossing any existing or proposed gravity-or vacuum – type sanitary sewer or storm sewer shall be laid so the outside of the water main is at least six inches, and preferably twelve inches, above or at least twelve inches below the outside of the other pipeline. However, it is preferable to lay the water main above the other pipeline.
   b. New or relocated, underground water mains crossing any existing or proposed pressure-type sanitary sewer, wastewater or storm water force main, or pipeline shall be laid so the outside of the water main is at least six inches, and preferably twelve inches, above or at least twelve inches below the outside of the other pipeline. However, it is preferable to lay the water main above the other pipeline. However, it is preferable to lay the water main above the other pipeline.
   c. At the utility crossings described in paragraphs (a) and (b) above, on full length of water main pipe shall be centered above or below the other pipeline so the water main joints will be as far as possible from the other pipeline. Alternatively, at such crossings, the pipes shall be arranged so that all water main joints are a least three feet from all joints in vacuum-type sanitary sewers, storm sewers, stormwater force mains, or pipelines conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., and at least six feet from all joints in gravity or pressure type sanitary sewers, wastewater force mains, or pipelines.

3. Separation between Water Mains and Sanitary or Storm Sewer Manholes.
   a. No water main shall pass through, or come into contact with, any part of a sanitary sewer manhole.
   b. Effective August 28, 2003, water mains shall not be constructed or altered to pass through, or come into contact with, any part of a storm sewer manhole or inlet structure. Where it is not technically
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feasible or economically sensible to comply with this requirement (i.e., where there is a conflict in the routing of a water main and a storm sewer and where alternative routing of the water main or the storm sewer is not technically feasible or is no economically sensible), the Department shall allow exceptions to this requirement (i.e., the Department shall allow construction of conflict manholes), but suppliers of water or persons proposing to construct conflict manholes must first obtain a specific permit from the Department in accordance with Part V of this chapter and must provide a preliminary design report or drawings, specifications, and design data accompanying their permit application the following information:

i. Technical or economic justification for each conflict manhole.
ii. A statement identifying the party responsible for maintaining each conflict manhole.
iii. Assurance of compliance with the design and construction requirements in sub-subparagraphs a. through d. below.

(a) Each water main passing through a conflict manhole shall have a flexible, watertight joint on each side of the manhole to accommodate differential settling between the main and the manhole.

(b) Within each conflict manhole, the water main passing through the manhole shall be installed in a watertight casing pipe having high impact strength (i.e., having an impact strength at least equal to that of 0.2 inch thick ductile iron pipe).

(c) Each conflict manhole shall have an access opening, and shall be sized, to allow for easy cleaning of the manhole.

(d) Gratings shall be installed at all storm sewer inlets upstream of each conflict manhole to prevent large objects from entering the manhole.

4. Separation between Fire Hydrant Drains and Sanitary or Storm Sewers, Wastewater or Stormwater Force Mains, Reclaimed Water Pipelines, and On-Site Sewage Treatment and Disposal Systems.

New or relocated fire hydrants with underground drains shall be located so that the drains are at least three feet from any existing or proposed storm sewer, stormwater force main, or pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C.; at least three feet, and preferably ten feet, from any existing or proposed vacuum-type sanitary sewer; at least six feet, and preferably ten feet, form any existing or proposed gravity or pressure type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.; and at least ten feet from any existing or proposed “on-site sewage treatment and disposal system” as defined in Section 381.00665(2), F.S., and Rule 64E-6.002, F.A.C.

E. System Connections

All connections and ties to the City of Jacksonville Beach Water System and transfer of services will be performed by the Contractor under supervision of the City of Jacksonville Beach’s representative.

1. Water Main Connections

Tapped connections in the barrel of a pipe shall be less than the diameter of pipe being tapped except 4 inch pipe which may be tapped with a 4 inch tapping sleeve and valve. No taps shall be made within 5 feet of a joint. When making 2 inch PVC water main connections to water mains, a flexible connection shall be made using 2 inch polyethylene pipe one foot long (minimum). The polyethylene pipe shall tie to the existing water main and then tie to the new 2 inch PVC water main. There shall be a stainless steel nipple between saddle and valve on 2 inch water main connections.

2. Water Service Connections

Water services to be Polyethylene – Orangeburg #4-05110, 3406 or Drisco pipe 3408, 5100 ultra-line. All long and short side water services are to be one inch (1”).
F. Field Testing

1. Disinfection Tests
   a. All water pipe and fittings of whatever size and wherever installed on potable water lines shall be thoroughly disinfected prior to being placed in service. Disinfection shall follow the applicable provisions of the procedure established for the disinfection of water mains as set forth in AWWA Standard C651 entitled "AWWA Standard for Disinfecting Water Mains". See Appendix

   Temporary blow-offs, shall be installed for the purpose of clearing the water main. Blow-offs installed on water mains up to and including 12 inches shall be the same diameter as the water main. Blow-offs installed on 16 inch water mains and larger shall be the next smaller size, in diameter, than the water main being tested. Temporary blow-offs shall be removed and plugged after the main is cleared. The City of Jacksonville Beach Representative shall be present prior to and during the operation of blow-offs. The main shall be flushed prior to disinfection.

   The new water main shall be connected to the existing water main at one point only for flushing purposes (no looping). The new main MUST have a blow off on the end as required previously. After the new main is thoroughly flushed, the open end shall be sealed and restrained and the main shall be thoroughly disinfected as specified.

   The contractor may use a separate source of water for flushing purposes. Upon completion of the flushing, the contractor shall proceed with disinfection as specified.

   Anytime the new line is reopened (to repair defective joints or pipe, defective fitting or valve) the complete disinfection process shall be repeated.

   Once bacteriological clearance (on 2 days of samples) has been approved, the main may be pressure tested against an existing system valve.

   The Permittee’s Engineer shall submit two (2) copies each of the following: FDEP certification form; pressure test results (witnessed by City of Jacksonville Beach Public Works, Distribution and Collection System personnel); two (2) consecutive days of satisfactory bacteriological test samples; and As-Built drawings to the City Engineer or Public Works Director for signatures prior to submittal to the FDEP. **No new water mains shall be placed into service until a Certification of Completion has been approved by the Florida Department of Environmental Protection (FDEP).** The Contractor shall allow time for this process to be completed.

2. Leakage and Pressure Tests

   The Contractor shall test pipelines installed under this Contract in accordance with these specifications prior to acceptance of the pipeline by the City of Jacksonville Beach or connecting pipeline to any existing pipeline or facility. All field tests shall be made in the presence of the Engineer. Except as otherwise directed, all pipelines shall be tested. Pipelines laid in excavation (other than trench excavation), shall be tested prior to the backfilling of the excavation. All piping to operate under liquid pressure shall be tested in sections of approved length. For these tests, the Contractor shall furnish clean water, suitable temporary testing plugs or caps, and other necessary equipment, and all labor required. If the Contractor chooses to pressure test against an existing City of Jacksonville Beach water main/valve, the new water main must be disinfected prior to connection to the City of Jacksonville Beach line. The City of Jacksonville Beach will not be responsible for failure of the pressure test due to the existing valve leaking. If positive test results cannot be obtained because the City of Jacksonville Beach valves will not hold the test pressures, the Contractor shall be required to disconnect from the City of Jacksonville Beach System and re-test independent of the City of Jacksonville Beach System and at the Contractor’s expense. The Contractor will use suitable pressure gauges, calibrated by an approved testing laboratory, with increments no greater than 2 psi. Gauges used shall be of such size that pressures tested will not register less than 10% nor more than 90% of the gauge capacity. Leakage and pressure testing shall be in accordance with AWWA C600 and as outlined below.

   a. Unless it has already been done, the section of pipe to be tested shall be filled with water of approved quality and all air shall be expelled from the pipe. If blow offs or other outlets are not available at
high points for releasing air, the Contractor shall make the necessary taps at such points and shall plug said holes after completion of the test.

b. Hydrostatic testing shall consist of a combined pressure test and leakage test. Specified test pressures, based on the elevation of the highest point of the line or section under test, and corrected to the elevation of the test gauge, shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Engineer. The pump, pipe connection and all necessary apparatus, shall be furnished by the Contractor and shall be subject to the approval of the Engineer. All valved sections shall be hydrostatically tested to insure sealing (leak allowance) of all line valves. See Section 351.

c. All piping shall be pressure and leakage tested for a minimum of two hours duration at 150 psi. Pressure tests shall be conducted with a pressure loss of not more than 5 psi regardless of length being tested. No pipe will be accepted if pressure loss is greater than 5 psi. regardless of leakage test results. All exposed pipe, fittings, valves and joints shall be examined carefully during the test. Any damaged or defective pipe, fittings or valves that are discovered following the pressure test shall be repaired or replaced with sound material and the test shall be repeated until it is satisfactory. Repairing, replacing and retesting shall be done at the Contractor’s expense.

d. Leakage tests shall be conducted simultaneously with the pressure tests. At the end of the pressure test, the line will be pumped back to initial test pressure. The quantity of water used to repump the line shall be measured and compared to the limitations calculated using the leakage equation below.

No pipe installation will be accepted if the leakage is greater than determined by the following formula:

\[ L = \frac{SDP^{1/2}}{133200} \]

In which \( L \) is the allowable leakage in gallons per hour; \( S \) is the length of pipeline tested, in feet; \( D \) is the nominal diameter of the pipe, in inches; and \( P \) is the average test pressure during the leakage test, in pounds per square inch. If any test discloses leakage greater than that specified above, the Contractor shall, at its own expense, locate and repair the defective material and retest until the leakage is within the specified allowance.

e. In the event a section fails to pass the tests, the Contractor shall do everything necessary to locate, uncover (even to the extent of uncovering the entire section), and replace the defective pipe, valve, fitting or joint. Visible leaks shall be corrected regardless of total leakage. Lines which fail to meet these tests shall be retested as necessary until test requirements are complied with. All testing shall be performed at the Contractor’s expense.

f. If, in the judgment of the Engineer, it is impracticable to follow the foregoing procedures exactly for any reason, modifications in the procedure shall be made with approval; but, in any event, the Contractor shall be responsible for the ultimate tightness of the piping within the above requirement. Re-disinfection shall be required if the line is de-pressurized for repairs prior to tying into the City of Jacksonville Beach system.

3. Locate Wiring Testing

Installed locate wiring shall be tested by the contractor with an approved testing company using approved equipment. Locate wire testing company must be provided a copy of the As-Builts.

G. Inspection

All pipe and fittings shall be subject to inspection at time of delivery and also in the field just prior to installation. All pipe and fittings which in the opinion of the Engineer do not conform to these specifications will be rejected and shall be removed by the Contractor at the Contractor’s expense. An authorized City of Jacksonville Beach representative must be present for all pressure and leakage testing, connections to the’ s existing lines and the collection of water samples. The City of Jacksonville Beach representative will pull the water samples and deliver them to the lab.

H. State Highway Crossings
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Permits for all work within the right-of-way of a State Highway will be obtained by the Engineer. The Contractor shall, however, verify the existence of the permit before commencing work in this area. All work related to the State Highway crossing shall be in full compliance with the requirements of the Florida Department of Transportation permit and in accordance with the Florida Department of Transportation Utility Accommodation Guide and standard specifications. Unless otherwise shown on the drawings or specified herein, State Highway crossings shall be made by jacking a steel pipe casing, of the size shown on the drawings and shown in the City of Jacksonville Beach Standard Details, under the highway at the elevations and locations shown. The water main shall then be placed in the casing with approved casing spacers as specified in this section. All joints within carrier pipe shall be mechanically restrained joints. After inspection, the ends of the casing shall be filled with 2500 psi concrete not less than 8 inches thick.

I. Railroad Crossings (N/A This Project)

Permits for all work within the railroad right-of-way will be obtained by the Engineer. The Contractor shall, however, verify existence of the permit before commencing work in this area. All work related to the railroad crossings shall be in full compliance with the terms of the permit and AREA Specifications for Pipeline Crossings Under Railway Tracks for Non-Flammable Substances. The water main shall be placed in steel casing pipe under all railroad crossings whether installed by open cutting or jacking and boring. The water main shall then be placed in the casing with approved casing spacers as specified in this section. All joints within carrier pipe shall be mechanically restrained joints. After inspection by the Engineer, the ends of the casing shall be sealed with 2,500 psi concrete not less than 12 inches thick. Upon completion and prior to final acceptance, the Contractor shall place crossing markers of a type acceptable to the Railroad Company at each end of the crossing at the railroad right-of-way.

K. Locate Wiring

Contractor shall furnish and install #12 copper locate wiring and warning tape on all PVC water mains and polyethylene and PVC water services installed. Locate wire on services shall be limited to a continuous loop of wire extending 3 feet along the service from the main. Locate wire must be attached to water mains and services with plastic zipper type ties at each side of bell joint or fitting and at 10 foot intervals along pipeline. Locate wire shall be brought to within 8 inches of grade within a valve box or water meter box flush with finished surface with 36 inches of locate wire rolled up inside box at 475 foot intervals. Locate wire shall be installed in box and along pipeline as detailed in the City of Jacksonville Beach Standard Details. Locate wire shall be installed in either the 1:00 or 11:00 position on the pipe. Locate wire shall be attached to intersecting ductile iron or galvanized pipeline using a three way splice and brass split ground clamp with wire installed around brass nipple. Locate wiring must have the ability to conduct an electrical current; therefore, the wiring must be continuous with any breaks in the line spliced as per the City of Jacksonville Beach Standard Details. Locate wire shall be spliced with the City of Jacksonville Beach approved wire connectors.

L. New Water Services

New water services shall be furnished and installed in the sizes and locations indicated on the Contract documents. Short services shall be services installed on the same side of the road as the water main. Long services shall be services installed on the opposite side of the road as the water main. All water services on this project will be installed by the jack & boring or underground piercing tool method. No open cutting of roadway will be allowed for water services.

M. Renewal and Transfer of Water Service

1. General

Where a new water main is installed or where an existing water main is relocated or replaced, as shown on the drawings or where necessary due to a direct conflict with proposed construction and when approved by the Engineer, the Contractor shall install new piping from the water main to each existing water meter.

2. Service Line Size

Service lines and component parts thereof shall be sized based on the existing meter size as follows:

| SINGLE METER SERVICES |

02660-16

Jacksonville Beach Specification 05/2012

OFFSITE 12" WELl HEADER FOR WTP 1, WELL 16 & 6" VM REPLACEMENT
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#### WATER DISTRIBUTION SYSTEM

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**N. Contractor Warranty**

The Contractor shall supply to the City of Jacksonville Beach a one (1) year unconditional warranty. The warranty shall include materials and installation and shall constitute complete replacement and delivery to the site of materials and installation of same to replace defective materials or defective workmanship with new materials/workmanship conforming to the specifications.

End of Section
SECTION 2660-B
WATER VALVES & APPURTENANCES

1.1 GENERAL

A. Scope of Work

The Contractor shall furnish, install, joint, and test all gate valves, butterfly valves, check valves and other special valves and appurtenances as shown on the drawings and herein specified. All references to Industry Standards (ASTM, ANSI, AWWA, etc.) shall be to the latest revision unless otherwise stated. Only those materials included in the City of Jacksonville Beach Water and Sewer Standards, Details and Materials Manual shall be installed. All materials shall be new unless specifically called for otherwise.

B. Rotation of Opening

All valves larger than two inches installed within a water system to be the City of Jacksonville Beach owned shall open by turning to the left or counter-clockwise, when viewed from the stem.

C. Extension Stems

Where extension stems are required, substantial, adjustable wall brackets and extension stems shall be furnished and located as directed. Extension stems shall be provided on all buried valves when the operating nut is deeper than 30 inches below the final grade. Sufficient stem extension shall be provided so that the nut will be no more than 30 inches below finished grade.

D. Painting of Valves and Valve Box Lids

The top side of all water valve box covers shall be painted blue except for gate valves at fire hydrants. Top of valve box covers at fire hydrants shall be painted yellow. Oil based, traffic-rated paint shall be used.

E. Hydrostatic and Leakage Test

The Contractor shall be required to perform a separate hydrostatic/leakage field test on each valve installed to insure it is bubble tight. The duration of this test shall be 15 minutes at 150 psi and conform to AWWA C504. The method of performing this test shall be left up to Contractor with the Engineer's approval. The failure of the valve to perform will result in its removal from the job site and replacement by the Contractor at the contractor’s expense.

F. Locating Markers for Valves

A ‘V’ cut shall be carved in the curb closest/adjacent to a below grade valve. This ‘V’ cut shall be painted blue.

2.1 GATE VALVES

A. Gate valves two inches (2") and smaller shall be bronze body, inside screw, with non-rising stem, solid wedge, 200 PSI cold water non-shock rating and open by turning to the left. Valve shall be Walworth No: 4, Powell No: 507, or approved equal.

B. Gate valves three inches (3") to twelve inches (12") in diameter shall be designed for 175 PSI minimum working pressure. Valves over twelve inches (12") in diameter shall be 150 PSI minimum working pressure. Gate valves, when fully open, shall have a clean waterway equal to the nominal diameter of the pipe. The valve shall open by turning to the left or counterclockwise when viewed from the stem. The operating nut or wheel shall have an arrow cast in the metal indicating the direction of opening. Each valve shall have the manufacturer’s distinctive marking, pressure rating and year of manufacture cast on the body. Prior to shipment from the factory, each valve shall be tested by applying to it a hydraulic pressure equal to twice the specified working pressure. Gate valves shall be iron body, fully bronze mounted, single disc, double seat, tapered wedge type, except as noted otherwise herein and unless otherwise called for on
the plans. The valves shall conform to AWWA C500 (latest), Specifications for Gate Valves for Ordinary Water Works Service with an “O” ring seal of standard manufacture.

1. All Buried gate valves shall be iron body bronze mounted, rubber encapsulated, resilient seat, solid wedge, non-rising stem type with operating nuts and adjustable valve boxes and covers. Operating nuts shall be two inches square. All gate valves 20 inches or larger must be bevel geared for both horizontal and vertical installations. All valves shall be installed vertically unless additional depth of bury is impossible due to physical obstructions. Where depth of cover does not permit, the valves shall be mounted horizontally and fitted with rollers, scrapers and tracks. Tracks shall be stainless steel. Provide cleanout on each side of bonnet. Gate valves shall open counterclockwise.

2. All above ground gate valves shall be of the rising stem type. Above ground valves shall have hand wheel operators.

3. Valves sixteen inches (16") in diameter and larger shall contain enclosed gears and also an enclosed worm geared type position indicator.

4. Valves sixteen inches (16") in diameter and larger for vertical buried installation shall be furnished with enclosed spur gearing. Valves for horizontal installation shall be furnished with enclosed beveled gearing. Exposed valves shall have open gearing.

C. Gate valves three inches (3") through twelve inches (12") shall be Clow, M & H, American Flow Control, Mueller or approved equal; and gate valves fourteen inches (14") and larger shall be Clow, M & H, American Flow Control, Mueller or approved equal.

D. Resilient-Seated Gate Valves: Resilient wedge gate valves shall be manufactured to meet all applicable requirements of AWWA C509-80, Standard for Resilient-Seated Gate Valve. Valves twelve inches (12") and smaller shall have a working water pressure rating of 200 PSI and shall have non-rising stems, left opening, provided with two inch (2") square operating nut with arrow cast in the metal to indicate direction of opening. Interior surfaces of the valve body shall be coated with a two (2) part, thermosetting, non-toxic epoxy coating, minimum thickness of four (4) mils. Each valve shall have the manufacturer’s name, pressure rating and year of manufacture cast on the body and shall be factory tested by hydrostatic pressure equal to twice the specified working pressure prior to shipment. Resilient seated wedge type gate valves shall be as manufactured by Clow, M & H, American Flow Control, Mueller or approved equal. Contractor shall provide complete submittal data, including detailed drawing showing ASTM numbers of all components, interior coating specifications, and certificates that each valve has met specified pressure test requirements.

E. Above Ground Valves

Gate valves located above ground or inside structures shall be hand wheel operated, non-rising stem type with flanged ends and be of the same general construction as buried valves.

F. Valve Joints

All gate valves shall have mechanical joint ends, flanged ends, or screw joints to fit the pipe run in which they are used, except valves installed on push-on joint pipe shall have mechanical joint ends unless otherwise specified.
3.1 BUTTERFLY VALVES

A. General

Butterfly valves must be used on water mains larger than 24 inches. Butterfly valves shall not be used on pipe 24 inches or smaller. All butterfly valves shall be of the tight closing, rubber seat type with rubber seats which are recess-mounted and securely fastened to the valve body or attached to the valve disc. Valves shall be bubble tight at rated pressures in both directions of flow and shall be satisfactory for applications involving valve operation after long periods of inactivity. Valve discs shall rotate 90 degrees from the full open position to the tight shut position. Valves shall meet the full structural requirements of the applicable classes of AWWA C504.

B. Valve Bodies

Valve bodies shall be constructed of ductile iron conforming to ASTM A126, Class B, and buried valves shall have integrally cast mechanical joint ends. Above ground valves shall be flanged in accordance with ANSI B16.1, Class 125. Two trunnions for shaft bearings shall be integral with each valve body. Body thickness shall be in accordance with AWWA C504.

C. Valve Discs

Valve discs shall be constructed of Ni-Resist, Type 1 or ductile iron, ASTM A536, Grade 65-45-12 with stainless steel seating edges. All disc seating edges not incorporating recess-mounted rubber seats shall be smooth and polished.

D. Valve Shafts

Valve shafts shall be "Stub Shaft" type or one piece, extending full size through the disc (or a minimum of 1-1/2 shaft diameters per "stub shaft" valves) bearings and into the operating mechanism and shall be constructed of ASTM A276, type 304 stainless steel or a stainless steel with greater overall corrosion and oxidation resistance, or shall be high tensile steel with stainless steel shaft journals, teflon bushings and shaft seals. Shaft diameters shall meet the minimum requirements of AWWA C504 for Class 150B.

E. Valve Seats

Shall be of a natural rubber or a synthetic rubber compound. Bonded seats shall be simultaneously molded in, vulcanized and bonded into the valve body. Seat bond must withstand 75 lb. pull under test procedure ASTM D429, Method B. Valve seats on 24" diameter valves and larger shall be field adjustable and replaceable without dismantling operator, disc or shaft and without removing the valve from the line. Provision for adjustment shall take the form of heavy corrosion resistant retaining segments which lock the seat rigidly in position after adjustment and which will effect a minimum of 1/8 inch change in seat rise at equal increments around the periphery. Seats attached to the valve disc shall be held in place by a stainless steel, ASTM A296, Grade CF8, retaining ring. Cap screws through the rubber seat and the seat retaining ring must be provided for adjustment of the rubber seat. The mating body seat shall be constructed of type 304 stainless steel.

F. Valve Bearings

Valves shall be fitted with sleeve type bearings. Bearings shall be corrosion resistant and self-lubricating. Bearing load shall not exceed the published design load for the bearing material, or 1/5 of the compressive strength of the bearing or shaft material.

G. Valve Operators
Manual valve operators shall be of the worm gear or traveling nut type and fully enclosed. Units furnished for buried service shall be fully gasketed and grease packed. Valves located above ground shall be equipped with hand wheel operators and shall have a suitable indicator arrow to give valve position from full open to fully closed. Buried valves, designated to be furnished with above ground operators, shall be equipped with hand wheel operators and position indicators on extended bonnet. The hand wheel for buried valves shall be set 3 feet above finished grade. All other buried butterfly valves shall be furnished with 2 inch AWWA nut operator with valve box and cover. Operator components shall, at the extreme operator positions, withstand, without damage, a pull of 200 lb. for hand wheel or chain wheel operators or an input torque of 300 ft. lb. for operating nuts.

4.1 CHECK VALVES

Check valves shall conform to the requirements of AWWA C508. Check valves larger than 2 inch nominal size shall be iron body, flanged ends, outside lever, spring loaded, swing type with straight-away passageway of full pipe area. The valve shall have renewable bronze seat ring and rubber-faced disc. Check valves larger than 2 inches shall be 150 psi working pressure. Check valves 2 inches and smaller nominal size shall be all brass swing check valves, 200 psi working pressure. Buried check valves shall be installed in an access box with traffic rated cover.

5.1 MISCELLANEOUS VALVES AND APPURTENANCES

A. Tapping Valves

1. General

Tapping valves shall be iron body, bronze mounted gate valves, non-rising stem, open left, resilient seat, 2 inch square operating nut, for vertical mounting in approximately level setting on buried water lines. The valve ends shall be mechanical joint for use with ductile iron pipe on one side and standard flanged (Class 125) on the other. Valves shall conform to the applicable section of these specifications.

2. Disinfection of Tapping or Drilling Machine

Prior to tapping a potable water main, the drilling machine's pilot drill, shell cutter and cutter hub shall be sterilized in accordance with the following procedure:

Four gallons of potable water shall be combined with 8 oz. of sodium hypochlorite (household bleach); the pilot drill, shell cutter and cutter hub shall be swabbed until clean or totally immersed in the sterilizing solution and allowed to remain wet at least five minutes before tapping operation commences. It is not necessary to rinse the sterilizing solution from tapping components prior to use.

3. Hydrostatic and Leakage Test

After installing a tapping sleeve and valve, and prior to tapping of a pressurized water main, a hydrostatic and leakage test shall be performed. The test will be conducted by introducing water into a tap or test hole located at the neck of the outlet half of the sleeve, on sleeves furnished with said tap, and with the tapping valve in the closed position. Sleeves shall be provided with a test plug. The sleeve and valve shall be capable of maintaining a test pressure of 150 psi for 30 minutes duration, with no sign of visible leaks. All leaks shall be repaired by removing and replacing defective items with items free of defects, after which the sleeve and valve shall be re-tested. Such repair and re-testing shall be done until the installation passes the specified test. The Contractor shall furnish and install any necessary temporary restraints, gauges, pumps and other incidental and appurtenant items necessary to complete this work, and shall remove same upon completion of the test. A watertight plug shall then be inserted into the test hole.
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WATER VALVES & APPURTENANCES

B. Corporation Stops

All corporation stops to be Ford ball corp. FB 1600 AWWA/cc taper thread inlet by female iron pipe thread outlet or FB1000 ball corp with grip joint, McDonald 4701BT. Corporation stops shall be required on all services regardless of service size.

C. Curb Stop

Curb stops must be either Ford B41-343W-G (3/4’ x 1”) and B41-344W-G (1”) both with grip joints or McDonald 6102 W.T.

Adapters can be Ford C84 series with grip joint or Mueller H-15428.

Separate services to be terminated with a curb stop in meter box one foot (1’) off property line and minimum of two feet (2’) off side property line. Either Brook #37 with 37H lid, for one inch (1”) Brook #38 with 38H lid for 1½”, Brook #65 with 65H for 2” or DPW Model D-1200 for one inch (1”) services. When performing pressure tests, curb stops must be capped or plugged and tested in the open position.

D. Ball Valves

Ball valves shall be limited to 3/4 inch through 2 inches in size and shall have cast bronze body, bronze tee head, stem with check, full roundway opening and provisions for locking in a closed position. Ball valves for use with copper services shall have an inlet connection with a flare nut fitting for Type K copper tubing and an outlet connection with female iron pipe thread, or shall have an inlet connection with a compression joint (insert stiffener will be used with plastic service connections) and an outlet connection with female iron pipe thread. Ball valves for use with Schedule 40 PVC pipe shall have an outlet connection with female iron pipe threads and an inlet connection with either a compression joint or female iron pipe threads. The latter will require the use of an approved Schedule 40 PVC Adapter (MIPT X SLIP). Compression joints will require insert stiffeners. Below grade ball valves on water mains must have two inch (2”) operating nuts and be installed in standard valve boxes.

E. Service or Tapping Saddle

Water services to be made with service saddle for C.I., AC or galvanized double strap JCM 402, Mueller H-10500, Smith-Blair 313, or Ford 202 and must be CC threads (AWWA).

Service saddles for PVC C-900 water pipe are Mueller (H-134-series or Ford S90). Taps to existing water mains will be made with an approved stainless steel tapping sleeve and resilient seat tapping valve. Taps to existing water mains will be made with an approved stainless steel tapping sleeve and resilient seat tapping valve.

6.1 FIRE HYDRANTS

A. General

Fire hydrants shall be 4 ½ inch ductile iron body, fully bronze mounted, for 150 psi working pressure, complying with AWWA Standard C502. Fire hydrants to be Mueller #A421 or #A423, Clow Medallion, or M&H AWWA C-502 style 129 Traffic Model, 4½” main valve size. Unless otherwise stated, all drain holes must be rocked with 57 stone. The inlet connection shall be mechanical joint type, with accessories, for 6 inch ductile iron pipe. The hydrant foot shall be epoxy coated and have integral cast tie-back lugs. The integral shut-off valve shall be compression type opening against water pressure, right hand openings. Valve diameter and general interior design shall be sufficient to provide head loss/flow quantity ratios less than specified in the above cited Standard. The main valve seat and the threaded portion of the hydrant into which it screws shall be bronze. The hydrant barrel drain valve and port shall be bronze. The hydrant barrel drain shall be actuated by operation of the main valve stem. The stem operating threads and thrust
bearing shall be sealed, by "O" rings, from exposure to moisture and shall be provided with means for lubrication. The hose nozzles shall be bronze with National Standard fire hose coupling screw threads, one 4 inch pumper nozzle and two 2½ inch hose nozzles. The hydrant operating nut and nozzle cap nuts shall be 1¼” square. Pipe used for fire hydrant laterals shall be ductile iron Pressure Class 350, or Class 150 DR18 PVC. Tees and bends leading to fire hydrants shall be ductile iron only. The nozzle caps shall be securely chained to the hydrant barrel. The chains shall be free from rust or corrosion and painted to match the color of the hydrant. The hydrants shall be "Traffic" type with a frangible flange or lugs and operating stem section at the ground line. The hydrant shall be painted with the above ground finish color "Traffic Yellow".

B. Installation

Fire hydrants shall be installed at the locations shown on the drawings in accordance with the City of Jacksonville Beach Standard Details.

C. Independent Valve

Independent valve furnished with each hydrant shall be 6 inch, non-rising stem gate valve with mechanical joint ends in conformance with the sub-section entitled "Gate Valves" of these specifications. Independent valves shall be provided with a cast iron valve box in conformance with the sub-section entitled "Valve Boxes".

D. Hydrostatic and Leakage Test

Hydrostatic and leakage tests shall be conducted in accordance with AWWA C502, Section 5.

7.1 VALVE BOXES

A. General

The Contractor shall furnish, assemble and install a valve box for each buried valve. Each valve box installed in non-paved areas shall be installed with a 24 inch round, 6 inch thick concrete collar with #4 reinforcing bars, poured around the top of the valve box cover. The concrete shall have a minimum strength of 3000 psi. Provide brass identification tag with “Water”, valve size and valve type epoxied or riveted to interior of valve box. Tag shall be 2 inch diameter, 1/8 inch thick brass, located a maximum of 2 inches below the top of the valve box.

B. Valve Boxes

Adjustable valve boxes of suitable length shall be used. Cover shall be marked "Water". The top section shall be adjustable for elevation and shall be set to allow equal movement above and below finished grade. The base shall be centered over the valve and shall be on line with nut at top of valve stem and the entire assembly shall be plumb. Boxes for paved areas shall be cast iron. Boxes for non-paved areas may be PVC. Cast iron castings shall be manufactured of clean, even grain, gray cast iron conforming to ASTM Designation A48, Class 20B, Gray Iron Castings; and shall be smooth, true to pattern, free from blow holes, sand holes, projections, or other harmful defects and shall be coated with a single thin coat of coal tar epoxy. The cover will not rock after it has been seated in any position in its associated jacket.

C. Debris Cap

Debris caps shall be required in all valve boxes. The debris cap shall be comprised of a hollow member having a cylindrical outer surface, a closure for one end and three point resilient contact pads projecting from the outer surface. One contact pad shall be movable by means of a cam having a low angle of advance whereby external forces applied to the cam via the movable contact pad will not cause rotation of said cam. The cap shall have a flexible shirt providing an outward seal preventing debris from getting past the cap. The cap must withstand without slippage, a minimum vertical force of 50 lbs. at a loading rate of
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1.0 inches/minute. The cap shall have retaining prongs to retain a standard locating coil, and shall be capable of installing a standard fitting for “Lock-out/Tag-out” in compliance to all standards and requirements of State and Federal OSHA guidelines

8.1 METER BOXES

A. Concrete

Where called for on the drawings, concrete meter boxes shall be the type as listed in the City of Jacksonville Beach Water and Sewer Standards, Details and Materials and shall be installed in accordance with the City of Jacksonville Beach Water and Sewer Standard Details. Concrete meter boxes will only be allowed in driveway and sidewalk areas.

B. Copolymer

Where called for on the drawings, copolymer meter boxes shall be the type as listed in the City of Jacksonville Beach Water and Sewer Standards, Details and Materials and shall be installed in accordance with the City of Jacksonville Beach Water and Sewer Standard Details. Copolymer meter boxes will be used in all grass areas.

9.1 BACKFLOW PREVENTION DEVICES

A. Double Check Valve Backflow Assembly

Where called for on the drawings, double check valve backflow assembly shall be the type as listed in the City of Jacksonville Beach Water and Sewer Standards, Details and Materials and shall be installed in accordance with the City of Jacksonville Beach Water and Sewer Standard Details.

B. Double Check Valve Detector Assembly

Where called for on the drawings, double check valve detector assembly shall be the type as listed in the City of Jacksonville Beach Water and Sewer Standards, Details and Materials and shall be installed in accordance with the City of Jacksonville Beach Water and Sewer Standard Details.

C. Reduced Pressure Principle Assembly

The reduced pressure backflow preventer shall consist of two independently operating check valves and a hydraulically dependent differential relief valve and two independent ball valve shut-offs. The reduced pressure backflow preventer shall protect against back-siphonage and back-pressure conditions with both checks fouled.

D. Atmospheric (Non-Pressure) Type Vacuum Breaker

Where called for on the drawings, atmospheric (non-pressure) type vacuum breakers shall be the type as listed in the City of Jacksonville Beach Water and Sewer Standards, Details and Materials and shall be installed in accordance with the City of Jacksonville Beach Water and Sewer Standard Details.

E. Pressure Type Vacuum Breaker

The pressure vacuum breaker shall be a device containing within its structure an approved check valve, vacuum relief, inlet and shutoff valves and field testing cocks. All moving parts shall be corrosion resistant. The device shall meet the requirements of A.S.S.E. Standard 1020.
10.1 WATER METERS

A. Compound Water Meter

Where called for on the drawings, compound water meters shall be the type as listed in the City of Jacksonville Beach Water and Sewer Standards, Details and Materials and shall be installed in accordance with the City of Jacksonville Beach Water and Sewer Standard Details.

B. Turbine Water Meter

Where called for on the drawings, turbine water meters shall be the type as listed in the City of Jacksonville Beach Water and Sewer Standards, Details and Materials and shall be installed in accordance with the City of Jacksonville Beach Water and Sewer Standard Details.

C. Compact Fireline Water Meters

Where called for on the drawings, compact fireline water meters shall be the type as listed in the City of Jacksonville Beach Water and Sewer Standards, Details and Materials and shall be installed in accordance with the City of Jacksonville Beach Water and Sewer Standard Details.

11.1 MATERIAL WARRANTY

The manufacturer of materials furnished on the project shall supply to the City of Jacksonville Beach, a one (1) year unconditional warranty. The warranty shall be limited to the material which shall constitute complete replacement and delivery to the site of materials only to replace defective materials with new materials conforming to the specifications. This warranty is contingent upon determination of failure by a private independent testing laboratory. The testing shall prove that the failure was caused by failure of the material. The testing laboratory shall be selected by and agreed upon by both parties involved. This warranty is in addition to any warranty required for pipe linings herein before specified.

12.1 CONTRACTOR WARRANTY

The Contractor shall supply to the City of Jacksonville Beach one (1) year unconditional warranty. The warranty shall include materials and installation and shall constitute complete replacement and delivery to the site of materials and installation of same to replace defective materials or defective workmanship with new materials/workmanship conforming to the specifications.

End of Section
PART I - GENERAL

1.1 DESCRIPTION - POTABLE WATER

A. As-Built drawings of all water construction shall be submitted to the City of Jacksonville Beach for review and approval by the Public Works Department. As-Built drawings shall be prepared in CADD by revisions and amendment to a Mylar copy and CADD disk of the engineering plans of the project. Each sheet shall be labeled “as-built” in one-inch high letters. As-built drawings shall be prepared by a registered land surveyor or a professional engineer who is licensed to practice in the State of Florida according to the provisions of Chapters 471 or 472 of the Florida Statutes. Final approved as-builts shall be submitted to the Public Works Department in the following format: Two (2) Auto Cad Release 2016, Two (2) discs (PDF), and Two (2) sets of blue-line drawings signed/sealed (full size).

B. As-built information shall be recorded and kept current during the progress of the work. Locations and elevations of pipe, fittings, valves, etc. shall be taken before the construction trench is backfilled. All data shall be recorded in ink, to scale, on the mylars by a competent draftsman/CADD operator. In showing changes the same legend that was used on the construction drawings shall be used to identify items on the as-built drawings. The as-built drawings shall bear the name, date, and original signature of the general contractor responsible for the water construction and the name, date, original signature and seal of the surveyor or engineer who prepared the as-built drawings. The signatures shall certify that the as-built drawings do, in fact, reflect the true as-built conditions as located under the direct supervision by the Registered Surveyor and/or Engineer. Where service connections are properly marked on the curb & gutter and/or by marker in the ground, the Public Works Department will accept a certification to the location and depth by the Contractor. All final As-Built Drawings will be prepared on AutoCAD or an approved equal.

C. All valves, fittings, fire hydrants, etc. shall be located in two directions; one location shall be referenced perpendicular to the right-of-way line. The other location shall be parallel to the water main and shall be referenced to the right-of-way line of the nearest street intersection. Locations to pavement, curb, sidewalk, or other utility structures are not acceptable unless these are in turn referenced to right-of-way lines. Centerline of right-of-way may be used for reference in lieu of the right-of-way line.

D. Elevations are required and shall be referenced to a NGVD Survey benchmark. The location and elevation of the benchmark shall be shown on the as-built drawings.

E. All horizontal and vertical control dimensions shall be shown to the nearest tenth of a foot. Locations and elevations of pipe shall be shown every 500 feet maximum and at every change in location or elevation. Locations of water services shall be given to the center of the metal lid in the top of the meter box. The size and type of water pipe, valves, fittings, etc. shall also be shown (i.e. 8”DR 18 PVC pipe). Special details may be required where installations are not as shown on the construction drawings due to field conditions. All service lines shall be referenced off individual property lines.

1.2 DESCRIPTION - WASTE WATER

A. As-Built drawings of all sewer construction shall be submitted to the City of Jacksonville Beach for review and approval by the Public Works Department. As-built drawings shall be prepared in ink by revision and amendment to a Mylar copy of the project. Each sheet shall be labeled “AS-BUILT” in one-inch high letters. As-built drawings shall be prepared by a registered land surveyor or a professional engineer who is licensed to practice in the State of Florida under the provisions of Chapters 471 or 472 of the Florida Statutes.

B. As-built information shall be recorded and kept current during the progress of the work. Locations and elevations of pipe, fittings, valves, etc. shall be taken before the construction trench is backfilled. All data shall be recorded in ink, to scale, on the mylars by a competent draftsman/CADD operator. In showing changes, the same legend that was used on the construction drawing shall be used to identify items on the as-built drawings. The as-built drawings shall bear the name, date and original signature of...
the general contractor responsible for the sewer construction and the name, date, original signature and seal of the surveyor or engineer who prepared the as-built drawings. The signature shall certify that the as-built drawings do, in fact, reflect the true as-built condition as located under the direct supervision of the registered surveyor and/or engineer. All final As-Built Drawings shall be prepared on AutoCAD or an approved equal.

C. Where service connections are properly marked on the curb and gutter and/or by marker in the ground, the Public Works Department will accept a certification to the location and depth by the contractor.

D. All pipe, manholes, valves, fittings, etc. shall be located in two directions. One location shall be referenced perpendicular to the right-of-way line. The other location shall be parallel to the sewer main and shall be referenced to the right-of-way line of the nearest street intersection. Locations to pavement, curb, sidewalk or utility structures are not acceptable unless these are, in turn, referenced to right-of-way lines.

E. Centerline of right-of-way may be used for reference in lieu of the right-of-way line. Elevations where required shall be referenced to an NGVD Survey benchmark. The location and elevation of the benchmark shall be shown on the as-built drawings. All services shall be referenced off lot property lines.

1.3 DESCRIPTION-STORM WATER

A. As-built drawings of all storm water construction shall be submitted to the City of Jacksonville Beach for review and approval by the Public Works Department. As-built drawings shall be prepared in ink by revision and amendment to a Mylar copy of the project. Each sheet shall be labeled “AS-BUILT” in one-inch high letters. As-built drawings shall be prepared by a registered land surveyor or a professional engineer who is licensed to practice in the State of Florida under the provisions of Chapters 471 or 472 of the Florida Statutes.

B. As-built information shall be recorded and kept current during the progress of the work. Locations and elevations of pipe, fittings, valves, etc. shall be taken before the construction trench is backfilled. All data shall be recorded in ink, to scale, on the mylars by a competent draftsman/Cadd operator. In showing changes, the same legend that was used on the construction drawing shall be used to identify items on the as-built drawings. The as-built drawings shall bear the name, date and original signature of the general contractor responsible for the storm water construction and the name, date, original signature and seal of the surveyor or engineer who prepared the as-built drawings. The signature shall certify that the as-built drawings do, in fact, reflect the true as-built condition as located under the direct supervision of the registered surveyor and/or engineer. All final As-Built Drawings shall be prepared on AutoCAD or an approved equal.

C. All pipe, manholes, inlet structures, valves, fittings, etc. shall be located in two directions. One location shall be referenced perpendicular to the right-of-way line. The other location shall be parallel to the storm water main and shall be referenced to the right-of-way line of the nearest street intersection. Locations to pavement, curb, sidewalk or utility structures are not acceptable unless these are, in turn, referenced to right-of-way lines.

D. Centerline of right-of-way may be used for reference in lieu of the right-of-way line. Elevations where required shall be referenced to an NGVD Survey benchmark. The location and elevation of the benchmark shall be shown on the as-built drawings.

PART 2 - PRODUCTS - NOT USED
PART 3 - EXECUTION

3.1 POTABLE WATER

A. General Requirements

1. All Engineering Construction Plans As-builts shall be 24 X 36; therefore, all As-builts shall be 24” x 36” and shall bear the name of contractor or subcontractor who prepared the drawing and the date it was prepared.

2. Surveyor’s Statement (embossed seal) and original signature on each sheet.

3. Contractor’s statement and original signature on each sheet.
   a. Statements shall verify that As-built drawings reflect the true conditions.
   b. As-built shall be labeled on each sheet in 1-inch high letters.
   c. Street names shall be on all streets.
   d. Location and elevation of the benchmark shall be shown on drawings.

B. Water Locations

1. Locate valves, fittings, fire hydrants, etc. in two directions.

2. Locations shall be: (A. perpendicular of right-of-way;) (B. parallel to water main and referenced perpendicular to right-of-way line of nearest street).

3. Center line may be used in lieu of right-of-way line.

4. Structures, which are properly located, may be used, providing ties are perpendicular or parallel to said structure. Radial ties are not acceptable.
   a. All horizontal and vertical distances to be shown to nearest tenth of a foot.
   b. Show all sizes and types of valves, fittings, pipe, hydrants, etc.
   c. Special detail drawings will be required where installations were not shown on contract drawings due to field conditions or where required for clarity.
   d. Elevations on pipe and fittings every 500 feet maximum except where changes in direction and/or elevations occur. Then locations are required at those points.
   e. Locations on pipe every 500 feet except where changes in direction occur; then locations required.
   f. Locate and give elevations for beginning, middle, and end of deflected pipe.

3.2 WASTE WATER

A. Gravity sewer piping & structures - All horizontal control dimensions shall be shown to the nearest tenth of a foot. All elevations shall be shown to the nearest hundredth of a foot. The locations of all manholes shall be given to the center of the manhole cover. Elevations shall be given for the top of the manhole cover and for each pipe invert. Locations of sewer connections shall be given to the plug or to the point where the connection is joined to the consumer’s service. Elevations shall be given if the end
of the connection is less than 36" or more than 60" deep. The size and type of pipe and manholes shall also be given (i.e., Type “A” manhole, 8” PVC-SDR 35 pipe).

B. Force Mains - A horizontal and vertical control dimensions shall be shown to the nearest tenth of a foot. Locations and elevations of the pipe shall be shown every 500 feet maximum, or at every change in location or elevation and at the points of connection. The size and type of pipe, fittings, valves, etc. shall also be shown (i.e., 8” 45 degree bend).

C. Pump Stations - The following information will be required.

1. The size and location of the wetwell to the nearest tenth of a foot.
2. Elevations shall be given for the top of the wetwell cover and for each pipe invert.
3. All schedules on the construction drawings, which show pump, motor or electrical data shall be amended to show as-built conditions.
4. Special details may be required where installations are not as shown on the construction drawings due to field conditions.

3.3 STORM WATER

A. Storm water piping & structures - All horizontal control dimensions shall be shown to the nearest tenth of a foot. All elevations shall be shown to the nearest hundredth of a foot. The locations of all manholes and inlet structures shall be given to the center of the manhole cover. Elevations shall be given for the top of the manhole cover, inlet grate & top and for each pipe invert. The size and type of pipe, manholes and inlet structures shall also be given (i.e., Type “J-1” manhole, Type C Inlet, 15” PVC-SDR 26 pipe).

B. Force Mains - A horizontal and vertical control dimensions shall be shown to the nearest tenth of a foot. Locations and elevations of the pipe shall be shown every 500 feet maximum, or at every change in location or elevation and at the points of connection. The size and type of pipe, fittings, valves, etc. shall also be shown (i.e., 8” 45 degree bend).

C. Pump Stations - The following information will be required.

1. The size and location of the wetwell to the nearest tenth of a foot.
2. Elevations shall be given for the top of the wetwell cover and for each pipe invert.
3. All schedules on the construction drawings, which show pump, motor or electrical data shall be amended to show as-built conditions.
4. Special details may be required where installations are not as shown on the construction drawings due to field conditions.
PART 1 - GENERAL

1.1 DESCRIPTION

Scope of Work: The work specified in this Section consists of establishing a stand of grass, within the areas indicated on the Drawings, by furnishing and placing grass sod. Also included are watering and maintenance as required to assure a healthy stand of grass.

1.2 SUBMITTALS

A certification of sod quality by the producer shall be delivered to the Engineer ten (10) days prior to use.

PART 2 - PRODUCTS

2.1 GRASS SOD

A. Grass sod shall be St. Augustine grass sod or as directed by the City Project Representative. All sod shall be well matted with grass roots. The sod shall be taken in rectangles, preferably 12-inch by 24-inch, shall be a minimum 2-inches in thickness and shall be live, fresh and uninjured at the time of planting.

B. It shall be reasonably free of weeds and other grasses and shall have a soil mat of sufficient thickness adhering firmly to the roots to withstand all necessary handling. The sod shall be planted as soon as possible after being dug and shall be shaded and kept moist until it is planted.

2.2 WATER FOR GRASSING

The water used in the sodding operations shall be obtained as provided for in Section 01500: Temporary Facilities.

PART 3 - EXECUTION

3.1 PREPARATION OF GROUND

The area over which the sod is to be placed shall be scarified or loosened to a depth and then raked smooth and free from debris. Where the soil is sufficiently loose and clean, the Engineer, at his discretion, may authorize the elimination of ground preparation.

3.2 PLACING SOD

A. The sod shall be placed on the prepared surface, with edges in close contact and shall be firmly and smoothly embedded by light tamping with appropriate tools.

B. Sod, which has been cut for more than 72 hours shall not be used unless specifically authorized by the Engineer after his inspection thereof. Sod, which is not planted within 24 hours after cutting shall be stacked in an approved manner and maintained and properly moistened. Any pieces of sod which, after placing, show an appearance of extreme dryness shall be removed and replaced by fresh, uninjured pieces.

C. Sodding shall not be performed when weather and soil conditions are, in the Engineer's opinion, unsuitable for proper results.

3.4 WATERING

The areas on which the sod is to be placed shall contain sufficient moisture, as determined by the Engineer, for optimum results. After being placed, the sod shall be kept in a moist condition to the full depth of the rooting zone for at least 2 weeks. Thereafter, the Contractor shall apply water as needed until the sod roots and starts to grow for...
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a minimum of 60 days (or until final acceptance, whichever is latest).

3.5 MAINTENANCE

A. The Contractor shall, at his expense, maintain the sodded areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include repairing of any damaged areas and replacing areas in which the establishment of the grass stand does not appear to be developing satisfactorily.

B. Replanting or repair necessary due to the Contractor's negligence, carelessness or failure to provide routine maintenance shall be at the Contractor's expense.

END OF SECTION
PART 1 - GENERAL

1.1 DESCRIPTION

A. The work included in this section consists of providing all labor, materials and equipment necessary for providing and installing formwork for concrete.

B. Related Work Described Elsewhere:

1. Concrete Reinforcement: Section 03200.
2. Concrete Joints and Waterstops: Section 03262.
3. Cast-in-Place Concrete: Section 03300.
4. Concrete Finishing and Curing: Section 03345.

C. General Design: The Contractor shall be responsible for the design of all formwork and for safety in its construction and removal.

1.2 QUALITY ASSURANCE

A. Qualifications: Formwork shall be constructed in accordance with the specified standards, as well as all pertinent codes and regulations. Where provisions of pertinent codes conflict with the requirements of this section of these specifications, the more stringent provisions shall govern.

B. Standards: Unless otherwise indicated, all materials, workmanship and practices shall conform to the following standards:

2. ACI 347 "Recommended Practice for Concrete Formwork".
3. Local Codes and Regulations.

C. Preplacement checklist. The Contractor, as part of his Quality Control Plan, shall develop and submit for approval a Preplacement Checklist form to cover the following items:

1. Reference Drawings covering the placement for all trades and disciplines.
2. Date and time scheduled for placement and the actual date and time of placement.
3. Foreman name, placement number, number of truckloads and number of cylinders.
4. Checklist items such as embeds (list each), subgrade, rebar, forms, alignment, plumbness, etc.
5. Signoff's for foreman, Contractor's Quality Control representative, each subcontractor foreman (major subs, mechanical, electrical, plumbing, etc.) and Resident Project Representative.

D. Tolerances: Formwork shall be constructed to insure that finished concrete surfaces will be in accordance with the tolerances listed in A.C.I. 347. Camber shall be provided as necessary to compensate for anticipated deflection in formwork and concrete due to weight and pressure of fresh concrete and other construction loads.
E. No concrete may be placed until the checklist is properly and completely signed off. Failure to comply with this provision can be grounds for rejecting the work. The checklist shall be weather protected and located with the foreman or at the foreman's station.

1.3 SUBMITTALS

Materials: Submit manufacturer's literature on form ties, spreaders, corner formers, form coatings and bond breakers.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Form Lumber: Use form lumber when in contact with exposed concrete, conforming to one of the following, a combination thereof, or equivalent as approved by the Engineer.
   1. Lumber: Douglas Fir-Larch No. 2 grade, seasoned, surfaced on four sides.

B. Fiber Forms: Column forms for round columns shall be seamless fiber forms intended for this purpose. The three plies nearest to the interior surface of the form shall be deckled or scarfed and overlapped to minimize the spiral gaps or seams on the column surface.

C. Form Ties: Use form ties which do not leave an open hole through the concrete and which permit neat and solid patching at every hole. Use embedded rods with integral waterstops and cones to provide a 1-inch breakback. Wire ties and wood spreaders will not be permitted.

D. Form Coatings: Form release coating shall be a paraffin base oil or mineral oil coating which effectively prevents absorption of moisture, prevents bonding with concrete, is non-staining to concrete and leaves the concrete with a paintable surface.

E. Chamfer Strips: Chamfer strips shall be polyvinyl strips or approved equal, designed to be nailed in the forms to provide a 3/4 inch chamfer (unless indicated otherwise) at exposed edges of concrete members.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Construction of Formwork: Forms shall be sufficiently strong to withstand the pressure resulting from the placement and vibration of concrete and shall be sufficiently rigid to maintain specified tolerances. Forms shall be sufficiently tight to prevent loss of mortar, and shall be adequately braced against lateral, upward or downward movement.

B. Coating of Forms: Apply form coating to board forms prior to placing reinforcing. Keep form coatings off steel reinforcing, items to be embedded and previously placed concrete.

C. Form Erection:
   1. Provide a means of holding adjacent edges and ends of panels and sections tightly together and in accurate alignment so as to prevent the formation of ridges, fins, offsets, or similar surface defects of the finished concrete. Insure that forms may be removed without injury to the surface of the finished concrete.
2. Provide a positive means of adjustment of shores and struts. Insure that all settlement is taken up during concrete placing.

3. Temporary openings shall be provided in wall forms to limit the free fall of concrete to a maximum of 6 feet unless an elephant trunk is used. Such openings shall be located to facilitate placing and consolidation and shall be spaced no more than 8 feet apart. Temporary openings shall also be provided in the bottom of wall and column forms and elsewhere as necessary to facilitate cleaning and observation immediately prior to placing.

4. Do not embed any form-tying device or part thereof other than metal in concrete.

5. Form surfaces of concrete members except where placement of the concrete against the ground is shown on the drawings. The dimensions of concrete members shown on the drawings apply to formed surfaces, except where otherwise indicated.

D. Formwork Reuse: Reuse only forms which maintain a uniform surface texture on exposed concrete surfaces. Apply light sanding between uses to obtain such a uniform texture. Plug unused tie rod holes with corks, shave flush, and sandpaper on the concrete surface side.

E. Removal of Forms:

1. Forms and shoring for elevated structural slabs, girders, and/or beams shall remain in place until the concrete has reached a compressive strength equal to the specified 28-day compressive strength as determined by test cylinders. The following table indicates the minimum allowable time after the last concrete is placed before forms, shoring, and/or bracing may be removed.

<table>
<thead>
<tr>
<th>Structural Item</th>
<th>Minimum Allowable Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bottom side of slabs girders, beams</td>
<td>When concrete reaches specified 28-day compressive strength and minimum 4-days</td>
</tr>
<tr>
<td>beams</td>
<td></td>
</tr>
<tr>
<td>2. Vertical sides of girders, beams</td>
<td>48 hours</td>
</tr>
<tr>
<td>3. Walls not supporting vertical or</td>
<td>48 hours</td>
</tr>
<tr>
<td>horizontal loads</td>
<td></td>
</tr>
<tr>
<td>4. Walls supporting vertical or</td>
<td>When concrete reaches specified 28-day compressive strength and minimum 4 days</td>
</tr>
<tr>
<td>horizontal loads</td>
<td></td>
</tr>
<tr>
<td>5. Footing, pipe encasements, pipe</td>
<td>24 hours</td>
</tr>
<tr>
<td>supports</td>
<td></td>
</tr>
</tbody>
</table>

2. Do not remove forms from concrete, which have been placed with outside air temperature below 50 degrees Fahrenheit (°F) without first determining if the concrete has properly set without regard for time. Do not apply heavy loading on green concrete. Immediately after forms are removed, the surface of the concrete shall be carefully examined and any irregularities in the surface shall be repaired and finished as specified.
F. Formed Openings: Openings shall be of sufficient size to permit final alignment of the items within it without deflection or offsets of any kind and to allow space for packing where the items pass through the wall to ensure water tightness around openings so formed. Provide openings with continuous keyways with waterstops where required, and provide a slight flare to facilitate grouting and the escape of entrained air during grouting. Provide formed openings with reinforcement as indicated and specified. Reinforcing steel shall be at least 2 inches clear from the opening.

G. Embedded Items: Set anchor bolts and other embedded items accurately and hold securely in position in the forms until the concrete is placed and set. Check all special castings, channels, or other metal parts that are to be embedded in the concrete prior to and again after concreting. Check all nailing, blocks, plugs and strips necessary for the attachment of trim, finish and similar work prior to concreting.

H. Pipes and Wall Spools Cast in Concrete:
   1. Install wall spools, wall flanges and wall anchors before placing concrete. Do not weld, tie or otherwise connect the wall spools to the reinforcing steel.
   2. Support pipe and fabricated fittings to be encased in concrete on concrete piers or pedestals. Carry concrete supports to firm foundations so that no settlement will be possible during construction.

I. Form Tolerances:
   1. Failure of the forms to produce the specified concrete surface tolerance shall be grounds for rejection of the concrete work. Rejected work shall be repaired or replaced at no cost to the City. Comply with A.C.I. 347 if more stringent than listed herein.
   2. The following table indicates tolerances or allowable variations from dimensions or positions of structural concrete work:

<table>
<thead>
<tr>
<th></th>
<th>Maximum Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(inches per 10 feet length)</td>
</tr>
<tr>
<td>Sleeves and Inserts</td>
<td>+1/3 to -1/4</td>
</tr>
<tr>
<td>Projected ends of anchors</td>
<td>+1/4 to -0.0</td>
</tr>
<tr>
<td>Anchor bolt setting</td>
<td>+1/4 to -1/4</td>
</tr>
<tr>
<td>Finished concrete, all locations</td>
<td>+1/4 to -1/4 in Class B</td>
</tr>
<tr>
<td></td>
<td>+1/8 to −1/8 in Class A</td>
</tr>
<tr>
<td></td>
<td>per Section 03300:</td>
</tr>
<tr>
<td></td>
<td>Cast-in-Place Concrete</td>
</tr>
</tbody>
</table>

The planes or axes from which the above tolerances are to be measured shall be as follows:

|                                |                           |
|                                | Centerline of sleeve      |
|                                | or insert                 |
| Projected ends of anchors      | Plane perpendicular to the end of the anchor as located on the drawings |
| Anchor bolt setting            | Centerline of anchor bolt |
| Finish Concrete                | The concrete surface as located on the drawings. |

3. Where equipment is to be installed, comply with manufacturer's tolerances if more severe than above.

END OF SECTION

03100-4
ART 1 - GENERAL

1.1 DESCRIPTION

A. Scope of Work: The work included in this section consists of providing all labor, materials and equipment necessary to install expansion joints, construction joints, and waterstops.

B. Related Work Described Elsewhere:
   1. Shop Drawings, Working Drawings and Samples: Section 01340.
   2. Concrete Formwork: Section 03100.
   3. Concrete Reinforcement: Section 03200.
   5. Concrete Finishing and Curing: Section 03345.

1.2 SUBMITTALS

Materials:
2. Submit materials and samples of waterstops.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Preformed expansion joint filler shall be ¾-inch thick, or as shown on the drawings, and shall be a self-expanding cork, Servicized Products, W.R. Grace and Company, Code No. 4314, or approved equal.

B. Joint sealant for continuous immersion shall be a multi-part, gray, polyurethane sealant meeting U.S. Federal Specification TT-S-00227E (3) Type I, Class A for horizontal joints and Type II, Class A for vertical joints. Additionally, the sealant must be recommended by the manufacturer for continuous immersion in water. Products meeting this specification include PRC 270 of Products Research and Chemical Corporation and Vulkem 227 of Mameco International.

C. Waterstops shall be extruded from a PVC compound and shall be 9-inch by 3/8-inch flat dumbbell and/or center bulb type as shown on the Drawings. Center bulb waterstops shall be used at expansion joints. Waterstops shall comply with Corps of Engineers Specification CRD-C-572. All material shall be virgin material. The uses of reworked PVC or other substitute will not be permitted.

D. Tongue and groove joint forms: Tongue and groove joint forms shall be 24 gauge steel forms complete with steel stakes and splice plates. Forms shall be designed for joints not to receive a poured seal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Construction Joints:
1. Provide construction joints where shown on the Drawings, or as recommended by the Contractor and approved by the Engineer. In case of emergency, place additional construction joints. (An interval of 45 minutes between two consecutive batches of concrete shall constitute cause for an emergency construction joint.)

2. Construction joints shall be keyed, unless otherwise detailed. Form keyways by beveled strips or boards placed at right angles to the direction of shear. Except where otherwise shown on the Drawings or specified, keyways shall be at least 1-1/2 inches in depth over at least 25 percent of the area of the section.

3. When it is necessary to make a joint because of an emergency, furnish and place reinforcing dowels across the joint. Embed dowels 48 bar diameters each side of the joint. Size and number of dowels shall match reinforcing in the member. Furnishing and placing such reinforcing steel shall be at the Contractor's expenses.

4. After the pour has been completed to the construction joint and the concrete has hardened, thoroughly clean the entire surface of the joint of surface laitance, loose or defective concrete, and foreign material, and expose clean aggregate by sandblasting the surface of construction joints before placing the new concrete. Cover horizontal construction joints with mortar. Spread uniformly and work thoroughly into all irregularities of the surface. The mortar shall be flowable and shall consist of sand, water, and a minimum of 12 sacks of cement per cubic yard. Provide positive measuring device, such as a bucket, or other device that will contain only enough mortar for depositing in one place in the wall or column to ensure that portion of the form does not receive too much mortar. Do not deposit mortar from pump hoses or large concrete buckets unless inspection windows close to the joint are available to allow visual measurement of mortar thickness and means for mortar removal are available for removal of excess grout. The water-cement ratio of the mortar in place shall not exceed that of the concrete to be placed upon it, and the consistency of the mortar shall be suitable for placing and working.

B. Expansion Joints:
   1. Provide expansion joints of sizes and at locations as shown on the Drawing.
   2. Place expansion joint fillers every 30 feet in straight runs of walkways, at right angle turns and wherever concrete butts into vertical services.

C. Bonding at Construction Joints: Before depositing new concrete on or against concrete that has set, thoroughly clean the surfaces of the set concrete so as to expose the coarse aggregate and remove laitance coatings, foreign matter and loose particles. Retighten forms. Dampen, but do not saturate the hardened concrete of joints and then thoroughly cover with a coat of cement grout of similar proportions to the mortar in the concrete. Place the fresh concrete before the grout has attained its initial set.

D. Time Between Pours: At least two (2) hours shall elapse after depositing concrete in columns or walls before depositing in beams, girders or slabs supported thereon. Place beams, girders, brackets, column capitals and haunches monolithically as part of the floor or roof system.

E. Joint Sealants: Joint sealants shall be required where indicated on the Drawings. Preparation of surfaces, priming and the handling and preparation of materials shall be in complete compliance with the manufacturer's instructions as approved.

F. Waterstops:
   1. Waterstops shall be properly heat spliced at ends and intersections to ensure continuity. Construct
forms for construction joints in such a manner as to prevent injury to waterstops. Hold waterstops securely in position in the construction joints by wire ties, continuous bars, and rings as required. Install waterstops in construction joints in hydraulic structures, which will contain liquid or resist the entry of groundwater.

2. Make field splices with a thermostatically controlled heating iron in conformance with the manufacturer's current recommendations. Allow at least 10 minutes before pulling or straining the new splice in any way. The finished splices shall provide a cross section that is dense and free of porosity with tensile strength of not less than 80 percent of the unspliced materials. Where prefabricated intersections such as tees, crosses, and elbows are available, provide them in lieu of field-fabricated intersections.
SECTION 03345
CONCRETE FINISHING AND CURING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope of Work: This section describes materials and methods of concrete finishes, curing, repair of defects and surface protection.

B. Related Work Described Elsewhere:
1. Concrete Formwork: Section 03100.
2. Concrete Reinforcement: Section 03200.
3. Concrete Joints and Waterstops: Section 03262.
4. Cast-In-Place Concrete: Section 03300.

1.2 SUBMITTALS

Curing Compound: Submit manufacturer's statement of compliance with these specifications and recommend coverage to meet or exceed the specified tests. Submit manufacturer's application instructions.

PART 2 - PRODUCTS

2.1 MATERIALS

A. See Section 03300: Cast-In-Place Concrete.

B. Curing Compound:
1. Curing compound shall conform to ASTM C 309, Type 2, Class BN.
2. Curing compound shall be compatible with required finishes and coatings.
3. Curing compound for exposed concrete not to receive special finishes, protective coatings and/or concrete toppings shall be "Super Rez-Seal", as manufactured by Euclid Chemical Co., Cleveland, Ohio or equal.
4. Curing compound for exposed concrete to receive special finishes, protective coatings and/or concrete toppings shall be "Kurez-DR", as manufactured by Euclid Chemical Co., Cleveland, Ohio or equal.

C. Mortar for Repair of Concrete: Mortar used for repair of concrete shall be made of the same materials as used for concrete, except that the coarse aggregate shall be omitted and the mortar shall consist of not more than one (1) part cement to two and one-half (2-1/2) parts sand by damp loose volume. The quantity of mixing water shall be no more than necessary for handling and placing.

D. Burlap Mats: Conform to AASHTO Specification M182.

E. Sisal-Kraft Paper and Polyethylene Sheets for Curing: Conform to ASTM C 171.

PART 3 - EXECUTION
3.1 CONCRETE FINISHES

A. Complete concrete surfaces in accordance with the following schedule:

<table>
<thead>
<tr>
<th>Finish Designation</th>
<th>Area Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-1</td>
<td>Exterior walls below grade not exposed to water.</td>
</tr>
<tr>
<td>F-2</td>
<td>Exterior and interior walls exposed to water.</td>
</tr>
<tr>
<td>F-3</td>
<td>Walls of structures or buildings exposed to view. Underside of formed floors or slabs.</td>
</tr>
<tr>
<td>S-2</td>
<td>Slabs and floors not water bearing.</td>
</tr>
<tr>
<td>S-3</td>
<td>Slabs and floors, which are water bearing. Slab surfaces on which mechanical equipment moves.</td>
</tr>
<tr>
<td>S-4</td>
<td>Slabs, beams, girders, columns, and floors of structures.</td>
</tr>
<tr>
<td>S-5</td>
<td>Slabs and floors at slopes greater than 10 percent.</td>
</tr>
<tr>
<td>E-1</td>
<td>Exposed edges of slabs, floors, and walls tops.</td>
</tr>
</tbody>
</table>

B. Concrete surface repair.

1. Finish F-1: Repair defective concrete, fill depressions deeper than ½-inch, and fill tie holes.
2. Finish F-2: Repair defective concrete, remove fins, fill depressions ¼-inch or deeper, and fill tie holes.
3. Finish F-3: In addition to Finish F-2, fill depressions and airholes with mortar. Dampen surfaces and then spread a slurry consisting of one (1) part cement and one-half (1/2) parts sand by damp loose volume, over the surface of clean burlap pads or sponge rubber floats. Remove any surplus by scraping and then rubbing with clean burlap.
5. Finish S-3: Steel trowel finish free from trowel marks and all irregularities.
6. Finish S-4: Steel trowel finish without local depressions or high points and apply a light hair-broom finish. Do not use stiff bristle brooms or brushes. Leave hair-broom lines parallel to the direction of slab drainage.
7. Finish S-5: Steel trowel finish without local depressions or high points. Apply a stiff bristle broom finish. Leave broom lines parallel to the direction of slope drainage.
8. Finish E-1: Exposed edges of slabs, floors, and tops of walls, finish with a ¼-inch radius edge if a chamfer is not indicated.

3.2 FINISHING OF FORMED SURFACES

A. Water cure surfaces until finishing and repairing are completed.

B. As soon as possible after forms are removed, remove fins and irregularities by grinding or rubbing, fill
depressions deeper than specified with mortar, and fill tie holes.

C. Ream tie holes with toothed reamers until surface of hole is rough and clean. Coat surface with epoxy bonding compound and fill with mortar.

D. Finish tapered tie holes as follows:
   1. Sandblast tie rod hole and blow clean prior to filling.
   2. Drive rubber plug, with one end open, to the center of the hole. Plug size shall be larger in diameter than the diameter of the hole at the center of the wall.
   3. Coat entire annular surface of the hole with epoxy prior to filling with mortar. Apply epoxy in accordance with manufacturer's instructions.
   4. Fill each side of hole with mortar. Apply mortar to the "wet" side of the wall first. Consolidate mortar solidly into the hole.
   5. Notify City's Representative of tie rod filling schedule.

3.3 REPAIR OF SURFACE DEFECTS

A. Remove honeycombed and other defective concrete down to sound concrete. Edges shall be perpendicular to surface. Sandblast surfaces to receive repair.

B. Coat sandblasted surface with epoxy bonding compound.

C. Place mortar in layers having a compacted thickness of 3/8-inch. Scratch surface of each layer to promote bonding with next layer.

D. Finish repair shall match adjacent concrete and cure as specified.

E. Repair defective areas of more than 1-foot square and deeper than the reinforcing steel as above, except fill the area with pneumatically applied concrete.

3.4 REPAIR OF CRACKED CONCRETE (REFER TO STRUCTURAL STANDARDS DETAILS)

A. Alternate methods of crack repair may be submitted by the Contractor for review by the Resident Project Representative.

3.5 CURING AND PROTECTION

A. Cure concrete surfaces in accordance with the following schedule:

<table>
<thead>
<tr>
<th>Curing Method</th>
<th>Area Permitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>All surfaces</td>
</tr>
<tr>
<td>2.</td>
<td>All surfaces</td>
</tr>
<tr>
<td>3.</td>
<td>Slabs and floors</td>
</tr>
<tr>
<td>4.</td>
<td>All surfaces when maximum ambient</td>
</tr>
<tr>
<td></td>
<td>temperature will not exceed 80</td>
</tr>
<tr>
<td></td>
<td>degrees Fahrenheit (°F) and humidity</td>
</tr>
<tr>
<td></td>
<td>will not drop below 40 percent on the</td>
</tr>
<tr>
<td></td>
<td>day of concrete</td>
</tr>
</tbody>
</table>

Jacksonville Beach Specification 04/05
OFFSITE 12" WELL HEADER FOR WTP 1, WELL NO. 16 & 6" WM REPLACEMENT
SECTION 03345
CONCRETE FINISHING AND CURING

Where wooden forms are used, wet them immediately before concreting and keep moist by sprinkling until removed. Keep all exposed surfaces of formed concrete moist until curing method is applied.

B. Cure concrete for not less than 14 days after placing in accordance with one of the following appropriate methods:
   1. Method 1 - Water Spray Method: Tightly close off concrete surfaces to be cured by bulkheads or other means or entirely surround by tight enclosures, and keep the concrete surfaces moist by sprinkling, spraying or other means.
   2. Method 2 - Wet-Burlap-Mat Method: Thoroughly wet and cover concrete surfaces to be cured with wet burlap mats as soon as the forms have been stripped or as soon as the concrete has set sufficiently to avoid marring the surface. Keep entire concrete surface and burlap continuously and completely wet during the entire curing period.
   3. Method 3 - Curing Blanket Method: Thoroughly wet concrete surfaces to be cured and cover with curing blankets as soon as the concrete has set sufficiently to avoid marring the surface. The curing blankets shall be weighted to maintain close contact with the concrete surface during entire curing period. Should the curing blankets become torn or otherwise ineffective, keep surfaces moist and replace damaged sections. The curing blankets shall consist of one (1) of the following two (2) types:
      a. Sheets of heavy waterproof sisal-kraft paper laid with the edges butted together and with the joints between strips sealed with 2-inch wide strips of sealing tape or with the edges lapped not less than three inches and fastened together with waterproof cement to form continuous watertight joints; or
      b. Sheets of clean polyethylene, having a minimum thickness of four mils, laid with edges butted together and with the joints between sheets sealed with 1-inch wide strips of acetate tape.
      c. During the curing period, do not permit traffic of any nature or depositing of objects, temporary or otherwise, on the curing blankets.
   4. Method 4 - Curing Compound Method: Spray the surface with two (2) coats of liquid curing compound. Apply in accordance with the manufacturer's instructions to cover the surface with a uniform film, which will seal thoroughly. Apply second coat at 90 degrees of the first coat.
      a. Apply curing compound immediately after completion of the finish on unformed surfaces and within two (2) hours after removal of forms on formed surfaces. Repair formed surfaces within the said 2 hour period; provided, however, that any such repairs which cannot be made within the said 2 hour period shall be delayed until after Method 1, 2, or 3 has been applied. When repairs are to be made to an area on which curing compound has been applied, first sandblast the area to remove the curing compound, and then repair.
      b. Wherever curing compound may have been applied to surfaces against which concrete subsequently is to be placed and to which it is to adhere, remove the curing compound entirely by sandblasting prior to the placing of new concrete.
      c. Where the curing compound method is used, exercise care to avoid damage to the seal during the curing period. Should the seal be damaged or broken before the expiration of the curing period, repair the damaged portions immediately by the application of additional curing compound.

3.6 CONCRETE SURFACES TO BE COATED
Concrete surfaces on which paints or coatings are to be applied shall be of even color, gray or gray-white. The surface shall have no pits, pockets, holes or sharp changes of surface elevation. Scrubbing with a stiff bristle fiber brush shall produce no dusting or dislodging of cement or sand.

END OF SECTION
PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope of Work: The work included in this Section consists of grouting the various items listed hereinafter and indicated on the Drawings.

B. Related Work Described Elsewhere: Cast-in-Place Concrete, Section 03300.

1.2 SUBMITTALS

Materials and Shop Drawings: Section 01340: Shop Drawings, Working Drawings and Samples for submittal requirements. Manufacturer's literature shall be submitted for review on nonshrink grout data shall include grout properties, mixing, surface preparation and installation instructions.

1.3 PRODUCT DELIVERY, STORAGE AND HANDLING

Grouting materials shall be delivered and stored in unbroken containers with seals and labels intact as packaged by the manufacturer.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Nonshrink, Nonmetallic Grout: Sauereisen F-100 Level Fill, Master Builders Masterflow 713, Burke Non-Ferrous, Non-Shrink Grout or equal pre-mixed type.

B. Nonshrink Metallic Grout: Master Builders Embeco 636 Grout pre-mixed type, or equal.

PART 3 - EXECUTION

3.1 PREPARATION

A. All bonding surfaces shall be clean and dust and oil free.

3.2 INSTALLATION

A. Nonshrink Grout:

1. Nonshrink, nonmetallic grout shall be used for grouting column base plates, anchor bolts, reinforcing bars, pipe sleeves, machinery supports and pump base plates.

2. Nonshrink grout shall be mixed and placed as recommended by the manufacturer.

3. Grout shall be mixed as close to the work area as possible and transported quickly to its final position in a manner, which will not permit segregation of materials.

4. Nonshrink grout shall be cured with water-saturated burlap for at least 3 days.

5. Machinery set on grout pads shall not be operated until the grout has cured for at least 36 hours.

END OF SECTION
APPENDIX A

PERMITS-VARIOUS
June 4, 2019

In the Matter of an Application for Permit by:

Mr. Martin Martirone, City Engineer
City of Jacksonville Beach
1460 Shetter Avenue
Jacksonville, Florida 32250
Email: mmartirone@jaxbchfl.net

Permit Number: 0128730-144-DS
Project Name: Off-site 12" Well Header for WTP 1, Well 16
County: Duval

NOTICE OF PERMIT ISSUANCE

Enclosed is Permit Number 0128730-144-DS to install approximately 2,260 LF of 12"PVC dry line well header pipe. This permit is issued pursuant to Chapter 403.087(1), Florida Statutes.

This permit is final and effective on the date filed with the clerk of the Department unless a petition is filed in accordance with the paragraphs below or unless a request for extension of time in which to file a petition is filed within the required timeframe and conforms to Rule 62-110.106(4), F.A.C. Upon timely filing of a petition or a request for an extension, this permit will not be effective until further Order of the Department.

A person whose substantial interests are affected by this permit may petition for an administrative proceeding (hearing) in accordance with sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) with the Agency Clerk for the Department of Environmental Protection, Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, within 14 days of receipt of this Notice. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under sections 120.569 and 120.57 of the Florida Statutes. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-106.205, F.A.C.
A petition must contain the following information:

(a) The name and address of each agency affected and each agency’s file or identification number, if known;

(b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner’s representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner’s substantial interests will be affected by the agency determination;

(c) A statement of how and when the petitioner received notice of the agency decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, including the specific facts which petitioner contends warrant reversal or modification of the Department’s action;

(f) A statement of the specific rules or statutes the petitioner contends requires reversal or modification of the Department’s action, including an explanation of how the alleged facts relate to the specific rules or statutes; and

(g) A statement of the relief sought by petitioner, stating precisely the action that the petitioner wants the Department to take.

A petition that does not dispute the materials facts on which the Department’s action is based shall state that no such facts are in dispute and otherwise contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department’s final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any such final decision of the Department on the petition have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

When the Order (Permit) is final, any party to the Order has the right to seek judicial review of the Order pursuant to section 120.68 of the Florida Statutes, by filing a Notice of Appeal pursuant to Rule 9.110 of the Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, Mail Station 35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000; and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days from the date when the final order is filed with the Clerk of the Department.
STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Jeffrey S. Martin, P.E.
Chief Engineer
Water and Wastewater Permitting

CERTIFICATION OF SERVICE/ FILING AND ACKNOWLEDGEMENT

FILED, on June 4, 2019, under Section 120.52, Florida Statutes, with the designated Deputy Clerk, receipt of which is hereby acknowledged. The undersigned hereby certifies that this NOTICE OF PERMIT ISSUANCE and all copies were mailed before the close of business on June 4, 2019, to the listed persons.

Clerk

Cc: Kayle W. Moore, P.E., Kmoore@jaxbchfl.net
Shane Tierney, DEP/NED
Arturo Aranda, DEP/NED
Jim Orr, DEP/NED
Brian Durden, DEP/NED
Joni Petry, DEP/NED
PERMITTEE:
Mr. Martin Martirone, City Engineer
City of Jacksonville Beach
1460 Shetter Avenue
Jacksonville, Florida 32250
Email: mmartirone@jaxbchfl.net

PUBLIC WATER SYSTEM ID: 2160563
PERMIT NUMBER: 0128730-144-DS
EFFECTIVE DATE: June 4, 2019
EXPIRATION DATE: June 3, 2024
COUNTY: Duval
PROJECT: Off-site 12" Well Header for WTP 1, Well 16

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Chapters 62-4, 62-550, 62-555 and 62-560. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawings, plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

TO CONSTRUCT: to install approximately 2,260 LF of 12"PVC dry line well header pipe.

PROPOSED CONSTRUCTION INCLUDES:

To install approximately 2,260 LF of 12" PVC (DR-25) dry line well header pipe and associated valves and appurtenances. The permitted maximum daily capacity for this public water system will remain as 7.0 MGD.

IN ACCORDANCE WITH: The permit application package received on May 22, 2019.

LOCATION: The project is located within the city of Jacksonville Beach right-of ways of 2nd Avenue North & 11th Street North between 10th Street North & 8th Avenue North, Florida, in Duval County.

Work must be conducted in accordance with the General and Specific Conditions, attached hereto.

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PERMITTEE: City of Jacksonville Beach             PERMIT NUMBER: 0128730-144-DS
FACILITY: Off-site 12" Well Header for WTP 1, Well 16     EXPIRATION DATE: June 3, 2024

GENERAL CONDITIONS:

The permittee shall be aware of and operate under the Permit Conditions below. These applicable conditions are binding upon the permittee and enforceable pursuant to Chapter 403, Florida Statutes. [F.A.C. Rule 62-555.533(1)]

1. The terms, conditions, requirements, limitations and restrictions set forth in this permit, are "permit conditions" and are binding and enforceable pursuant to Sections 403.141, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in this permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, are required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:
8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
   a. A description of and cause of noncompliance; and
   b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Section 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules. A reasonable time for compliance with a new or amended surface water quality standard, other than those standards addressed in Rule 62-302.500, shall include a reasonable time to obtain or be denied a mixing zone for the new or amended standard.

11. This permit is transferable only upon Department approval in accordance with Rule 62-4.120 and 62-730.300 F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:
   a. Determination of Best Available Control Technology (BACT)
   b. Determination of Prevention of Significant Deterioration (PSD)
   c. Certification of compliance with state Water Quality Standards (Section 401, PL 92-500)
   d. Compliance with New Source Performance Standards

14. The permittee shall comply with the following:
   a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

c. Records of monitoring information shall include:
   1. the date, exact place, and time of sampling or measurements;
   2. the person responsible for performing the sampling or measurements;
   3. the dates analyses were performed;
   4. the person responsible for performing the analyses;
   5. the analytical techniques or methods used;
   6. the results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware the relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

1. All construction must be in accordance with this permit. Before commencing work on project changes for which a construction permit modification is required per 62-555.536(1), the permittee shall submit to the Department a written request for a permit modification. Each such request shall be accompanied by one copy of a revised construction permit application, the proper processing fee and one copy of either a revised preliminary design report or revised drawings, specifications and design data. [F.A.C. Rule 62-555.536]

2. Permitted construction or alteration of public water supply systems must be supervised during construction by a professional engineer registered in the State of Florida if the project was designed under the responsible charge of a professional engineer licensed in the State of Florida. The permittee must retain the service of a professional engineer registered in the State of Florida to observe that construction of the project is in accordance with the engineering plans and specifications as submitted in support of the application for this permit. [F.A.C. Rule 62-555.520(3)]

3. If prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoe remains, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, the permitted project should cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The permittee, or other designee, should contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section at 850.245.6333 or 800.847.7278, as well as the appropriate permitting agency office. Project activities should not resume
without verbal and/or written authorization from the Division of Historical Resources and the permitting agency. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statutes.

4. In accordance with General Condition #11 of this permit, this permit is transferable only upon Department approval. Persons proposing to transfer this permit must apply jointly for a transfer of the permit within 30 days after the sale or legal transfer of ownership of the permitted project that has not been cleared for service by the Department using form, 62-555.900(8), Application for Transfer of a PWS Construction Permit along with the appropriate fee. [*F.A.C. Rule 62-555.536(5)*]

5. This permit satisfies Drinking Water permitting requirements only and does not authorize construction or operation of this facility prior to obtaining all other necessary permits from other program areas within the Department, or required permits from other state, federal, or local agencies.

6. Permittee shall ensure that the well and drinking water treatment facilities will be protected to prevent tampering, vandalism, and sabotage as required by Rule 62-555.315(1) & 62-555.320(5), F.A.C.

7. All products, including paints, which shall come into contact with potable water, either directly or indirectly, shall conform with National Sanitation Foundation (NSF) International, Water Chemicals Codex, Food Chemicals Codex, American Water Works Association (AWWA) Standards and the Food and Drug Administration, as provided in Rule 62-555.320(3), F.A.C.

8. Water supply facilities, including mains, pipe, fittings, valves, fire hydrants and other materials shall be installed in accordance with the latest applicable AWWA Standards and Department rules and regulations. The system shall be pressure and leak tested in accordance with AWWA Standard C600 C603, or C605, as applicable, and disinfected in accordance with AWWA Standard C651-653, as well as in accordance with Rule 62-555.340, F.A.C.

9. The installation or repairs of any public water system, or any plumbing in residential or nonresidential facilities providing water for human consumption, which is connected to a public water system shall be lead free in accordance with Rule 62-555.322, F.A.C.

10. The new or altered aboveground piping at the drinking water treatment plant shall be color coded and labeled as recommended in Section 2.14 of “Recommended Standards for Water Works, 1997 Edition”. [*F.A.C. Rule 62-555.320(10)*]

11. Permittee shall ensure that there shall be no cross-connection with any non-potable water source in accordance with Rule 62-555.360, F.A.C.
12. The supplier of water shall operate and maintain the public water system so as to comply with applicable standards in F.A.C. Rule 62-550 and 62-555.350.

13. The permittee shall provide an operation and maintenance manual for the new or altered treatment facilities to fulfill the requirements under subsection 62-555.350(13), F.A.C. The manual shall contain operation and control procedures, and preventative maintenance and repair procedures, for all plant equipment and shall be made available for reference at the plant or at a convenient location near the plant. Bound and indexed equipment manufacturer manuals shall be considered sufficient to meet the requirements of the subsection.


15. The permittee shall have complete record drawings produced for the project in accordance with Rule 62-555.530(4), F.A.C.

16. The permittee or suppliers of water shall telephone the State Warning Point (SWP), at 1-800-320-0519 immediately (i.e., within two hours) after discovery of any actual or suspected sabotage or security breach, or any suspicious incident, involving a public water system in accordance with the F.A.C. Rule 62-555.350(10).

17. The permittee must instruct the engineer of record to request system clearance from the Department within sixty (60) days of completion of construction, testing and disinfecting the system. Bacteriological test results shall be considered unacceptable if the test were completed more than 60 days before the Department received the results. [*F.A.C. Rule 62-555.340(2)(c)*]

18. The water treatment plant shall maintain throughout the distribution system a minimum continuous and effective free chlorine residual of 0.2 mg/l or its equivalent. A minimum system pressure of 20 psi must be maintained throughout the system. Also, safety equipment shall be provided and located outside of chlorine room.

19. Suppliers of water shall notify the appropriate DEP District Office or ACHD and affected water customers by no later than the previous business day before initiating any planned permanent or temporary conversion from free chlorine to chloramines or vice versa for disinfection. [*F.A.C. Rule 62-555.350(10)(c)*]

20. Setback distances between potable water wells and sanitary hazards shall be in accordance with 62-555.312, F.A.C.

21. Prior to placing this project into service, Permittee shall submit, at a minimum, all of the following to the Department for evaluation and approval for operation, as provided in Rules 62-555.340 and 62-555.345, F.A.C.:
   a. the engineer’s *Certification of Construction Completion and Request for Clearance to Place Permitted PWS Components Into Operation* {DEP Form 62-555.900(9)};
b. certified record drawings, if there are any changes noted for the permitted project.
c. two consecutive days of satisfactory bacteriological analytical results collected in accordance with Rule 62-555.340(2), F.A.C. at each of the locations indicated in the applicable AWWA standard referenced in Rule 62-555.340(1), F.A.C.
In order to facilitate the issuance of a letter of clearance, the Department requests that all of the above information be submitted as one package.


Executed in Jacksonville, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

[Signature]
Jeffrey S. Martin, P.E.
Chief Engineer
Water and Wastewater Permitting

Date: June 4, 2019
CITY OF JACKSONVILLE BEACH, FLORIDA

OFFSITE 12" WELL HEADER
FOR
WATER TREATMENT PLANT 1 - WELL NO. 16
AND
6" WATER MAIN REPLACEMENT

FOR
CITY OF JACKSONVILLE BEACH

SUPERINTENDANTS
CHUCK HERNDEN
&
MIKE TAYLOR

RELEASED FOR BID
JUNE 2019

MAYOR
CHARLIE LATHAM

PREPARED BY
DEPARTMENT OF PUBLIC WORKS

CITY MANAGER
MICHAEL J. STAFFOPOULOS

DIRECTOR OF PUBLIC WORKS
J. DAVID MILLINOR, P.E.
GONZALES PARK

EXISTING WATER MAIN

WATER TREATMENT PLANT 1 - WELL NO. 16

FOR

6" WATER MAIN REPLACEMENT

OFFSITE 12" WELL HEADER

AND

SITE PLAN

EXISTING SEWER MAIN

DISTURBED PAVEMENT

NEW RAW WATER MAIN
PROJECT OVERVIEW

SCALE: 1" = 20'
ALL JOINTS WILL BE RESTRAINED JOINTS.

NOTE:

OFFSITE 12" WELL HEADER FOR WATER TREATMENT PLANT 1 - WELL NO. 16 AND 6" WATER MAIN REPLACEMENT WATER DETAILS
WATER DETAILS

- For any inquiries regarding the construction requirements for new pavement of Type SP-9.5 Asphalt (W/MAX 15% RAP), contact: COMPACTED BACKFILL AASHTO T-180 MAX. DENSITY (LBR 100) 100%
- CRUSHCRETE BASE 98% MAX. DENSITY PER AASHTO T-180
- 12" MIN. CRUSHCRETE BASE
- 6" MIN. FOR MATCH EXIST. GRADE
- 2" MIN. THICKNESS FOR COMPACTED 12", L.B.R. 40, MAX. PLASTIC INDEX OF 6

- For coordinates: WATER TREATMENT PLANT 1 - WELL NO. 16
- OFFSITE 12" WELL HEADER AND 6" WATER MAIN REPLACEMENT
- DATE: 5/17/2019
- SCALE: N.T.S.

- FOR THRUST BLOCK INSTALLATION: 2'-8" CONCRETE THRUST BLOCK
- FOR TIE ROD INSTALLATION: 2'-8" CONCRETE COLLAR
- INSTALL WATER METER BOX WITH LID, PARALLEL TO RIGHT OF WAY
- ZIPPER TIE LOCATING WIRE TO VALVE BOX AT A MAXIMUM DEPTH OF 8" BELOW GRADE.
- DRILL HOLE IN VALVE BOX AND INSERT LOCATING WIRE INTO VALVE BOX. PIG TAIL END.
- ZIPPER TIE LOCATING WIRE TO RISER PIPE AT A MAXIMUM DEPTH OF 8" BELOW EXISTING GRADE. DRILL HOLE IN RISER PIPE AND INSERT LOCATING WIRE THROUGH TO INTERIOR OF RISER PIPE. PIGTAIL END.