

CITY OF LAKE WORTH, FLORIDA



**CITY OF LAKE WORTH  
2016 MECHANICAL INTEGRITY TESTING OF  
CLASS 1 DEEP INJECTION WELL IW-1**

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August, 2015

**CITY OF LAKE WORTH  
WATER UTILITIES ADMINISTRATION  
MONICA SHANER – PROJECT ENGINEER  
301 College St. Lake Worth, FL 33461  
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**PROJECT:  
City of Lake Worth  
2016 Mechanical Integrity Testing of  
Class 1 Deep Injection Well IW-1**

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City of Lake Worth 2016 Mechanical Integrity  
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PROJECT: City of Lake Worth 2016 Mechanical Integrity Testing of Class 1 Deep Injection Well IW-1  
**IFB 15-119**

Date: September 16, 2015

**00020**  
**INVITATION TO BID**

Sealed bids, in duplicate, will be received by City of Lake Worth Finance Office, City Hall, 2<sup>nd</sup> Floor, 7 North Dixie Highway, Lake Worth, Florida 33460 for the subject Project **until 3:00 p.m., local time, October 29, 2015**, then opened publicly at that time.

The OWNER for the Project is City of Lake Worth, Florida.

The Contract Documents will be open to inspection at the City of Lake 7 North Dixie Hwy Lake Worth, FL 33460.

Contract Documents may be obtained in electronic format from the City of Lake Worth's web site:

<http://www.lakeworth.org/business/bids/>

This Contract is a Lump Sum contract.

Bids must be accompanied by a Bid Security in the form of a certified or bank check made payable to the Owner, or a Bid Bond. The amount of the security shall not be less than five (5) percent of the Bidder's total price indicated in Bid Form.

No Bid may be withdrawn for a period of 120 days after the scheduled closing date for the receipt of bids except as otherwise provided in Article 13 of the Instructions to Bidders.

The successful Bidder, who is awarded the Contract, shall be required to furnish a 100% Construction Performance Bond and a 100% Construction Payment Bond.

The OWNER reserves the right to reject any or all Bids, to waive informalities, and to re-advertise.

Publish: Palm Beach Post - September 20, 2015

/s/ Monica Shaner, P.E., Utilities Director

**00100**  
**INSTRUCTIONS TO BIDDERS**

**1. DEFINED TERMS.**

Terms used in these Instructions to Bidders which are defined in the Standard General Conditions of the Construction Contract (EDCJC No. 1910-8, 1983 Edition) have the meanings assigned to them in the General Conditions. The term "Bidder" means one who submits a Bid directly to Owner, as distinct from a sub-bidder, who submits a bid to a Bidder. The term "Successful Bidder" means the lowest, qualified, responsible and responsive Bidder to whom Owner (on the basis of Owner's evaluation as hereinafter provided) makes an award. The term "Bidding Documents" includes 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).

**2. COPIES OF BIDDING DOCUMENTS.**

2.1. Complete sets of the Bidding Documents in the number and for the cost, if any, stated in the Advertisement or Invitation to Bid may be obtained from Engineer (unless another issuing office is designated in the Advertisement or Invitation to Bid).

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

2.3. Owner and Engineer in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids on the Work and do not confer a license or grant for any other use.

**3. QUALIFICATIONS OF BIDDERS.**

To demonstrate qualifications to perform the Work, each Bidder must be prepared to submit within five days of Owner's request, written evidence such as financial data, previous experience, present commitments and other such data as may be reasonably specifically requested by Owner or otherwise required in Contract Documents. Each Bid must contain evidence of Bidder's qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the contract.

**4. EXAMINATION OF CONTRACT DOCUMENTS AND SITE.**

4.1. It is the responsibility of each Bidder before submitting a Bid, to (a) examine the Contract Documents thoroughly, (b) visit the site to become familiar with local conditions that may affect cost, progress, performance or furnishing of the Work, (c) consider federal, state and local Laws and Regulations that may affect cost, progress, performance or furnishing of the Work, (d) study and carefully correlate Bidder's observations with the Contract Documents, and (e) notify Engineer of all conflicts, errors or discrepancies in the Contract Documents.

4.2. Reference is made to Division 1: General Requirements of the Specifications for the identification of:

4.2.1. those reports of explorations and tests of subsurface conditions at the site which have been utilized by Engineer in preparation of the Contract Documents.

4.2.2. those drawings of physical conditions in or relating to existing surface and subsurface conditions (except Underground Facilities) which are at or contiguous to the site which have been utilized by Engineer in preparation of the Contract Documents.

4.2.3. Copies of such reports and drawings (referred to above), if not attached to the Specifications or added on the Drawings, will be made available by Owner to any Bidder on request. Those reports and drawings are not a part of the Contract Documents. Bidder may not rely upon the accuracy of the non-technical data, interpretations or opinions contained in those reports and drawings. Bidder may not rely on the completeness of those reports and drawings for the purposes of bidding or construction. Bidder may rely on any technical data contained in those reports and drawings specifically referenced in Division 1: General Requirements as technical data that can be relied on.

4.3. Information and data reflected in the Contract Documents with respect to Underground Facilities at or contiguous to the site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities or others, and Owner does not assume responsibility for the accuracy or completeness thereof unless it is expressly provided otherwise in the Supplementary Conditions.

4.4. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders on subsurface conditions, Underground Facilities and other physical conditions, and possible changes in Contract Documents due to differing conditions appear in Paragraphs 4.2 and 4.3 of the General Conditions.

4.5. Before submitting a Bid, each Bidder will, at Bidder's own expense, be responsible to make or obtain such examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work and which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

4.6. On request in advance, Owner will provide each Bidder access to the site to conduct such explorations and tests as each Bidder deems necessary for submission of a Bid. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.

4.7. The lands upon which the Work is to be performed, rights-of-way and easements for access thereto and other lands designated for use by Contractor in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by Contractor. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by Owner unless otherwise provided in the Contract Documents.

4.8. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Contract Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Documents, and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

## **5. INTERPRETATIONS AND ADDENDA.**

5.1. All questions about the meaning or intent of the Contract Documents are to be directed to Engineer (unless another issuing office is designated in the Advertisement or Invitation to Bid). Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by issuing office as having received the Bidding Documents. Questions received less than five days prior to the date for opening of Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

5.2. Addenda may also be issued to modify the Bidding Documents as deemed advisable by Owner or Engineer.

## **6. BID SECURITY.**

6.1. Each Bid must be accompanied by Bid security made payable to Owner in an amount of five percent of the Bidder's maximum Bid price and in the form of a certified or bank check or a Bid Bond issued by a surety meeting the requirements of Paragraph 5.1 of the General Conditions.

6.2. The Bid security of the Successful Bidder will be retained until such Bidder has executed the Agreement and furnished the required contract security, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Agreement and furnish the required contract security within fifteen days after the Notice of Award, Owner may annul the Notice of Award and the Bid security of the Bidder will be forfeited. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of the seventh day after the Effective Date of the Agreement or the 120th day after the Bid opening, whereupon Bid security furnished by such Bidders will be returned. Bid security with Bids which are not competitive will be returned within seven days after the Bid opening.

## **7. CONTRACT TIME.**

The numbers of days within which, or the dates by which, the Work is to be substantially completed and also completed and ready for final payment (the Contract Time) are set forth in the Bid Form and the Agreement. If Contract Times are left blank in the Bid Form, the time for Substantial Completion and final completion are to be set forth by Bidder in the Bid and will be included in the Agreement. The times will be taken into consideration by Owner during the evaluation of Bids, and it will be necessary for the Successful Bidder to satisfy Owner of Bidder's ability to achieve Substantial Completion and final completion within the times designated in the Bid.

## **8. LIQUIDATED DAMAGES.**

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

## **9. SUBSTITUTE OR "OR-EQUAL" ITEMS.**

The contract, if awarded, will be on the basis of materials and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or-equal" item of material or equipment may be furnished or used by Contractor if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Agreement. The procedure for submission of any such application by Contractor and consideration by Engineer is set forth in Paragraphs 6.7.1, 6.7.2 and 6.7.3 of the General Conditions and may be supplemented in Division 1: General Requirements.

## **10. SUBCONTRACTORS, SUPPLIERS AND OTHERS.**

10.1. If the Bid Form or Specifications require (or if Owner requests after Bids are received) the identity of certain Subcontractors, Suppliers and other persons and organizations (including those who are to furnish the principal items of material and equipment) to be submitted to Owner in advance of the specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within seven days after the Bid opening (or seven days after request by Owner) submit to Owner a list of all such Subcontractors, Suppliers and other persons and organizations proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, person or organization if requested by Owner. Subcontractors shall be required to meet Contractor's liability insurance requirements as established by the General and Supplementary Conditions or be listed as an additional insured on the apparent successful Bidder's policy. If Owner or Engineer after due investigation has reasonable objection to any proposed Subcontractor, Supplier, other person or organization, either may before the Notice of Award is given request the apparent Successful Bidder to submit an acceptable substitute without an increase in Bid price. If apparent Successful Bidder declines to make any such substitution, Owner may award the contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers and other persons and

organizations. The declining to make requested substitutions will not constitute grounds for sacrificing the Bid security of any Bidder. Any Subcontractor, Supplier, other person or organization listed and to whom Owner or Engineer does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.8.2 of the General Conditions.

10.2. No Contractor shall be required to employ any Subcontractor, Supplier, other person or organization against whom Contractor has reasonable objection.

## **11. BID FORM.**

11.1. The Bid Form is included with the Bidding Documents; additional copies may be obtained from Engineer (or the issuing office).

11.2. All blanks on the Bid Form must be completed in ink or by typewriter.

11.3. Bids by corporations must be executed in the corporate name by the president or a vice-president (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal must be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation must be shown below the signature.

11.4. Bids by partnerships must be executed in the partnership name and signed by a general partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.

11.5. All names must be typed or printed below the signature.

11.6. The Bid shall contain an acknowledgement of receipt of all Addenda (the numbers of which must be filled in on the Bid Form). All Addenda are a part of the Bid documents and each Bidder will be bound by such Addenda, whether or not received by the Bidder. It is the responsibility of each Bidder to verify that he or she has received all Addenda issued before Bids are opened.

11.7. The address and telephone number for communications regarding the Bid must be shown.

## **12. SUBMISSION OF BIDS.**

Bids shall be submitted at the time and place indicated in the Advertisement or Invitation to Bid and shall be enclosed in an opaque sealed envelope, marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted) and name and address of the Bidder and accompanied by the Bid security and other required documents. If the Bid is sent through the mail or other delivery system the sealed envelope shall be enclosed in a separate envelope with the notation "BID ENCLOSED FOR City of Lake Worth 2016 Mechanical Integrity Testing of Class 1 Deep Injection Well IW-1 TO BE OPENED 3:00 p.m., local time, October 29, 2015" on the face of it.

## **13. MODIFICATION AND WITHDRAWAL OF BIDS.**

13.1. Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening of Bids.

13.2. If, within twenty-four hours after Bids are opened, any Bidder files a duly signed, written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid and the Bid security will be returned. Thereafter, that Bidder will be disqualified from further bidding on the Work to be provided under the Contract Documents.

## **14. OPENING OF BIDS.**

#### **14. OPENING OF BIDS.**

Bids will be opened (publicly or privately) as indicated in the Invitation to Bid.

14.1. When Bids are opened publicly they will be read aloud, and the amounts of the base Bids and major alternates (if any) will be made available after the opening of Bids. If applicable, the bid will be opened in accordance with sec. 255.0518, Florida Statutes.

14.2. When Bids are opened privately, an abstract of the same information (will or will not) be made available to Bidders within seven days after the date of Bid opening.

#### **15. BIDS TO REMAIN SUBJECT TO ACCEPTANCE.**

All bids will remain subject to acceptance for 120 days after the day of the Bid opening, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to that date.

#### **16. AWARD OF CONTRACT.**

16.1. Owner reserves the right to reject any and all Bids, to waive any and all informalities not involving price, time or changes in the Work and to negotiate contract terms with the Successful Bidder, and the right to disregard all nonconforming, nonresponsive, unbalanced or conditional Bids. Also, Owner reserves the right to reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make and award to the Bidder, whether because the Bid is not responsive or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by Owner. Discrepancies in the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

16.2. In evaluating Bids, Owner will consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.

16.3. Owner may consider the qualifications and experience of Subcontractors, Suppliers and other persons and organizations proposed for those portions of the Work as to which the identity of Subcontractors, Suppliers, and other persons and organizations must be submitted as provided in the Supplementary Conditions (or as requested by Owner after the Bids are received). Owner also may consider the operating costs, maintenance requirements, performance data and guarantees of major items of materials and equipment proposed for incorporation in the Work when such data is required to be submitted prior to the Notice of Award.

16.4. Owner may conduct such investigations as Owner deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of Bidders, proposed Subcontractors, Suppliers, and other persons and organizations to perform and furnish the Work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time.

16.5. If the contract is to be awarded, it will be awarded to the lowest Bidder whose evaluation by Owner indicates to Owner that the award will be in the best interests of the Project and subject to the Owners Local Preference Policy. No. bidder shall be accepted from, nor will any Contract be awarded to any Bidder who is in arrears to the Owner upon any debt or Contract or who is a defaulter as surety or otherwise upon any obligation to the Owner or who has failed to perform faithfully any previous Contract with the Owner or other party as determined by the Owner.

16.6. If the contract is to be awarded, Owner will give the Successful Bidder a Notice of Award within 120 days after the day of the Bid opening.

16.7. When Bidder is permitted to designate the Contract Time, Bid prices will be compared after adjusting for differences in the time designated in the Bid for Substantial Completion.

## **17. CONTRACT SECURITY.**

Paragraph 5.1 of the General Conditions and the Supplementary Conditions set forth Owner's requirements as to performance and payment Bonds. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by the required performance and payment Bonds.

## **18. SIGNING OF AGREEMENT.**

When Owner gives a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within 15 days thereafter Contractor shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner with the required Bonds. In the event the successful Bidder fails to execute the Contract and return same to the Owner within the stipulated fifteen (15) days, the Owner may disqualify the Bid, and said Bidder shall not be permitted to contest to the contrary and does waive such right upon submitting a Bid.

## **19. DISQUALIFICATION OF BIDDER**

19.1 Bidder may be disqualified and its Bid rejected for any of the following:

- a) Bidder does not meet the Competency of Bidder and Reference requirements set forth herein.
- b) Reason to believe that collusion exists among or between Bidders
- c) Unbalanced Bid; that is, Bid in which the prices bid for some items are out of all proportion to those Bids of others.
- d) Bidder's uncompleted workload, which in the judgment of the Owner, may cause detrimental impact or impair the prompt completion of this Contract.
- e) Lack of responsibility on the part of Bidder, (for example, no Bidder would be considered responsible who had failed to carry out any Contract in which the Owner had been directly or indirectly concerned), or to which Bidder failed to perform on other projects.
- f) A determination by Owner of the Contractor's lack of experience or lack of competency as may be revealed by qualification statements, financial statements, experience records, references, or other questionnaires.
- g) Substantial evidence of bad character or dishonesty.
- h) Bidder is involved in any current litigation with Owner.
- i) Bidder has defaulted on any contract or is in arrears on any contract.

## **20. LICENSES, PERMITS, AND CERTIFICATION**

20.1 When applicable, vendor must hold a Certificate of Competency issued by the State of Florida or the Palm Beach County Construction Industry Licensing.

20.2 An Occupational License obtained from the Owner shall be required of any person maintaining a permanent business location or branch office within the City of Lake Worth.

20.3 A copy of any licenses and permits shall be submitted with the Bid and must be in the name of the vendor shown on the Bid submittal.

## **21. PREPARATION EXPENSE**

21.1 Neither the Owner nor its representatives will be liable for any expenses incurred in connection with the preparation, presentation or submittal of any Bid.

## **22. NON-COLLUSION**

22.1 Bidder certifies that this Bid is made without prior understanding, agreement, or connection with any individual, firm, partnership, corporation or other entity submitting a Bid for the same materials, services, supplies, or equipment and is in all respects fair and without collusion or fraud. No premiums, rebates, or gratuities are permitted with, prior to, or after any delivery of material or

provisions of services. Any violation of this provision may result in Contract cancellation, return of materials or discontinuation of services, and the possible removal of Bidder from the vendor Bid list(s).

## **23. CODE OF ETHICS**

23.1 If any Bidder violates or is a party to a violation of the Code of Ethics of the Owner, Palm Beach County, and/or of the State of Florida with respect to this Bid, such Bidder may be disqualified from performing the work described in this Bid or from furnishing the goods or services for which this Bid is submitted and may be further disqualified from bidding on any future Bids for work or for goods or services for the Owner.

## **24. CONFLICT OF INTEREST**

24.1 The award is subject to any and all applicable conflict of interest provisions found in the policies or Code of Ordinances of the City, the Palm Beach County Code of Ethics, and found in the Florida Statutes. All Bidders must complete the Conflict of Interest Form attached hereto.

## **25. DRUG FREE WORKPLACE PROGRAMS**

25.1 Preference may be given to businesses with Drug-Free Work Place Programs. Whenever two or more Bids which are equal with respect to price, quality, and service are received by the Owner for the procurement of commodities or contractual services, a Bid received from a business that completes the attached DFW form certifying that it is a DFW may be given preference in the award process.

## **26. LEGAL REQUIREMENTS**

26.1 Federal, State, County and Owner laws, ordinances, rules, codes, guidelines, directives and regulations that in any manner affect the items covered herein apply. Lack of knowledge by the Bidder shall in no way be a cause for relief from responsibility.

## **27. COMPLIANCE WITH OCCUPATIONAL SAFETY AND HEALTH ACT**

27.1 The Bidder certifies that all equipment and materials contained in this Bid shall meet all O.S.H.A. requirements. Bidder further certifies that, if it is the successful Bidder and the equipment and/or materials delivered are subsequently found to be deficient in any O.S.H.A. requirements in effect on the date of delivery, all costs necessary to bring the equipment and/or materials into compliance with the aforementioned requirements shall be borne by the Bidder.

## **28. NON-APPROPRIATIONS**

28.1 The obligations of the Owner to make a Bid award and sign an agreement under the terms of this "Invitation to Bid" are contingent upon funds lawfully appropriated for this purpose. Should funds not be appropriated for this purpose, the Owner, at its sole discretion, shall have the right to reject all Bids.

## **29. FLORIDA PUBLIC RECORDS ACT AND CONTRACT CONTENT OWNERSHIP**

29.1 All material submitted regarding this Bid becomes the property of the Owner. Pursuant to sec. 119.07(1), Fla. Stat., sealed Bids received by the Owner pursuant to a competitive solicitation are subject to disclosure when the Owner provides notice of an intended decision or until thirty (30) after opening of the Bids, whichever is earlier. If the Owner rejects all bids submitted in response to a competitive solicitation and the Owner concurrently provides notice of its intent to reissue the competitive solicitation, the rejected bids remain exempt from sec. 119.07(1), Fla. Stat., until such time as the Owner provides notice of an intended decision concerning the reissued competitive solicitation or until the Owner withdraws the reissued competitive solicitation. A Bid is not exempt from disclosure for longer than 12 months after the initial notice rejecting all Bids made by the Owner. Bidder should take special note of this as it relates to any proprietary information that might

be included in their offer. Any resulting contract may be reviewed by any person after the contract has been executed by the Owner. The Owner has the right to use any or all information/material submitted in response to this bid and/or any resulting contract from the same. Disqualification of a Bidder does not eliminate this right.

29.2 Contractor shall comply with Florida's Public Records Laws, and, if applicable, specifically agrees to:

- a) Keep and maintain public records that ordinarily and necessarily would be required by the Owner in order to perform the service.
- b) Provide the public with access to public records on the same terms and conditions that the Owner would provide the records and at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
- c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law.
- d) Meet all requirements for retaining public records and transfer, at no cost, to the Owner all public records in possession of the Contractor upon termination of the Contract Documents and destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. All records stored electronically must be provided to the Owner in a format that is compatible with the information technology systems of the Owner.

END OF SECTION

**BID FORM MUST BE SUBMITTED IN DUPLICATE**

BIDDER: \_\_\_\_\_

PROJECT: City of Lake Worth 2016 Mechanical Integrity  
Testing of Class 1 Deep Injection Well IW-1  
**IFB 15-119**

DATE: \_\_\_\_\_  
(Bid Submitted on)

**00300  
BID FORM**

THIS BID IS SUBMITTED TO:

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Contract Documents to perform and furnish all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.
2. BIDDER accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 120 days after the day of Bid opening. BIDDER will sign and submit the Agreement with the Bonds and other documents required by the Bidding Requirements within 15 days after the date of OWNER's Notice of Award.
3. In submitting this Bid, BIDDER represents, as more fully set forth in the Agreement, that:
  - (a) BIDDER has examined copies of all the Bidding Documents and of the following Addenda (receipt of all which is hereby acknowledged):

Date	Number
_____	_____
_____	_____
_____	_____

- (b) BIDDER has familiarized itself with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.
  - (c) BIDDER has studied carefully all reports and drawings of subsurface conditions and drawings of physical conditions which are identified in the Division 1: General Requirements as provided in paragraph 4.2 of the General Conditions, and accepts the determination set forth in Division 1: General Conditions of the extent of the technical data contained in such reports and drawings upon which BIDDER is entitled to rely.
  - (d) BIDDER has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests and studies (in addition to or to supplement those referred to in (c) above) which pertain to the subsurface or physical conditions at the site or otherwise may affect the cost, progress, performance or furnishing of the Work as BIDDER considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents,

including specifically the provisions of paragraph 4.2 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports or similar information or data are or will be required by BIDDER for such purposes.

- (e) BIDDER has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, investigations, explorations, tests, reports or similar information or data in respect of said Underground Facilities are or will be required by BIDDER in order to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of paragraph 4.3 of the General Conditions.
- (f) BIDDER has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.
- (g) BIDDER has given ENGINEER written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to BIDDER.
- (h) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other Bidder or over OWNER.

4. BIDDER agrees to perform all the Work described in Contract Documents, subject to adjustments as provided therein, for the Prices BIDDER provides on the Schedule of Bid Items (Page 00300-5 thru 00300-6 ):

~~5. BIDDER declares it understands that the unit quantities shown on the Bid Form Unit Price Schedule are approximate only and not guaranteed and are subject to either increase or decrease; and that should the quantities of any of the items of Work be increased, the BIDDER agrees to do the additional Work at the unit prices set out herein, and should the quantities be decreased, BIDDER also understands that final payment shall be made on actual quantities completed at the unit prices, and shall make no claims for anticipated profits for any decrease in the quantities.~~

6. The BIDDER further declares it understands the OWNER may elect to construct only a portion of the Work covered by these Documents and BIDDER agrees to perform that portion of the Work for which BIDDER is awarded a Contract at the unit prices quoted herein.

7. BIDDER agrees that the Work:

will be substantially complete within 90 calendar days after the date when the Contract Time commences to run as provided in paragraph 2.3 of the General Conditions, and completed and ready for final payment within 105 calendar days after the date when the Contract Time commences to run.

BIDDER accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work on time.

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

- (a) Required Bid Security in the form of \_\_\_\_\_.
- (b) Schedule of Bid Items on Page(s) 00300-5 and 00300-6 .
- (c) Trench Safety Affidavit on Page(s) 00300-7.
- (d) Schedule of Subcontractors (Page(s) 00300-8).

(e) Schedule of Suppliers, Equipment and Materials (Page(s) 00300-9 )

(f) Sworn Statements Under Section 287.133(3)(a), Florida Statutes, on Public Entity Crimes on Page(s) 00300-10 and 00300-11.

(g) Certification of Drug Free Workplace Program (Page 00300-12).

9. Communications concerning this Bid shall be telephoned or addressed to:

City of Lake Worth  
7 North Dixie Hwy.  
Lake Worth, FL 33460  
561-586-1674

The phone number and address of BIDDER indicated below.

10. The terms used in this Bid which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents have the meanings assigned to them in the General Conditions.

11. BIDDER's Florida Contractor's License No. \_\_\_\_\_.

12. BIDDER covenants that it is qualified to do business in the State of Florida and has attached evidence of BIDDER's qualification to do business in the State of Florida, or if not attached, BIDDER covenants to obtain such evidence within five days of request by OWNER to provide evidence.

13. If BIDDER is:

An Individual

By \_\_\_\_\_ (SEAL)  
(Individual's Name)

\_\_\_\_\_  
(Signature)

doing business as \_\_\_\_\_

Business address: \_\_\_\_\_

\_\_\_\_\_  
Phone No. : \_\_\_\_\_

A Partnership

By \_\_\_\_\_ (SEAL)  
(Firm Name)

\_\_\_\_\_  
(General Partner) (Signature)

Business address: \_\_\_\_\_

\_\_\_\_\_  
Phone No. : \_\_\_\_\_

A Corporation

By \_\_\_\_\_ (SEAL)  
(Corporation Name)

\_\_\_\_\_  
(State of Incorporation)

By \_\_\_\_\_  
(Name of Person Authorized to Sign)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Signature)

(Corporate Seal)

Attest \_\_\_\_\_  
(Secretary)

\_\_\_\_\_  
(Signature)

Business address: \_\_\_\_\_

\_\_\_\_\_  
Phone No. : \_\_\_\_\_

SCHEDULE OF BID ITEMS

All bid items shall include prices for furnishing, to the City, all materials, equipment, supplies, and all costs incurred in providing all work shown on the plans and specifications for **City of Lake Worth 2016 Mechanical Integrity Testing of Class 1 Deep Injection Well IW-1**. Said costs shall be complete and inclusive of all labor, permits, inspection, taxes, bond(s), insurance, miscellaneous costs, record drawings, warranty, overhead and profit.

ITEM NO.	DESCRIPTION	EST. QUANT.	UNIT	UNIT PRICE	AMOUNT
<b>BASE BID</b>					
1.	Mobilization and demobilization of men and equipment to the site including all set ups and site preparation; installing stripper head and blowout preventer for the MIT, including necessary connections and subassemblies, cleaning and restoring the site upon completion of work at the injection well site, and the flushing and restoration of the well to operating conditions.	1	L.S.	XXX	\$
2.	All costs to conduct the following geophysical logs on the injection well from land surface to 3,303 feet below land surface (bls): temperature, caliper, and natural gamma, including the furnishing of logging tools and logging unit with sufficient wireline, and reports.	1	L.S.	XXX	\$
3.	All costs for performing a television survey on the entire well from the top of the 11.75-inch diameter casing/FRP tubing to the bottom of the borehole, including the furnishing of a downhole camera with sufficient wireline, videotape recorder, logging unit, and pumping the well clear prior to performing the video survey of the injection casing.	1	L.S.	XXX	\$
4.	All costs for performing an injection casing pressure test on the well from the top of the 11.75-inch diameter casing//FRP tubing to the bottom of the casing, including furnishing of the inflatable packer, high pressure pump, tubing, hoses, valves, gauges and the furnishing and placement of weighted material to kill the well.	1	L.S.	XXX	\$
5.	All costs for performing a Radioactive Tracer Survey on the well, including furnishing of RTS tool, tracer, logging unit with sufficient wireline, test pump, hoses, valves, meters, and gauges; performing low flow pumping; and coordinating with plant staff to flush the well.	1	L.S.	XXX	\$
<b>TOTAL BASE BID (Items 1 thru 5)</b>					<b>\$</b>

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**CONTINGENCY ITEMS:**

**The costs listed below represent contingencies to be invoked by the OWNER in the event that site conditions warrant that these activities be performed.**

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6.	All costs related to the performance of additional pressure tests in the event that a leak, related to loss of casing mechanical integrity, is identified in the injection casing and must be located. The costs represent contingency to be invoked by the OWNER only if additional pressure testing must be performed by the CONTRACTOR that is not due to CONTRACTOR equipment failure.	<b>Per additional test</b>	\$
7.	All costs related to the performance of cleaning the interior of the 11.75-inch nominal diameter casing/FRP tubing should it be necessary. Acceptable cleaning procedures include brushing or hydrojetting the interior of the casing. The costs represent a contingency to be invoked by the OWNER only if the casing interior based either on visual inspection during the television survey caliper log results or lack of packer seating during casing pressure testing that can not be ascribed to other causes.	<b>Per cleaning event</b>	\$
8.	All costs related to the performance of all activities associated with "killing the well" including removing the wellhead; providing, mixing and placement of weighted material; and restoring the wellhead to operating conditions after performing remedial activities. The costs represent a contingency to be invoked by the OWNER only in the event a situation arises that requires controlling flow at the wellhead so that the injection wellhead and/or piping may be serviced or repaired.	<b>Per event</b>	\$
9.	All costs related to standby time for a total of 24 hours. Standby time will include time where the CONTRACTOR is idle and cannot perform contract activities at the request of the OWNER.	<b>Total for 24 hours</b>	\$

PROJECT NO:

**TRENCH SAFETY AFFIDAVIT**

(FAILURE TO COMPLETE THIS FORM MAY RESULT IN THE BID BEING DECLARED NON-RESPONSIVE)

\_\_\_\_\_ (NAME OF CONTRACTOR) hereby provides written assurance that compliance with applicable Trench Safety Standards identified in the Occupational Safety & Health Administration's Excavation Safety Standards, (OSHA) 29 C.F.R.S. 1926.650 Subpart P will be adhered to during trench excavation in accordance with Florida Statutes 553.60 through 553.64 inclusive (1990), "Trench Safety Act".

The undersigned acknowledges that included in the various items of the proposal and in the Total Bid Price are costs for complying with the Florida "Trench Safety Act" as summarized below: (Attach additional sheets as necessary)

Schedule Item	Trench Safety Measure (Slope, Trench Shield, etc.	Cost
		\$
		\$
		\$
		\$
		\$
		\$
	Total	\$

\_\_\_\_\_

\_\_\_\_\_ (Signature)

\_\_\_\_\_ (date)

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Subscribed and Sworn to (or affirmed) before me on \_\_\_\_\_ (date) by

\_\_\_\_\_ (name). He/she is personally known to me or has

presented \_\_\_\_\_ (type of identification) as identification.

\_\_\_\_\_ Notary Public Signature and Seal

\_\_\_\_\_ Print Notary Name and Commission No.

SCHEDULE OF SUBCONTRACTORS

List Proposed Subcontractors

Category of Work

<hr/>	<hr/>

SCHEDULE OF EQUIPMENT AND MATERIALS

Description	Manufacturer	Model
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

**SWORN STATEMENT UNDER SECTION 287.133(3)(a),  
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES**

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted to \_\_\_\_\_  
by \_\_\_\_\_ [print name of the public entity]  
by \_\_\_\_\_ [print individual's name and title]  
for \_\_\_\_\_ [print name of entity submitting sworn statement]

whose business address is \_\_\_\_\_  
\_\_\_\_\_

and (if applicable) its Federal Employer Identification Number (FEIN) is \_\_\_\_\_

(If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement: \_\_\_\_\_.)

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.
3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.
4. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:
1. A predecessor or successor of a person convicted of a public entity crime; or
  2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.
5. I understand that a "person" as defined in Paragraph 287.133(1)(c), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

6. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. [Please indicate which statement applies.]

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

\_\_\_\_\_ The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

\_\_\_\_\_ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. [attach a copy of the final order]

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

\_\_\_\_\_  
[signature]

\_\_\_\_\_  
[date]

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Subscribed and Sworn to (or affirmed) before me on \_\_\_\_\_ by \_\_\_\_\_  
[date]

\_\_\_\_\_. He/she is personally known to me or has presented  
[name]

\_\_\_\_\_ as identification.  
[type of identification]

\_\_\_\_\_  
[Notary's Signature and Seal]

\_\_\_\_\_  
Print Notary Name and Commission No.

Form PUR 7068 (Rev. 04/10/91)  
M/R 03/06/92

## CERTIFICATION OF DRUG FREE WORKPLACE PROGRAM

I certify the firm of \_\_\_\_\_ maintains a drug-free workplace program, and that the following conditions are met:

1. We publish a statement notifying employees that the unlawful manufacturer, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying that actions will be taken against employees for violations of such prohibitions.
2. We inform employees about the dangers of drug abuse in the workplace, the company'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. We give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection one (1).
4. In the statement specified subsection one (1) we notify the employee that; a condition of working in 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 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. We 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 convicted.
6. We 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.

\_\_\_\_\_  
Contractor's Signature

BIDDERS'S QUALIFICATION QUESTIONNAIRE

(Include in Bid Envelope)

THE UNDERSIGNED GUARANTEES THE TRUTH AND ACCURACY OF ALL STATEMENTS AND ANSWERS HEREIN CONTAINED:

- A. Any information judged by OWNER OR ENGINEER to be false is grounds for rejection of Bid and Cost Proposal. (Use additional sheets as required to provide the required information.)
  
- B. The individual who holds the General Contractor's License certified in Florida shall be active in the management and ownership of the firm awarded the work and be available to provide their expertise for the project on an ongoing-basis. Provide the name of this individual for the complete duration of this project.

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- C. State the numbers of years your organization has been doing business in Florida.

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- D. State the numbers of years your organization has been doing business as a Licensed General Contractor in Florida.

- E. We normally perform \_\_\_\_\_% of the work with our own forces.

List trades below: \_\_\_\_\_

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

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G. BIDDER shall have performed at least five (5) deep injection well Mechanical Integrity Tests within the past five years. Provide references below:

Project #1 Name: \_\_\_\_\_

Contract Amount: \_\_\_\_\_

Owner: \_\_\_\_\_

Owner Contact: \_\_\_\_\_ Phone No. \_\_\_\_\_

Consultant /Engineer \_\_\_\_\_ Phone No. \_\_\_\_\_

Type of Well (details): \_\_\_\_\_

Total Depth: \_\_\_\_\_

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

Contract Schedule (days): \_\_\_\_\_

Actual Completion Schedule: \_\_\_\_\_

Project #2 Name: \_\_\_\_\_

Contract Amount: \_\_\_\_\_

Owner: \_\_\_\_\_

Owner Contact: \_\_\_\_\_ Phone No. \_\_\_\_\_

Consultant /Engineer \_\_\_\_\_ Phone No. \_\_\_\_\_

Type of Well (details): \_\_\_\_\_

Total Depth: \_\_\_\_\_

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

Contract Schedule (days): \_\_\_\_\_

Actual Completion Schedule: \_\_\_\_\_

Project #3 Name: \_\_\_\_\_

Contract Amount: \_\_\_\_\_

Owner: \_\_\_\_\_

Owner Contact: \_\_\_\_\_ Phone No. \_\_\_\_\_

Consultant /Engineer \_\_\_\_\_ Phone No. \_\_\_\_\_

Type of Well (details): \_\_\_\_\_

Total Depth: \_\_\_\_\_

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

Contract Schedule (days): \_\_\_\_\_

Actual Completion Schedule: \_\_\_\_\_

Project #4 Name: \_\_\_\_\_

Contract Amount: \_\_\_\_\_

Owner: \_\_\_\_\_

Owner Contact: \_\_\_\_\_ Phone No. \_\_\_\_\_

Consultant /Engineer \_\_\_\_\_ Phone No. \_\_\_\_\_

Type of Well (details): \_\_\_\_\_

Total Depth: \_\_\_\_\_

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

Contract Schedule (days): \_\_\_\_\_

Actual Completion Schedule: \_\_\_\_\_

Project #5 Name: \_\_\_\_\_

Contract Amount: \_\_\_\_\_

Owner: \_\_\_\_\_

Owner Contact: \_\_\_\_\_ Phone No. \_\_\_\_\_

Consultant /Engineer \_\_\_\_\_ Phone No. \_\_\_\_\_

Type of Well (details): \_\_\_\_\_

Total Depth: \_\_\_\_\_

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

Contract Schedule (days): \_\_\_\_\_

Actual Completion Schedule: \_\_\_\_\_

H. List ALL projects within the past five years (started, underway, or completed) in which liquidated damages (LD) were incurred, either directly or indirectly (attach additional sheets as required):

Project: \_\_\_\_\_

LD Amount: \_\_\_\_\_

LD Unit Price: \_\_\_\_\_

I. BIDDER shall specifically name proposed superintendent to be utilized on this project and identify years of experience in construction and MIT testing completed by the proposed superintendents within the previous five years. It must be demonstrated that the experience is with the current bidder.

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

Position: \_\_\_\_\_

Years of Experience with BIDDER: \_\_\_\_\_

Type of Work Responsible For: \_\_\_\_\_

License: \_\_\_\_\_

J. BIDDER shall provide information related to the job safety and safety rating of the corporation:

K. Please attach copies of your most recent audited financial statement.

L. Bonding Capacity:

(a) Please state your bonding capacity per project. \_\_\_\_\_

(b) Please state your total bonding capacity. \_\_\_\_\_

(c) Please provide name, address and contact person of your bonding company.

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

M. State the true, exact, correct and complete name of the partnership, corporation or trade name under which you do business. (If corporation, state the name of the president and secretary. If a partnership, state the name of all partners. If a trade name, state the name of the individuals who do business under the trade name).

\_\_\_\_\_

- (a) The business is a \_\_\_\_\_
- (b) The address of the principal place of business is: \_\_\_\_\_
- (c) The name of the corporate officers, or partners, or individuals doing business under a trade name are as follows:

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

If a Corporation, attach a copy of the most recent good standing certificate issued by the Secretary of State of Florida.

Date \_\_\_\_\_

Bidder: \_\_\_\_\_

By: \_\_\_\_\_

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

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

\_\_\_\_\_

END OF BIDDER'S QUALIFICATION QUESTIONNAIRE

**00500**  
**AGREEMENT**

THIS AGREEMENT is dated and will be effective on the \_\_\_\_\_ day of \_\_\_\_\_ in the year 20\_\_\_\_, by and between the City of Lake Worth (hereinafter called OWNER) and \_\_\_\_\_ (hereinafter called CONTRACTOR).

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

**ARTICLE 1. WORK.**

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

**Perform Mechanical Integrity Testing of Class 1 Deep Injection Well IW-1 for the City of Lake Worth.**

**ARTICLE 2. ENGINEER**

The Project has been designed by Mathews Consulting, Inc., 477 South Rosemary Avenue, Suite 330, West Palm Beach, Florida 33401, who is hereinafter called ENGINEER and who is to act as OWNER's representative, assume all duties and responsibilities and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

**ARTICLE 3. CONTRACT TIME.**

3.1. The Work will be substantially completed within 90 days from the date when the Contract Time commences to run as provided in paragraph 2.3 of the General Conditions and shall be finally complete and ready for final payment in accordance with paragraph 14.13 of the General Conditions within 105 days from the date when the Contract Time commences to run.

3.2 All time limits for Milestones, if any, Substantial Completion and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

**3.3. LIQUIDATED DAMAGES. OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 3.1 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER Five Hundred and 00/100 dollars (\$ 500.00 ) for each day that expires after the time specified in paragraph 3.1 for Substantial Completion until the Work is substantially complete. After Substantial Completion if CONTRACTOR shall neglect, refuse or fail to complete the**

remaining Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER Five Hundred and 00/100 dollars (\$500.00 ) for each day that expires after the time specified in paragraph 3.1 for completion and readiness for final payment.

**ARTICLE 4. CONTRACT PRICE.**

OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents, subject to adjustment as provided therein, in current funds as follows:

4.1 An amount equal to the sum of the established unit price for each separately identified item on the Unit Price Schedule times the estimated quantity of that item:

TOTAL OF ALL UNIT PRICES \_\_\_\_\_ (\$ \_\_\_\_\_ )  
(use words) (figures)

which is based on the Schedule of Bid Items numbered 1 to 5.

**ARTICLE 5. PAYMENT PROCEDURES.**

CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

5.1. PROGRESS PAYMENTS. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment as recommended by ENGINEER, on or about the 10<sup>th</sup> day of each month during construction as provided below. All progress payments will be on the basis of the progress of the Work measured by the schedule of values established in paragraph 2.9 of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in Division 1: General Requirements.

5.1.1 Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below, but, in each case, less the aggregate of payments previously made and less such amounts as ENGINEER shall determine, or OWNER may withhold, in accordance with paragraph 14.7 of the General Conditions, less liquidated damages, if any.

90% of Work completed.

90% of materials and equipment not incorporated in the Work (but delivered, suitably stored and accompanied by documentation satisfactory to OWNER as provided in paragraph 14.2 of the General Conditions).

95% of the work complete after the Contractor has completed over 50% of the Work.

5.1.2 Upon Substantial Completion, in an amount sufficient to increase total payments to CONTRACTOR to 98% of the Contract Price, less such amounts as ENGINEER shall determine, or OWNER may withhold, in accordance with paragraph 14.7 of the General Conditions, less liquidated damages, if any.

5.2. FINAL PAYMENT. Upon final completion and acceptance of the Work in accordance with paragraph 14.13 of the General Conditions, and settlement of all claims, including liquidated damages, if any, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.13.

**ARTICLE 6.** (This Article left blank intentionally)

**ARTICLE 7. CONTRACTOR'S REPRESENTATIONS.**

In order to include OWNER to enter into this Agreement CONTRACTOR makes the following representations:

7.1. CONTRACTOR has familiarized itself with the nature and extent of the Contract Documents, Work, site locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

7.2. CONTRACTOR has studied carefully all reports of explorations and tests of subsurface conditions and drawings of physical conditions which are identified in the Division 1: General Requirements as provided in paragraph 4.2 of the General Conditions, and accepts the determination set forth in Division 1: General Requirements of the extent of the technical data contained in such reports and drawings upon which CONTRACTOR is entitled to rely, if any.

7.3. CONTRACTOR has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests, reports and studies, if any, (in addition to or to supplement those referred to in paragraph 7.2 above) which pertain to the subsurface of physical conditions at or contiguous to the site or otherwise may affect the cost, progress, performance or furnishing of the Work as CONTRACTOR considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of paragraph 4.2 of the General Conditions; and no additional examinations, investigations, explorations, tests, reports, studies or similar information or data are or will be required by CONTRACTOR for such purposes.

7.4. CONTRACTOR has reviewed and checked all information and data shown or indicated on the Contract Documents, if any, with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, investigations, explorations, tests, reports, studies or similar information or data in respect of said Underground Facilities are or will be required by CONTRACTOR in order to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of paragraph 4.3 of the General Conditions.

7.5. CONTRACTOR has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.

7.6. CONTRACTOR has given ENGINEER written notice of all conflicts, errors or discrepancies that he has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

7.7 CONTRACTOR acknowledges that the Contract Documents are generally sufficient to indicate and convey an adequate understanding of all terms and conditions for performance and furnishing of the Work.

**ARTICLE 8. CONTRACT DOCUMENTS.**

The Contract Documents which comprise the entire Agreement between OWNER and CONTRACTOR concerning the Work consist of the following:

- 8.1. This Agreement consisting of 7 pages.
- 8.2. Exhibits to this Agreement identified as: Contractor's Corporate Resolution; Contractor's Certificate of Insurance; \_\_\_\_\_ inclusive.
- 8.3. Performance Bond and Payment Bond consisting of 4 pages (plus Power of Attorney Forms as applicable).
- 8.4. Notice of Award and Notice to Proceed.
- 8.5. General Conditions consisting of 33 pages.
- 8.6. Supplementary Conditions consisting of 7 pages.
- 8.7. Bid documents as listed in the table of contents of the Project Manual.
- 8.8. Specifications consisting of    pages.
- 8.9. ~~Drawings not attached hereto but are listed in Section 00860 List of Drawings. Not Used~~
- 8.10. Addenda numbers \_\_\_\_\_ to \_\_\_\_\_, inclusive.
- 8.11. CONTRACTOR's Bid consisting of \_\_\_\_\_ pages.
- 8.12. Documentation submitted by CONTRACTOR prior to Notice of Award.
- 8.13. The following which may be delivered or issued after the Effective Date of the Agreement and are not attached hereto: All Written Amendments and other documents amending, modifying, or supplementing the Contract Documents pursuant to paragraphs 3.4 and 3.5 of the General Conditions.
- 8.14. The documents listed under Article 8 above are attached to this Agreement (except as expressly noted otherwise above).
- 8.15. Notice of Compliance with Chapter 556, Florida Statutes, consisting of 1 page.
- 8.16. Any other document attached hereto or incorporated herein.

There are no Contract Documents other than those listed above in this Article 8. The Contract Documents may only be amended, modified or supplemented as provided in paragraphs 3.4 and 3.5 of the General Conditions.

**ARTICLE 9. MISCELLANEOUS.**

9.1. Terms used in this Agreement which are defined in Article 1 of the General Conditions will have the meanings indicated in the General Conditions.

9.2. No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

9.3. OWNER and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect of all covenants, agreements and obligations contained in the Contract Documents.

9.4. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replaced such stricken provision or part thereof with a valid and enforceable provisions that comes as close as possible to expressing the intention of the stricken provision.

9.5 A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Bid on a Contract to provide any goods or services to a public entity, may not submit a Bid on a Contract with a public entity for the construction or repair of a public building or public work, may not be awarded or perform Work as a Contractor, Supplier, Subcontractor, or Consultant under a Contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for Category Two for a period of 36 months from the date of being placed on the convicted vendor list.

9.6 In accordance with Palm Beach County ordinance number 2011-009, the Contract Documents may be subject to investigation and/or audit by the Palm Beach County Inspector General. Contractor should review such ordinance in order to be aware of its rights and/or obligations under such ordinance and as applicable.

9.7 Failure of either party to enforce or exercise any right(s) under the Contract Documents shall not be deemed a waiver of either party's right to enforce said right(s) at any time thereafter.

9.8 TO ENCOURAGE PROMPT AND EQUITABLE RESOLUTION OF ANY LITIGATION, EACH PARTY HEREBY WAIVES ITS RIGHTS TO A TRIAL BY JURY IN ANY LITIGATION RELATED TO THE CONTRACT DOCUMENTS.

9.9 The Contractor is, and shall be, in the performance of all Work under the Contract Documents, an Independent Contractor, and not an employee, agent, or servant of the Owner. All persons engaged in any of the Work performed pursuant to the Contract Documents shall at all times and in all places be subject to the Contractor's sole direction, supervision and control.

9.10 The Contractor shall maintain adequate records to justify all charges, expenses, and costs incurred in estimating and performing the Work for at least five (5) years after final payment is made. The Owner shall have access to such books, records, and documents as required for the purpose of inspection or audit during normal business hours at the Contractor's place of business. Under no circumstances will Contractor be required to disclose any confidential or proprietary information regarding its products and service costs.

9.11 The Contract Documents shall not be construed more strongly against either party regardless of who was more responsible for its preparation.

9.12 Contractor shall comply with Florida's Public Records Laws, and specifically agrees to:

- a) Keep and maintain public records that ordinarily and necessarily would be required by the Owner in order to perform the service.
- b) Provide the public with access to public records on the same terms and conditions that the Owner would provide the records and at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
- c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law.
- d) Meet all requirements for retaining public records and transfer, at no cost, to the Owner all public records in possession of the Contractor upon termination of the Contract Documents and destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. All records stored electronically must be provided to the Owner in a format that is compatible with the information technology systems of the Owner.

**ARTICLE 10. INDEMNIFICATION.**

10.1. Contractor shall indemnify and hold harmless Owner and Engineer and their respective officers, and employees for liabilities, damages, losses, and costs, including but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the Contractor and persons employed or utilized by the Contractor in the performance of the construction contract.

10.2. It is the specific intent of the parties hereto that the foregoing indemnification complies with section 725.06, Florida Statutes. It is further the specific intent and agreement of the parties that all of the Contract Documents on this Project are hereby amended to include the foregoing indemnification and the "Specific Consideration" therefore.

10.3 Nothing in the Contract Documents shall be construed or interpreted as consent by the OWNER to be sued, nor as a waiver of sovereign immunity beyond the waiver or limits provided in section 768.28, Florida Statutes.

**REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK**  
**SIGNATURE PAGE FOLLOWS**

IN WITNESS WHEREOF, OWNER AND CONTRACTOR have signed this Agreement in four parts. Two counterparts have been delivered to OWNER, and one counterpart each to CONTRACTOR and ENGINEER. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or by ENGINEER on their behalf.

**CITY OF LAKE WORTH, FLORIDA**

By: \_\_\_\_\_  
Pam Triolo, Mayor

ATTEST

\_\_\_\_\_  
Pamela J. Lopez, City Clerk

Approved as to form and legal sufficiency:

\_\_\_\_\_  
Glen J. Torcivia, City Attorney

**CONTRACTOR:** \_\_\_\_\_

By: \_\_\_\_\_

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

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

[Corporate Seal]

STATE OF \_\_\_\_\_)  
COUNTY OF \_\_\_\_\_)

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 2015 by \_\_\_\_\_, as \_\_\_\_\_ of \_\_\_\_\_, Inc., a Florida corporation, and who is personally known to me or who has produced the following \_\_\_\_\_ as identification.

Notary Public:  
\_\_\_\_\_

PROJECT: City of Lake Worth 2016 Mechanical Integrity Testing of Class 1 Deep Injection Well IW-1

**00501**  
**OPINION OF ATTORNEY**

This is to certify that I have examined the attached Contract Documents, that after such examination I am of the opinion that the execution of the Agreement, the Performance Bond and Payment Bond are in due and proper form.

\_\_\_\_\_  
Attorney for Owner

This the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

# Construction Performance Bond

Bond Number:

*Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable*

---

**CONTRACTOR (Name & Address):**

**SURETY (Name & Principal Place of Business):**

**OWNER (Name & Address):**

City of Lake Worth  
7 North Dixie Highway  
Lake Worth, FL. 33460

**CONSTRUCTION CONTRACT**

**Date**

**Amount:**

**Description (Name & Location):** 2016 Mechanical Integrity Testing of Class 1 Deep Injection Well IW-1, City of Lake Worth, FL

**BOND**

**Date (Not earlier than Construction Contract Date):**

**Amount:**

**Modifications to this Bond Form:**

**CONTRACTOR AS PRINCIPAL**

**SURETY**

**Company:**

**Company:**

**Signature:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

**Name & Title:**

**Name & Title:**

EJCDC No. 1910-28A (1984 Edition)

Prepared through the joint efforts of The Surety Association of America, Engineers' Joint Contract Documents Committee, The Associated General Contractor of America, and the American Institute of Architects.

1. The Contractor and the Surety, jointly and severally, bind themselves their heir; executors, administrators, successors and assigns to the owner to pay for labor. Materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except to participate in conferences as provided in Subparagraph 3.1.
3. If there is no Owner Default, the Surety's obligation under this Bond shall arise after:
  - 3.1. The Owner has notified the Contractor and Surety at its address described in Paragraph 10 below, that the Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performance the Construction Contract. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall be waive the Owner's right. If any, subsequently to declare a Contractor Default: and
  - 3.2. The Owner has declared a Contractor Default and formally terminated the Contractor's right to compete the contract. Such Contactor Default shall not be declared earlier than twenty days after the Contractor and the Surety have received notice as provided in Subparagraph 3.1: and
  - 3.3. The Owner has agreed to pay the Balance of the Contract Price to the Surety in accordance with the terms of the Construction Contract or to a contractor selected to perform the Construction Contract in accordance with the terms of the contract with the Owner.
4. When the Owner has satisfied the conditions of Paragraph 3. The Surety shall promptly and at the Surety's expense take one of the following actions:
  - 4.1. Arrange for the Contractor with consent of the Owner to perform and complete the Construction Contractor
  - 4.2. Undertake to perform and complete the Construction Contract itself, through its agents or through independent contractors; or
  - 4.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract , arrange for a contract to be prepared for execution by the Owner and the contractor selected with the Owner's concurrence to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract and pay to the Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by the Owner resulting from the Contractor's default: or
  - 4.4. Waive its right to perform and complete arrange for completion or obtain a new contractor and with reasonable promptness under circumstances:
    1. After investigation determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined tender payment therefor to the Owner; or
    2. Deny liability in whole or in part and notify the Owner citing reasons therefor.
5. If the Surety does not proceed as provided in Paragraph 4 with reason-able promptness. The Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Subparagraph 4.4. And the Owner refuses the payment tendered or the Surety has denied liability in whole or in part without further notice the Owner shall be entitled to enforce any remedy available to the Owner.
6. After the Owner has terminated the Contractor's right to complete the Construction Contract and if the Surety elects to act under Subparagraph 4.1. 4.2. or 4.3. above then the responsibilities of the Surety to the Owner shall not be greater than those

of the Contractor under the Construction Contract and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. To the limit of the amount of this Bond but subject to commitment by the Owner of the Balance of the Contract Price to mitigation of costs and damages on the Construction Contract the Surety is obligated without Duplication for:

- 6.1. The responsibilities of the Contractor for correction of defective work and completion of the Construction Contract:
- 6.2. Additional legal including appellate proceedings, design professional and delay costs and expenses resulting from the Contractor's default, and resulting from the actions or failure to act of the Surety under paragraph 4; and
- 6.3. Liquidated damages. Or if no liquidated damages are specified in the Construction Contract actual damages caused by delayed performance or non-performance of the Contractor.
7. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heir's executors, administrators or successors.
8. The Surety hereby waives notice of any change including changes of time to the Construction Contract or to related subcontracts, purchase orders and other obligation.
9. Any proceeding, legal or equitable under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after Contactor Default or within two years after the Contactor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
10. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page.
11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The Intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
12. Definitions.
  - 12.1. Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled. Reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
  - 12.2. Construction Contract: The agreement between the Owner and the Contractor identified on the signature page. Including all Contract Documents and changes thereto.
  - 12.3. Contractor Default: Failure of the Contractor which has neither been remedied nor waived to perform or otherwise to comply with the terms of the Construction Contract.
  - 12.4. Owner Default: Failure of the Owner, which has neither been remedied nor waived to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

This Bond is executed pursuant to Florida Statutes Section 255.05 or Section 713.23, whichever is applicable, and is subject to the notice and time limitation provisions.

**(FOR INFORMATION ONLY- Name, Address and Telephone)**

**AGENT OR BROKER:**

**OWNER'S REPRESENTATIVE (ENGINEER):**

Mathews Consulting, Inc.  
477 S. Rosemary Ave., Suite 330  
West Palm Beach, FL 33401

**CONSTRUCTION PERFORMANCE BOND**

**00610-2**

# Construction Payment Bond

Bond Number:

*Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable*

---

**CONTRACTOR (Name & Address):**

**SURETY (Name & Principal Place of Business):**

**OWNER (Name & Address):**

City of Lake Worth  
7 North Dixie Highway  
Lake Worth, FL. 33460

**CONSTRUCTION CONTRACT**

**Date**

**Amount:**

**Description (Name & Location):** 2016 Mechanical Integrity Testing of Class 1 Deep Injection Well IW-1, City of Lake Worth, FL

**BOND**

**Date (Not earlier than Construction Contract Date):**

**Amount:**

**Modifications to this Bond Form:**

**CONTRACTOR AS PRINCIPAL**

**SURETY**

**Company:**

**Company:**

**Signature:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

**Name & Title:**

**Name & Title:**

EJCDC No. 1910-28B (1984 Edition)

Prepared through the joint efforts of The Surety Association of America, Engineers' Joint Contract Documents Committee, The Associated General Contractor of America, and the American Institute of Architects, American Subcontractors Association, and the Associated Specialty Contractor

1. The Contractor and the Surety, jointly and severally, bind themselves their heir; executors, administrators, successors and assigns to the owner to pay for labor. Materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference.
2. With respect to the Owner, this obligation shall be null and void if the Contractor:
  - 2.1. Promptly makes payment, directly or indirectly for all sums due Claimants and
  - 2.2. Defends indemnifies and holds harmless the Owner from all claims demands liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of Construction Contract provided the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 12) of any claims, demands liens or suits to the Contractor and the Surety and provided there is no Owner Default.
3. With respect to Claimants this obligation shall be null and void if the Contractor promptly makes payment directly or indirectly for all sums due.
4. The Surety shall have no obligation to Claimants under this Bond until:
  - 4.1 Claimants who are employed by or have a direct contact with the Contractor have given notice to the Surety (at the address described in Paragraph 12) and sent a copy or notice thereof to the Owner stating that a claim is being made under this Bond and with substantial accuracy the amount of the claim (see note one)
  - 4.2 Claimants who do not have a direct contract with the Contractor
    1. Have furnished written notice to the Contractor and sent a copy or notice thereof, to the Owner within 90 days after having last preformed labor or last furnished materials or equipment included in the claim stating with substantial accuracy the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or preformed and
    2. Have either received a rejection in whole or in part from the Contractor or not received within 30 days of furnishing the above notice any communication from the Contractor by which the Contractor has indicated the claim will be paid directly or indirectly and
    3. Not having been paid within the above 30 days have sent a written notice to the Surety (at address described in Paragraph 12) and sent a copy or notice thereof to the Owner stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the Contractor
5. If a notice required by Paragraph 4 is given by the Owner to the Contractor or to the Surety that is sufficient compliance.
6. When the Claimant has satisfied the conditions of Paragraph 4 the Surety shall promptly and at the Surety's expense take the following actions:
  - 6.1. Send an answer to the Claimant, with a copy to the Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
  - 6.2 Pay or arrange for payment of any undisputed amounts of this Bond, and the amount of this Bond shall be credited for any payment made in good faith by the Surety.
7. The Surety's total obligation shall not exceed the amount of this Bond and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
8. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims. If any, under any Construction Performance Bond By the Contractor furnishing and the Owner accepting this Bond they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and the Surety under this Bond subject to the Owner's priority to use the funds for the completion of the work.
9. The surety shall not be liable to the Owner Claimants or others for Obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for payment of any costs or expense of any Claimant under this Bond and shall have under this Bond no obligations to make payments to give notice on behalf of or otherwise have obligations to Claimants under this Bond.
10. The Surety hereby waives notice of any change, including changes at time to the Construction Contract or to related subcontracts purchase orders and other obligations.
11. No Suit or actions shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the work or part of the work is located or after the expiration of 2 year from the date (1) on which the Claimant gave the notice required by Subparagraph 4.1 or Clause 4.2 (iii) , or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to the Surety the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page. Actual receipt of notice by Surety the Owner or the Contractor however accomplished shall be sufficient compliance as of the date received at the address shown on the signature page.
13. When this Bond has been furnished to comply with statutory or other legal requirements in the location where the construction was to be performed any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be constructed as a statutory bond and not as a common law bond.
14. Upon request by any person or entity appearing to be a potential beneficiary of this Bond the Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made
15. DEFINITIONS
  - 15.1. Claimant: An individual or entity having a direct contract with the Contractor or with a subcontractor to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms " labor materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor materials or equipment were furnished.
  - 15.2. Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.
  - 15.3. Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

Note 1: As an additional requirement any claimant, except a laborer, who is not in privity with the Contractor shall, within forty-five days after beginning to furnish labor, materials or supplies, furnish the Contractor with a Notice that he intends to look to the Bond for protection.

This Bond is executed pursuant to Florida Statutes Section 255.05 or Section 713.23, whichever is applicable, and is subject to the notice and time limitation provisions.

**(FOR INFORMATION ONLY- Name, Address and Telephone)**

**AGENT OR BROKER:**

**OWNER'S REPRESENTATIVE (ENGINEER):**

Mathews Consulting, Inc.  
477 S. Rosemary Ave., Suite 330  
West Palm Beach, FL 33401

PROJECT: City of Lake Worth 2016 Mechanical Integrity Testing of Class 1 Deep Injection Well IW-1

**SECTION 00630  
NOTICE OF COMPLIANCE WITH CHAPTER 556, FLORIDA STATUTES**

The undersigned Contractor does hereby confirm to the Owner and Engineer that the Contractor has reviewed the provisions of Chapter 556, Florida Statutes, and has provided to “Sunshine State One-Call of Florida, Inc.” the information required under F.S. 556.105 before the commencement of any excavation or demolition required for the Work.

Executed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
(name of Contractor)

\_\_\_\_\_  
(signature)

\_\_\_\_\_  
(print name)

\_\_\_\_\_  
(title)

END OF SECTION

PROJECT: City of Lake Worth 2016 Mechanical Integrity Testing of Class 1 Deep Injection Well IW-1

**00670**  
**CONTRACTOR'S AFFIDAVIT TO OWNER**

STATE OF FLORIDA  
COUNTY OF \_\_\_\_\_

Before me, the undersigned authority, authorized to administer oaths and take acknowledgements, personally appeared \_\_\_\_\_, who, being by me first duly sworn, on oath depose(s) and say(s):

(1) He/she is/They are a (Corporation, Partnership or Individual) of \_\_\_\_\_ (State), doing business as \_\_\_\_\_ (Company Name), hereinafter called "Contractor".

(2) Contractor heretofore entered into a Contract with \_\_\_\_\_ hereinafter called "Owner" to do Work (furnish material, labor and services) for the construction of \_\_\_\_\_, located at \_\_\_\_\_ County, Florida. "

(3) Contractor has fully completed construction in accordance with the terms of the Contract, and all lienors have been paid in full, except:

<u>NAME OF LIENOR</u>	<u>AMOUNT DUE AND UNPAID</u>
	\$

(4) All Workmen's Compensation claims have been settled and no liability claims are pending, in connection with, arising out of or resulting from the Contract.

(5) Receipt by the Contractor of the final payment, under the aforementioned Contract, shall constitute a full release and discharge by the Contractor to the Owner of any and all claims of the Contractor against the Owner, arising out of, connected with, or resulting from performance of the obligations of the Contractor pursuant to the Contract Documents.

(6) The term "lienor" as used in this affidavit means any person having a lien or a prospective lien, under the Mechanics Lien Law of Florida, on the land and property of the Owner referred to in paragraph (2) of this affidavit..

(7) This affidavit is given pursuant to the provisions of Florida Statutes Section 713.06 or Section 255.05, whichever is applicable.

Signed and sealed in the presence of:

<u>(ENTITY)</u> _____	_____
<u>(SEAL)</u> _____	By: _____

Subscribed and Sworn to (or affirmed) before me on \_\_\_\_\_ (date) by \_\_\_\_\_ (name). He/she is personally known to me or has presented \_\_\_\_\_ (type of identification) as identification.

_____ Notary Public Signature and Seal	_____ Print Notary Name and Commission No.
---	---

**00680**  
**APPLICATION FOR PAYMENT NO. \_\_\_\_\_**

Project \_\_\_\_\_

Application is made for payment, as hereinafter shown, in connection with this Agreement:

Total Work to Date - see attached schedule	\$ _____
Total Material Suitably Stored - see attached schedule	\$ _____
Gross Amount Due	\$ _____
Less _____ % Retainage	\$ _____
Amount Due to Date	\$ _____
Less Previous Applications	\$ _____
Amount Due This Application	\$ _____

Original Contract Price	\$ _____
Net Change Orders	\$ _____
Current Contract Price	\$ _____
Value of Work Remaining to be Done	\$ _____

Contractor's Certification:

The undersigned Contractor certifies that (1) all previous progress payments received from Owner on account of Work done under the Agreement referred to above have been applied to discharge in full all obligations of Contractor incurred in connection with Work covered by prior Applications for Payment numbered 1 through \_\_\_\_\_, inclusive; and (2) title to all materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all liens, claims, security interests and encumbrances (except such as covered by Bond acceptable to Owner).

Dated \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_  
Contractor and Mailing Address

By \_\_\_\_\_  
(Name and Title)

State of \_\_\_\_\_ )  
County of \_\_\_\_\_ )ss

Subscribed and Sworn to (or affirmed) before me on \_\_\_\_\_ (date)  
personally appeared \_\_\_\_\_ (name).

He/she is personally known to me or has presented \_\_\_\_\_  
\_\_\_\_\_ (type of identification) as identification. Who being so duly sworn, did depose and say that he/she is \_\_\_\_\_ of the Contractor above mentioned; that he/she executed the above Application for Payment and statement on behalf of said Contractor; and that all of the statements contained therein are true, correct and complete.

\_\_\_\_\_  
Notary Public Signature and Seal

\_\_\_\_\_  
Print Notary Name and Commission No.

Payment of the above AMOUNT DUE THIS APPLICATION is recommended.

MATHEWS CONSULTING, INC.

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

By: \_\_\_\_\_  
(Name) (Title)

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

CITY OF LAKE WORTH  
By \_\_\_\_\_  
(Name) (Title)

PROJECT: City of Lake Worth 2016 Mechanical Integrity Testing of Class 1 Deep Injection Well IW-1

**00681**  
**SCHEDULE OF VALUES AND WORK COMPLETED**

PROJECT TITLE \_\_\_\_\_

CONTRACTOR \_\_\_\_\_

FOR PERIOD ENDING \_\_\_\_\_

TO ACCOMPANY APPLICATION NO. \_\_\_\_\_

ITEM	CONTRACTOR'S Schedule of Values			Work Completed	
	Unit Price	Quantity	Amount	Quantity	Amount
	\$		\$		\$
NOTE: CONTRACTOR SHALL PREPARE APPROPRIATE SCHEDULE WITH ALL CONTRACT ITEMS					
SHOWN FOR ATTACHMENT TO EACH APPLICATION FOR PAYMENT.					
			Total (Original Contract)		\$ _____
C.O. No. 1					
C.O. No. 1	NOTE: CHANGE ORDER(S) SHALL BE ITEMIZED AS APPLICABLE.				

TOTAL WORK TO DATE \$ \_\_\_\_\_

MATERIALS SUITABLY STORED

NOTE: CONTRACTOR TO ITEMIZE AND ATTACH APPROPRIATE INVOICES

TOTAL MATERIAL SUITABLY STORED \$ \_\_\_\_\_

Accompanying Documentation (Contractor to itemize):

This document has important legal consequences: consultation with an attorney is encouraged with respect to its completion or modification.

05/02/86  
GC-1

00700  
**STANDARD**

**GENERAL CONDITIONS  
OF THE  
CONSTRUCTION CONTRACT**

Prepared by

**Engineers' Joint Contract Documents Committee**

and

Issued and Published Jointly By



PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE  
*A practice division of the*  
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

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AMERICAN CONSULTING ENGINEERS COUNCIL

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AMERICAN SOCIETY OF CIVIL ENGINEERS

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CONSTRUCTION SPECIFICATIONS INSTITUTE

This document has been approved and endorsed by

The Associated General  Contractors of America

These General Conditions have been prepared for use with the Owner-Contractor Agreements (No. 1910-8-A-1 or 1910-8-A-2, 1983 editions). Their provisions are interrelated and a change in one may necessitate a change in the others. Comments concerning their usage are contained in the Commentary on Agreements for Engineering Services and Contract Documents, No. 1910-9, 1981 edition. For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. 1910-17, 1983 edition). When bidding is involved, the Standard Form of Instructions to Bidders (No. 1910-12, 1983 edition) may be used.

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2029 K Street, N.W., Washington, D.C. 20006

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1015 15th Street, N.W., Washington, D.C. 20005

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Construction Specifications Institute  
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# GENERAL CONDITIONS

## 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 OWNER 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.

\* *BIDDER*—(see ¶SC-1 of Supplementary Conditions)

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

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

*Contract Documents*—The 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 OWNER 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 17.2) or the date stated in the Agreement for the completion of the Work.

*CONTRACTOR*—The person, firm or corporation with whom OWNER 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 OWNER 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.

*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 the 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 by OWNER to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

*Notice to Proceed*—A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) 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.

*OWNER*—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.

*Resident Project Representative*—The authorized representative of ENGINEER who is assigned to the site or any part thereof. (see ¶SC-1 of Supplementary Conditions) \*

*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 Work (or a specified part thereof) has progressed to the point where, in the opinion of ENGINEER as evidenced by ENGINEER's definitive certificate of Substantial Completion, it is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) 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 result 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 and signed by OWNER and recommended by ENGINEER,

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 OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the nonengineering 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 OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish in accordance with paragraph 5.1.

### *Copies of Documents:*

2.2. OWNER shall furnish to CONTRACTOR up to ten 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 will commence to run on the thirtieth day after the Effective Date of the Agreement, or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within thirty days after the Effective Date of the Agreement. ~~In no event will the Contract Time commence to run later than the seventy-fifth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.~~ (See ¶SC-2.3 of Supplementary Conditions) \*

### *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 OWNER 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 OWNER, with a copy to ENGINEER, certificates (and other evidence of insurance requested by OWNER) which CONTRACTOR is required to purchase and maintain in accordance with paragraphs 5.2 and 5.4, and OWNER shall deliver to CONTRACTOR certificates (and other evidence of insurance requested by CONTRACTOR) which OWNER is required to purchase and maintain in accordance with paragraphs 5.6 and 5.7. (See 1Sc-2.7 of the Supplementary Conditions)~~

*Preconstruction Conference:*

2.8. Within twenty days after the Effective Date of the Agreement, but 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 para-

graph 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 submissions. 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 OWNER 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 OWNER, 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 provisions 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.

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 OWNER 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 formal 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 OWNER shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of ENGINEER; and they shall not reuse any of them on extensions of the Project or any other project without written consent of OWNER and ENGINEER and specific written verification or adaptation by ENGINEER.

**ARTICLE 4—AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS**

**Availability of Lands:**

4.1. OWNER 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 OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR believes that any delay in OWNER's furnishing these lands, rights-of-way or easements entitles CONTRACTOR to an extension of the Contract Time, CONTRACTOR may make a claim therefor as provided in Article 12. 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:** (see §SC 4.2.1 of the Supplementary 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. 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 OWNER 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 OWNER 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 of the inaccuracy or 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 OWNER 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 OWNER or ENGINEER by the owners of such Underground Facilities or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

4.3.1.1. OWNER 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 owners 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 owner of such Underground Facility and give written notice thereof to that owner and to OWNER 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 paragraph 6.20. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, to the extent that they are attributable to the existence of any Underground Facility that was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of. If the parties are unable to agree as to the amount or length thereof, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

**Reference Points:**

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

**ARTICLE 5—BONDS AND INSURANCE**

**Performance and Other Bonds:**

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 Law or Regulation or by the Contract Documents and be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All Bonds signed by an agent must be accompanied by a certified copy of the authority to act.

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 OWNER.

\* **Contractor's Liability Insurance:** (See ¶SC-5.3 of the Supplementary Conditions)

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, occupational sickness or disease, or death of CONTRACTOR's employees;

5.3.3. Claims for damages because of bodily injury, sickness or disease, or death of any person other than 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 ownership, 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 OWNER 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 OWNER with evidence of continuation of such insurance at final payment and one year thereafter.

**Contractual Liability Insurance:** (See ¶SC-5.4 of the Supplementary Conditions) \*

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.

**Owner's Liability Insurance:** (See ¶SC-5.5 of the Supplementary Conditions) \*

~~5.5. OWNER shall be responsible for purchasing and maintaining OWNER's own liability insurance and, at OWNER's option, may purchase and maintain such insurance as will protect OWNER against claims which may arise from operations under the Contract Documents.~~

**Property Insurance:** (See ¶SC-5.6 thru 5.10 of the Supplementary Conditions) \*

~~5.6. Unless otherwise provided in the Supplementary Conditions, OWNER 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 OWNER, CONTRACTOR, Subcontractors, ENGINEER and ENGINEER's consultants in the Work, all of whom shall be listed as insureds 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.~~

5.7. OWNER 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 OWNER, CONTRACTOR, Subcontractors, ENGINEER AND ENGINEER's consultants in the Work, all of whom shall be listed as insured or additional insured parties.

~~5.8. All the policies of insurance (or the certificates or other evidence thereof) required to be purchased and maintained by OWNER in accordance with paragraphs 5.6 and 5.7 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 CONTRACTOR by certified mail and will contain waiver provisions in accordance with paragraph 5.11.2.~~

~~5.9. OWNER 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.~~

~~5.10. If CONTRACTOR requests in writing that other special insurance be included in the property insurance policy, OWNER shall, if possible, include such insurance, and the cost thereof will be charged to CONTRACTOR by appropriate Change Order or Written Amendment. Prior to commencement of the Work at the site, OWNER shall in writing advise CONTRACTOR whether or not such other insurance has been procured by OWNER.~~

#### *Waiver of Rights:*

5.11.1. OWNER 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 5.6 and 5.7 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 insureds 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 OWNER, CONTRACTOR, ENGINEER, ENGINEER's consultants and all other parties named as insureds. None of the above waivers shall extend to the rights that any of the insured parties may have to the proceeds of insurance held by OWNER as trustee or otherwise payable under any policy so issued.

5.11.2. OWNER and CONTRACTOR intend that any policies provided in response to paragraphs 5.6 and 5.7 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 insureds or additional insureds, and if the insurers require separate waiver forms to be signed by ENGINEER or ENGINEER's consultant OWNER will obtain the same, and if

such waiver forms are required of any Subcontractor, CONTRACTOR will obtain the same.

#### *Receipt and Application of Proceeds:*

5.12. Any insured loss under the policies of insurance required by paragraphs 5.6 and 5.7 will be adjusted with OWNER and made payable to OWNER as trustee for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of paragraph 5.13. OWNER shall deposit in a separate account any money so received, and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof and the Work and the cost thereof covered by an appropriate Change Order or Written Amendment.

5.13. OWNER as trustee shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within fifteen days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as trustee shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If required in writing by any party in interest, OWNER as trustee shall, upon the occurrence of an insured loss, give bond for the proper performance of such duties.

#### *Acceptance of Insurance: (See §5.14 of the Supplementary Conditions) \**

~~5.14. If OWNER has any objection to the coverage afforded by or other provisions of the insurance required to be purchased and maintained by CONTRACTOR in accordance with paragraphs 5.3 and 5.4 on the basis of its not complying with the Contract Documents, OWNER shall notify CONTRACTOR in writing thereof within ten days of the date of delivery of such certificates to OWNER in accordance with paragraph 2.7. If CONTRACTOR has any objection to the coverage afforded by or other provisions of the policies of insurance required to be purchased and maintained by OWNER in accordance with paragraphs 5.6 and 5.7 on the basis of their not complying with the Contract Documents, CONTRACTOR shall notify OWNER in writing thereof within ten days of the date of delivery of such certificates to CONTRACTOR in accordance with paragraph 2.7. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided by each as the other may reasonably request. Failure by OWNER or CONTRACTOR to give any such notice of objection within the time provided shall constitute acceptance of such insurance purchased by the other as complying with the Contract Documents.~~

#### *Partial Utilization—Property Insurance:*

5.15. If OWNER 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, method, 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 OWNER 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 OWNER'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 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 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 provisions of the General Requirements applicable thereto.

### *Substitutes or "Or-Equal" Items:*

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 OWNER 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. OWNER 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 OWNER 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 OWNER and ENGINEER as indicated in paragraph 6.8.2), whether initially or as a substitute, against whom OWNER 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 OWNER in advance of the specified date prior to the Effective Date of the Agreement for acceptance by

OWNER and ENGINEER and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER'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 OWNER or ENGINEER of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of OWNER or ENGINEER to reject defective Work.

6.8.3. (See §SC-6.8.3 of the Supplementary Conditions) \*

6.9. CONTRACTOR shall be fully responsible to OWNER and ENGINEER 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 OWNER or ENGINEER and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations. (See §SC-6.9 of the Supplementary 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 OWNER and ENGINEER and contains waiver provisions as required by paragraph 5.11. 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 5.6 and 5.7.

#### **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 OWNER

or ENGINEER its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by OWNER in the Contract Documents. CONTRACTOR shall indemnify and hold harmless OWNER 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 and arbitration 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. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or if there are no Bids on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto such as plant investment fees. (See §6.13 of the Supplementary Conditions)

**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 OWNER 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 owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against OWNER or ENGINEER by any such owner 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 OWNER 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 and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against OWNER 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 OWNER. 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 com-

pletion of the Work, these record documents, samples and Shop Drawings will be delivered to ENGINEER for OWNER.

**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 owners of adjacent property and of Underground Facilities and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property. 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 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 OWNER 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 OWNER 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 OWNER.

**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 OWNER, 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 Drawing submissions (see paragraph 2.9), or for other appropriate action if so indicated in the Supplementary Conditions, five 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. 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.

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 the 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 OWNER. 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 OWNER may otherwise agree in writing.

**See Paragraph SC-6.30 of the Indemnification: Supplementary Conditions**

6.30. ~~To the fullest extent permitted by Laws and Regulations CONTRACTOR shall indemnify and hold harmless OWNER 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 and arbitration 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.~~

**See Paragraph SC-6.31 of the Supplementary Conditions**

~~6.31. In any and all claims against OWNER 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. OWNER may perform other work related to the Project at the site by OWNER's own forces, have other work performed by utility owners 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; and, if CONTRACTOR believes that such performance will involve additional expense to CONTRACTOR or requires additional time and the parties are unable to agree as to the extent thereof, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

7.2. CONTRACTOR shall afford each utility owner and other contractor who is a party to such a direct contract (or OWNER, if OWNER is performing the additional work with OWNER'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. CON-

TRACTOR 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 the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

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 owner (or OWNER), 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 OWNER 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 OWNER nor ENGINEER shall have any authority or responsibility in respect of such coordination.

ARTICLE 8—OWNER'S RESPONSIBILITIES

8.1. OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.2. In case of termination of the employment of ENGINEER, OWNER shall appoint an engineer against whom CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER. Any dispute in connection with such appointment shall be subject to arbitration.

8.3. OWNER shall furnish the data required of OWNER 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.

8.4. OWNER'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 OWNER's identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and in existing struc-

tures which have been utilized by ENGINEER in preparing the Drawings and Specifications.

8.5. OWNER's responsibilities in respect of purchasing and maintaining liability and property insurance are set forth in paragraphs 5.5 through 5.8.

8.6. OWNER is obligated to execute Change Orders as indicated in paragraph 10.4.

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

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

ARTICLE 9—ENGINEER'S STATUS DURING CONSTRUCTION

*Owner's Representative:*

9.1. ENGINEER will be OWNER's representative during the construction period. The duties and responsibilities and the limitations of authority of ENGINEER as OWNER's representative during construction are set forth in the Contract Documents and shall not be extended without written consent of OWNER 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 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 OWNER a greater degree of confidence that the completed 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 OWNER informed of the progress of the Work and will endeavor to guard OWNER against defects and deficiencies in the Work.

*Project Representation:*

9.3. If OWNER 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 OWNER designates another agent to represent OWNER 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.

9.3.1. (See §SC-9.3.1 of 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 OWNER, 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*, 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.

**Shop Drawings, Change Orders and Payments:**

9.7. In connection with ENGINEER's responsibility for Shop Drawings and samples, see paragraphs 6.23 through 6.29 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.

**Determinations 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 OWNER and CONTRACTOR, unless, within ten days after the date of any such decision, either OWNER 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 of the event giving rise thereto, and written supporting data will be submitted to ENGINEER and the other party within sixty days after such 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 OWNER 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 OWNER 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 Sub-contractor, 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 terms "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 or 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

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10.1. Without invalidating the Agreement and without notice to any surety, OWNER 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 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 OWNER 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 and except in the case of uncovering Work as provided in paragraph 13.9.

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

10.4.1. changes in the Work which are ordered by OWNER 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, 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—CHANGE OF CONTRACT PRICE

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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 OWNER 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 prices to the quantities of the items involved (subject to the provisions of paragraphs 11.9.1. through 11.9.3, 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 OWNER, 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 OWNER 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 OWNER.

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 OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to OWNER, 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 OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to CONTRACTOR and shall deliver such bids to OWNER 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. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys and accountants) employed for services specifically related to the Work.

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 OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, installation, 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.

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 (except losses and damages within the deductible amounts of property insurance established by OWNER in accordance with paragraph 5.9), 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 OWNER. 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 and premiums for property insurance coverage within the limits of the deductible amounts established by OWNER in accordance with paragraph 5.9.

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 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 OWNER 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 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.

~~11.9.3. Where the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement and there is no corresponding adjustment with respect to any other item of Work and if CONTRACTOR believes that CONTRACTOR has incurred additional expense as a result thereof, CONTRACTOR may make a claim for an increase in the Contract Price in accordance with Article 11 if the parties are unable to agree as to the amount of any such increase.~~

\* (See §SC-11.9.3 of the Supplementary Conditions)

#### **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 OWNER 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 OWNER 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 not exclude recovery for damages (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) 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 OWNER and ENGINEER 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. \*See §SC-13.1 of the Supplementary Conditions. \*

##### **Access to Work:**

13.2. ENGINEER and ENGINEER's representatives, other representatives of OWNER, 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.~~ See §SC-13.3 of the Supplementary Conditions. \*

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 OWNER'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 OWNER (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 OWNER 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 observation 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, (including but not limited to fees and charges of engineers, architects, attorneys and other professionals), and OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, may make a claim therefor as provided in Article 11. If, however, such Work is not found to be *defective*, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction; and, if the parties are unable to agree as to the amount or extent

thereof, CONTRACTOR may make a claim therefor as provided in Articles 11 and 12.

#### **Owner 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, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR 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 *nondefective* 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 OWNER and in accordance with OWNER's written instructions, either correct such *defective* Work, or, if it has been rejected by OWNER, remove it from the site and replace it with *nondefective* 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, OWNER 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, OWNER (and, prior to ENGINEER's recommendation of final payment, also ENGINEER) prefers to accept it, OWNER may do so. CONTRACTOR shall bear all direct, indirect and consequential

costs attributable to OWNER's evaluation of and determination to accept such *defective Work* (such costs to be approved by ENGINEER as to reasonableness and to include but not be 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 OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, OWNER 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 OWNER.

***OWNER 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 paragraph 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, OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR's services related thereto, take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees such access to the site as may be necessary to enable OWNER to exercise the rights and remedies under this paragraph. All direct, indirect and consequential costs of OWNER 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 OWNER shall be entitled to an appropriate decrease in the Contract Price, and, if the parties are unable to agree as to the amount thereof, OWNER 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 and arbitration 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 OWNER of OWNER's rights and remedies hereunder.

ARTICLE 14—PAYMENTS TO CONTRACTOR AND COMPLETION

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***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 OWNER 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 OWNER's interest therein, all of which will be satisfactory to OWNER. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

***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 OWNER 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 OWNER, or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application. 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 OWNER to CONTRACTOR.

14.5. ENGINEER's recommendation of any payment requested in an Application for Payment will constitute a

representation by ENGINEER to OWNER, based on ENGINEER's on-site observations of the Work in progress as an experienced and qualified design professional and on ENGINEER's review of the Application for Payment and the accompanying data and schedules that the Work has progressed to the point indicated; that, to the best of ENGINEER's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.10, and to any other qualifications stated in the recommendation); and that CONTRACTOR is entitled to payment of the amount recommended. However, by recommending any such payment ENGINEER will not thereby be deemed to have represented that exhaustive or continuous on-site inspections have been made to check the quality or the quantity of the Work beyond the responsibilities specifically assigned to ENGINEER in the Contract Documents or that there may not be other matters or issues between the parties that might entitle CONTRACTOR to be paid additionally by OWNER or OWNER to withhold payment to CONTRACTOR.

14.6. ENGINEER's recommendation of final payment will constitute an additional representation by ENGINEER to OWNER 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 OWNER. 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 OWNER 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. OWNER 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.

OWNER may refuse to make payment of the full amount recommended by ENGINEER because claims have been made against OWNER 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

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

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

**Partial Utilization:**

14.10. Use by OWNER of any finished part of the Work, which has specifically been identified in the Contract Docu-

ments, or which OWNER, ENGINEER and CONTRACTOR agree constitutes a separately functioning and useable part of the Work that can be used by OWNER 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. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees, CONTRACTOR will certify to OWNER 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 OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of 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. OWNER may at any time request CONTRACTOR in writing to permit OWNER 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 OWNER, 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 the items remaining to be completed or corrected thereon before final payment. If CONTRACTOR does not object in writing to OWNER and ENGINEER that such part of the Work is not ready for separate operation by OWNER, ENGINEER will finalize the list of items to be completed or corrected and will deliver such list to OWNER and CONTRACTOR together with a written recommendation as to the division of responsibilities pending final payment between OWNER 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 OWNER and CONTRACTOR at the time when OWNER 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, OWNER 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 5.15 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 OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or *defective*. CONTRACTOR shall immediately take such measures as are necessary to 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 OWNER) of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by OWNER, 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 OWNER or OWNER'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 OWNER to indemnify OWNER 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 OWNER for payment. Thereupon ENGINEER will give written notice to OWNER 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 OWNER 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 OWNER to CONTRACTOR.

14.14. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment 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 OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 5.1, 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 OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER 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 OWNER 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 OWNER 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 OWNER 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 OWNER other than those previously made in writing and still unsettled.

**ARTICLE 15—SUSPENSION OF WORK AND  
TERMINATION**

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***Owner May Suspend Work:***

15.1. OWNER 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.

***Owner 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;

OWNER 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 OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER 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 and arbitration costs) such excess will be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such costs incurred by OWNER will be approved as to reasonableness by ENGINEER and incorporated in a Change Order, but when exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

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

15.4. Upon seven days' written notice to CONTRACTOR and ENGINEER, OWNER 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 and arbitration 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 OWNER 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 OWNER fails for thirty days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days' written notice to OWNER and ENGINEER, terminate the Agreement and recover from OWNER 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 OWNER has failed to make any payment as aforesaid, CONTRACTOR may upon seven days' written notice to OWNER and ENGINEER stop the Work until payment of all amounts then due. The provisions 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 OWNER.

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## ARTICLE 16—ARBITRATION

16.1. All claims, disputes and other matters in question between OWNER and CONTRACTOR arising out of, or relating to the Contract Documents or the breach thereof (except for claims which have been waived by the making or acceptance of final payment as provided by paragraph 14.16) will be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association then obtaining subject to the limitations of this Article 16. This agreement so to arbitrate and any other agreement or consent to arbitrate entered into in accordance herewith as provided in this Article 16 will be specifically enforceable under the prevailing law of any court having jurisdiction.

16.2. No demand for arbitration of any claim, dispute or other matter that is required to be referred to ENGINEER initially for decision in accordance with paragraph 9.11 will be made until the earlier of (a) the date on which ENGINEER has rendered a decision or (b) the tenth day after the parties have presented their evidence to ENGINEER if a written decision has not been rendered by ENGINEER before that date. No demand for arbitration of any such claim, dispute or other matter will be made later than thirty days after the date on which ENGINEER has rendered a written decision in respect thereof in accordance with paragraph 9.11; and the failure to demand arbitration within said thirty days' period shall result in ENGINEER's decision being final and binding upon OWNER and CONTRACTOR. If ENGINEER renders a decision after arbitration proceedings have been initiated, such decision may be entered as evidence but will not supersede the arbitration proceedings, except where the decision is acceptable to the parties concerned. No demand for arbitration of any written decision of ENGINEER rendered in accordance with paragraph 9.10 will be made later than ten days after the party making such demand has delivered written notice of intention to appeal as provided in paragraph 9.10.

16.3. Notice of the demand for arbitration will be filed in writing with the other party to the Agreement and with the

American Arbitration Association, and a copy will be sent to ENGINEER for information. The demand for arbitration will be made within the thirty-day or ten-day period specified in paragraph 16.2 as applicable, and in all other cases within a reasonable time after the claim, dispute or other matter in question has arisen, and in no event shall any such demand be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statute of limitations.

16.4. No arbitration arising out of or relating to the Contract Documents shall include by consolidation, joinder or in any other manner any other person or entity (including ENGINEER, ENGINEER's agents, employees or consultants) who is not a party to this contract unless:

16.4.1. the inclusion of such other person or entity is necessary if complete relief is to be afforded among those who are already parties to the arbitration,

16.4.2. such other person or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration and which will arise in such proceedings, and

16.4.3. the written consent of the other person or entity sought to be included and of OWNER and CONTRACTOR has been obtained for such inclusion, which consent shall make specific reference to this paragraph; but no such consent shall constitute consent to arbitration of any dispute not specifically described in such consent or to arbitration with any party not specifically identified in such consent.

16.5. The award rendered by the arbitrators will be final, judgment may be entered upon it in any court having jurisdiction thereof, and will not be subject to modification or appeal except to the extent permitted by Sections 10 and 11 of the Federal Arbitration Act (9 U.S.C. §§10,11).

\*(See §SC-16 of the Supplementary Conditions)

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ARTICLE 17—MISCELLANEOUS

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**Giving Notice:**

17.1. 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:**

17.2.1. 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.

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

**General:**

17.3. Should OWNER or CONTRACTOR suffer injury or damage to person or property because of any error, omis-

sion 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 17.3 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

17.4. 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 OWNER 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.

PROJECT: City of Lake Worth 2016 Mechanical Integrity Testing of Class 1 Deep Injection Well IW-1

**00800**  
**SUPPLEMENTARY CONDITIONS**

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (EJCDC No. 1910-8, 1983 edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect. The General Conditions may also be supplemented elsewhere in the Contract Documents.

The terms used in these Supplementary Conditions which are defined in the Standard General Conditions of the Construction Contract (EJCDC No. 1910-8, 1983, edition) have the meanings assigned to them in the General Conditions.

**PART 1 - MODIFICATIONS AND SUPPLEMENTS TO GENERAL CONDITIONS**

SC-1

Add the following to Article 1 - Definitions of the General Conditions:

Bidder -Any individual, partnership, corporation or joint venture submitting a Bid for the Work to be performed.

Resident Project Representative - The Resident Project Representative (RPR) may be assigned to the site or any part thereof on a full time basis or only on a part-time basis. This will be determined by Engineer's Agreement with Owner.

**COMMENCEMENT OF CONTRACT TIME; NOTICE TO PROCEED:**

SC-2.3

Delete the last sentence of paragraph 2.3. of the General Conditions and insert the following in its place:

In no event will the Contract Time commence to run later than the 120th day after the date of the Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier, (unless agreed otherwise by Owner and Contractor in writing).

**BEFORE STARTING CONSTRUCTION:**

SC-2.7

Delete paragraph 2.7. of the General Conditions in its entirety and insert the following in its place:

Before any Work at the site is started, Contractor shall deliver to Owner and Engineer certificates (and other evidence of insurance requested by Owner) which Contractor is required to purchase and maintain in accordance with the Contract Documents.

**PHYSICAL CONDITIONS:**

SC-4.2.1.

Delete paragraphs 4.2.1 and 4.2.2 of the General Conditions in their entirety and insert the following in their place:

4.2.1. Explorations and Reports: Reference is made to Division 1: General Requirements of the Specifications for the 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 any technical data contained in such reports that is specifically referenced in Division 1: General Requirements as technical data that can be relied on by Contractor. Contractor may not rely upon nontechnical data, interpretations or opinions contained therein or upon the completeness thereof for Contractor's purposes. Except as indicated above 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 Division 1: General Requirements of the Specifications for the identification of those drawings and 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 that is specifically referenced in Division 1: General Requirements as technical data that can be relied on by Contractor. Contractor may not rely upon non-technical data contained in such drawings or upon the completeness thereof for Contractor's purposes. Except as indicated above in this paragraph and in paragraph 4.2.6, Contractor shall have full responsibility with respect to physical conditions in or relating to such structures.

**PAYMENT AND PERFORMANCE BONDS**

**SC-5.1**

Add the following after the last sentence of General Condition 5.1:

In accordance with section 255.05(1), Fla. Stat., as amended from time to time, before commencing the Work or before recommencing the Work after a default or abandonment, the Contractor shall execute and record in the public records of Palm Beach County a payment and performance bond with a surety insurer authorized to do business in the State of Florida, and the Contractor shall be required to provide to the Owner a certified copy of the recorded bond. The Owner may not make a payment to the Contractor until the Contractor has complied with section 255.05(1)(b), Fla. Stat.

**CONTRACTOR'S LIABILITY INSURANCE:**

**SC-5.3.**

The limits of liability for the insurance required by paragraph 5.3 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

5.3.1. and 5.3.2. Worker's Compensation, etc. under paragraphs 5.3.1 and 5.3.2 of the General Conditions:

- |  |                     |
|--|---------------------|
| (1) State:   | Statutory           |
| (2) Applicable Federal (e.g. Longshoreman's and Harbour Workers' Compensation, Maritime, Jones Act, etc.): | Statutory           |
| (3) Employer's Liability:  | <u>\$ 1,000,000</u> |

5.3.3, 5.3.4, 5.3.5, 5.3.6. Comprehensive General Liability (under paragraphs 5.3.3 through 5.3.6 of the General Conditions):

- |  |                     |
|--|---------------------|
| (1) Bodily Injury (including completed operations and products liability): |                     |
| <u>\$ 1,000,000</u>  | Each Occurrence     |
| <u>\$ 3,000,000</u>  | Annual Aggregate    |
| Property Damage:   |                     |
| <u>\$ 1,000,000</u>  | Each Occurrence     |
| <u>\$ 1,000,000</u>  | Annual Aggregate    |
| or a combined single limit of  | <u>\$ 1,000,000</u> |

(2) Property Damage liability insurance will provide Explosion, Collapse and Underground coverage where applicable.

(3) Personal Injury, with employee exclusion deleted  
\$ 1,000,000 Annual Aggregate

5.3.7. Comprehensive Automobile Liability:

Bodily Injury:  
\$ 500,000 Each Person  
\$ 1,000,000 Each Occurrence

Property Damage:  
\$ 500,000 Each Occurrence  
or a combined single limit of \$ 1,000,000

Add new paragraphs immediately after paragraph 5.3.7 of the General Conditions which are to read as follows:

5.3.8. Umbrella Excess Liability Insurance:

(1) \$ 1,000,000 Each Occurrence  
\$ 1,000,000 Annual Aggregate

(2) The umbrella coverage shall be Following-Form being no more restrictive than coverage required for the underlying policies.

5.3.9. The comprehensive general liability insurance and umbrella insurance required under paragraph 5.3 and SC-5.3, and the contractual liability insurance required under SC-5.4, of the General Conditions shall include Owner and Engineer as additional insureds.

5.3.10 Prior to beginning work, Contractor shall provide Owner and Engineer with its Certificates of Insurance and endorsements naming Owner and Engineer as additional insureds in accordance with the requirements of the Contract Documents.

CONTRACTUAL LIABILITY INSURANCE:

SC-5.4.

The Contractual Liability Insurance required by paragraphs 5.4 of the General Conditions shall provide coverage for not less than the following amounts:

5.4.1. Bodily Injury:  
\$ 1,000,000 Each Occurrence

5.4.2. Property Damage:  
\$ 1,000,000 Each Occurrence  
\$ 3,000,000 Annual Aggregate

OWNER'S LIABILITY INSURANCE:

SC-5.5.

Delete paragraph 5.5 of the General Conditions in its entirety.

PROPERTY INSURANCE:

SC-5.6.

Delete paragraph 5.6 of the General Conditions in its entirety and insert the following in its place:

Contractor shall purchase and maintain on Projects with above ground structures, property insurance upon the Work at the site to the full insurable value thereof (subject to deductible amounts as may be provided in these Supplementary Conditions or required by Laws and Regulations). This insurance shall include the interests of Owner, Contractor, Subcontractors and Engineer in the Work (all of whom shall be listed as insured 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 these 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 these 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. The policies of insurance required to be purchased and maintained by Contractor in accordance with this paragraph 5.6 shall comply with the requirements of SC-5.8 and SC-5.9.

5.6.1. For all other Projects and portions of Projects not classified as above ground structures, Contractor shall add to the property insurance and/or maintain an Installation Floater with aggregate coverage of the total value of the Work.

5.6.2. When the Work includes the handling and installation of Owner furnished equipment, Contractor shall add to Property insurance or Installation Floater the amount of \$ N/A which is the total value of the Owner furnished items.

#### SC-5.7.

Delete paragraph 5.7 of the General Conditions in its entirety and insert the following in its place:

5.7. Contractor shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by these Supplementary Conditions or Laws and Regulations which shall include the interests of Owner, Contractor, Subcontractors and Engineer in the Work, all of whom shall be listed as insured or additional insured parties.

5.7.1. Boiler and Machinery Policy Required. (None required by Owner this Project)

5.7.2. Additional Property Insurance Required. (None required by Owner this Project)

#### SC-5.8.

Delete paragraph 5.8 of the General Conditions in its entirety and insert the following in its place:

5.8. All policies of insurance (or the certificates or other evidence thereof) required to be purchased and maintained by Contractor in accordance with paragraphs 5.3 through 5.10 shall contain the following provision or endorsements:

5.8.1. The Owner shall be the trustee of all monies received as an insured loss and shall be so named.

5.8.2. That the coverage afforded will not be cancelled or materially changed or renewal refused until at least ten days' prior written notice of cancellation for nonpayment of premium, and thirty days prior written notice for other cancellations or material changes have been given to Owner and Engineer by certified mail and shall contain waiver provisions in accordance with paragraph 5.11.2.

#### SC-5.9.

Delete paragraph 5.9 of the General Conditions in its entirety and insert the following in its place:

5.9. The maximum deductible amount for the insurance provided in response to paragraphs SC-5.6 and SC-5.7 shall be \$ 5,000.00. The risk of loss within the deductible amount shall 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.

SC-5.10.

Delete paragraph 5.10 of the General Conditions in its entirety.

ACCEPTANCE OF INSURANCE:

SC-5.14.

Delete paragraph 5.14 of the General Conditions in its entirety and insert the following in its place:

5.14. Owner shall review the coverage afforded by or other provisions of the insurance required to be purchased and maintained by Contractor after delivery of insurance certificates to Owner in accordance with paragraph 2.7 of the General Conditions. Contractor shall furnish to the Owner such additional information in respect of insurance provided by Contractor as the Owner may reasonably request.

5.14.1. Review of Insurance Policies or Insurance Certificates by the Owner shall not relieve or decrease the liability of the Contractor hereunder.

5.14.2. In case of the breach by Contractor of any insurance provision stated in the Contract Documents, the Owner, at his option, may take out and maintain, at the expense of the Contractor, such insurance as the Owner may deem proper and Owner may deduct the cost of such insurance from any monies which may be due or become due the Contractor under this Contract.

5.14.3. All the policies of insurance (or the certificates or other evidence thereof) required to be purchased and maintained by Contractor shall contain the name of the Project.

CONCERNING SUBCONTRACTORS, SUPPLIERS AND OTHERS:

SC-6.8.3.

Add the following paragraph to the General Conditions:

6.8.3. If the Bid Form or Specifications require (or if requested by Owner prior to the Notice of Award) the apparent Successful Bidder and any other Bidder so requested, shall submit a list of all Subcontractors, Suppliers and other persons or organizations (including those who are to furnish the principal items of material and equipment) in accordance with requirements of paragraph 10. of the Instructions to Bidders and Article 6.8.2. of the General Conditions.

SC-6.9.

Add the following language at the end of paragraph 6.9 of the General Conditions:

Owner or Engineer may furnish to any such Subcontractor, Supplier or other person or organization, to the extent practicable, evidence of amounts paid to Contractor in accordance with Contractor's Applications for Payment.

SC-6.13

When the Owner is a public agency, add the following at the end of paragraph 6.13 of the General Conditions:

Contractor shall obtain and pay for the following permits:

1. City of Lake Worth Building Permit. Include in the bid amount a 3-percent permit fee based on the bid cost. This permit fee amount will be adjusted based on the actual fee charged and the difference credited as applicable.
2. Any other permits as applicable.

## INDEMNIFICATION

### SC-6.30

Delete paragraph 6.30 of the General Conditions in its entirety and insert the following in its place:

Contractor shall indemnify and hold harmless Owner and Engineer and their respective officers, and employees for liabilities, damages, losses, and costs, including but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the Contractor and persons employed or utilized by the Contractor in the performance of the construction contract.

### SC-6.31

Delete paragraph 6.31 of the General Conditions in its entirety.

## PROJECT REPRESENTATION:

### SC-9.3.1.

Add the following paragraph to the General Conditions:

9.3.1. If the Engineer furnishes a Resident Project Representative as per Article 9.3. of the General Conditions, the duties, etc. of the representative shall be as provided in the LISTING OF THE DUTIES, RESPONSIBILITIES AND LIMITATIONS OF AUTHORITY OF THE RESIDENT PROJECT REPRESENTATIVE as included in the Project Manual. If Owner designates another agent to represent Owner at the site who is not Engineer's agent or employee, the duties, responsibilities and limitations of authority of such other agent will be as presented at the Preconstruction Conference.

## REJECTING DEFECTIVE WORK

### SC-9.6

Add the following after the last sentence of General Condition 9.6:

ENGINEER will also have authority to disapprove or reject Work which ENGINEER believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

## UNIT PRICE WORK

### SC-11.9.3.

Delete paragraph 11.9.3 of the General Conditions in its entirety and substitute the following in its place:

11.9.3. Contractor may not make a claim for additional expenses incurred as a result of a difference between final quantity of any item(s) of Unit Price Work and the estimated quantity of such item(s) in the Contract Documents, unless specifically allowed in the Bid Form. Any adjustments specifically allowed shall be made in accordance with directions in the Bid Form.

## WARRANTY AND GUARANTEE:

### SC-13.1.

Change the second sentence of paragraph 13.1 of the General Conditions to read as follows:

Prompt notice of all observed defects shall be given to the Contractor.

## TESTS AND INSPECTIONS:

### SC-13.3.

Delete paragraph 13.3 of the General Conditions in its entirety and insert the following in its place:

Contractor shall give twenty-four hour notice to Engineer for all required inspections, tests or approvals, except as otherwise provided.

## ONE YEAR COLLECTION PERIOD

### SC-13.12

Add the following after the last sentence of General Condition 13.12:

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

## FINAL PAYMENT AND ACCEPTANCE

### SC-14.13

Replace the last sentence of General Condition 14.13 with the following:

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

## TERMINATION OF AGREEMENT

### SC-15.4

Remove General Condition 15.4 in its entirety and replace with the following:

The Owner may terminate this contract for convenience upon providing Contractor fourteen (14) days written notice of the same. If this Contract is terminated as provided herein, the Contractor shall be paid for all completed and acceptable work executed and allowable expenses incurred prior to the date of termination. Payment shall include services actually performed in full prior to termination date, but shall exclude all lost profits, direct, indirect, consequential, special damages, or other damages for the remainder of the project.

If a court of competent jurisdiction finds that the Owner wrongfully terminated this Contract, then in such event, this Contract shall be deemed terminated for convenience as provided for in this paragraph, and the Contractor shall not be entitled to damages or loss of profits, but may be entitled to all items as authorized herein.

SC-16.

Delete Article 16-ARBITRATION of the General Conditions in its entirety.

#### MISCELLANEOUS PROVISIONS

SC-18

Add Article 18 as follows:

SC-18.1

Controlling Law and Venue.

This Contract is to be governed by the laws of the State of Florida. The venue for any and all legal action necessary to enforce the Contract Documents will be in Palm Beach County, Florida.

SC-18.2

Headings.

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

SC-18.3

Inspector General.

In accordance with Palm Beach County ordinance number 2011-009, the Contract Documents may be subject to investigation and/or audit by the Palm Beach County Inspector General. Contractor should review Palm Beach County ordinance number 2011-009 in order to be aware of its rights and/or obligations under such ordinance and as applicable.

SC-18.4

Enforcement Costs.

If any legal action or other proceeding is brought for the enforcement of the Contract Documents, or because of an alleged dispute, breach, default or misrepresentation in connection with any provisions of the Contract Documents, the parties agree that each party shall be responsible for its own attorney's fees.

SC-18.5

Waiver.

Failure of either party to enforce or exercise any right(s) under the Contract Documents shall not be deemed a waiver of either party's right to enforce or exercise said right(s) at any time thereafter.

SC-18.6

Jury Trial.

**TO ENCOURAGE PROMPT AND EQUITABLE RESOLUTION OF ANY LITIGATION, EACH PARTY HEREBY WAIVES ITS RIGHTS TO A TRIAL BY JURY IN ANY LITIGATION RELATED TO THE CONTRACT DOCUMENTS.**

SC-18.7

Independent Contractor.

The Contractor is, and shall be, in the performance of all services under this Contract, an Independent Contractor, and not an employee, agent, or servant of the Owner. All persons engaged in any of the services performed pursuant to this Contract shall at all times, and in all places, be subject to the Contractor's sole direction, supervision, and control. The Contractor shall exercise control over the means and manner in which it and its employees perform the services.

SC-18.8

Access and Audits.

The Contractor shall maintain adequate records to justify all charges, expenses, and costs incurred in estimating and performing the Work for at least five (5) years after final payment is made. The Owner shall have access to such books, records, and documents as required in this section for the purpose of inspection or audit during normal business hours, at the Contractor's place of business. In no circumstances will Contractor be required to disclose any confidential or proprietary information regarding its products and service costs.

SC-18.9

Time.

Time is of the essence in all respects under the Contract Documents.

SC-18.10

Preparation. This Contract shall not be construed more strongly against either party regardless of who was more responsible for its preparation.

SC-18.11

Representation and Binding Authority.

Contractor's representative below has full power, authority and legal right to execute and deliver these Contract Documents and perform all of its obligations under the Contract Documents. By signing the Contract Documents, the representative hereby represents to the Owner that he/she has the authority and full legal power to execute the Contract Documents and any and all documents necessary to effectuate and implement the terms of the Contract Documents on behalf of the party for whom he or she is signing and to bind and obligate such party with respect to all provisions contained in the Contract Documents.

NO DAMAGES FOR DELAY

SC-19

NO CLAIM FOR DAMAGES OR ANY CLAIM OTHER THAN FOR AN EXTENSION OF TIME SHALL BE MADE OR ASSERTED AGAINST OWNER BY REASON OF ANY DELAYS. Contractor shall not be entitled to an increase in the Contract Price or payment or compensation of any kind from Owner for direct, indirect, consequential, impact or other costs, expenses, or damages, including, but not limited to, costs of acceleration or inefficiency, arising because of delay, disruption, interference, or hindrance be reasonable or unreasonable, foreseeable, or avoidable or unavoidable. Contractor shall be entitled only to extensions of the Contract Time as the sole and exclusive remedy for such resulting delays, in accordance with and to the extent specifically provided herein.

## **PART 2 - ADDITIONAL SUPPLEMENTARY CONDITIONS**

### **1. ATTACHMENTS:**

The following forms included in the Project Manual shall be used by Contractor for submittals required by the Contract Documents (unless Owner accepts other form):

- a. Construction Performance Bond (00610).
- b. Construction Payment Bond (00620).
- c. Notice of Compliance with Chapter 556, Florida Statutes (00630).
- d. Contractor's Affidavit to Owner (00670).
- e. Form of Application for Payment (00680).
- f. This space left blank intentionally.

### **2. DESIGN PROFESSIONALS REPRESENTING OWNER AND/OR ENGINEER AND DIVISION OF RESPONSIBILITIES**

- a. Various Design Professionals (i.e. Civil, Structural, Mechanical, Electrical, Groundwater Hydrology, Environmental, Landscape Architect, Architect, etc.) as consultants to Owner and/or Engineer, prepared or assisted in the preparation of Drawings and Specifications for the Project. The Owner and/or Engineer may have the various Design Professionals provide services during construction phase of the Project. The Design Professionals will be representatives of the Owner and/or Engineer. Visits to the site by the Design Professionals will be on the basis of General Conditions Paragraph 9.2, VISITS TO SITE. Also General Conditions Paragraphs 9.13 through 9.16, LIMITATIONS ON ENGINEER'S RESPONSIBILITIES includes the various Design Professionals for this Project.
- b. Communication to and from the various Design Professionals will be coordinated through the Engineer.

END OF SECTION

**00820  
SPECIAL CONDITIONS**

**CITY OF LAKE WORTH PURCHASING DEPARTMENT REQUIREMENTS**

**SPC-1 APPROVAL OF ACCOUNTING SYSTEM**

Except with respect to firm fixed-price contracts, no contract type shall be used unless the Purchasing Manager has determined in writing that:

- 1) The proposed contractor's accounting system will permit timely development of all necessary cost data in the form required by the specific contract type contemplated; and
- 2) The proposed contractor's accounting system is adequate to allocate costs in accordance with generally accepted cost accounting principles.

**SPC-2 RIGHT TO INSPECT PLANT**

The City may, at reasonable times, inspect any part of the plant, place of business, or work site of a contractor or subcontractor which is pertinent to the performance of any contract awarded or to be awarded by the City.

**SPC-3 RIGHT TO AUDIT RECORDS**

- 1) **Audit of Cost or Pricing Data:** The City may, at reasonable times and places audit the books, documents, papers and records of any contractor who has submitted cost or pricing data to the extent that such books, documents, papers and records are pertinent to such cost or pricing data. Any person who receives a contract, change order or contract modifications for which cost or pricing data is required, shall maintain such books, documents, papers and records that pertinent to such costs or pricing data for three (3) years from the date of the final payment under the contract.
- 2) **Contract Audit:** The City shall be entitled to audit the books, documents, papers and records of a contractor or a subcontractor at any tier under any negotiated contract or subcontract other than a firm fixed-price contract to the extent that such books, documents, papers and records are pertinent to the performance of such contract or subcontract. Such books, documents, papers and records shall be maintained by the contractor for a period of three (3) years from the date of final payment under the prime contract and by the subcontractor for a period of three (3) years from the date of final payment under the subcontract.
- 3) **Contractor Records:** If a contract is being funded in whole or in part by assistance from a federal agency, then the contract shall include provisions:
  - A) Requiring the contractor and subcontractor at any tier to maintain for three (3) years from the date of final payment under the contract all

books, documents, papers and records pertinent to the contract; and

- B) Requiring the contractor and subcontractor at any tier to provide to the City, the federal grantor agency, the Comptroller General of the United States, or any of their duly authorized representatives access to such books, documents, papers and records for the purposes of examining, Auditing and copying them.

#### **SPC-4 LOCAL VENDOR PREFERENCE**

In the event the lowest responsive, responsible bidder or the highest ranked responsive, responsible proposer in the procurement of goods, services or construction is a non-LOCAL business, then all bids and or proposals from responsive, responsible LOCAL businesses to the same solicitation shall be adjusted by five (5) percent, solely for the purpose of determining bid/contract award. The bid price of LOCAL bidders will be adjusted downward by five (5) percent for purposes of ranking of bidders.

In no event, shall the application of this adjustment to a responsive quote or bid change the actual bid amount. Further, it will not cause the City to pay more than \$15,000 above the amount bid by that non-local vendor, which would have been recommended for award if the local vendor preference had not been applied.

If the application of the five-percent local vendor preference causes the *evaluated local vendor price* to be less than the actual low-bid price, but the actual bid price of the local vendor is more than \$15,000 higher than the actual low-bid price of a non-local vendor, then the non-local vendor submitting the actual low-bid, shall be viewed as the low-bidder, and be recommended for award, unless for reasons other than price, the bid is not found to be responsive and/or responsible.

The determination as to whether a bidder or proposer is a local or non-local business shall be made by the Purchasing Division, after confirming the vendor has a valid business tax receipt and certificate of occupancy, as reflected within the Business Master File of the city's ERP system. The bidder or proposer does not have to be a current vendor to the City (City as a customer) at the time of bidding/proposing, but must have been issued a business tax receipt applicable to the goods/services/ construction being requested, PRIOR to the due date/time for bids/proposals. Prior to making an award through the application of the local vendor preference, city staff may require a bidder or proposer to provide additional information at any time prior to the award.

A *LOCAL business*, for the purposes of the application of a local vendor preference, means a bidder or proposer which has a permanent, physical place of business within the city limits, and a valid business tax receipt applicable to the required goods, services, or construction items being procured. Post office boxes or locations at a postal service center are not verifiable and shall not be used for the purpose of establishing said physical address. If the business is a joint venture/partnership, it is sufficient for qualification as a LOCAL business if at least one party of the joint venture/partnership meets the test set forth in this Section.

*Non-LOCAL business* means a bidder or proposer which is not a LOCAL business as defined herein.

*Permanent place of business* means headquarters which are located within the city limits or a permanent office or other site located within the city limits from which a bidder or proposer will produce a substantial portion of the goods or perform a substantial portion of the services to be purchased. A post office box or location at a postal service center shall not constitute a permanent place of business.

#### **SPC-5 CONTRACTOR'S START OF WORK & CHANGE OF SCOPE**

- 1) The Contractor shall not perform work without a Purchase Order.
- 2) The Contractor shall not work out of scope without a signed, issued change order to the purchase order, authorizing the additional work and any change to the period of performance (Construction Contract Time).

#### **SPC-6 APPROPRIATION OF FUNDS**

This project is subject to approval and appropriation of funds by the City of Lake Worth Commission.

#### **SPC-7 BUILDING PERMIT FEE**

A building permit fee equal to 3-percent of the accepted bid shall be included in the project costs. See Supplemental Conditions paragraph SC-6.13 for further details.

#### **SPC-8 APPRENTICESHIP PROGRAM REQUIREMENTS**

- A. It is the policy of the City that contractors shall be required to comply with the Apprenticeship Program of the City as follows:
  - (1) On City-funded construction projects which exceed One Hundred Thousand Dollars (\$100,000.00), twenty percent (20%) of laborers working specialties for which there are apprentice programs registered with the City shall be apprentices. Such apprentices shall be students in certified State of Florida Pre-Apprenticeship/Apprenticeship programs which are located in the City, and, if such percentage of apprentices of such programs are not located in the City, then such programs may be located in Palm Beach County.
  - (2) A City registered apprenticeship program is one which has registered with the City and provided the required documentation, including but not limited to, proof of certification as an apprenticeship program with the State of Florida and proof of having educational facilities physically located in the City or Palm Beach County.
  - (3) Unless the apprenticeship requirement is waived by the City, the failure of a Contractor to demonstrate compliance with this requirement shall result in the Contractor's bid being deemed nonresponsive.

- (4) The apprentice requirement may be waived or modified by the City's Office of Management and Budget Manager, with approval by the City Manager, and appeal to the City Commission.
  - (a). Upon request of the Contractor, if the Contractor demonstrates that the required apprentices are not available despite a good faith effort on the Contractor's part; or
  - (b) Upon request of the Contractor, if the Contractor demonstrates that the available apprentices are not sufficient to meet the required 20% and the Contractor commits to utilizing a specific percentage of apprentices who are available; or
  - (c) If the City determines it is in the best interests of the City to waive such requirements based on potential savings of money and time or grant requirements.
- (5) The agreed upon percentage and type of apprentices will be included as a requirement of the construction contract. Failure to meet the terms of the apprenticeship requirement may result in the Contractor being found in breach of the contract and subject to possible monetary sanctions.

## SECTION 01010

### SUMMARY OF WORK

#### 1.01 LOCATION OF WORK:

- A. All of the work of this Contract is located at the Lake Worth Water Treatment Plant, located at 301 College St. Lake Worth, FL 33461.

#### 1.02 PROJECT DESCRIPTION

- A. Furnish all labor, materials equipment and incidentals required to perform Mechanical Integrity Testing of 11.75-inch diameter (nominal O.D.) Class 1 Deep Injection Well at the Lake Worth Water Treatment Plant.
- B. The Contractor shall perform the work complete, in place, perform tests where applicable, and ready for continuous services, and shall include repairs, replacements, and restoration required as a result of damages caused during this construction.
- C. The Contractor shall furnish and install all materials, equipment, and labor, which is reasonably and properly inferable and necessary, for the proper completion of the Work, whether specifically indicated in the Contract Documents or not.

#### 1.03 REFERENCES:

- A. Whenever reference is made to the furnishing of materials or testing thereof to conform to the standards of any technical society, organization or body, it shall be construed to mean the latest standard, code, specifications or tentative specifications adopted and published at the date of advertisement for bids, even though reference has been made to an earlier standard. The following list of specifications is hereby made a part of the Contract, the same as if herein repeated in full. In the event of any conflict between any of these specifications, standards, codes or tentative specifications, and the specifications, the latter shall govern. In the event that one of the following conflict with another, the decision as to which shall govern will be decided by the Engineer-of-Record, whose judgement will be final.
- B. When no reference is made to a code, standard, or specification, the standard specifications of ASTM (American Society of Testing Materials), ANSI (American National Standard Institute), ASME (American Society of Mechanical Engineers), IEEE (Institute of Electrical and Electronics Engineers, Inc.), NEMA (National Electrical Manufacturers Association) shall govern.

#### 1.04 GENERAL DESCRIPTION OF CONTRACT

- A. Video surveys of injection well of approximately 3,300 feet depth.
- B. Geophysical logging of injection well including:
  - 1. Caliper and temperature logging
  - 2. Radioactive tracer survey
- C. Pressure testing of injection well final casing.

1.05 CONTRACTOR'S USE OF PREMISES

- A. CONTRACTOR shall have complete and exclusive use of premises for the performance of his work.
- B. CONTRACTOR shall assume full responsibility for security of all his and his Subcontractors' materials and equipment stored on the site.
- C. If directed by the OWNER or ENGINEER, the CONTRACTOR shall move any stored items which interfere with operations of OWNER or other Contractors.
- D. Obtain and pay for use of additional storage or work areas if needed to perform the work.

END OF SECTION

SECTION 01011

**SPECIAL PROJECT PROCEDURES**

**PART 1 GENERAL**

1.01 TRAFFIC CONTROL:

- A. Method of traffic control while performing the work within roadways shall be coordinated by the Contractor with the City and Palm Beach County Engineering, and approved by the Engineer-of-Record and appropriate governmental agencies prior to performing work.

1.02 EXISTING UTILITY AND STRUCTURES PROTECTION:

- A. Existing utilities and facilities shall be located prior to commencement of each task.
- B. It shall be the Contractor's responsibility to contact utility companies and call SUNSHINE at (800) 432-4770 at least 48 hours before starting construction so maintenance personnel can locate and protect facilities, if required by the utility company.
- C. The Contractor will video the existing surface conditions of the entire vicinity before and after each task and when project is complete. The Contractor will be responsible for any repairs required as a result of construction in performance of this Contract. **The Contractor will submit three (3) copies of the video in DVD format to the Engineer-of-Record prior to starting construction.**
- D. Contractor shall give written notification of construction (one week minimum) to all residents (commercial or residential) in the vicinity of the construction.

1.03 SALVAGED MATERIAL:

- A. Any existing equipment or material which is removed or replaced as a result of construction under this project may be designated as salvage by the City and if so shall be removed, cleaned, and delivered to the site in a protected place specified by the City. Any equipment or material not worthy of salvaging, as directed by the City, shall be disposed of by the Contractor at a suitable location. Upon request of the Engineer, Contractor shall submit evidence of proper disposal.

1.04 RECORD DOCUMENTS:

- A. The Contractor shall maintain on site one set of the following record documents for use to record actual revision to the Work:
  - a. Construction Drawings
  - b. Specifications
  - c. Addenda
  - d. Change Orders and other modifications to the Contract
  - e. Approved Shop Drawings, product data, and samples
- B. The Contractor shall provide record drawings for partial releases and final release submittals. With each submittal provide survey data, signed and sealed by the Contractor's Surveyor, to support elevation information depicted on the record drawings.
- C. The record drawings shall correctly and accurately show all changes made during construction from the Contract Documents and shall reflect surveyed information which shall be performed, signed and sealed by a professional land surveyor registered in the State of Florida. The drawings shall be neat and legible. All elevations shall be based on State Plane Coordinates NGVD-29 Datum. Record Drawings, at the minimum shall show the following information:

1. Piping - Record drawings shall show the following field information:
  - a. Materials used to construct lines, including invert elevations.
  - b. Station, offset, and top of pipe and roadway elevation at 100 foot intervals, at each change of grade, valves, fittings, and at the point of utility crossings. Show all variations in required cover over pipe.
  - c. Station and offset of water services, valves, fittings, hydrants, terminal ends, blow-off points, sampling points, etc.
  - d. Station, offset, and length of all sleeves and casing pipes.
  - e. Detailed sketch for each tie-in point, and utility crossings.
  - f. Location and/or clearances of utilities (gas main, electrical and communication conduits, telephone conduit/duct bank, tv cables, etc.) and miscellaneous structures crossed or otherwise exposed during construction.
2. Structures - Record drawings shall show the following information:
  - a. Station, offset, top of grate, and invert elevation of structures including structure dimensions and wall thickness.
  - b. Influent and effluent pipe inverts.

- D. Upon completion of the project, final record drawings will be provided to the City on CD-Rom, Autocad Release 2013 DWG format, along with one set of blueprint, and one set mylar, signed and sealed by a professional Land Surveyor registered in the state of Florida.
- E. Engineer-of-Record/Owner (City) reserves the right to review Contractor's As-Built drawings during course of construction.
- F. Final pay and connections to any existing utility main will not be approved until Record Drawings are approved and accepted by Engineer-of-Record/Owner (City).

1.05 INSPECTION FEES:

- A. Contractor shall be responsible for all inspection fees incurred by regulatory/governmental agencies.

1.06 PROVISION FOR THE CONTROL OF DUST:

- A. Extreme precautions shall be taken during construction to minimize the amount of dust created. Wetting down the site may be required or directed by the City to prevent dust as a result of vehicular traffic.

1.07 SPECIAL CONSIDERATIONS:

- A. All work under this contract shall be performed with minimal interruption of operation to the existing facility. Where it is necessary to make connection to or changes in existing facilities, the required interruption shall be kept to a minimum as allowed by the City.

1.08 PROJECT SCHEDULE AND ORDER OF WORK

- A. The CONTRACTOR'S attention is drawn to the fact that much of this work is required under Florida Department of Environmental Protection permit requirements. The mechanical integrity testing report is due for submittal to FDEP as follows:

<u>Well No.</u>	<u>Pressure Test Due Date</u>	<u>Engineer's MIT Report Due Date to FDEP</u>
1W	January 18, 2016	April 17, 2016

- B. It is imperative that all pressure tests are completed on or before the dates listed above. As such, the order of work, schedule and timetable for performing the work, and methodology is

subject to the FDEP's conditions and approval. CONTRACTOR shall submit Mechanical Integrity Testing Results within 30 days of completion of testing for the well. Under no circumstance shall testing results be submitted later than February 17, 2016.

- C. The planned chronological order of the testing will be conducted as follows:
  - 1. Video Survey
  - 2. Caliper Log
  - 3. Pressure Testing
  - 4. Temperature Log
  - 5. Background Gamma Log
  - 6. Radioactive Tracer Survey
  
- D. At the geophysical logging operator's option, the Temperature Log may be conducted at the same time as the Background Gamma Log.

#### 1.09 DISPOSAL OF FLUIDS

- A. At no time during the course of the work shall any fluids, including testing water and plant effluent, be released onto the ground or into the canal system. The CONTRACTOR shall take precautions to ensure that effluent flow and all other liquids are properly handled and disposed at all times.

#### 1.10 WORK REQUIREMENTS

- A. The CONTRACTOR shall be aware that these specifications are intended to outline that work which may be required to meet the intent of the project to test and successfully rehabilitate the deep wells and monitor tubes. Not all of the work specified herein included in the Schedule of Prices will necessarily be required. The actual course of work shall be determined by the ENGINEER, in conjunction with the OWNER and the CONTRACTOR, as required to meet the intent of the project.

#### 1.11 MAINTENANCE OF EXISTING WASTEWATER FACILITIES OPERATION

- A. The CONTRACTOR shall take notice that existing wastewater facilities are operated in the construction area.
  
- B. The CONTRACTOR shall fully cooperate at all times with the OWNER in order to maintain the operation of the existing facilities with the least amount of interference and interruption possible. Continuous service, public health and safety considerations shall exceed all others and the CONTRACTOR's schedule, plans and work shall at all times be subject to alteration and revision if necessary for above considerations.
  
- C. The ENGINEER and OWNER reserve the right to require the CONTRACTOR to work 24 hours per day in all cases where, in their opinion, interference with operation of the system may result.
  
- D. In no case will the CONTRACTOR be permitted to interfere with the existing system until all materials, supplies, equipment, tools and incidentals necessary to complete the interfering portion of the work are on the site.

1.12 SITE RESTORATION

- A. The CONTRACTOR shall remove all excess material and shall clean up and restore the site to its original condition or better. All damage, as a result of work under this Contract, done to existing structures, piping, equipment, instrumentation, pavement, paved areas, sidewalks, shrubbery, grass, trees, utility poles, fences, utility pipelines, conduits, drains, catch basins, and including all obstructions not specifically named herein, shall be repaired.

1.13 MINIMUM REQUIREMENTS TO PERFORM WORK

- A. CONTRACTOR must list five (5) references in the last five (5) years in which they have performed similar MIT testing for a waste water treatment plant of similar size and flow capacity. **Failure to submit a minimum of five references shall be cause to determine bid "NON-RESPONSIVE".**

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

END OF SECTION

SECTION 01019

**GENERAL REQUIREMENTS**

1.01 EXISTING UTILITIES AND STRUCTURES:

- A. The existing utilities and facilities shown, have been located from the Owner's and other records. Guaranties are not made that all existing facilities are shown or that those shown are entirely accurate. The Contractor shall assure himself of any utilities, structures, or facilities prior to performing any Work. Prior to the start of Work, the Contractor will request the Owner to advise him of the location of their facilities in the vicinity and will notify the Engineer of any deviation between existing conditions and the drawings. The Contractor will assume liability for damages sustained or costs incurred because of his operations in the vicinity of existing utilities or structures. The Contractor shall be solely responsible for the protection and maintenance of existing utilities to provide uninterrupted service to commercial and residential customers.

1.02 PRESERVING WATER QUALITY:

- A. The Contractor shall exercise extreme care to minimize degradation of water quality at the site. All necessary provisions shall be taken to insure compliance with the water quality standards of the State of Florida.
- B. The Contractor shall take steps to collect and dispose of all sewage that leaks and/or spills during the performance of this contract. Any leakage or spillage shall be cleaned up to the satisfaction of the Department of Environmental Protection.

1.03 PROTECTION OF EXISTING AND ADJACENT PROPERTIES:

- A. Unless indicated otherwise, all shrubbery, paved streets and walks, fences and walls, adjacent structures and equipment shall be fully protected against damage during each stage of the project. Any damage by the Contractor will be fully restored to the original condition.

1.04 RESTORATION OF DAMAGED SURFACES, STRUCTURES, AND PROPERTY:

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

1.05 SUBSTITUTIONS:

- A. For substitution of products in place of those specified, bidder must submit shop drawings and technical data at least ten (10) calendar days prior to the Bid Opening date to substantiate "an approved equal" by the City, except specified items followed by the words "no substitution".
- B. Submit five copies of request for substitution. Include in request:
  - 1. Complete data substantiating compliance of proposed substitution with Contract Documents.
  - 2. For Products:
    - a. Product identification, including manufacturer's name and address.
    - b. Manufacturer's literature:

- (1) Product description.
  - (2) Performance and test data.
  - (3) Reference standards.
  - c. Samples.
  - d. Name and address of similar projects on which product was used, and date of installation.
- 3. For construction methods:
    - a. Detailed description of proposed method.
    - b. Drawings illustrating methods.
  - 4. Itemized comparison of proposed substitution with product or method specified.
  - 5. Data relating to changes in construction schedule.
  - 6. Relation to separate contracts.
  - 7. Accurate cost data on proposed substitution in comparison with product or method specified.

1.06 CONSTRUCTION WATER:

- A. The Contractor will be responsible for making application to the City for hydrant meters with backflow preventers. The City will install necessary connections and backflow preventers at locations needed by the Contractor and approved by the Engineer. Maintenance of such is the responsibility of the Contractor. All associated fees including construction water will be paid for by the Contractor in accordance with City's current fee schedule. In an event that damage to these facilities occurs, the Contractor will be responsible for all costs associated with their replacement by the City's standard rate.

1.07 SANITARY FACILITIES:

- A. If necessary, the Contractor shall provide temporary restroom facilities for field crews. Location of such facilities will be subject to the approval of the City. Existing City/Residence facilities are not available for use by the Contractor.

1.08 WORKING HOURS:

- A. All water and sewer work on this contract shall be conducted during normal working hours (8:00 A.M. to 5:00 P.M.) on weekdays. No work shall be performed on weekends or City observed holidays. **Inspection services needed beyond normal working hours will be paid for by the Contractor.**

1.09 ASSEMBLIES OR UNITS:

- A. Where the Contractor is required to furnish and install an assembly or unit, the Contractor shall furnish all component parts as required by the manufacturer of the unit.

1.10 ACCESS TO THE WORK SITE:

- A. The Contractor may use only the roads and/or easements designated by the Owner for access to the work locations. The Contractor shall be responsible for maintaining, protecting, and restoring the routes to the satisfaction of the Owner and Engineer.

1.11 SECURITY:

- A. The Contractor shall be fully responsible for the safety and security of the construction area including any temporary measures required to maintain its protection. The Contractor will be responsible for any damages or theft incurred to his tools, equipment, machinery, and new work in-place not yet been fully accepted by the City.

1.12 TRENCH SAFETY ACT:

- A. All work shall conform to the Trench Safety Act. Contractor shall include in his price the cost of conforming to the Trench Safety Act.

1.13 PRECONSTRUCTION CONFERENCE/PROJECT PROGRESS MEETING:

- A. Before the Contractor starts the work, a conference will be held to establish procedures for handling Shop Drawings and other submittal, and for processing Applications for Payment, and to establish a working understanding among the parties as to the work.
- B. At each project progress meeting, the Contractor shall develop and submit for approval a progress schedule and phasing plan demonstrating complete fulfillment of all contract requirements including all activities of subcontractors, equipment vendors and suppliers. An updated schedule shall be submitted with each pay request.

1.14 TEST OR OPERATION:

- A. All tests and analyses which are called for in the Specifications and/or Drawings (geotechnical, concrete, bacteriological, pressure and leakage, etc.) are to be performed by an Independent Testing Laboratory, and shall be at the Contractor's expense.

1.15 REMOVAL OF ALL TEMPORARY FACILITIES & RESTORATION OF SITE:

- A. Upon completion of the work, it shall be the responsibility of the Contractor to remove all temporary facilities including but not limited to pumps, fences, signs, temporary power, materials or other debris. The site, adjacent properties and Owner facilities, shall be restored to their original condition.

1.16 VIDEOS

- A. At least one (1) week prior to start of construction, the Contractor shall have videos taken of all areas where construction is to take place. Such videos shall be provided to the Engineer before construction commences. These videos shall serve as a record of the existing conditions for disputes arising from restoration, and should therefore be taken along the line of construction at sufficient detail as necessary to clearly depict details of existing conditions. The videos shall be provided in electronic DVD format, in color. All videos shall be indexed and catalogued in such a manner that each photographed area is readily identifiable and shall also indicate the date and time (hour, minutes & seconds) on which the photograph was made. The Contractor shall also have videos taken of any unusual conditions encountered during construction that are not already a matter of photographic record. In any area where existing conditions cannot be determined by means of videos, the area shall be restored as approved by the Engineer at the Contractor's expense. All videos shall become the property of the Owner.

1.17 RECORD DOCUMENTS:

- A. The Contractor shall maintain on site one set of the following record documents for use to record actual revision to the Work:
  - 1. Construction Drawings
  - 2. Specifications
  - 3. Addenda
  - 4. Change Orders and other modifications to the Contract
  - 5. Approved Shop Drawings, product data, and samples
- B. The Contractor shall provide record drawings for partial releases and final release submittals. With each submittal provide survey data, signed and sealed by the Contractor's Surveyor, to support elevation information depicted on the record drawings.

- C. The record drawings shall be correctly and accurately show all changes made during construction from the Contract Documents and shall reflect surveyed information which shall be performed, signed and sealed by a professional land surveyor registered in the State of Florida. The drawings shall be neat and legible. All elevations shall be based on State Plane Coordinates NGVD-29 Datum. Record drawings, at the minimum, shall show the following information:
1. Piping - Record drawings shall show the following field information:
    - a. Materials used to construct lines, including invert elevations.
    - b. Station, offset, and top of pipe and roadway elevation at 100 foot intervals, at each change of grade valves, fittings, and at the point of utility crossings. Show all variations in required cover over pipe.
    - c. Station and offset of water services, valves, fittings, hydrants, terminal ends, blow-off points, sampling points, etc.
    - d. Station, offset, and length of all sleeves and casing pipes.
    - e. Detailed sketch for each tie-in point, and utility crossings.
    - f. Location and/or clearances of utilities (gas main, electrical and communication conduits, telephone conduit/duct bank, TV cables, etc.) and miscellaneous structures crossed or otherwise exposed during construction.
  2. Structures - Record drawings shall show the following information:
    - a. Station, offset, top of grate, and invert elevation of structures including structure dimensions and wall thickness.
    - b. Influent and effluent pipe inverts.
- D. Upon completion of the project, final record drawings will be provided to the City on CD-Rom, Autocad Release 2013 DWG format, along with one set of blueprint (24"x36"), and one set Mylar, along with a complete set of all survey data, signed and sealed by a professional Land Surveyor in the State of Florida
- E. Engineer-of-Record\Owner (City) reserves the right to review Contractor's As-Built drawings during course of construction.
- F. Final pay and connections to any existing utility main will not be approved until Record Drawings are approved and accepted by Engineer-of-Record\Owner (City).

1.18 PROVISION FOR THE CONTROL OF DUST:

- A. The Contractor shall take the necessary steps to prevent objectionable blowing or drifting of dust, sand, and other debris where the construction occurs in residential, commercial, or other developed areas.
- B. Extreme precautions shall be taken during construction to minimize the amount of dust created. Wetting the site or other means as directed by the City, may be required for control of dirt.

1.19 OBSTRUCTION:

- A. The attention of the Contractor is drawn to the fact that during excavation at the project site, the possibility exists of the Contractor encountering various water, chemical, electrical, gas, or other lines not shown on the drawings. The Contractor shall exercise extreme care before and during excavation to locate and flag these lines so as to avoid damage to the existing lines. Should damage occur to an existing line, the Contractor shall repair the line at no cost to the City.
- B. It is the responsibility of the Contractor to ensure that all utility or other poles, the stability of which may be endangered by the close proximity of excavation, are temporarily stayed in position while the work proceeds in the vicinity of the pole and that the utility or other

companies concerned be given reasonable advance notice of any such excavation by the Contractor.

1.20 CLEAN-UP:

- A. The Contractor shall maintain the site of the work in a neat condition. The Contractor shall remove all excess materials, excess excavated materials and all debris resulting from his operations within a time frame approved by the Engineer.

1.21 DESIGN PROFESSIONALS REPRESENTING OWNER:

- A. Various Design Professionals (i.e. Civil, Mechanical, Electrical, Groundwater Hydrologists, etc.) as consultants to the Owner prepared the drawings and specifications for the project. The Owner may have the various Design Professionals provide services to the Owner during construction phase of the project. The Design Professionals will be representatives of the Owner and visits to the site by the Design Professionals will be on the basis of paragraph 1.22 of this section. Also paragraph 1.23 of this section includes the various Design Professionals for this project.

1.22 VISITS TO SITE BY OWNER'S REPRESENTATIVE:

- A. The Owner's representative 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 accordance with the Contract Documents.
- A. The Owner's representative's efforts will be directed toward providing for the Owner a greater degree of confidence that the completed work will conform to the drawings and these specifications. On the basis of such visits and on-site observations, the Owner's representative will keep the Owner informed of the progress of the work and will endeavor to guard the Owner against defects and deficiencies in the work.

1.23 LIMITATIONS ON OWNER'S REPRESENTATIVE RESPONSIBILITIES:

- A. Neither the Owner's representative's authority to act under these specifications and drawings or elsewhere in other documents nor any decision made by the Owner's representative in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the Owner's representative to the Contractor, any sub-Contractor, any manufacturer, fabricator, supplier or distributor, or any of their agents or employees or any other person performing any of the work.
- B. The Owner's representative shall not be responsible to the Contractor's means, methods, techniques, sequences or procedures of construction, or safety precautions and programs incident thereto, and the Owner's representative shall not be responsible for the Contractor's failure to perform the work in accordance with the drawings and these specifications.
- C. The Owner's representative shall not be responsible for the acts or omissions of the Contractor or of any sub-Contractors, or of any other persons at the site or otherwise performing any of the work.

1.24 WARRANTY:

- A. The Contractor shall be responsible for defects in materials (including latent defects) or workmanship for a period of one year after the date of final acceptance of the project by the Owner. Such defects include, but not limited to, any settlement noted in backfill, fill, or in structures built over the backfill or fill during the warranty period in accordance with the GENERAL CONDITIONS will be considered to be caused by improper compaction methods and shall be corrected by the Contractor at no cost to the Owner. Structures damaged by settlement shall be restored to their original condition by the Contractor at no cost to the Owner.

- B. The Contractor shall furnish factory warranty on all equipment furnished for the performance and completion of the project against defects in materials and/or workmanship. The factory warranty shall become effective on the date of delivery and acceptance by the Owner. Should any defects in materials or workmanship, the Contractor shall replace at no cost to the Owner.

END OF SECTION

SECTION 01025

**MEASUREMENT AND PAYMENT**

PART 1 - GENERAL

1.01 DESCRIPTION:

- A. Measurement and payment will be based upon Work completed and accepted in accordance with the Contract Documents. No separate payment will be made for excavation, trenching, backfilling, leakage tests, surveying, bacteriological tests, density tests, or other incidental items of Work not shown in the Agreement.
- B. Contractor must notify the Owner in writing when 80% of contract amount has been reached.

1.02 SECTION INCLUDES

- A. Measurement and payment criteria applicable to the Work performed under a lump sum payment method with a schedule of bid values for specific portions of the work.
- B. Defect assessment and non-payment for rejected work.

1.03 EQUIPMENT AND MATERIALS IN STORAGE:

- A. Partial payment for materials and equipment in proper storage at the site of the Work will be made for those items for which the Contractor has submitted paid invoices to the Engineer. Paid invoices are defined as follows:
  - 1. Contractor has paid supplier 90% of invoice.
  - 2. Contractor has provided a copy of a check or check number in an amount totaling 90% of the invoice.
  - 3. Supplier has received a check for 90% of the invoice.
  - 4. Contractor acknowledges that Owner will make a partial payment in the amount of 90% of the invoice, less retainage for as long as the item is in storage.

1.04 PAYMENT:

- A. Payment will be made at the respective unit price or lump sum price for each item shown in the Agreement, installed and accepted, which price and payment shall include the providing of all costs required for the complete installation labor, including social security, insurance, and other fringe benefits, workman's compensation insurance; bond premiums; rental of equipment and machinery; taxes; testing; surveys and other incidental expenses; and supervision. No separate payment will be made for the preparation of record drawings.
- B. **Contractor shall review pay requests with City's Construction Coordinator, for approval, prior to submitting for payment to the City.**

1.05 PAYMENT SCHEDULE:

- A. To assure prompt payment, pay applications must be received by the Engineer-of-Record twenty (20) days prior to the 15th or 30th of the payment date (i.e. for receipt of payment on or about the 30th of the month invoices must be received by the 10th of the same month).

1.06 PAY ESTIMATE FORMS:

- A. The Engineer will accept A1A Form G702 and 703 for submittal. The Contractor shall make copies to be used for submittal of the following pay estimates. Failure of the Contractor to sign the pay estimate or attach appropriate documentation shall be grounds for returning the pay estimate with no action by the Owner or Engineer. The Contractor shall submit six (6)

copies of the pay request each month. Pay requests without updated progress schedules shall be returned with no action taken.

1.07 CONTRACT ADJUSTMENTS:

- A. Contract Sum adjustments will be by Change Order on basis of net accumulative change for each unit price category.
  - 1. Except as otherwise specified, unit prices shall apply to both deductive and additive variations of quantities.
  - 2. Unit prices in the Agreement shall remain in effect until date of final completion of the entire Work.

1.08 DEFECT ASSESSMENT:

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.

1.09 NON-PAYMENT FOR REJECTED PRODUCTS:

- A. Payment will not be made for any of the following:
  - 1. Products wasted or disposed of in a manner that is not acceptable.
  - 2. Products determined as unacceptable before or after placement.
  - 3. Products not completely unloaded from the transporting vehicle.
  - 4. Products placed beyond the lines and levels of the required Work.
  - 5. Products remaining on hand after completion of the Work.
  - 6. Loading, hauling and disposing of rejected Products.
  - 7. Used Products and Materials.

1.10 DESCRIPTION AND MEASUREMENT OF PAY ITEMS:

- A. Non-Payment Items:
  - 1. It is intended that all labor, equipment and materials to construct and complete this project are included in the unit price bid item schedule of values for this project. If any item of work, process, equipment or material is not specifically listed in the unit price bid item schedule of values, the contractor shall include and provide said work, process, equipment or material of the best quality workmanship appropriate for the intended use at no additional cost.
  - 2. Payment will only be made based on the unit price bid items included in the schedule of values.
- B. Payment Items:
  - 1. General:
    - a. Measurement for payment of lump sum bid items will be on an estimated percentage of work completed as agreed upon by the Contractor and the Engineer.
    - b. Payment of bid items, assemblies, or systems having quantities listed as per each shall be made on the basis of the work actually performed and completed, such work including but not limited to, the furnishing of all necessary labor, materials, equipment, transportation, cleanup, and all other appurtenances to complete the construction and installation of the work to the configuration and extent as shown on the drawings and as described in the specifications. Basis for payment of such items shall be measured quantities or actual count of completed items, assemblies, or systems.

- c. It is intended that all security, insurance, bond, license and other miscellaneous administrative costs, and all other costs to the Contractor not specifically identified as a bid item be distributed among and included in the unit prices stated.

No additional payment shall be made for transportation, communication, office maintenance, project signs, and other incidental work or services, and no further payment shall be made for remobilization unless all of the work is suspended by the Engineer for a period in excess of three (3) months and through no fault to the Contractor.

2. Mobilization:

- A. Mobilization consists of preparatory work and operations in mobilizing for beginning work on the project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site, and for the establishment of temporary offices, building, safety equipment and first aid supplies, construction water, sanitary and other facilities, as required by these Specifications, the special provisions, and State and local laws and regulations. The costs of bonds and any required insurance, and any other preconstruction expense necessary for the start of the work, excluding the cost of construction materials, shall also be included in this item. Partial payment will be made therefore in accordance with the following:

Percent of Original Contract Amount Earned	Allowable Percent of the Lump Sum Price for the Item
5	25
10	50
25	75
50	100

**PART II PRODUCTS**

Not Used.

**PART III EXECUTION**

3.01 MEASUREMENT:

- A. Each building shall be paid on a lump sum basis. This includes all work as shown on the plans and specified herein. Contractor shall submit schedule of values of each station for payment application processing.
- B. Building Permit Fees shall be calculated using the formula of paragraph 3.02.
- C. Mobilization: Lump sum amount to include costs for mobilization.
- D. Piping: Measure lineal feet along the centerline of the pipe installed. Includes furnishing and installing pipe with all appurtenances, trenching, flushing, backfilling, dewatering, thrust restraints, and testing.
  - 1. No deduction will be made for the length of valves and fittings installed in the line.
  - 2. Where the measurement terminates at a valve, bend, tee, or other fitting, the centerline of the valve or fitting shall be the point of termination.

- E. Fittings: Includes furnishing and installing pipe fittings with all appurtenances, trenching, backfilling, dewatering, thrust restraints, and testing. Measure cast iron and ductile iron fittings on the basis of the unit installed.
- F. Valves and Valve Boxes: Measure on the basis of furnishing and installing each type of valve and size of valve required, including the valve box, support/thrusting, backfill, compaction, and concrete collars.
- G. Air Release Valve Vault Structures: Include the valve, double-stop saddle, pipe, manhole, cover, and appurtenances required for each occurrence.
- H. Concrete: Measure cubic yards of concrete in place or in certified transit mix trucks.
  - 1. No separate payment will be made for concrete thrust blocking or manhole, wetwell, or valve vault usage.
- I. Sidewalk and Roadway Pavement Replacement:
  - 1. Water Mains, Force Mains, and Gravity Sewer: Compute the number of square yards of replaced pavement using the mean width of replacement multiplied by the mean length, except that the maximum width to be used in the computation shall be eight feet.
  - 2. Gravity Sewer: Compute the number of square yards of replaced pavement using the mean width of replacement multiplied by the mean length.
- J. Jack and Bore: Furnish and install a jack and bore complete, including casing, restrained joint pipe, casing spacers, concrete and grout, survey, monitoring, excavation, and backfill as necessary for a complete installation.
- K. Grass Sodding, Seeding, and Mulching: Measure square feet of actual area planted. Include necessary soil preparation, seed, sowing, fertilizer, mulch, and irrigation.
- L. Mobilization: Lump sum amount includes costs for mobilization.
- M. No separate payment will be made for:
  - 1. Concrete thrust blocking.
  - 2. Temporary pavement restoration.

3.02 BUILDING PERMIT FEES:

- A. Bidder shall be responsible for payment of all Building Permit Fees associated with the Work. The Building Permit Fees shall be included as part of the Total Base Bid. The City reserves the right to pay for the City Permit Fee, at which time, the Contractor shall deduct the total amount of the permit fee from the contract.

3.03 RESTORATION OF DAMAGED SURFACES, STRUCTURES, AND PROPERTY:

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

END OF SECTION

## SECTION 01050

### FIELD ENGINEERING

#### PART 1 - GENERAL

##### 1.01 WORK INCLUDED

- A. This section covers all work required for the verification of preconstruction conditions, layout of proposed utility improvements, quality control and data gathering for the preparation of post-construction record drawings.

##### 1.02 SUBMITTALS

- A. Submit name, address and telephone number of Florida Registered Land Surveyor before starting work.
- B. Submit copies of all post-construction record drawings and certificate signed by the approved Florida Registered Land Surveyor indicating that the elevations and locations of the work are as the work was constructed.

##### 1.03 DEFINITIONS

- A. Location: "As-Built" location station, offset distance and direction relative to the existing construction baseline.
- B. Elevation: "As-Built" elevation relative to the National Geodetic Vertical Datum of 1929 (NGVD).
- C. Major Deflection: Change in horizontal or vertical alignment greater than 12-inches accomplished without the use of fittings.

##### 1.04 QUALITY ASSURANCE

- A. Land surveyor employed shall be registered in the State of Florida and acceptable to the ENGINEER.
- B. Where applicable, employ a professional engineer of the discipline required for specific source on project, licensed in the State of Florida.

##### 1.05 PROJECT RECORD DOCUMENTS DATA

- A. Maintain a complete and accurate log of control and survey data for project record documents as project progresses.
- B. Upon completion of the project or other intervals as requested by ENGINEER, submit certified "as-built" site survey data of the project improvements. Scale shall be same as ENGINEER's drawings and may be used as a base for surveyor's field data (redline markups).
- C. The following data (as applicable to project) shall be provided as a minimum:

1. Location and elevation of all pressure pipe fittings and valves.
  2. Locations and elevations as required to define major horizontal/vertical pipe deflections/conflicts. Data shall include beginning and end of deflection/conflicts, all changes in elevations and alignment and the location and elevation of subject conflict item.
  3. Location and elevation of all connections to existing systems.
  4. Locations and elevations at appropriate intervals along centerline of pressure pipe to limit distance between data points to no more than 100 feet.
  5. Locations, invert(s) and rim/grate elevations of all new sanitary manholes. Location to be center of manhole.
  6. Cross sections of all repaved roadways at maximum 100 foot intervals.
  7. Locations and elevations as required to describe all other improvements.
- D. Submit final record drawings prior to final pay application at completion of project as specified in Section 01700 – Contract Closeout.
- E. Provide in tabular form, based on the obtained applicable field data, the final "As-Built" quantities for the project. "As-Built" quantities shall be referenced to the bid items and their units of measure as indicated in the CONTRACTOR's Bid Proposal.

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

## **PART 3 - EXECUTION**

### **3.01 EXAMINATION**

- A. Verify locations of survey control points prior to starting work. Promptly notify ENGINEER of any discrepancies discovered.

### **3.02 SURVEY REFERENCE POINTS**

- A. Protect survey control points prior to starting site work; preserve permanent reference points during construction. Make no changes without prior written notice to ENGINEER.
- B. Promptly report to ENGINEER the loss or destruction of any reference point or relocation required because of changes in grades or other reasons. Replace dislocated survey control points based on original survey control.
- C. Provide affidavit from approved Florida Registered Surveyor that all survey control points were re-established following completion of construction.

### **3.03 SURVEY REQUIREMENTS**

- A. ENGINEER will furnish CONTRACTOR with horizontal and vertical control information. Responsibility for construction of the Work to correct dimensions, alignment and grade shall be CONTRACTOR's. Additional control points, as applicable, shall be provided for and established by surveyor.

- B. Establish and define all baselines. Provide necessary stationing along baseline. All ends and intersections of baselines shall be tied to a minimum of two permanent features.
- C. Establish locations of right-of-way lines and property lines as applicable and locations and elevations of proposed improvements. Locate and lay out by instrumentation and similar appropriate means:
  - 1. All utility improvements including locations and elevation.
  - 2. Major pipeline deflections/conflicts.
  - 3. The locations and elevations as applicable to valves, fitting, services and connections to existing utilities.
  - 4. Alignment and cross section of roadway, driveway and sidewalk restorations. As applicable, roadways, driveways and sidewalks shall be reconstructed to existing horizontal and vertical dimensions, unless shown otherwise.
- D. Periodically verify layouts by same means indicated above.
- E. As-built information of all utilities installed within the limits of pavement must be obtained prior to initial backfilling of trench.

3.04 SURVEYS FOR MEASUREMENT AND PAYMENT

- A. Final project record drawings with "as-built" information of the installed utility systems and all bid quantities shall be submitted and approved by ENGINEER prior to application for final payment.
- B. "As-Built" quantity data shall be presented in tabular form and reference the individual bid items and their respective units of measure as given in the CONTRACTOR's Bid Proposal.
- C. "As-Built" information shall be used by CONTRACTOR to prepare his final statement of accounts as specified in Section 01700 – Contract Closeout.
- D. Current "as-built" information shall be available for ENGINEER's use for evaluation of partial pay requests.

END OF SECTION

SECTION 01090

**REFERENCE STANDARDS**

**PART 1 - GENERAL**

1.01 REQUIREMENTS INCLUDED

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

1.02 QUALITY ASSURANCE

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

1.03 ABBREVIATIONS, NAMES AND ADDRESSES OF ORGANIZATIONS

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

AASHTO American Association of State Highway and  
Transportation Officials  
444 North Capitol Street, N.W.  
Washington, D.C. 20001

ACI American Concrete Institute  
Box 19150  
Redford Station  
Detroit, MI 48219

AISC American Institute of Steel Construction  
1221 Avenue of the Americas  
New York, N.Y. 10020

AISI American Iron and Steel Institute  
1000 16th Street, N.W.  
Washington, D.C. 20036

ANSI American National Standards Institute  
1430 Broadway  
New York, N.Y. 10018

ASME	American Society of Mechanical Engineers 345 East 47th Street New York, N.Y. 10017
ASTM	American Society of Testing and Materials 1916 Race Street Philadelphia, PA 19103
AWWA	American Water Works Association 6666 W. Quincy Avenue Denver, CO 80235
AWS	American Welding Society 2501 N.W. 7th Street Miami, FL 33125
CRSI	Concrete Reinforcing Steel Institute 180 North LaSalle Street, Suite #2110 Chicago, IL 60601
FS	Federal Specification General Services Administration Specifications and Consumer Information Distribution Section (WFSIS) Washington Navy Yard, Bldg. 197 Washington, D.C. 20407
MIL	Military Specification Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, PA 19120
NEMA	National Electrical Manufacturer's Association 2101 "L" Street, N.W. Washington, D.C. 20037
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 20076
PCI	Prestressed Concrete Institute 20 North Wacker Drive Chicago, IL 60606
PS	Product Standard U.S. Department of Commerce Washington, D.C. 20203
UL	Underwriter's Laboratories, Inc. 333 Pfingston Road Northbrook, IL 60062

- B. When no reference is made to a code, standard, or specification, the standard specifications of the ASTM, the ANSI, the ASME, the IEEE, or the NEMA shall govern.
- C. Contractor shall, when required, furnish evidence satisfactory to the Engineer that materials and methods are in accordance with such standards where so specified.
- D. In the event any questions arise as to the application of these standards or codes, copies shall be supplied on site by the Contractor.

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

**PART 3 - EXECUTION (NOT USED)**

**END OF SECTION**

## SECTION 01110

### ENVIRONMENTAL PROTECTION PROCEDURES

#### PART 1 - GENERAL

##### 1.01 SCOPE OF WORK

- A. The work covered by this Section consists of furnishing all labor, materials and equipment and performing all work required for the prevention of environmental pollution in conformance with applicable laws and regulations, during and as the result of construction operations under this Contract. For the purpose of this Specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic and/or recreational purposes.
- B. The control of environmental pollution requires consideration of air, water and land, and involves management of noise and solid waste, as well as other pollutants.
- C. Schedule and conduct all work in a manner that will minimize the erosion of soils in the area of the work. Provide erosion control measures such as diversion channels, sedimentation or filtration systems, berms, staked hay bales, seeding, mulching or other special surface treatments as are required to prevent silting and muddying of streams, rivers, impoundments, lakes, etc. All erosion control measures shall be in place in an area prior to any construction activity in that area.
- D. These Specifications are intended to ensure that construction is achieved with a minimum of disturbance to the existing ecological balance between a water resource and its surroundings.
- E. These are general guidelines. It is the CONTRACTOR's responsibility to determine the specific construction techniques to meet these guidelines.

##### 1.02 APPLICABLE REGULATIONS

- A. Comply with all applicable Federal, State and local laws and regulations concerning environmental pollution control and abatement.

##### 1.03 NOTIFICATIONS

- A. The ENGINEER will notify the CONTRACTOR in writing of any non-compliance with the foregoing provisions or of any environmentally objectionable acts and corrective action to be taken. State or local agencies responsible for verification of certain aspects of the environmental protection requirements shall notify the CONTRACTOR in writing, through the ENGINEER, of any non-compliance with State or local requirements. The CONTRACTOR shall, after receipt of such notice from the ENGINEER or from the regulatory agency through the ENGINEER, immediately take corrective action. Such notice, when delivered to the CONTRACTOR or his authorized representative at the site of the Work, shall be deemed sufficient for the purpose. If the CONTRACTOR fails or refuses to comply promptly, the OWNER may issue an order stopping all or part of the

work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the CONTRACTOR unless it is later determined that the CONTRACTOR was in compliance.

#### 1.04 IMPLEMENTATION

- A. Prior to commencement of the Work, meet with the ENGINEER to develop mutual understandings relative to compliance with this provision and administration of the environmental pollution control program.
- B. Remove temporary environmental control features, when approved by the ENGINEER and incorporate permanent control features into the project at the earliest practicable time.

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

### **PART 3 - EXECUTION**

#### 3.01 EROSION CONTROL

- A. Provide positive means of erosion control such as shallow ditches around construction to carry off surface water. Erosion control measures, such as siltation basins, hay check dams, mulching, jute netting and other equivalent techniques, shall be used as appropriate. Flow of surface water into excavated areas shall be prevented. Ditches around construction areas shall also be used to carry away water resulting from dewatering of excavated areas. At the completion of the work, ditches shall be backfilled and the ground surface restored to its original condition.

#### 3.02 PROTECTION OF SURFACE WATERS

- A. Care shall be taken to prevent, or reduce to a minimum, any damage to any surface water from pollution by debris, sediment or other material, or from the manipulation of equipment and/or materials in or near such surface waters. Water that has been used for washing or processing, or that contains oils or sediments that will reduce the quality of the surface water, shall not be directly returned to the surface water. Such waters will be diverted through a settling basin or filter before being directed into the surface waters.
- B. The CONTRACTOR shall not discharge water from testing operations directly into any surface water.
- C. All preventative measures shall be taken to avoid spillage of petroleum products and other pollutants. In the event of any spillage, prompt remedial action shall be taken in accordance with a contingency action plan approved by the OWNER. CONTRACTOR shall submit two copies of approved contingency plans to the ENGINEER

#### 3.03 PROTECTION OF LAND RESOURCES

- A. Land resources within the project boundaries and outside the limits of permanent work shall be restored to a condition, after completion of construction that will appear to be

natural and not detract from the appearance of the project. Confine all construction activities to areas shown on the Drawings.

- B. Outside of areas requiring earthwork for the construction of the new facilities, the CONTRACTOR shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without prior approval. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorage unless specifically authorized by the ENGINEER. Where such special emergency use is permitted, first wrap the trunk with a sufficient thickness of burlap or rags over which softwood cleats shall be tied before any rope, cable, or wire is placed. The CONTRACTOR shall in any event be responsible for any damage resulting from such use.
- C. Where trees may possibly be defaced, bruised, injured, or otherwise damaged by the CONTRACTOR's equipment, dumping or other operations, protect such trees by placing boards, planks, or poles around them. Monuments and markers shall be protected similarly before beginning operations near them.
- D. Any trees or other landscape feature scarred or damaged by the CONTRACTOR's equipment or operations shall be restored as nearly as possible to its original condition. The ENGINEER will decide what method of restoration shall be used and whether damaged trees shall be treated and healed or removed and disposed of.
  - 1. All scars made on trees by equipment, construction operations, or by the removal of limbs larger than 1-inch in diameter shall be coated as soon as possible with an approved tree wound dressing. All trimming or pruning shall be performed in an approved manner by experienced workmen with saws or pruning shears. Tree trimming with axes will not be permitted.
  - 2. Climbing ropes shall be used where necessary for safety. Trees that are to remain, either within or outside established clearing limits, that are subsequently damaged by the CONTRACTOR and are beyond saving in the opinion of the ENGINEER, shall be immediately removed and replaced.
- E. The locations of the CONTRACTOR's storage and other construction buildings, required temporarily in the performance of the Work, shall be cleared as portions of the job site or areas to be cleared as shown on the Drawings and shall require written approval of the ENGINEER and shall not be within wetlands or floodplains. The preservation of the landscape shall be an imperative consideration in the selection of all sites and in the construction of buildings. Drawings showing storage facilities shall be submitted for approval of the ENGINEER
- F. If the CONTRACTOR proposes to construct temporary roads or embankments and excavations for plant and/or work areas, he shall submit the following for approval at least ten-days prior to scheduled start of such temporary work:
  - 1. A layout of all temporary roads, excavations and embankments to be constructed within the work area.
  - 2. Details of temporary road construction.
  - 3. Drawings and cross sections of proposed embankments and their foundations, including a description of proposed materials.
  - 4. A landscaping drawing showing the proposed restoration of the area. Removal of any trees and shrubs outside the limits of existing clearing area shall be indicated. The drawing shall also indicate location of required guard posts or barriers required to control vehicular traffic passing close to trees and shrubs to

be maintained undamaged. The drawing shall provide for the obliteration of construction scars as such and shall provide for a natural appearing final condition of the area. Modification of the CONTRACTOR's approved drawings shall be made only with the written approval of the ENGINEER. No unauthorized road construction, excavation or embankment construction including disposal areas will be permitted.

- G. Remove all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess waste materials, or any other vestiges of construction as directed by the ENGINEER. It is anticipated that excavation, filling and plowing of roadways will be required to restore the area to near natural conditions which will permit the growth of vegetation thereon.
- H. All debris and excess material will be disposed of outside wetland or floodplain areas in an environmentally sound manner.

#### 3.04 PROTECTION OF AIR QUALITY

- A. Burning - The use of burning at the project site for the disposal of refuse and debris will not be permitted.
- B. Dust Control - The CONTRACTOR will be required to maintain all excavations, embankments, stockpiles, access roads, plant sites, waste areas, borrow areas and all other work areas within or without the project boundaries free from dust which could cause the standards for air pollution to be exceeded and which would cause a hazard or nuisance to others.
- C. An approved method of stabilization consisting of sprinkling or other similar methods will be permitted to control dust. The use of petroleum products is prohibited. The use of chlorides may be permitted with approval from the ENGINEER.
- D. Sprinkling, to be approved, must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times, and the CONTRACTOR must have sufficient competent equipment on the job to accomplish this if sprinkling is used. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs, as determined by the ENGINEER.

#### 3.05 MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION

- A. During the life of this Contract, maintain all facilities constructed for pollution control as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created.

#### 3.06 NOISE CONTROL

- A. The CONTRACTOR shall make every effort to minimize noises caused by his/her operations. Equipment shall be equipped with silencers or mufflers designed to operate with the least possible noise in compliance with State and Federal regulations.

END OF SECTION

SECTION 01152

**APPLICATIONS FOR PAYMENT**

**PART 1 - GENERAL**

1.01 REQUIREMENTS INCLUDED

- A. Submit Applications for Payment to the ENGINEER in accordance with the schedule established by Conditions of the Contract and Agreement Between OWNER and CONTRACTOR.
- B. The accepted Schedule of Values, Section 01370, shall be used as the basis for the CONTRACTOR's Application for Payment.

1.02 SUBMITTALS

- A. Submit applications typed on forms approved by the OWNER, Application for Payment, with itemized data typed on 8-1/2 inch x 11 inch or 8-1/2 inch x 14 inch white paper continuation sheets.
- B. Provide itemized data on continuation sheet:
  - 1. Format, schedules, line items and, values: those of the Schedule of Values accepted by the ENGINEER.

1.03 PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT

- A. Application Form:
  - 1. Fill in required information, including that for Change Orders executed prior to date of submittal of application.
  - 2. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.
  - 3. Execute certification with signature of a responsible officer of Contract firm.
- B. Continuation Sheets:
  - 1. Fill in total list of all scheduled component items of Work, with item number and scheduled dollar value for each item.
  - 2. Fill in dollar value in each column for each scheduled line item when Work has been performed or products stored.
    - a. Round off values to nearest dollar, or as specified for the Schedule of Values.
  - 3. List each Change Order executed prior to date of submission, at the end of the continuation sheets.
    - a. List by Change Order Number, and the description, as for an original component item of the Work.

4. To receive approval for payment on component material stored on site, submit copies of the original paid invoices with the Application for Payment.

#### 1.04 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

- A. When the OWNER or the ENGINEER requires substantiating data, CONTRACTOR shall submit suitable information, with a cover letter identifying:
  1. Project.
  2. Application number and date.
  3. Detailed list of enclosures.
  4. For stored products:
    - a. Item number and identification as shown on application.
    - b. Description of specific material.
- B. Submit one copy of data and cover letter for each copy of application.
- C. As a prerequisite for payment, CONTRACTOR is to submit a "Surety Acknowledgment of Payment Request" letter showing amount of progress payment which the CONTRACTOR is requesting.
- D. The CONTRACTOR is to maintain an updated set of drawings to be used as record drawings in accordance with Section 01720. As a prerequisite for monthly progress payments, the CONTRACTOR is to exhibit the updated record drawings for review by the OWNER and the ENGINEER.

#### 1.05 PREPARATION OF APPLICATION, FOR FINAL PAYMENT

- A. Fill in Application form as specified for progress payments.
- B. Use continuation sheet for presenting the final statement of accounting as specified in Section 01700 – Contract Closeout.
- C. Submit all Project Record Documents in accordance with Sections 01050 and 01700.

#### 1.06 SUBMITTAL PROCEDURE

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

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

**PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## SECTION 01300

### SUBMITTALS

#### 1.01 DESCRIPTION OF REQUIREMENTS:

- A. The types of submittals controlled by these general requirements include shop drawings, procedure manuals, samples and miscellaneous work-related submittals. The individual submittal requirements are specified herein and in applicable sections for each unit of work.

#### 1.02 GENERAL SUBMITTAL REQUIREMENTS:

##### A. Coordination and Sequencing:

- 1. The Contractor shall coordinate preparation and processing of submittals with performance of the work so that the work will not be delayed by submittals. The Contractor shall coordinate and sequence different categories of submittals for the same work, and for interfacing units of work, so that one will not be delayed for coordination with another. No extension of time will be allowed because of failure to properly coordinate and sequence submittals.

##### B. Preparation of Submittal:

- 1. Provide permanent marking on each submittal to identify project, date, Contractor, subcontractor, submittal name and similar information to distinguish it from other submittals. Each submittal shall clearly state where the item is to be installed. Package each submittal appropriately for transmittal and handling. Submittals which are received from sources other than through Contractor's office will be returned without action. All results of testing by independent labs or agencies shall be submitted to the Engineer. This shall include both passing and failing tests.

#### 1.03 SPECIFIC CATEGORY SUBMITTAL REQUIREMENTS:

- A. Except as otherwise indicated in individual work sections, comply with general requirements specified herein for each indicated category of submittal.

#### 1.04 SHOP DRAWINGS AND SAMPLES:

- A. As soon as practicable and within fifteen (15) days after the date of execution of the Contract, the Contractor, in conformance with the conditions of the contract, shall submit to the Engineer for approval, six (6) copies (in addition to those copies necessary for his own requirements) of the shop drawings.
- B. Shop drawings submitted to the Engineer for his review, shall first be checked and approved by the Contractor, as indicated by a "Checked" stamp marked "Approved" on each copy of the shop drawing. Shop drawings received without the Contractor's "Checked and Approved" stamp will be returned without further action.
- C. Shop drawings shall be submitted, for the items requested under Section 02734 and Section 02737, as well as any other section requiring submittals:
- D. Product Data:
  - 1. Collect required data into one submittal for each unit of work or system; and mark each copy to show which choices and options are applicable to the project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked, and special coordination requirements.

Maintain one set of product data for each submittal at the project site, available for reference by the Engineer. For purposes of this submittal, manufacturer's fabrication drawings shall be synonymous with shop drawings.

2. The Contractor shall not submit product data or allow its use on the project, until compliance with requirements of the Contract Documents has been confirmed. Submittal is for information and record only, unless otherwise indicated.

1.05 DOCUMENTS:

- A. Maintain at the job site one copy of all drawings, specifications; addenda; approved shop drawings; change orders; field orders; other contract modifications; and other approved documents submitted by the Contractor in compliance with various sections of the specifications. Each of these Project Record Documents shall be clearly marked "Project Record Copy" and maintained in good condition; available at all times for review by the Engineer and not used for construction purposes.

1.06 BOND AND COMPLETED OPERATION INSURANCE:

- A. Prior to final payment, the Contractor shall submit proof that bonds and completed operations insurance are in effect as required by the GENERAL CONDITIONS.

END OF SECTION

SECTION 01311

**CONSTRUCTION SCHEDULES**

**PART 1 - GENERAL**

1.01 REQUIREMENTS INCLUDED

- A. Promptly after award of the Contract and within ten days after the effective date of the Agreement, prepare and submit to the ENGINEER estimated project progress schedules for the Work, with sub schedules of related activities which are essential to its progress. The schedules shall clearly indicate mechanical integrity testing dates which will allow for completion of all work in time to meet the OWNER's submittal deadlines for the mechanical integrity testing reports to FDEP.
- B. Submit revised progress schedules on a monthly basis.
- C. No partial payments shall be approved by the ENGINEER until there is an approved construction progress schedule on hand.
- D. The CONTRACTOR shall designate an authorized representative of his firm who shall be responsible for development and maintenance of the schedule and of progress and payment reports. This representative of the CONTRACTOR shall have direct project control and complete authority to act on behalf of the CONTRACTOR in fulfilling the commitments of the CONTRACTOR's schedule.

1.02 FORM OF SCHEDULES

- A. Prepare schedules in the form of a horizontal bar chart.
  - 1. Provide separate horizontal bar for each trade or operation within each structure or item.
  - 2. Horizontal time scale: In weeks from start of construction and identify the first work day of each month.
  - 3. Scale and spacing: To allow space for notations and future revisions.
  - 4. Minimum sheet size: 24 inches x 36 inches.
- B. Format of listings: The chronological order of the start of each item of work for each structure.
- C. Identification of listings: By major specification section numbers as applicable and structure.

1.03 CONTENT OF SCHEDULES

- A. Construction Progress Schedule:
  - 1. Show the complete sequence of construction by activity.

2. Show the dates for the beginning of, and completion of, each major element of construction in no more than a two-week increment scale.
  3. Show projected percentage of completion for each item, as of the first day of each month.
  4. Show projected dollar cash flow requirements for each month of construction.
- B. Submittals Schedule for Shop Drawings, and Samples in accordance with Section 01340. Show:
1. The dates for CONTRACTOR's submittals.
  2. The dates submittals will be required for OWNER-furnished products, if applicable.
  3. The dates approved submittals will be required from the ENGINEER
- C. A typewritten list of all long lead items (equipment, materials, etc.)

#### 1.04 PROGRESS REVISIONS

- A. Indicate progress of each activity to date of submission.
- B. Show changes occurring since previous submission of schedule:
1. Major changes in scope.
  2. Activities modified since previous submission.
  3. Revised projections of progress and completion.
  4. Other identifiable changes.
- C. Provide a narrative report as needed to define:
1. Problem areas, anticipated delays, and the impact on the schedule.
  2. Corrective action recommended, and its effect.
  3. The effect of changes on schedules of other prime CONTRACTORS.

#### 1.05 SUBMISSIONS

- A. Submit initial schedules to the ENGINEER within 10 days after the effective date of the Agreement.
1. The ENGINEER will review schedules and return review copy within seven (7) days after receipt.
  2. If required, resubmit within seven (7) days after return of review copy.
- B. Submit revised monthly progress schedules with that month's application for payment.
- C. Submit one original and five copies with each submittal.

## 1.06 DISTRIBUTION

- A. Distribute copies of the reviewed schedules to:
  - 1. ENGINEER.
  - 2. Job site file.
  - 3. Subcontractors.
  - 4. Other concerned parties.
  - 5. OWNER (two copies).
- B. Instruct recipients to report promptly to the CONTRACTOR, in writing, any problems anticipated by the projections shown in the schedules.

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

## **PART 3 - EXECUTION**

### 3.01 RESPONSIBILITY FOR SCHEDULE COMPLIANCE

- A. The CONTRACTOR agrees that whenever it becomes apparent from the current monthly schedule that delays to the critical path have resulted, and hence, that the contract completion date will not be met or when so directed by the ENGINEER, he will take some or all of the following actions at no additional cost to the OWNER, submitting to the ENGINEER for approval, a written statement of the steps he intends to take to remove or arrest the delay to the critical path in the approved schedule.
  - 1. Increased construction manpower in such quantities and crafts as will substantially eliminate, in the judgment of the ENGINEER, the backlog of work.
  - 2. Increase the number of working hours per shift, shifts per working days per week, the amount of construction equipment, or any combination of the foregoing, sufficiently to substantially eliminate, in the judgment of the ENGINEER, the backlog of work.
  - 3. Reschedule activities to achieve maximum practical concurrency of accomplishment of activities, and comply with the revised schedule.
  - 4. Costs incurred by the OWNER arising from such lengthening of hours, including furnishing of - Inspectors, shall be the CONTRACTOR's responsibility and shall be deducted from monies due him. Failure of the CONTRACTOR to comply with the requirements of the ENGINEER may be grounds for determination by the OWNER that the CONTRACTOR is not proceeding at such rates as will insure completion within the specified time and may result in the termination of the right of the CONTRACTOR to continue the work.

### 3.02 ADJUSTMENT OF CONTRACT SCHEDULE AND COMPLETION TIME

- A. If the CONTRACTOR desires to make changes in his method of operating which affect the approved schedule, he shall notify the ENGINEER in writing stating what changes are

proposed and the reason for the change. If the ENGINEER approves these changes, the CONTRACTOR shall revise and submit for approval, without additional cost to the OWNER, all of the affected portion of the schedule. The schedule shall be adjusted by the CONTRACTOR only after prior approval of his proposed changes by the ENGINEER.

- B. Adjustments may consist of changing portions of the activity sequence and/or activity durations, division of approved activities, or other adjustments as may be approved by the ENGINEER. The addition of extraneous, non-working activities and/or activities which add unapproved restraints to the schedule shall not be approved.
- C. If the completion of any activity, whether or not critical, falls more than 100 percent behind its approved duration, the CONTRACTOR shall submit for approval a schedule adjustment showing each such activity divided into two activities reflecting completed versus uncompleted work.
- D. Shop drawings which are not approved on the first submittal or within the scheduled time shall be immediately rescheduled, as well as pipelines and tanks which do not pass leak tests.
- E. The contract completion time will be adjusted only for causes specified in this contract. In the event the CONTRACTOR requests an extension of any contract completion date, he shall furnish such justification and supporting evidence as the ENGINEER may deem necessary for a determination as to whether the CONTRACTOR is entitled to an extension of time under the provisions of this contract. ENGINEER will, after receipt of such justification and supporting evidence make findings of fact and will advise the CONTRACTOR in writing thereof. If the ENGINEER finds that the CONTRACTOR is entitled to any extension of any contract completion date under the provisions of this contract, the ENGINEER's determination as to the total number of days extension shall be based upon the currently approved schedule and on all data relevant to the extension. Such data shall be included in the next monthly updating of the schedule. The CONTRACTOR acknowledges and agrees that actual delays in activities which, according to the schedule, do not affect any contract completion date shown by the critical path in the schedule do not have any effect on the contract completion date or dates, and therefore, will not be the basis for a change therein.
- F. From time to time it may be necessary for the contract schedule and/or completion time to be adjusted by the ENGINEER to reflect the effects of job conditions, weather, technical difficulties, strikes, unavoidable delays on the part of the OWNER or his representatives, and other unforeseeable conditions which may indicate schedule adjustments and/or completion time extension. Under such conditions, the CONTRACTOR shall reschedule the work and/or contract completion time to reflect the changed conditions, and the CONTRACTOR shall revise his schedule accordingly. No additional compensation shall be made to the CONTRACTOR for such schedule changes except for unavoidable overall contract time extensions beyond the actual completion of all unaffected work in the contract, in which case the CONTRACTOR shall take all possible action to minimize any time extension and any additional cost to the OWNER. It is specifically pointed out that the use of available float time in the schedule may be used by the OWNER as defined by the ENGINEER, as well as by the CONTRACTOR. Float time is defined as the amount of time between the early start date, and the late start date, or the early finish date and the late finish date, of any of the activities in the schedule.
- G. The OWNER controls the float time in the approved schedule and, therefore, without obligation to extend either the overall completion date or any intermediate completion dates set out in the schedule, the OWNER may initiate changes to the contract work that absorb float time only. OWNER-initiated changes that affect the critical path on the approved schedule shall be the sole grounds for extending (or contracting) said

completion dates. CONTRACTOR-initiated changes that encroach on the float time identified in the approved schedule may be accomplished with the OWNER's concurrence. Such changes, however, shall give way to OWNER-initiated changes competing for the same float time.

### 3.03 COORDINATING SCHEDULES WITH OTHER CONTRACT SCHEDULES

- A. Where work is to be performed under this contract concurrently with and/or contingent upon work performed on the same facilities or area under other contracts, the CONTRACTOR's schedule shall be coordinated with the schedules of the other contracts. The CONTRACTOR shall obtain the schedules of the other appropriate contracts from the ENGINEER for the preparation and updating of his schedule and shall make the required changes in his schedule when indicated by changes in corresponding schedules.

END OF SECTION

SECTION 01370

**SCHEDULE OF VALUES**

**PART 1 - GENERAL**

1.01 REQUIREMENTS INCLUDED

- A. Submit to the Engineer a Schedule of Values allocated to the various portions of the Work, within 21 days after the effective date of the Agreement.
- B. Upon request of the Engineer, support the values with data which will substantiate their correctness.
- C. The accepted Schedule of Values shall be used only as the basis for the Contractor's Applications for Payment.

1.02 FORM AND CONTENT OF SCHEDULE OF VALUES

- A. Type schedule on an 8-1/2-in by 11-in or 8-1/2-in by 14-in white paper furnished by the Contractor. Contractor's standard forms and automated printout will be considered for approval by the Engineer upon Contractor's request. Identify schedule with:
  - 1. Title of Project and location.
  - 2. Engineer and Project number.
  - 3. Name and Address of Contractor.
  - 4. Contract designation.
  - 5. Date of submission.
- B. Schedule shall list the installed value of the component parts of the Work in sufficient detail to serve as a basis for computing values for progress payments during construction.
- C. Identify each line item with the number and title of the respective major section of the specifications.
- D. For each major line item list sub-values of major products or operations under the item.
- E. For the various portions of the Work:
  - 1. Each item shall include a directly proportional amount of the Contractor's overhead and profit.
  - 2. For items on which progress payments will be requested for stored materials, break down the value into:
    - a. The cost of the materials, delivered and unloaded, with taxes paid. Paid invoices are required for materials upon request by the Engineer.
    - b. The total installed value.
- F. The sum of all values listed in the schedule shall equal the total Contract Sum.

1.03 SUBSCHEDULE OF UNIT MATERIAL VALUES

- A. Submit a sub-schedule of unit costs and quantities for:
  - I. Products on which progress payments will be requested for stored products.
- B. The form of submittal shall parallel that of the Schedule of Values, with each item identified the same as the line item in the Schedule of Values.
- C. The unit quantity for bulk materials shall include an allowance for normal waste.
- D. The unit values for the materials shall be broken down into:
  - 1. Cost of the material, delivered and unloaded at the site, with taxes paid.
  - 2. Copies of invoices for component material shall be included with the payment request in which the material first appears.
  - 3. Paid invoices shall be provided with the second payment request in which the material appears or no payment shall be allowed and/or may be deleted from the request.
- E. The installed unit value multiplied by the quantity listed shall equal the cost of that item in the Schedule of Values.

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

**PART 3 - EXECUTION (NOT USED)**

END OF SECTION

## SECTION 01400

### GENERAL QUALITY CONTROL

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION OF REQUIREMENTS:

- A. Specific quality control requirements for the work are indicated throughout the contract documents and are not repeated herein. The requirements for this section are primarily to performances of the work beyond furnishing of manufactured products. The term "Quality Control" includes, but is not necessarily limited to, inspection and testing and associated requirements. This section does not specify or modify Engineer's duties relating to quality control and Contract enforcement.

##### 1.02 RESPONSIBILITY FOR INSPECTIONS AND TESTS:

- A. Unless otherwise noted, all testing and inspections required by these specifications shall be performed by a properly certified entity. All costs associated with the testing and inspections shall be the Contractor's responsibility. The Contractor shall also be responsible for all tests or inspections required by any entity having jurisdictional control over the work.
- B. The costs for those required services by independent testing laboratories are recognized to be included in the contract sum.
- C. No failure of test agencies, whether engaged by Owner or Contractor, to perform adequate inspections or tests or to properly analyze or report results, shall relieve the Contractor of responsibility for fulfillment of the requirements of the contract documents.

##### 1.03 QUALITY ASSURANCE:

- A. General Workmanship Standards: Except as more definitively specified, the Contractor shall comply with recognized workmanship quality standards within the industry as applicable to each unit of work, including ANSI, ASTM and AWWA standards where applicable. It is a requirement that each category of tradesperson or installer performing the work be prequalified, to the extent of being familiar with applicable and recognized quality standards for that category of work, and of being capable of workmanship complying with those standards.

##### 1.04 PRODUCT DELIVERY-STORAGE-HANDLING:

- A. Handle, store and protect materials and products, including fabricated components, by methods and means which will prevent damages, deterioration and losses, including theft (and resulting delays), thereby insuring highest quality results as the performance of the work progresses. Control delivery schedules so as to minimize unnecessary long-term storage at the project site prior to installation. Contractor shall provide covered, inside storage for all new equipment on the site which is not intended for outside installation. Electrical, hydraulic and pneumatic connections on all equipment shall be protected from the elements. Contractor shall store all material on the project site unless specifically authorized otherwise by the Owner.

#### PART 2 - PRODUCTS (not applicable)

## **PART 3 - EXECUTION**

### **3.01 PREPARATION FOR INSTALLATION:**

- A. Installer's Inspection of Conditions: The Contractor shall require the manufacturer's representative and installer of each major unit of work to inspect substrate to receive the work, and conditions under which the work will be performed and to report (in writing to the Contractor and the Engineer) conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the fabricator, installer, and engineer.

### **3.02 INSTALLATION QUALITY CONTROL:**

- A. Manufacturer's Instructions: Where installations include manufactured products, comply with manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in the contract documents.
- B. The Contractor shall inspect each item of material or equipment immediately prior to installation and reject damaged and defective items.
- C. Provide attachment and connection devices and methods for securing work as it is installed; true to line and level, and within recognized industry tolerances if not otherwise indicated.
- D. The Contractor shall recheck measurements and dimensions of the work as an integral step of starting each installation.
- E. Install work during conditions of temperature, humidity, exposure, forecasted weather and status of project completion which will ensure best possible results for each unit of work, in coordination with entire work. Isolate each unit of work from noncompatible work as required, to prevent deterioration.
- F. Mounting Heights: Except as otherwise noted, mount individual units of work at industry-recognized standard mounting heights, for applications indicated. Refer questionable mounting height choices to the Engineer for final decision.
- G. Adjust, clean, and restore marred finishes and protect newly installed work, to ensure that it will remain without damage or deterioration during the remainder of the construction period.

END OF SECTION

SECTION 01410

**TESTING LABORATORY SERVICES**

**PART 1 - GENERAL**

1.01 WORK INCLUDED

- A. The Contractor will employ the services of an independent Testing Laboratory (approved by City) to perform specified testing. The Contractor shall pay the costs of all testing laboratory services.
  - 1. The Contractor shall cooperate with the laboratory to facilitate the execution of its required services.
  - 2. Employment of the laboratory shall in no way relieve the Contractor's obligations to perform the Work in accordance with the requirements of the Contract Documents.

1.02 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY

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

1.03 CONTRACTOR'S RESPONSIBILITIES

- A. Cooperate with laboratory personnel and/or the Engineer. Provide access to the Work or manufacturer's operations.
- B. Secure and deliver to the laboratory adequate quantities of representative samples of materials proposed to be used and which require testing.
- C. Provide to the laboratory the preliminary design mix to be used for concrete and other mixes which require control by the testing laboratory.
- D. Furnish copies of test reports as required.
- E. Furnish incidental labor and facilities:
  - 1. To provide access to Work to be tested.
  - 2. To obtain and handle samples at the project site to be tested.
  - 3. To facilitate inspections and tests.
  - 4. For storage and curing of test samples.
- F. Notify the laboratory sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of test.

- G. Make arrangements with the laboratory and pay for additional samples and tests required for the Contractor's convenience.

**PART 2 - PRODUCTS - NOT USED.**

**PART 3 - EXECUTION**

3.01 PAYMENT

- A. Testing of materials and products will be performed by an independent testing laboratory. Testing will be performed to least encumber the performance of the Work.
- B. The Contractor shall pay for the costs of all testing as required.
- C. When the Work of this Contract or portions thereof are completed, notify the Engineer to perform or witness the tests. Do not proceed with additional portions of Work until test results have been verified.

END OF SECTION

SECTION 01450

**ENVIRONMENTAL PROTECTION**

**PART 1 GENERAL**

1.01 SECTION INCLUDES:

- A. Requirements for prevention of environmental pollution and damage as the result of construction operations under this contract.
- B. The work covered by this Section consists of furnishing all labor, materials and equipment and performing all work required for the prevention of environmental pollution in conformance with applicable laws and regulations, during and as the result of construction operations under this Contract. For the purpose of this Specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic and/or recreational purposes.
- C. The control of environmental pollution requires consideration of air, water and land, and involves management of noise and solid waste, as well as other pollutants.
- D. Schedule and conduct all work in a manner that will minimize the erosion of soils in the area of the work. Provide erosion control measures such as diversion channels, sedimentation or filtration systems, berms, staked hay bales, seeding, mulching or other special surface treatments as are required to prevent silting and muddying of streams, rivers, impoundments, lakes, etc. All erosion control measures shall be in place in an area prior to any construction activity in that area.
- E. These Specifications are intended to ensure that construction is achieved with a minimum of disturbance to the existing ecological balance between a water resource and its surroundings.
- F. These are general guidelines. It is the CONTRACTOR's responsibility to determine the specific construction techniques to meet these guidelines.

1.02 SYSTEM DESCRIPTION:

- A. Environmental pollution and damage are defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorable alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic, cultural, and/or historical purposes.
- B. The control of environmental pollution and damage requires consideration of air, water, and land, and includes management of visual esthetics, noise, solid waste, radiant energy and radioactive materials, as well as other pollutants.
- C. Comply with all applicable Federal, State and local laws and regulations concerning environmental pollution control and abatement.

1.03 QUALITY ASSURANCE:

- A. Establish and maintain quality control for environmental protection of all items set forth herein.
- B. Record on daily quality control reports or attachments thereto, any problems in complying with laws, regulations and ordinances, and corrective actions taken.

- C. Comply with all requirements under the terms and conditions set out in all permit(s) obtained by the Owner.
- D. The Owner's Representative will notify the Contractor in writing of any observed noncompliance with the Federal, State, or local laws or regulations, permits and other elements of the Environmental Protection Plan.
  - 1. After receipt of such notice, inform the Owner's Representative of proposed corrective action and take such action as may be approved.
  - 2. Failure to comply promptly will be grounds for suspension of the work.
  - 3. No time extensions shall be granted or costs or damages allowed for any such suspension.
- E. The ENGINEER will notify the CONTRACTOR in writing of any non-compliance with the foregoing provisions or of any environmentally objectionable acts and corrective action to be taken. State or local agencies responsible for verification of certain aspects of the environmental protection requirements shall notify the CONTRACTOR in writing, through the ENGINEER, of any non-compliance with State or local requirements. The CONTRACTOR shall, after receipt of such notice from the ENGINEER or from the regulatory agency through the ENGINEER, immediately take corrective action. Such notice, when delivered to the CONTRACTOR or his authorized representative at the site of the Work, shall be deemed sufficient for the purpose. If the CONTRACTOR fails or refuses to comply promptly, the OWNER may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the CONTRACTOR unless it is later determined that the CONTRACTOR was in compliance.
- F. Prior to commencement of the Work, meet with the ENGINEER to develop mutual understandings relative to compliance with this provision and administration of the environmental pollution control program.
- G. Remove temporary environmental control features, when approved by the ENGINEER and incorporate permanent control features into the project at the earliest practicable time.

## **PART 2 PRODUCTS (Not Applicable)**

## **PART 3 EXECUTION**

### **3.01 PROTECTION OF ENVIRONMENTAL RESOURCES:**

- A. Protect the environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire period of this contract. Confine activities to areas defined by the drawings and specifications.
- B. Disposal of Waste:
  - 1. Dispose of solid wastes (excluding clearing debris), in containers which are emptied on a regular schedule. All handling and disposal shall be conducted to prevent contamination.
  - 2. Transport all solid waste off property and dispose of it in compliance with Federal, State and local requirements for solid waste disposal.
  - 3. Store chemical waste in corrosion resistant containers, removed from the work area and disposed of in accordance with Federal, State and local regulations.
  - 4. Discarded materials other than those which can be included in the solid waste category, shall be handled as directed by the Owner's Representative.
- C. Under no circumstances shall the Contractor discharge any sewage into the storm system or

on the ground. The Contractor shall prepare a contingency plan to dispose of the sewage should the by-pass pumping system fail. Previous methods included the use of tankers to transport the sewage to a different part of the system. The Contractor should also consider re-flooding the wetwell. However, no additional payment will be made for clean-up and restoration of work already completed.

### 3.02 PROTECTION OF WATER RESOURCES:

- A. Keep construction activities under surveillance, management and control to avoid pollution of surface and ground waters.
- B. Monitor all water areas affected by construction activities.
- C. Grade site to drain. Maintain excavations free of water. Provide, operate and maintain pumping equipment. **Contractor shall be responsible for obtaining any required South Florida Water Management District dewatering permits.** Contractor shall be responsible for complying with any and all SFWMD permit requirements.
- D. Protect site from puddling or running water.
- E. Care shall be taken to prevent, or reduce to a minimum, any damage to any surface water from pollution by debris, sediment or other material, or from the manipulation of equipment and/or materials in or near such surface waters. Water that has been used for washing or processing, or that contains oils or sediments that will reduce the quality of the surface water, shall not be directly returned to the surface water. Such waters will be diverted through a settling basin or filter before being directed into the surface waters.
- F. The CONTRACTOR shall not discharge water from testing operations directly into any surface water.
- G. All preventative measures shall be taken to avoid spillage of petroleum products and other pollutants. In the event of any spillage, prompt remedial action shall be taken in accordance with a contingency action plan approved by the OWNER. CONTRACTOR shall submit two copies of approved contingency plans to the ENGINEER

### 3.03 PROTECTION OF FISH AND WILDLIFE RESOURCES:

- A. Keep construction activities under surveillance, management and control, to minimize interference with, disturbance to, and damage of fish and wildlife.

### 3.04 EROSION CONTROL

- A. Provide positive means of erosion control such as shallow ditches around construction to carry off surface water. Erosion control measures, such as siltation basins, hay check dams, mulching, jute netting and other equivalent techniques, shall be used as appropriate. Flow of surface water into excavated areas shall be prevented. Ditches around construction areas shall also be used to carry away water resulting from dewatering of excavated areas. At the completion of the work, ditches shall be backfilled and the ground surface restored to its original condition.

### 3.05 PROTECTION OF LAND RESOURCES

- A. Land resources within the project boundaries and outside the limits of permanent work shall be restored to a condition, after completion of construction, that will appear to be natural and not detract from the appearance of the project. Confine all construction activities to areas shown on the Drawings.
- B. Outside of areas requiring earthwork for the construction of the new facilities, the CONTRACTOR shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without prior approval. No ropes, cables, or guys shall be fastened to or attached to any

existing nearby trees for anchorage unless specifically authorized by the ENGINEER. Where such special emergency use is permitted, first wrap the trunk with a sufficient thickness of burlap or rags over which softwood cleats shall be tied before any rope, cable, or wire is placed. The CONTRACTOR shall in any event be responsible for any damage resulting from such use.

- C. Where trees may possibly be defaced, bruised, injured, or otherwise damaged by the CONTRACTOR's equipment, dumping or other operations, protect such trees by placing boards, planks, or poles around them. Monuments and markers shall be protected similarly before beginning operations near them.
- D. Any trees or other landscape feature scarred or damaged by the CONTRACTOR's equipment or operations shall be restored as nearly as possible to its original condition. The ENGINEER will decide what method of restoration shall be used and whether damaged trees shall be treated and healed or removed and disposed of.
  - 1. All scars made on trees by equipment, construction operations, or by the removal of limbs larger than 1-inch in diameter shall be coated as soon as possible with an approved tree wound dressing. All trimming or pruning shall be performed in an approved manner by experienced workmen with saws or pruning shears. Tree trimming with axes will not be permitted.
  - 2. Climbing ropes shall be used where necessary for safety. Trees that are to remain, either within or outside established clearing limits, that are subsequently damaged by the CONTRACTOR and are beyond saving in the opinion of the ENGINEER, shall be immediately removed and replaced.
- E. The locations of the CONTRACTOR's storage and other construction buildings, required temporarily in the performance of the Work, shall be cleared as portions of the job site or areas to be cleared as shown on the Drawings and shall require written approval of the ENGINEER and shall not be within wetlands or floodplains. The preservation of the landscape shall be an imperative consideration in the selection of all sites and in the construction of buildings. Drawings showing storage facilities shall be submitted for approval of the ENGINEER
- F. If the CONTRACTOR proposes to construct temporary roads or embankments and excavations for plant and/or work areas, he shall submit the following for approval at least ten-days prior to scheduled start of such temporary work:
  - 1. A layout of all temporary roads, excavations and embankments to be constructed within the work area.
  - 2. Details of temporary road construction.
  - 3. Drawings and cross sections of proposed embankments and their foundations, including a description of proposed materials.
  - 4. A landscaping drawing showing the proposed restoration of the area. Removal of any trees and shrubs outside the limits of existing clearing area shall be indicated. The drawing shall also indicate location of required guard posts or barriers required to control vehicular traffic passing close to trees and shrubs to be maintained undamaged. The drawing shall provide for the obliteration of construction scars as such and shall provide for a natural appearing final condition of the area. Modification of the CONTRACTOR's approved drawings shall be made only with the written approval of the ENGINEER. No unauthorized road construction, excavation or embankment construction including disposal areas will be permitted.
- G. Remove all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess waste materials, or any other vestiges of construction as directed by the ENGINEER. It is anticipated that excavation,

filling and plowing of roadways will be required to restore the area to near natural conditions which will permit the growth of vegetation thereon.

- H. All debris and excess material will be disposed of outside wetland or floodplain areas in an environmentally sound manner.

### 3.06 PROTECTION OF AIR QUALITY

- A. Burning - The use of burning at the project site for the disposal of refuse and debris will not be permitted.
- B. Dust Control - The CONTRACTOR will be required to maintain all excavations, embankments, stockpiles, access roads, plant sites, waste areas, borrow areas and all other work areas within or without the project boundaries free from dust which could cause the standards for air pollution to be exceeded and which would cause a hazard or nuisance to others.
- C. An approved method of stabilization consisting of sprinkling or other similar methods will be permitted to control dust. The use of petroleum products is prohibited. The use of chlorides may be permitted with approval from the ENGINEER.
- D. Sprinkling, to be approved, must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times, and the CONTRACTOR must have sufficient competent equipment on the job to accomplish this if sprinkling is used. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs, as determined by the ENGINEER.

### 3.07 MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION

- A. During the life of this Contract, maintain all facilities constructed for pollution control as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created.

### 3.08 NOISE CONTROL

- A. The CONTRACTOR shall make every effort to minimize noises caused by his/her operations. Equipment shall be equipped with silencers or mufflers designed to operate with the least possible noise in compliance with State and Federal regulations.

END OF SECTION

SECTION 01500

**CONSTRUCTION CONSIDERATIONS**

**PART 1 - GENERAL**

1.01 HYDRAULIC UPLIFT ON STRUCTURES

- A. The Contractor shall be completely responsible for any pipelines, sanitary manholes, or similar structures that may become buoyant during the construction operations due to the ground water or floods and before the structure is put into operation. Should there be any possibility of buoyance of a structure, the Contractor shall take the necessary steps to prevent its buoyance. Damage to any structures due to floating or flooding shall be repaired or the structures replaced at the Contractor's expense.

1.02 RELOCATIONS

- A. The Contractor shall be responsible for the relocation of structures, including but not limited to, light poles, sign poles, fences, piping, conduits and drains that interfere with the positioning of the Work as set out on the Drawings. The cost of all such relocations shall be included in the bid for the project and shall not result in any additional cost to the Owner.

1.03 SUBSURFACE INVESTIGATIONS

- A. The Contractor shall be responsible for having determined to his satisfaction, prior to 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 groundwater condition, the character of equipment and facilities required preliminary to and during the performance 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 shall reflect all costs pertaining to the work. Any claims for extras based on the substrata or groundwater table conditions will be disallowed.

1.04 OBSTRUCTIONS

- A. All water pipes, storm drains, sanitary sewers, force mains, or other pipe, telephone or power cables or conduits and all other obstructions, whether or not shown, shall be temporarily supported across utility line excavations. The Contractor shall be responsible for any damage to any such pipes, conduits, or structures. Approximate locations of known water, sanitary, raw water, drainage, power and telephone installations along route of new force main pipeline or in the vicinity of new work are shown, but must be verified in the field by the Contractor before beginning any excavation. The Contractor shall uncover these pipes, ducts, cables, etc., carefully, by hand if necessary, prior to installing new pipeline. Any discrepancies or differences found shall be brought to the attention of the Engineer in order that necessary changes may be made to permit installation of new work. These conditions are supplemental to general requirements elsewhere in the Contract Documents.

1.05 SITE CONDITIONS

- A. The Contractor acknowledges that he has investigated prior to bidding and satisfied himself as to the conditions affecting the work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, canal stages, tides, water tables or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during prosecution of the work. The Contractor further acknowledges that he has satisfied himself as to the character, quality of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, or any contiguous site, as well as from information presented by the Drawings and Specifications made a part of this Contract, or any other information made available to him prior to receipt of Bids. Any failure by the Contractor to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficult or cost of successfully performing the work. The Owner assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the Owner.

1.06 PROTECTION OF PROPERTY

- A. The Contractor shall protect all property that may be affected by his work or operations. The location and extent of underground and covered facilities are not guaranteed and the Contractor is cautioned to proceed with care in order to prevent the undermining or damage to existing structures, piping, or facilities.
- B. When County or City water is being used, the supply source shall be protected against contamination in accordance with existing codes and regulations.
- C. In the event any of the Contractor's activities were to disrupt or endanger any facilities, he shall at his own expense make all necessary repairs or replacements necessary to correct the situation to the satisfaction of the Engineer. Such work shall progress continuously to completion on a 24-hour per day, seven workday basis. The Contractor shall be responsible for the services of repair crews on call 24 hours per day for emergencies that arise involving work under this Contract.

1.07 WORK ADJACENT TO FLORIDA POWER AND LIGHT CORPORATION (FP&L) FACILITIES

- A. The attention of the Contractor is drawn to existing FP&L overhead and underground facilities are located in the construction area. The Contractor shall protect all existing power transmission and distribution facilities throughout the period of construction and shall contact the offices of FP&L at least 72 hours prior to the start of any construction.
- B. It is full and complete responsibility of the Contractor to determine the exact location of all overhead and underground power transmission and distribution facilities in the area of the Works whether or not they are indicated on the Drawings.

1.08 WORK ADJACENT TO BELLSOUTH TELEPHONE COMPANY OR AT&T TELE-COMMUNICATIONS FACILITIES

- A. The attention of the Contractor is drawn to the existing overhead and underground telecommunications facilities are located in the construction area. The Contractor shall protect all existing telecommunications facilities throughout the construction of the project and shall contact the appropriate telecommunications offices at least 72 hours prior to the start of construction.

- B. It is full and complete responsibility of the Contractor to determine the exact location of all overhead and underground telecommunications facilities in the area of the Works whether or not they are indicated on the Drawings.

1.09 WORK ADJACENT TO FLORIDA PUBLIC UTILITIES COMPANY FACILITIES

- A. The attention of the Contractor is drawn to the existing underground natural gas lines are located in the construction area. The Contractor shall protect all existing natural gas pipelines throughout the construction of the project and shall contact the appropriate natural gas offices at least 72 hours prior to the start of construction.
- B. It is full and complete responsibility of the Contractor to determine the exact location of all underground natural gas lines in the area of the Works whether or not they are indicated on the Drawings.

1.10 WORK ADJACENT TO CABLE TV (CATV) FACILITIES

- A. The attention of the Contractor is drawn to the existing overhead and buried CATV lines are located in the construction area. The Contractor shall protect all existing overhead and buried CATV throughout the construction of the project and shall contact the appropriate cable TV offices at least 72 hours prior to the start of construction.
- B. It is full and complete responsibility of the Contractor to determine the exact location of all overhead and underground CATV in the area of the Works whether or not they are indicated on the Drawings.

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

**PART 3 - EXECUTION (NOT USED)**

END OF SECTION

**CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

**PART 1 GENERAL**

1.01 SECTION INCLUDES:

- A. Temporary Utilities: Electricity, lighting, telephone service and sanitary facilities.
- B. Temporary Controls: Barriers, enclosures and fencing, protection of the Work and water control.
- C. Construction Facilities: Access roads, parking, progress cleaning, project signage and temporary buildings.

1.02 TEMPORARY ELECTRICITY:

- A. Cost: By Contractor; provide and pay for any required temporary power service.

1.03 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES:

- A. Provide and maintain lighting for construction operations as necessary.

1.04 TEMPORARY VENTILATION:

- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity and to prevent accumulation of dust, fumes, vapors or gases.

1.05 TELEPHONE SERVICE:

- A. Provide, maintain and pay for telephone service to field office at time of project mobilization.

1.06 TEMPORARY SANITARY FACILITIES:

- A. Provide and maintain required temporary restroom facilities and enclosures for field crews.

1.07 BARRIERS:

- A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations maintaining access to public rights-of-way and existing buildings and driveways. Maintain access to fire hydrants.
- B. Provide protection for vegetation designated to remain. Replace damaged plant life.
- C. Protect vehicular traffic, stored materials, site and structures from damage.

1.08 FENCING:

- A. Construction: Contractor shall construct temporary fence six (6) feet high as requested by the Engineer.

1.09 WATER CONTROL:

- A. Grade site to drain. Maintain excavations free of water. Provide, operate and maintain pumping equipment. Contractor responsible for obtaining any required South Florida Water Management District dewatering permits.
- B. Protect site from puddling or running water.

1.10 TEMPORARY BYPASSING FACILITIES: NOT USED

- A. ~~Contractor to provide all pumps, labor and materials required to bypass the flow of sewage during sewer main replacement, manhole work, and lift station modifications.~~

1.11 PROTECTION OF INSTALLED WORK:

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to prevent damage.

1.12 SECURITY:

- A. Provide security and facilities to protect Work, existing facilities and Owner's operations from unauthorized entry, vandalism or theft.

1.13 PROGRESS CLEANING AND WASTE REMOVAL:

- A. Maintain areas free of waste materials, debris and rubbish. Maintain site in a clean and orderly condition.
- B. Collect and remove waste materials, debris and rubbish from site daily and dispose off-site.

1.14 REMOVAL OF UTILITIES, FACILITIES AND CONTROLS:

- A. Remove temporary utilities, equipment, facilities and materials prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing (and permanent) facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

1.15 TEMPORARY WATER SERVICES:

- A. See Section 01019-2, Paragraph 1.06.

**PART 2 PRODUCTS**

NOT APPLICABLE

**PART 3 EXECUTION**

NOT APPLICABLE

END OF SECTION

SECTION 01540

**SECURITY AND PROTECTION**

**PART 1 GENERAL**

1.01 DESCRIPTION:

- A. Requirements: This section specified minimum requirements of temporary provisions for security and protection is the Contractor's sole responsibility, and is not limited to the minimums established by the requirements hereof. Except as otherwise indicated, the use of alternative security and protection methods of facilities, equivalent to those specified in the Contractor's option. The work of this section is defined to exclude required insurance coverage, performance/payment bonds, first aid requirements, general supervision, quality control, damage surveys, enclosure of completed work and stored materials, inspections and test of the work, instruction to Owner's personnel and similar recognized protection/security provision, which are, nevertheless, specified in other parts of the contract documents, if required.
- B. The types of security and protection facilities and services required for the entire project include, but are not limited to, the following:
  - 1. Barricades, warning signs, lights.
  - 2. Security enclosure and lockup of work.
  - 3. Personnel security program.
  - 4. Environmental protection.

1.02 QUALITY ASSURANCE:

- A. Regulations: Comply with governing regulations for the installation and operation of security and protection facilities, including the rules and recommendations of fire and building departments, police, rescue squad's watchman services and similar local organizations and companies.

1.03 JOB CONDITIONS:

- A. Scheduled Uses: Provide security and protection at the times first needed t the site; and maintain, expand and modify the facilities as needed throughout the construction period.
- B. Conditions of Use: Use security and protection facilities and services in a safe, sanitary, lawful and publicly acceptable manner, which will not interfere unduly with performance of the work nor result in other deleterious effects.

1.04 MATERIALS OF SECURITY AND PROTECTION FACILITIES:

- A. For use in security and protection facilities, provide either new or used materials and equipment, which are in substantially undamaged and serviceable conditions. Provide types and quality levels which are recognized in the construction industry as suitable for the intended use in each application.

1.05 INSTALLATION OF SECURITY/PROTECTION FACILITIES:

- A. Use qualified tradesmen for the installation of security and protection facilities. Locate facilities where they will serve the total project construction work adequately, and result in a minimum interference with performance of the work. Relocate, modify and extend facilities as required during the course of the work, to properly accommodate the entire work of the project. Provide and maintain a reasonably neat and uniform appearance in security and protection facilities, acceptable to the Owner.

1.06 BARRICADES, WARNING SIGNS AND LIGHTS:

- A. General: Comply with recognized standards and code requirements for the erection of substantial and structurally adequate barricades wherever needed to prevent accidents and losses. Paint with appropriate colors, graphics and warning signs and inform personnel at the site, and the general public where exposure exists of the hazard being projected. Provide lighting where appropriate and needed for the recognition of the facility, including flashing red lights where appropriate.
- B. Storage: Where materials and equipment must be temporarily stored, prior to and during construction, and are of substantial value or attractive for possible theft, provide secure lockup and enforce strict discipline in connection with the timing of installation and release of materials, so that the opportunity for theft and vandalism is minimized.

1.07 ENVIRONMENTAL PROTECTION:

- A. Provide protection facilities, operate temporary facilities, conduct construction activities and enforce strict discipline for personnel at the project site in ways and by methods which comply with environmental protection regulations, and which will minimize the possibility that the air, waterways and subsoil might be contaminated or polluted, or that other undesirable and deleterious effects might result from performance of the work at the project site. Avoid the use of tools and equipment which produce harmful noise; and restrict the use of noise-making tools and equipment to the hours of use which will minimize noise complaints by persons or residents near the project.

1.08 TERMINATION AND REMOVAL:

- A. Maintain protection and security facilities and services in good operating condition through the time and use and until the completion and use of permanent work makes each temporary service unnecessary, or until the Owner's occupancy has replaced the need for the service or until its discontinuation has been otherwise authorized. Remove each facility promptly after its use has been terminated. Complete or restore permanent work which may have been delayed or otherwise affected by the temporary facility. Replace work which cannot be satisfactorily restored. Except as otherwise indicated, the materials and equipment of temporary security and protection facilities remain the property of the Contractor

END OF SECTION

SECTION 01600

**MATERIAL EQUIPMENT AND PRODUCTS**

**PART 1 - GENERAL**

1.01 WORK INCLUDED

- A. Workmanship.
- B. Manufacturer's Instructions.
- C. Transportation and Handling.
- D. Storage and Protection.
- E. Substitutions and Product Options.

1.02 SUBMITTALS

- A. The Contractor shall submit the following:
  - 1. Assembly instructions for parts shipped unassembled.
  - 2. Manufacturer's instructions for unloading, handling, storage, and protection prior to installation, with each shipment of each product type.
  - 3. Copy of manufacturer's notice of shipment for products critical to the project schedule.
  - 4. Documentation of products in storage, submitted with each progress payment request.
  - 5. Written agreement with property owner or lessee for storage of products, if offsite storage is necessary.

1.03 MATERIAL, EQUIPMENT AND PRODUCTS

- A. Comply with these Specifications and referenced standards as a minimum.
- B. Components required to be supplied in quantity within a Specification Section shall be the same, and shall be interchangeable.

1.04 WORKMANSHIP

- A. Comply with industry standards except when more restrictive tolerances of specified requirements indicate more rigid standards or more precise workmanship.
- B. Perform work by persons qualified to produce workmanship of the specified quality.
- C. Secure in places with positive anchorage devices designed and sized to withstand stresses, vibration and racking.

1.05 MANUFACTURER'S INSTRUCTIONS

- A. When work is specified to comply with manufacturer's instructions, submit copies as specified in Section 01300. Distribute copies to subcontractors involved and maintain one (1) set in the field office.
- B. Perform work in accordance with details of instructions and specified requirements. Should a conflict exist between the Specifications and the instructions, consult with the Engineer.

1.06 PREPARATION FOR SHIPMENT

- A. When practical, products shall be factory assembled.
  - 1. Furnish assembly instructions for parts and products that are shipped unassembled.
  - 2. Mark or tag the separate parts and assemblies for field assembly.
  - 3. Cover machined and unpainted parts that may be damaged by the elements with a strippable protective coating.
- B. Package or crate products to provide protection from damage during shipping, handling, and storage.
  - 1. Mark or tag the outside of each package or crate to indicate its purchase order number, bill of lading number, contents by name, name of project and Contractor, equipment number, and approximate weight.
- C. Mark spare parts and special tools to identify the associated products by name, equipment, and part number.
- D. Package parts for protection against damage from the elements during shipping, handling, and storage.
- E. Ship in boxes or containers marked to indicate the contents as stated above.
- F. Deliver spare parts and special tools before the associated equipment is scheduled for the initial test run.
- G. The Contractor shall request a minimum 7-day advance notice of shipment from manufacturer's.
- H. Where specified for specific products, factory test results shall be reviewed and accepted before such products are shipped.

1.07 TRANSPORTATION AND HANDLING

- A. Provide equipment and personnel necessary to handle products by methods to prevent soiling or damage to products or packaging.
- B. Provide additional protection during handling as necessary to prevent scraping, marring or otherwise damaging products or surrounding surfaces.
- C. Handle products by methods to prevent bending or stressing.

- D. Lift heavy components only at designated lifting points.

#### 1.08 RECEIVING, INSPECTION AND UNLOADING

- A. All Owner furnished items, if applicable, will be picked up by the Contractor at the locations specified by the Owner, and unloaded at the job site.
- B. The Contractor shall record the receipt of products at the jobsite.
- C. Upon receipt of products at the jobsite, the Contractor shall inspect for completeness and evidence of damage during shipment.
  - 1. The Owner, Engineer and manufacturer's representative may be present for inspection.
  - 2. Should there appear to be any damage, notify the Engineer immediately and inform the manufacturer and the transportation company.
  - 3. Expedite replacement of damaged, incomplete, or lost items.
- D. After completion of inspection, unload products per the manufacturer's instructions.
- E. Do not unload damaged or incomplete products to be returned to the manufacturer for replacement, except as necessary to expedite return shipment.
- F. The Contractor shall certify that the materials and quantity received are suitable for installation in accordance with these Contract Documents.
- G. The Contractor shall assume full responsibility for the storage and control of all Owner supplied materials.

#### 1.09 STORAGE, PROTECTION AND MAINTENANCE

- A. Store in accordance with the manufacturer's instructions, with seals and labels intact and legible.
- B. For exterior storage of fabricated products and equipment, place on supports above ground.
- C. Cover products and equipment subject to deterioration with impervious sheet covering and provide adequate ventilation to avoid condensation.
- D. Store loose granular materials on solid surfaces in a well-drained area. Prevent mixing with foreign matter.
- E. Store items subject to damage by the elements, vandalism, or theft in secure areas.
- F. Provide environmentally controlled storage facilities for items requiring environmental control for protection.
- G. Arrange storage to provide access for inspection and inventory control by the Engineer. Periodically inspect to assure products, equipment and materials are undamaged and are maintained under the manufacturer's recommended conditions.
- H. After installation, provide coverings to protect products and equipment from damage, traffic and construction operations. Remove when no longer needed.

- I. During such periods of time as are designated by the U.S. Weather Bureau as being a hurricane warning or hurricane alert, construction materials or equipment shall be secured against displacement by wind forces.
- J. Materials found unfit for use shall not be incorporated in the Work and shall be immediately removed from the construction or storage site.
- K. Delivered materials shall be stored in a manner acceptable to the Engineer before any payment for same will be made.
- L. The Contractor shall document products in storage to facilitate inspection and to estimate progress payments for products delivered but not installed in the work.

END OF SECTION

## SECTION 01700

### PROJECT CLOSEOUT

#### PART 1 - GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. Closeout procedures, final cleaning, project record documents, system demonstration, warranties and bonds.
- B. Closeout includes the general requirements near the end of the Contract Time in preparation for final acceptance, final payment, normal termination of the Contract, beneficial use by the Owner, and similar actions evidencing completion of the Work.

##### 1.02 CLOSEOUT PROCEDURES

- A. Comply with procedures stated in the General Conditions of the Contract Documents for issuance of the Certificate of Substantial Completion and the Certificate of Final Completion.
- B. When the Contractor considers that the Work has reached final completion, submit written certification that the Contract Documents have been reviewed, the Work has been thoroughly inspected, and that the Work is considered to be completed in accordance with the Contract Documents and is ready for inspection by the Engineer.
- C. In addition to submittals required by the conditions of the Contract, provide all other submittals required by the Owner, other governing authorities or regulatory agencies, and submit to the Engineer a final statement of accounting giving the total adjusted Contract Sum, previous payments, and the sum remaining due.
- D. The Engineer will issue a final change order reflecting approved adjustments to the Contract Sum not previously made by Change Order.

##### 1.03 SUBSTANTIAL COMPLETION

- A. When the Contractor considers the Work to be substantially complete, the Contractor will submit to the Engineer, or the Owner, as applicable:
  - 1. A written notice that the Work, or a designated portion thereof, is substantially complete.
  - 2. Special guarantees, warranties, workmanship bonds, maintenance agreements and similar documents.
  - 3. Occupancy permits, operating certificates, test certificates and similar releases enabling the Owner's full and unrestricted use of the work and access to services and utilities.
  - 4. Record drawings, maintenance manuals, project photographs, property survey and similar record information.
  - 5. Tools, spare parts, extra stocks of materials and similar physical items to the Owner.

6. Certification that all site temporary facilities and services, along with construction equipment, mock-ups and similar elements have been removed from the site and that all repairs, touch-ups and restorations of marred exposed finishes have been completed.
- B. Within a reasonable time after receipt of such notice, the Engineer will make an inspection to determine the status of completion.
  - C. Should the Engineer determine that the Work is not substantially complete:
    1. The Engineer will promptly notify the Contractor in writing, giving the reasons therefore.
    2. The Contractor will remedy the deficiencies in the Work, and send a second written notice of substantial completion to the Engineer.
    3. The Engineer will then re-inspect the Work.
  - D. When the Engineer finds that the Work is substantially complete, it will:
    1. Prepare and deliver to the Owner a tentative Certificate of Substantial Completion, with a tentative list of items to be completed or corrected before final payment.
    2. After consideration of any objections made by the Owner as provided in the General Conditions, and when the Engineer considers the Work substantially complete, it will execute and deliver to the Owner and the Contractor a definite Certificate of Substantial Completion with a revised tentative list of items to be completed or corrected.

#### 1.04 FINAL SUBMITTALS

- A. The following submittals, as applicable, are required prior to finalizing the Contract:
  1. Final shop drawings.
  2. Record drawings.
- B. All guarantees, bonds, certifications, licenses, and affidavits required for work and equipment must be filed with the Engineer.

#### 1.05 RELEASE OF LIENS OR CLAIMS

- A. Satisfactory evidence of release or waiver of all liens or claims must be submitted to the Owner prior to finalizing the Contract.

#### 1.06 FINAL INSPECTION

- A. When the Contractor considers the Work complete, it will submit written certification that:
  1. The Contract Documents have been reviewed.
  2. The Work has been inspected for compliance with the Contract Document.
  3. The Work has been completed in accordance with the Contract Documents.
  4. The Work is in every way completed and ready for final inspection.

- B. The Engineer will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.
- C. Should the Engineer consider that the Work is incomplete or defective:
  - 1. The Engineer will promptly notify the Contractor in writing, listing the incomplete or defective work.
  - 2. The Contractor will take immediate steps to remedy the stated deficiencies, and send a second written certification to the Engineer that the Work is complete.
  - 3. The Engineer will re-inspect the work.
  - 4. When the Engineer finds that the Work is acceptable under the Contract Documents, it shall request the Contractor to make close-out submittals.

#### 1.07 REINSPECTION FEES

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

#### 1.08 CONTRACTOR'S CLOSE-OUT SUBMITTALS TO THE ENGINEER

- A. Project record drawings.
- B. Contractor's affidavit of payment of debts and claims:
  - 1. Contractor's release or waiver of liens.
- C. Separate releases or waivers of liens for subcontractors, suppliers and others that have filed lien rights against property of the Owner in accordance with Section 713.06 Florida Statutes, together with a list of those parties.
- D. Final payment request with Consent of Surety for Final Payment and the Contractor's Certification of Final Completion.
- E. Certified copy of the Engineer's final punch-list of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance.

#### 1.09 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit a final statement of accounting to the Engineer. The statement will reflect all approved adjustments to the Contract Sum, including:
  - 1. The original Contract Sum.
  - 2. Additions and deductions resulting from:
    - a. Approved Change Orders.
    - b. Allowances.
    - c. Unit Prices.
    - d. Deductions for uncorrected Work.

- e. Deductions for liquidated damages.
    - f. Deductions for re-inspection payments.
    - g. Deductions for re-testing due to failed tests.
    - h. Other adjustments.
  - 3. Total Contract Sum, as adjusted.
  - 4. Previous payments.
  - 5. Sum remaining due.
- B. The Engineer will prepare a final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Order.

#### 1.10 FINAL CLEANING

- A. Perform prior to final inspection.
- B. Clean the site, sweep paved areas, rake clean other surfaces.
- C. Remove waste and surplus materials, rubbish and construction facilities from the project site and dispose of in a lawful manner.
- D. Remove stains, petrochemical spills and other foreign deposits.
- E. Except as otherwise indicated or requested by the Owner, remove temporary protection devices and facilities installed during the course of the Work to protect previously completed Work during the remainder of the construction period.
- F. Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at the site or bury debris or excess materials, or discharge volatile or other harmful or dangerous materials into the environment.
- G. Where extra materials of value remain after completion of the Work, dispose of or store such materials for use by the Owner as indicated in these Specifications.

#### 1.11 PROJECT RECORD DOCUMENTS

- A. Store documents separate from those used for construction.
- B. Keep documents current. Do not permanently conceal any work until required information has been recorded.
- C. At Contract closeout, submit documents with transmittal letter containing date, project title, Contractor's name and address, list of documents and signature of Contractor.
- D. Drawings legibly marked to record actual construction and showing:
  - 1. Horizontal and vertical locations of underground utilities and appurtenances.
  - 2. Field changes of dimension and detail.
  - 3. Changes made by approved Field Order or by approved Change Order.
  - 4. Details not shown on original Contract Drawings.
- E. Specifications and Addenda with each Section legibly marked to record:

1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment furnished and installed.
2. Changes made by approved Field Order or by approved Change Order.

#### 1.12 WARRANTIES AND BONDS

- A. Provide duplicate, signed, notarized originals. Execute Contractor's submittals and assemble documents executed by subcontractors, suppliers and manufacturers. Provide table of contents and assemble in binder with durable plastic cover.
- B. Submit material prior to final application for payment. For equipment put into use with Owner's permission during construction, submit within 10 days after first operation. For items of Work delayed materially beyond the date of Substantial Completion, provide updated submittals within 10 days after acceptance, listing the date of acceptance as the start of the warranty period.

#### 1.13 FINAL APPLICATION FOR PAYMENT

- A. The Contractor will submit the Final Application for Payment in accordance with the procedures and requirements stated in the General Conditions.

#### 1.14 FINAL CERTIFICATE FOR PAYMENT

- A. The Engineer will process the Final Application for Payment in accordance with the provisions of the General Conditions.

#### 1.15 POST-CONSTRUCTION INSPECTION

- A. Prior to expiration of one year from the date of Substantial Completion, the Engineer will make a visual inspection of the Project in company with the Owner and the Contractor to determine whether correction of Work is required, in accordance with the provisions of the General Conditions.
- B. The Engineer will promptly notify the Contractor, in writing, of any observed defects or deficiencies in the work.
- C. The Contractor shall immediately undertake all work required to remedy defects and repair the work to the satisfaction of the Engineer and the Owner.

## **PART 2 - PRODUCTS**

#### 2.01 ACCESSORIES

- A. Furnish to the Owner, upon acceptance of equipment, all accessories required to place each item of equipment in full operation.
- B. Accessory items include, but are not limited to, adequate oil and grease as required for first lubrication of equipment (after field testing), light bulbs, fuses, hydrant wrenches, valve keys, handwheels, chain operators, special tools, and other items as required for initial operation.

**PART 3 - EXECUTION (NOT USED)**

END OF SECTION

SECTION 01720

**PROJECT RECORD DOCUMENTS**

**PART 1 - GENERAL**

1.01 REQUIREMENTS INCLUDED

- A. Maintain at the site for the OWNER one record copy of:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other Modifications to the Contract.
  - 5. ENGINEER's Field Orders or written instructions.
  - 6. Approved Shop Drawings, Working Drawings and Samples.
  - 7. Field Test records.
  - 8. Field engineering records for compliance with field engineering submittals.

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Store documents and samples in CONTRACTOR's office apart from documents used for construction.
- B. File documents and samples in accordance with CSI/CSC format.
- C. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
- D. Make documents and samples available at all times for inspection by the ENGINEER

1.03 RECORDING

- A. Label each document "PROJECT RECORD" in neat large printed letters.
- B. Record information concurrently with construction progress.
  - 1. Do not conceal any work until required information is recorded.
- C. All geophysical logs, video surveys, injectivity data, pressure test data and other information required herein.

1.04 SUBMITTAL

- A. At Contract close-out, deliver Record Documents listed in Paragraph 1.01A to the ENGINEER for the OWNER.
- B. 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

SECTION 02734

**PRESSURE TESTING FOR INJECTION WELL  
MECHANICAL INTEGRITY TESTING OF CLASS 1 INJECTION WELL IW-1**

**PART 1 - GENERAL**

1.01 SCOPE OF WORK

- A. The Work to be performed under this Section includes the furnishing of all labor, materials, equipment, and other facilities and incidentals to test for the mechanical integrity of a Class I Injection Well as defined by the Florida Department of Environmental Protection (FDEP) and constructed to a depth of approximately 3,300 feet below land surface and used for the disposal of non-hazardous concentrate reject water from the membrane softening drinking water facility and well settled backwash supernate from the lime-softening drinking water facility located at the Lake Worth Water Treatment Plant. Included as part of the mechanical integrity test is the sampling of all associated pad monitor wells in addition to two sampling events conducted on the associated dual zone monitor wells. The mechanical integrity testing of the wells will consist of four tasks:

1. Task 1 shall consist of a Television Survey.
2. Task 2 shall consist of a Casing Pressure Test.
3. Task 3 shall consist of Caliper and Temperature Logging.
4. Task 4 shall consist of a series of Radioactive Tracer Surveys (RAT).

Task 2 is discussed in this Section. Tasks 1, 3, and 4 are discussed in Section 02737.

- B. These Specifications and Drawings are intended to give a general description of what is required, but do not cover all variations that may occur during injection well testing. The Specifications are intended to cover the successful mechanical integrity testing of the injection well system as herein specified, whether every detail is specifically mentioned or not.

1.02 REFERENCES

- A. Chapter 62-528 (Underground Injection Control), of the Florida Administrative Code (FAC)
- B. The FDEP Injection Well Operating Permit for the facility.
- C. The FDEP approved Mechanical Integrity Test (MIT) Plan dated July 2015 and provided herein as Appendix I.
- D. The CONTRACTOR is strongly encouraged to visit the wellsite to become familiar with site conditions.

1.03 RELATED WORK

- A. The television survey, caliper and temperature logging, and the radioactive tracer survey tasks are presented and discussed in Section 02737.

1.04 SUBMITTALS

- A. The CONTRACTOR shall submit, in writing, all items listed in this paragraph within fifteen (15) days after the date of execution of the Contract.
1. A complete list of testing equipment and materials including the name of the MANUFACTURER and technical data for the following:
    - a. Support rig or crane
    - b. Valves and fittings.
    - c. Calibrated Pressure Gauge.
    - d. Blowout preventer or stripper head for the existing wellheads.
    - e. Packer.
    - f. High Pressure Pump.
  2. The source and location of potable water supply, written authorization of the suppliers, method of transporting and containing the potable water.
  3. The name of the geophysical logging SUBCONTRACTOR(S), if one is to be used, for geophysical logging and the radioactive tracer surveys.
  4. The name of the SUBCONTRACTOR(S), if one is to be used, that will provide the television survey.
  5. The company to perform and supervise packer testing.
  6. The name of the HRS-approved laboratory to perform water quality analyses.
  7. A detailed description/drawing of the proposed equipment and material to be used for controlling flow in the wells.
- B. During the mechanical integrity testing of the injection well, the CONTRACTOR shall maintain a complete log at the well site setting forth the following:
1. Reference point for all depth measurements.
  2. Depth interval from which water samples are taken, if any.
  3. Depth at which tools are set, such as packers, radioactive tracer toolstring.
  4. Depth of all television, temperature and caliper surveys.
  5. The results of all surveys.
  6. Other pertinent data requested by the ENGINEER
- C. During testing of the injection wells, a daily detailed report shall be maintained and submitted as requested by the ENGINEER. The report shall give a complete description of all activities performed, number of hours on the job, shutdown (downtime) due to breakdown, standby time, and other pertinent data requested by the ENGINEER.

- D. Prior to testing, the CONTRACTOR shall submit a detailed description of the proposed method of performing the casing pressure tests. The description shall include, but not be limited to, the following:
  - 1. The wellhead configuration and "bleed-off" assembly.
  - 2. Method of pressurizing the casing.
- E. The CONTRACTOR shall provide sampling protocol for collecting samples from the pad monitor wells prior to testing and will provide information regarding the laboratory to be used for analysis of the samples collected.

#### 1.05 PERMITS

- A. The OWNER shall be responsible for obtaining approval from FDEP to test its Class I Injection Wells. The CONTRACTOR shall be responsible for obtaining any additional applicable federal, state, or local permits required.

#### 1.06 NOTIFICATION

- A. The CONTRACTOR shall notify the ENGINEER, in writing, three (3) days prior to the commencement of testing activities.
- B. No Work shall be performed by the CONTRACTOR without completing the notification requirement specified above.
- C. The CONTRACTOR shall notify the ENGINEER of any anticipated temporary shutdowns.

#### 1.07 EQUIPMENT REQUIREMENTS

- A. The CONTRACTOR shall provide equipment in good working order. The CONTRACTOR shall use his own testing and mechanical equipment having the minimum capabilities necessary to do the described Work.
- B. The CONTRACTOR shall provide and operate equipment capable of handling the largest load that will be placed upon the support rig during the testing. .
- C. No unnecessary delays or work stoppages will be tolerated because of equipment failures or delay caused by equipment failure. Unnecessary delays or work stoppages due to equipment failure will not be considered as a valid reason for extension of the contract time.
- D. The CONTRACTOR shall be held responsible, and payment withheld, for damages to the wells due to any cause of negligence, faulty operation, or equipment failure.

#### 1.08 CREW REQUIREMENTS

- A. The CONTRACTOR responsible for testing the injection wells shall employ only competent workmen for the execution of this Work, and all such Work shall be performed under the direct supervision of an experienced well superintendent, who shall be available to the job at all times. The crew and job superintendent shall be in the employ of the CONTRACTOR

- B. The CONTRACTOR shall be capable of controlling and testing the wells, maintaining complete and current activity log and daily notes for the wells' MIT report.

#### 1.09 OPERATING REQUIREMENTS

- A. All testing activities shall comply with the MIT Plan provided in Appendix I. Testing activities shall be conducted between 8:00 am and 5:00 pm, Monday through Friday.
- B. The CONTRACTOR shall take all precautions to prevent salt water, or brackish water, produced from any source during testing operations from contaminating the surficial aquifer.
- C. All water produced during the testing shall be confined to any circulation system being used and/or the drilling pad.
- D. The CONTRACTOR shall keep flowing conditions under control in the injection wells at all times.
- E. Gas, oil, and diesel fuel shall be stored in such a manner as to prevent contamination of the surface water, groundwater, and soils as required by the FDEP and PBCDERM.
- F. The CONTRACTOR shall properly dispose of all flow suppressant on site or if necessary transport off-site to an FDEP-approved facility.
- G. The 11.75-inch diameter (nominal O.D.) diameter injection casing / FRP liner shall be pressure tested to 150 (psi). A pressure decline of up to 5 percent is allowed in sixty (60) minutes. The test shall be repeated under controlled conditions to the satisfaction of the ENGINEER if there is a pressure decline of up to 5 percent which can be attributed to temperature or density variations. The test shall be repeated under controlled conditions to the satisfaction of the ENGINEER and regulatory agency.
- H. No payment for the testing of the injection wells will be due the CONTRACTOR if he fails to meet all of the above requirements.

#### 1.10 MEASUREMENT

- A. All depth reference shall be measured from the pad surface to the final depth below pad level.

### **PART 2 - PRODUCTS**

#### 2.01 PACKER FOR USE DURING PRESSURE TESTING

- A. The packer must be capable of hydraulically sealing the 11.75-inch diameter (nominal O.D.) diameter casing / FRP liner.
- B. The packer shall be a single element, rubber sleeve type, as manufactured by TAM International, Baker, or an approved equivalent.
- C. The CONTRACTOR shall provide appropriately sized pipe or tubing to convey the packer to the anticipated setting depth of +/- 2,818 feet (bpl)

## 2.02 GAUGES AND VALVES

- A. A pressure test bleed-off valve, suitable to ensure the injection casing / FRP liner is full of water, shall be provided.
- B. A back flow preventer or check valve shall be provided by the CONTRACTOR and installed appropriately on the injection fluid conveyance system.
- C. A calibrated and certified pressure gauge capable of measuring pressures within a range of 0 to 150 pounds per square inch shall be provided. The gauge shall be graded in such a way as to allow measurement of psi to the tenth of one pound. A copy of the gauge certification shall be provided to the ENGINEER prior to the pressure test.

## 2.03 FLOW CONTROL MATERIAL

- A. The CONTRACTOR shall provide to the ENGINEER a detailed description of the proposed method and material to be used for controlling artesian flow in the injection wells ("Killing the Well"). Material shall be salt or barite, or an approved equivalent, contained in an appropriate storage unit able to prevent accidental discharge of flow suppressant material to the land surface.

## 2.04 BLOWOUT PREVENTER

- A. The CONTRACTOR shall provide an appropriately sized blowout preventer that attaches to the wellhead and allows for the 11.75-inch diameter injection casing / FRP liner to be sealed during pressure testing.
- B. The CONTRACTOR shall provide any subassemblies necessary to connect the blowout preventer to the wellhead.
- C. The blowout preventer must be on-site at all times. No work will be performed until the preventer is on location and the CONTRACTOR demonstrates acceptable sealing capabilities.

## 2.05 HIGH PRESSURE PUMP

- A. The CONTRACTOR shall provide a high pressure water pump, hoses, and fittings capable of obtaining the test pressure of 150 psi in the sealed 11.75-inch diameter (nominal O.D.) injection casing / FRP liner.

## **PART 3 - EXECUTION**

### 3.01 PAD MONITORING WELL SAMPLING

- A. The CONTRACTOR will sample or make arrangements to have sampled the pad monitor wells associated to the injection well being tested. Sampling is to take place twice: 48

hours prior to and after testing of the injection well. Samples shall be promptly conveyed to an independent lab for analysis of chloride, total dissolved solids, specific conductance, and water level specified in the permit.

### 3.02 INJECTION CASING PRESSURE TESTING

- A. The CONTRACTOR shall conduct a pressure test on the 11.75-inch diameter (nominal O.D.) injection casing / FRP liner under the criteria specified in Section 62-528.300(6) of the Florida Administrative Code (FAC) and in accordance with the approved mechanical integrity test plan provided in Appendix I.
- B. In preparation for the pressure test, the CONTRACTOR, shall control the flow in the wells ("Kill the Well") using weighted material such as salt or barite. Upon killing the wells, the CONTRACTOR shall access the wells by removing the wellhead valves and appurtenances as appropriate (typical wellhead drawing provided in Appendix I). The packer seat intervals shall be cleaned to remove any scale or bacterial growth on the wall of the casing / FRP liner. The cleaning procedure shall consist of hydrojetting or the use of an appropriately sized casing brush.
- C. The casing shall be sealed at the bottom of the nominal 11.75-inch diameter (nominal O.D.) casing / FRP liner with an inflatable single element hydraulic packer with rubber sleeve. The packer will be conveyed and set within 40 feet of the bottom of the casing which is for IW-1 2,818 feet below pad level (bpl). The wellhead will be sealed and the casing shall be filled with water and placed under 150 pounds per square inch of pressure (psi). The pressure shall be maintained for a minimum of 60 minutes (no more than 5 percent or 7.5 psi fluctuation in casing pressure).
- D. In the event that a leak is detected by the pressure test, the CONTRACTOR, shall take steps to locate the leak(s). The CONTRACTOR shall move the packer up in 500 foot increments, reset the packer, and perform additional pressure tests until the leak is no longer detected. Once the leak is no longer detected, the packer will be moved down 250 feet, reset, and a test will be run to determine if the leakage occurred in the upper or lower 250 feet of the interval.
- E. The pressure test shall be performed in the presence of the ENGINEER and an FDEP representative. The pressure test shall be witnessed and certified, in writing, by the ENGINEER
- F. Pressure readings will be collected at five (5) minute intervals for a period of one (1) hour during the test. At the end of the test, the total volume released shall be measured to determine that an adequate amount of water was used to pressurize the casing.
- G. In the event of packer failure the CONTRACTOR will be responsible for re-starting the pressure test at no additional cost to the OWNER.
- H. After the pressure test is completed, the weighted material will be flushed from the wells. It is anticipated that three casing volumes of effluent should be adequate to remove the weighted material and establish buoyancy similar to operating conditions. As this pertains to IW-1, three casing volumes is approximately 39,500 gallons.

### 3.03 ADDITIONAL TESTING BY OUTSIDE AGENCIES

- A. The ENGINEER reserves the right to authorize additional testing and logging by outside agencies, the ENGINEER's staff, or competent testing firms.
- B. The CONTRACTOR shall be given notification of the test program and the firm, or agency performing the test, a minimum of 24 hours in advance.
- C. The CONTRACTOR shall be responsible for the condition of the wells. The CONTRACTOR's liability shall hold harmless the testing firm, agency, or ENGINEER
- D. The CONTRACTOR shall notify the ENGINEER verbally, and in writing, if the CONTRACTOR observes any practices or procedures which in his opinion jeopardizes the integrity of the wells.

### 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 wells or the entrance of foreign material into the wells or release of water from the wells.
- B. Immediately upon completion of well testing in this Section and Section 02737, the CONTRACTOR shall restore the injection wells to operating condition (including flushing the weighted material from the wells), 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 the Work started. Not more than two weeks will be allowed for this work, and the CONTRACTOR shall complete all cleaning up within that time. Failure to comply with these requirements shall be the authority of other CONTRACTORS or workmen selected by the ENGINEER to enter upon the site and complete the cleaning up, grading, etc. The cost of this work shall be deducted from any money due or to become due the CONTRACTOR for the well.

END OF SECTION

SECTION 02737

**GEOPHYSICAL LOGGING FOR INJECTION WELL  
MECHANICAL INTEGRITY TESTING OF CLASS 1 INJECTION WELL IW-1**

**PART 1 - GENERAL**

1.01 SCOPE OF WORK

- A. The Work to be performed under this Section includes the furnishing of all labor, materials, equipment, and all other facilities and incidentals necessary to geophysically log the Class 1 Injection Well for the City of Lake Worth, Florida, Water Treatment Plant. The geophysical logging is part of mechanical integrity testing program for the injection wells. The greatest anticipated depth is  $\pm 3,303$  feet for the injection well.
- B. It is anticipated that the following logs shall be run on the injection wells:
  - 1. Caliper,
  - 2. Temperature,
  - 3. Television survey and,
  - 4. Radioactive tracer survey inclusive of a background gamma ray log.
- C. All testing activities must be conducted between 8:00 am and 5:00 pm, Monday through Friday.
- D. These Specifications are intended to give a general description of what is required, but do not cover all variations that may occur during the geophysical logging. The Specifications are intended to cover the successful completion of the logging of the injection wells as herein specified, whether every detail is specifically mentioned or not.
- E. The CONTRACTOR shall perform all geophysical logging of the injection well, except as stated in Paragraph 1.10, ADDITIONAL LOGGING.

1.02 REFERENCES

- A. Chapter 62-528 (Underground Injection-Control), of the Florida Administrative Code (FAC)
- B. The FDEP Injection Well Operating Permits for the facility.
- C. The FDEP approved Mechanical Integrity Test (MIT) Plan dated July 2015 and provided herein as Appendix I.
- D. The CONTRACTOR is strongly encouraged to visit the wellsite to become familiar with site conditions.

1.03 RELATED ITEMS

- A. Refer to Section 02734 of these Specifications for additional requirements.

1.04 REVIEW

- A. The ENGINEER shall review with reasonable promptness, samples of geophysical logs, and other required submittals; but the ENGINEER's review shall be only for conformance with the Mechanical Integrity Test Plan and for compliance with the information given in the Contract Documents.
- B. The ENGINEER's review shall not relieve the CONTRACTOR from responsibility for any deviations from the Contract Documents unless the CONTRACTOR has, in writing, called the ENGINEER's attention to such deviation at the time of submission and the ENGINEER has given written concurrence to the specific deviation.

1.05 PERMITS

- A. The OWNER shall be responsible for obtaining approval from FDEP to test the Class I Injection Well. The CONTRACTOR shall be responsible for obtaining any additional applicable federal, state, or local permits required.
- B. The CONTRACTOR shall not perform any work on the injection wells until these permits are obtained.
- C. The CONTRACTOR shall furnish separate copies of all permits to the OWNER and the ENGINEER as the permits are received. Copies of all permits shall be furnished to the ENGINEER 5 days prior to mobilization.

1.06 QUALIFICATIONS

- A. The CONTRACTOR responsible for geophysically logging of the injection wells shall employ only competent workmen for the execution of the Work, and all such work shall be performed under the direct supervision of an experienced geophysical logger satisfactory to the ENGINEER.
- B. The geophysical logger shall be capable of calibrating and operating the logging equipment in addition to maintaining complete and current geophysical well logs and daily notes.
- C. The OWNER may make any other investigations deemed necessary to determine the ability of the CONTRACTOR to perform the work, and the CONTRACTOR shall furnish to the OWNER all such information and data for this purpose as the OWNER may request.
- D. The CONTRACTOR shall furnish satisfactory evidence, upon request, that all equipment to be used in performing the specified work is in good working order.
- E. All geophysical logging equipment shall be capable of producing digital logs in MS-DOS Canadian Well Logging Service (CWLS) ASCII Standard Well Log output format on CD's.
- F. The CONTRACTOR responsible for the Geiger counter surveys must show that the survey specialist and all equipment and procedures used during the surveys are in compliance with local and state laws and certification requirements.

## 1.07 SUBMITTALS

- A. The CONTRACTOR shall submit a list of materials and personnel to be used in the geophysical logging of the injection well, within fifteen (15) days after the date of execution of the Contract. The list shall include, but is not limited to, the following items:
1. Type of logging unit.
  2. Type of crane, sheave assembly, pack off sub and riser pipe to be used.
  3. Types of logging tools available.
  4. Maximum hole diameter and range of depth limitations of each tool.
  5. Footage of available cable, per tool.
  6. Personnel to perform the logging.
  7. The number of years of experience the geophysical logging personnel have.
- B. Prior to testing, the CONTRACTOR shall submit a detailed description of the proposed method(s) of performing the radioactive tracer survey and associated temperature logging. The description shall include, but not be limited to, the following:
1. All equipment to be used including flanges, gate valves, riser pipe, pump in sub, pump, pack off seals, wireline stripper, sheave wheel, and crane as assembled.
  2. The operational ranges of the crane (lifting capacity), pump and metering devices which shall be used.
  3. Training and certifications needed by the Geiger counter survey specialist.
  4. Specific procedures to be used to conduct the Geiger counter surveys and the core results pre and post RTS across the 30'x40' concrete well pad.
- C. During logging of the injection wells, the CONTRACTOR shall maintain a complete log at the well site setting forth the following:
1. The reference point for all depth measurements.
  2. The depth to or pressure of the static water level.
  3. The depth of the bottom of the casing / FRP liner.
  4. Changes in logging speed and direction.
  5. Other pertinent data requested by the ENGINEER
- D. During the logging of the injection wells, a daily detailed logger's report shall be maintained and submitted as requested by the ENGINEER. The report shall give a complete description of the number of feet logged, types of logs run, number of hours on the job, shutdown (downtime) due to breakdown (standby time), any downhole problems during the logging, and other pertinent data requested by the ENGINEER. .
- E. Upon the completion of each log, the CONTRACTOR shall submit to the ENGINEER five (5) field copies of each geophysical log, and shall submit within seven (7) days to the ENGINEER, a CD with digitized well logs and appropriate headers. The information shall be in MS-DOS CWLS Log ASCII Standard Well Log Output format. Within 7 days after

logging, the CONTRACTOR shall submit to the ENGINEER one (1) original and fifteen (15) copies of each geophysical log. The logs shall include the following:

1. Total depth and diameter of the logged open hole.
2. The depth or location of any lost tools or wire line.
3. Depth and diameter of the casing / FRP casing.
4. The type of log.
5. Units of measurements.
6. Scale.
7. Name of operator.
8. Rate of logging.
9. Static water level.
10. Project number.
11. Other pertinent data requested by the ENGINEER

#### 1.08 NOTIFICATION

- A. Five (5) days prior to the commencement of Work, the CONTRACTOR shall provide the proposed work schedule to the ENGINEER, in writing, including the following:
  1. The starting dates of the well logging.
  2. The completion dates of the well logging.
- B. Five (5) days prior to the commencement of Work, the CONTRACTOR shall notify the ENGINEER, in writing, as to the number of logging units and personnel to be used on the project. Any change in the number of units and personnel shall require written notification of the ENGINEER, forty-eight (48) hours prior to the change.
- C. Seventy-two (72) hours prior to the start of any logging, the FDEP shall be contacted by the ENGINEER in order for an FDEP representative to be present on site to witness performance of the casing pressure test and the Radioactive Tracer Survey.
- D. No Work shall be performed by the CONTRACTOR without completing the notification requirements specified above.

#### 1.09 EQUIPMENT REQUIREMENTS

- A. The CONTRACTOR shall provide equipment in good working order. The CONTRACTOR shall use his own testing and mechanical equipment having the minimum capabilities necessary to do the described Work.
- B. The CONTRACTOR shall provide and operate equipment capable of handling the largest load that will be placed upon the support rig during the testing. .
- C. No unnecessary delays or work stoppages will be tolerated because of equipment failures or delay caused by equipment failure. Unnecessary delays or work stoppages

due to equipment failure will not be considered as a valid reason for extension of the contract time.

- D. The CONTRACTOR shall be held responsible, and payment withheld, for damages to the wells due to any cause of negligence, faulty operation, or equipment failure.
- E. The CONTRACTOR responsible for the Geiger counter surveys must show that all equipment and procedures used during test are in compliance with local and state laws.

#### 1.10 CREW REQUIREMENTS

- A. The CONTRACTOR responsible for testing the injection wells shall employ only competent workmen for the execution of this Work, and all such Work shall be performed under the direct supervision of an experienced well superintendent, who shall be available to the job at all times. The crew and job superintendent shall be in the employ of the CONTRACTOR
- B. The CONTRACTOR shall be capable of controlling and testing the wells, maintaining complete and current activity log and daily notes for the wells' MIT report.
- C. The CONTRACTOR responsible for the Geiger counter surveys shall employ a specialist that is trained and certified for radiological testing in Florida.

#### 1.11 OPERATING REQUIREMENTS

- A. All testing activities shall comply with the MIT Plan provided in Appendix I. Testing activities shall be conducted between 8:00 am and 5:00 pm, Monday through Friday.
- B. The CONTRACTOR shall take all precautions to prevent salt water, or brackish water, produced from any source during testing operations from contaminating the surficial aquifer.
- C. All water produced during the testing shall be confined to any circulation system being used and/or the drilling pad.
- D. The CONTRACTOR shall keep flowing conditions under control in the injection wells at all times.
- E. Gas, oil, and diesel fuel shall be stored in such a manner as to prevent contamination of the surface water, groundwater, and soils as required by the FDEP and PBCDERM.
- F. The CONTRACTOR shall properly dispose of all flow suppressant on site or if necessary transport off-site to an FDEP-approved facility.
- G. No payment for the testing of the injection wells will be due the CONTRACTOR if he fails to meet all of the above requirements.

#### 1.12 GEOPHYSICAL LOG AND TELEVISION SURVEY ACCEPTANCE CRITERIA

- A. All geophysical logs shall be accurate and usable for interpretation of casing and injection well conditions. The television survey quality must allow for visual inspection of the casing interior.

- B. Any log that is not usable or is inaccurate because of equipment failure, reproduction quality, or individual error shall be relogged at no additional expense to the OWNER.

### 1.13 ADDITIONAL LOGGING

- A. At the option of the ENGINEER or the OWNER, additional Work may be authorized. Additional Work shall be completed at prices quoted in the Schedule of Prices.
- B. Additional Testing by Outside Government Agencies
  1. The ENGINEER and/or the OWNER may issue written authorization for additional testing and logging to be performed by outside agencies, including but not limited to the USGS, the SFWMD, and the FDEP. The CONTRACTOR shall be given due notification of the test program and the firm, or agency, performing the test. The CONTRACTOR shall be compensated for standby time during any such well testing and logging.
  2. In the event a tool owned or used by the outside agency is lost in the wells and cannot be retrieved, the CONTRACTOR shall be compensated for correcting the situation (if necessary). The CONTRACTOR shall be reimbursed for all costs incurred for rental of extra tools and equipment needed for these measures. The CONTRACTOR shall furnish the OWNER copies of invoices for all extra tools and equipment used during these operations.
  3. The CONTRACTOR shall be responsible for, and shall receive no additional compensation for, cleaning the wells of debris or loose wall material which is dislodged during the test. The condition of the wells is the CONTRACTOR's responsibility and no compensation shall be made for maintaining a clean hole.
  4. The CONTRACTOR shall be responsible for the condition of the injection wells. The CONTRACTOR's liability shall hold harmless the testing from an agency or the ENGINEER. In the event that the CONTRACTOR observes practices or procedures by others which in his opinion jeopardizes the integrity of the wells, the CONTRACTOR shall immediately notify the ENGINEER verbally and confirm the verbal notification with written notification within twenty four (24) hours.

## **PART 2 - PRODUCTS**

### 2.01 GEOPHYSICAL LOGS (GENERAL)

- A. All geophysical logging shall be performed in the presence of the ENGINEER and in accordance with the MIT Plan provided in Appendix I.
- B. All geophysical logs shall be scaled to be one (1)-inch equal to sixteen (16) feet vertical scale.
- C. All geophysical logs shall be produced in a digital format.
- D. All natural gamma ray logs shall be of the scintillation type.

## 2.02 CALIPER LOG .

- A. The caliper log shall be capable of logging a hole of eight (8)-inch to thirty-six (36) inches in diameter.
- B. The tool used to run the caliper log should be a four armed X-Y caliper tool which must be calibrated prior to testing.
- C. The existing wellheads will be used to perform the caliper survey. Stripper heads, pack-offs, and valve sub-assemblies will be necessary to control flow in the well during logging.

## 2.03 TEMPERATURE LOG

- A. The temperature tool will be calibrated and capable of accurately measuring temperatures ranging from 50 to 150° Fahrenheit.
- B. The temperature log shall be capable of providing both gradient and differential temperature measurements.
- C. The temperature log will be run from the top the bottom of the well in a downward direction. A minimum of 6 hours will transpire between cessation of injection and the initiation of the temperature log.

## 2.04 TELEVISION SURVEY

- A. The CONTRACTOR shall perform a color television survey on the entire depth of all the wells from the top of the 11.75-inch diameter casing / FRP liner to the bottom of the borehole. The reported depth of the injection wells IW-1 is 3,303 feet. The camera shall be linked to a calibrated depth counter and will be calibrated to pad level. The television survey shall be recorded on a DVD recorder.
- B. The CONTRACTOR shall use the services of a qualified company and technician to perform the survey such as Deep Venture Diving Service of Perry, Florida, Florida Geophysical Logging of Cape Coral, Florida, or approved equivalent.
- C. The video camera shall be centralized with a centralizer and be equipped with a wide angle lens and be capable of obtaining both horizontal and vertical views of the interior of the injection casing / FRP liner. Sufficient lighting will be provided with the camera to obtain a clear picture of the casing / FRP liner.
- D. The CONTRACTORS shall control the flow in the wells during the surveying with appropriate equipment and subassemblies.

## 2.05 RADIOACTIVE TRACER SURVEY (RTS) .

- A. The CONTRACTOR shall supply a riser pipe equipped with a pack-off seal and stripper for the wireline and radioactive tracer/temperature log tool string.
- B. The CONTRACTOR shall supply a sheave-wheel and crane to be used to align and suspend the wireline into the riser pipe.

- C. CONTRACTOR shall supply a pump capable of 23-gallon per minute (gpm) to be used during the low rate dynamic portions of the radioactive tracer survey. Both low rate and high rate dynamic RTS shall be performed by the CONTRACTOR.
- D. The RTS tool assembly will be equipped with a casing collar locator (CCL) to accurately determine the bottom of the casing / FRP liner.
- E. The RTS tool shall have at least one natural gamma ray detector above and another one below the ejector port. The upper and lower natural gamma ray detectors will be at least six feet above and below the tracer injector port. Please refer to the MIT plan Figure 5 for the recommended RTS tool configuration. The RTS tool shall have a minimum capacity of 3.0 millicuries of I -131.
- F. The CONTRACTOR shall provide medicinal quality Iodine (I-131) radioactive isotope tracer, dated less than one half-life at the time of use.
- G. RTS tool shall be capable of performing dynamic tracer surveys be capable of recording time to the nearest second continuously during all tracer surveys and record of time shall be presented on the logs.
- H. The measurement instrumentation shall be capable of recording the data collected electronically.

#### 2.06 TEST PUMPS

- A. The CONTRACTOR shall provide and install a pump(s) on the well capable of 23 gpm for the low rate dynamic test.
- B. The CONTRACTOR shall provide appropriate hoses, valves, connections, and other equipment for the pump(s).
- C. A back flow preventer or check valve shall be provided by the CONTRACTOR and installed appropriately on injection fluid conveyance system or as a pump feature.

#### 2.07 TOTALIZING FLOWMETER

- A. The CONTRACTOR shall provide and install a calibrated in-line totalizing flowmeter capable of measuring flow to the gallon and capable of providing instantaneous and cumulative flow measurements.

### **PART 3 - EXECUTION**

#### 3.01 WELL LOGGING: GENERAL

- A. The CONTRACTOR shall perform the geophysical logging of the injection wells on consecutive days. No payment shall be made for remobilization because of failure of equipment, hole condition, or lack of preparation by the CONTRACTOR.
- B. The CONTRACTOR shall run the following logs in the 11.75-inch diameter (nominal O.D.) injection casing / FRP liner:
  - 1. Natural Gamma Ray.

2. Temperature.
3. Caliper.
4. Television Survey.
5. Radioactive Tracer Survey.

The CONTRACTOR shall run logs in the order specified by the ENGINEER. The Television Survey shall be run from ground surface downward. The Radioactive Tracer Log shall be run as directed in the Mechanical Integrity Test Plan (Appendix I). All other logs shall be run from the bottom of the hole to ground surface.

### 3.02 CALIPER LOG

- A. The caliper log shall be calibrated prior to logging the injection casing.
- B. The caliper log shall be performed prior to the injection of fluids needed to perform the television survey and the Radioactive Tracer Survey.
- C. The caliper log will be conducted under static conditions prior to the injection of fluids needed to perform the television survey and the Radioactive Tracer Survey.
- D. The CONTRACTOR shall install stripper head, pack-offs, and all necessary valve subassemblies required to control flow in the well during logging.

### 3.03 TEMPERATURE LOG

- A. The temperature tool will be calibrated prior to logging the injection casing.
- B. The CONTRACTOR shall install stripper head, pack-offs, and all necessary valve subassemblies required to control flow in the wells during logging.
- C. The temperature log will be conducted under static conditions prior to the injection of fluids needed to perform the television survey and the Radioactive Tracer Survey.
- D. The temperature log shall be performed from land surface to the bottom of wells IW-1 3,303 feet below pad level (bpl).

### 3.04 TELEVISION SURVEY

- A. The CONTRACTOR shall perform a television surveys on the entire well from the top of the 11.75-inch diameter casing / FRP liner to the bottom of the open hole penetrating into the injection zone. Refer to above sub-section 3.03(D) for total depth of well.
- B. Prior to performing the color television survey, the well shall be flushed with clear water until the well is clean enough to visually observe the well casing / FRP liner interior. The estimated volume to be used for flushing is approximately 13,200 gallons. The flushing process should be completed within a 24 hour period.
- C. The CONTRACTOR shall begin the video survey at the top of the 11.75-inch diameter (nominal O.D.) injection casing / FRP liner with the reference datum for the survey being pad level.

- D. The survey shall be conducted to the satisfaction of the ENGINEER and in the presence of the ENGINEER and the FDEP representative.
- E. The CONTRACTOR shall provide ten (10) copies of the television survey in DVD format.

### 3.05 RADIOACTIVE TRACER SURVEY (RTS)

- A. The CONTRACTOR shall perform a radioactive tracer survey on the injection wells as follows:
  - 1. Prior to initiation of the Radioactive Tracer Survey, the CONTRACTOR shall contact the ENGINEER seventy-two (72) hours in advance of the survey to allow for the notification of FDEP staff.
  - 2. Prior to initiation of the radioactive tracer survey, the CONTRACTOR shall flush the casing / FRP liner with approximately 25,000 gallons of potable water utilizing the plant's injection well system and subsequently, shall run a background gamma ray log in the well from the bottom of the well to land surface. The CONTRACTOR will be required to coordinate flushing activity with the plant operators.
  - 3. Prior to initiation of the RTS, a radiation specialist shall preform a background Geiger counter survey around well IW-1's 30'x40' concrete pad.
  - 4. Upon completion of the background gamma ray and temperature logging of the 11.75-inch diameter (nominal O.D.) casing / FRP liner, in accordance with the approved MIT Plan, the CONTRACTOR will perform two (2) low rate dynamic RTS by positioning the ejector port five feet above (2,839 feet bpl) the bottom of the tubing during both surveys, ejecting Iodine-131 tracer into the wells and performing the low rate dynamic RTS in accordance with the Mechanical Integrity Test Plan.
  - 5. The low-rate dynamic surveys will be performed while injecting fresh water at a rate of 5 feet per minute.
  - 6. The CONTRACTOR shall be responsible for connecting to a suitable water supply and providing the conveyance system and pump for a 5 feet per minute test rate.
  - 7. The CONTRACTOR shall install a calibrated in-line totalizing flowmeter on the test pump line prior to the low flow rate RTS.
  - 8. The CONTRACTOR will flush with fresh water between surveys and at the last survey to ensure that no radioactive tracer remains in the 11.75-inch casing / FRP liner. Each flushing of the injection well is to last at least 30 minutes at a rate of at least 500 gpm. Flushing will be accomplished by using potable water conveyed from the water treatment plant. The CONTRACTOR will be responsible for coordinating all flushing activity with the plant operators.
  - 9. Should any Iodine-131 ejection test run be suspect, the CONTRACTOR shall subsequently repeat the ejection test for verification and duplication of results at no additional cost to the OWNER.
  - 10. The CONTRACTOR shall eject a minimum 2 and 3 millicuries of Iodine-131 for the two (2) low rate dynamic RTSs.
  - 11. Time drive monitoring is incorporated into the RTS and is not considered standby time.

12. The CONTRACTOR shall perform a final gamma ray log from the bottom of the open hole to pad level for comparison with the background gamma ray log performed at the beginning of the Radioactive Tracer Survey.
  13. Following the completion of the RTS, a radiation specialist shall perform a final Geiger counter survey around well IW-1's 30'x40' concrete pad.
- B. The CONTRACTOR shall run all logs at the rates specified by the MANUFACTURER of the unit to obtain the maximum definition of casing mechanical integrity.

### 3.06 LOSS OF TOOLS

- A. The CONTRACTOR shall take full responsibility for logging of the wells.
- B. The CONTRACTOR shall take full responsibility for the condition of the hole during and after logging. The CONTRACTOR shall hold harmless the OWNER and the ENGINEER for loss of tools and hole collapse.
- C. The CONTRACTOR shall receive no payment for time and material for removal of lost tools and equipment and no compensation for replacement of equipment or loss of time.
- D. The OWNER may withhold a portion of payment due the CONTRACTOR to compensate the ENGINEER for the additional cost of inspection associated with loss of tools and subsequent hole conditioning.

### 3.07 RESTORATION

- A. Immediately upon completion of well testing in this Section and in Section 02734, the CONTRACTOR shall restore the injection wells to operating condition (including flushing the weighted material from the well), 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 the Work started. Not more than two weeks will be allowed for this work, and the CONTRACTOR shall complete all cleaning up within that time. Failure to comply with these requirements shall be the authority of other CONTRACTORS or workmen selected by the ENGINEER to enter upon the site and complete the cleaning up, grading, etc. The cost of this work shall be deducted from any money due or to become due the CONTRACTOR for the well.

END OF SECTION

SECTION 09900

**PAINTING/COATING**

**PART 1 GENERAL**

1.01 SCOPE OF WORK:

- A. The work of this section consists of furnishing all materials, labor, equipment and incidentals required and performing all the painting necessary to complete this Contract in its entirety.
- B. It is the intent of these Specifications that the Contractor paint all exposed structural ferrous metal, pipe, fittings, supports, masonry, concrete, and all surfaces which are scraped, marked or have existing paint removed as part of this contract unless otherwise specified. At a minimum, all wellheads and associated piping shall be painted at the conclusion of the test procedures. Contractor shall match existing colors.

1.02 REFERENCES:

Steel Structures Painting Council (SSPC)

- 1. SSPC-SP-1 Surface Preparation Specification - Solvent Cleaning
- 2. SSPC-SP-2 Surface Preparation Specification - Hand Tool Cleaning
- 3. SSPC-SP-3 Surface Preparation Specification - Power Tool Cleaning
- 4. SSPC-SP-6 Surface Preparation Specification - Commercial Blast Cleaning

1.03 PAINTING NOT INCLUDED:

- A. The following categories of work are not included as part of the field-applied finish work, or are included in other sections of these specifications.
- B. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer finishing is specified for such items as finished electrical equipment including light fixtures, switchgear, and distribution cabinets. Pumps and motors are not included in this exception.
- C. Finished Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, and bronze materials will not require finish painting, unless otherwise indicated.
- D. Operating Parts and Labels: Moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts will not require finish painting, unless otherwise indicated.

Do not paint over any code-required labels, such as Underwriters= Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

1.04 SUBMITTALS:

- A. Submit to the ENGINEER for review; shop drawings, working drawings, product data including MANUFACTURER'S specifications and data on the proposed paint systems and detailed surface preparation, application procedures, dry film thickness, including paint label analysis and application instruction for each material proposed for use.
- B. Submit to the ENGINEER for review; color and texture cards, including standard and special colors, for initial color selections. Compliance with all other requirements is the exclusive responsibility of the Contractor. Provide a listing of the material and application for each coat of each finish sample. Samples of available colors shall be submitted to the Engineer for selection as per Section 01300.

1.05 DELIVERY AND STORAGE:

- A. Store paint products in a clean orderly manner in a well dry, ventilated space; no smoking in storage area.
- B. Deliver all materials to the job site in original, new and unopened packages and containers bearing manufacturer=s name and label, and the following information:

- Name or title of material.
- Fed. Spec. number, if applicable.
- Manufacturer=s stock number and date of manufacture.
- Manufacturer=s name.
- Contents by volume, for major pigment and vehicle constituents.
- Thinning instructions.
- Application instructions.
- Color name and number.
- Manufacturer=s product safety sheet.

1.06 JOB CONDITIONS:

- A. Apply water-base paints only when the temperature of surfaces to be painted and the surrounding air temperatures are between 50 degrees F and 90 degrees F, unless otherwise permitted by the paint manufacturer=s printed instructions.
- B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and the surrounding air temperatures are between 45 degrees F and 95 degrees F, unless otherwise permitted by the paint manufacturer=s printed instructions.
- C. Do not apply paint in rain, fog, or mist; or when the relative humidity exceeds 95 degrees; or to damp or wet surfaces; unless otherwise permitted by the paint manufacturer=s printed instructions.
- D. Painting may be continued during inclement weather only if the areas and surfaces to be painted are enclosed and heated within the temperature limits specified by the paint manufacturer during application and drying periods.

**PART 2 PRODUCTS**

2.01 MATERIALS:

- A. All painting materials shall be fully equal to those manufactured by the Tnemec Company Inc., Porter Paint Company, or M-A-B Paints and Coatings. The painting schedule has been prepared on the basis of Tnemec, Porter and Koppers products and recommendations for applications. No brand other than those named will be considered for approval unless the brand and type of paint proposed for each item in the following schedule together with sufficient data substantiated by certified tests conducted at no expense to the OWNER, to demonstrate its equality to the paint(s) named, is submitted in writing to the ENGINEER for approval within ten (10) days after the signing of the Notice to Proceed. The type and number of tests performed shall be subject to the ENGINEER'S approval.
- B. All painting materials shall be delivered to the mixing room in unbroken containers, bearing the manufacturer's brand, date of manufacture and name. They shall be used without adulteration and mixed, thinned and applied in strict accordance with MANUFACTURER'S directions for the applicable materials and surface and with the ENGINEER'S approval before using.

2.02 PAINTING SYSTEMS:

- A. All colors will be selected by the ENGINEER from color charts submitted by the CONTRACTOR.
- B. The following surfaces shall have the types of paint scheduled below applied at the dry film thickness (DFT) in mils per coat noted. Some colors will require an additional coat from what is listed to get the proper color coverage.
1. Concrete (nonsubmerged or subject to splashing) and precast concrete walls and ceilings:
    - a. Tnemec - 2 Coats: 66-Color Hi-Build Epoxoline (6 D.F.T. per coat)
    - b. Porter - 2 Coats: M.C.R. 65 High Solids Epoxy (6 D.F.T. per coat)
    - c. M.A.B. - 2 Coats: 520 High Build Epoxy, 031 Line (6 D.F.T. per coat)
  2. Submerged Concrete (except in wastewater facilities):
    - a. Tnemec - 2 Coats: 139-AA90 High Solids Catalyzed Epoxy (6 D.F.T. per coat)
    - b. Porter - 2 Coats: M.C.R. 65 High Solids Epoxy (6 D.F.T. per coat)
    - c. M.A.B. - 2 Coats: Ply-Mastic 101 High Solid Epoxy, 044 Line (7 D.F.T. per coat)
  3. Exterior Exposed Masonry:
    - a. Tnemec - 2 Coats: Tnemec Silicone Water Repellent (200 sq. ft./gal. per coat)
    - b. Porter - 2 Coats: 151 Aqua-Pel Super Water Repellent (200 sq. ft./gal. per coat)
    - c. M.A.B. - 2 Coats: MoClear Siloxane Water Repellent, 019-020 Line (200 sq. ft./gal. per coat)
  4. Interior Exposed Masonry (above grade and interior partitions):
    - a. Tnemec - 1 Coat: 54-561 Modified Epoxy Polyamide Masonry Filler (60-80 sq. ft. per gal.)  
2 Coats: 66-Color Hi-Build Epoxoline (6 D.F.T. per coat)
    - b. Porter - 1 Coat: 895 Unifill Block Filler (60-80 sq. ft. per gal.)  
2 Coats: M.C.R. 65 High Solids Epoxy (6 D.F.T. per coat)
    - c. M.A.B. - 1 Coat: Ply-Tile Epoxy Block Filler (60-80 sq. ft. per gal. per coat)  
1 Coat: Ply-Tile 520 High Build Epoxy, 031 Line (6 D.F.T. per coat)
  5. Ferrous metals submerged or subject to splashing:
    - a. Tnemec - 1 Coat: Series 205 Epoxy Prime (7 D.F.T.)  
1 Coat: Series 280 Tnemec-Glaze (8 D.F.T.)
    - b. Porter - 1 Coat: M.C.R. 65-Gray High Solids Epoxy (7 D.F.T.)  
1 Coat: M.C.R. 65-Color High Solids Epoxy (8 D.F.T.)
    - c. M.A.B. - 2 Coats: Hippo-Poxy- 52 Series (7 D.F.T. per coat)
  6. Exterior nonsubmerged ferrous metals:
    - a. Tnemec - 1 Coat: Series 205 Epoxy Prime (4 D.F.T.)  
1 Coat: Series 280 Tnemec-Glaze (6.0 D.F.T.)
    - b. Porter - 1 Coat: M.C.R. 65 High Solids Epoxy (4 D.F.T.)  
1 Coat: Hythane 4600 Series Polyurethane (2.0 D.F.T.)
    - c. M.A.B. - 1 Coat: Ply-Tile 520-W-45 Epoxy Primer, 011 Line (6 D.F.T. per coat)  
1 Coat: Hippo-Poxy 52 Series 100% Solids (6 D.F.T. per coat)

7. Interior nonsubmerged ferrous metals:
  - a. Tnemec - 1 Coat: 66-1211 Hi-Build Epoxoline (5 D.F.T.)  
1 Coat: 66-Color Hi-Build Epoxoline (6 D.F.T.)
  - b. Porter - 1 Coat: M.C.R. 65-Gray High Solids Epoxy (5 D.F.T.)
  - c. M.A.B. - 1 Coat: Ply-Mastic 101 High Solid Epoxy, 044 Line (7 D.F.T. per coat)  
1 Coat: Ply-Tile 520 High Build Solid Epoxy, 031 (6 D.F.T. per coat)
  
8. Exterior galvanized and non-ferrous metal:
  - a. Tnemec - 1 Coat: 66-Color Hi-Build Epoxoline (4 D.F.T.)  
1 Coat: 71-Color Endura-Shield (2.5 D.F.T.)
  - b. Porter - 1 Coat: M.C.R. 43 Hibuild Primer 4336 (5 D.F.T.)  
1 Coat: Hythane 4600 Series Polyurethane (2.0 D.F.T.)
  - c. M.A.B. - 1 Coat: Ply-Tile 520-W-45 Epoxy Primer, 011 Line (6 D.F.T. per coat)  
1 Coat: Ply-Thane 890 High Solid Epoxy, 020 Line (6 D.F.T. per coat)
  
9. Interior Galvanized and non-ferrous metals:
  - a. Tnemec - 1 Coat: 66-1211 Epoxoline Primer (5 D.F.T.)  
1 Coat: 66-Color Hi-Build Epoxoline (6 D.F.T.)
  - b. Porter - 1 Coat: M.C.R. 65-Gray High Solids Epoxy (5 D.F.T.)  
1 Coat: M.C.R. 65-Color High Solids Epoxy (6 D.F.T.)
  - c. M.A.B. - 1 Coat: Ply-Tile 520-W-45 Epoxy Primer, 011 Line (6 D.F.T. per coat)  
1 Coat: Ply-Tile 520 High Build Solid Epoxy, 031 Line (6 D.F.T. per coat)
  
10. Galvanized and non-ferrous metal submerged or subject to splashing:
  - a. Tnemec - 1 Coat: 20-1211 Porta Pox Primer (4 D.F.T.)  
1 Coat: 20-AA90 Porta Pox (5 D.F.T.)
  - b. Porter - (sweep blast to 1.5 mils before application)  
- 1 Coat: M.C.R. 43 Epoxy Primer (2 D.F.T.)  
1 Coat: M.C.R. 65-Gray High Solids Epoxy (6 D.F.T.)  
1 Coat: M.C.R. 65-Color High Solids Epoxy (6 D.F.T.)
  - c. M.A.B. - 1 Coat: Ply-Tile 520 W-45 Epoxy Primer, 011 Line (6 D.F.T. per coat)  
1 Coat: Ply-Mastic 101 High Solid Epoxy, 044 Line (7 D.F.T. per coat)
  
11. Plastic Piping - Interior:
  - a. Tnemec - 2 Coats: 66-Color Hi-Build Epoxoline (3 D.F.T. per coat)
  - b. Porter - 2 Coats: M.C.R. 65 High Solids Epoxy (3 D.F.T. per coat)
  - c. M.A.B. - 2 Coats: Ply-Tile 520 High Build Solid Epoxy, 031 Line (6 D.F.T. per coat)
  
12. Plastic Piping - Exterior:
  - a. Tnemec - 1 Coat: 66-Color Hi-build Epoxoline (4 D.F.T.)  
2 Coats: 71-Color Endura Shield (2.5 D.F.T. per coat)
  - b. Porter - 1 Coat: M.C.R. 43 Hibuild Primer 4336 (5 D.F.T.)  
2 Coats: Hythane 4600 Series Polyurethane (2.0 D.F.T. per coat)
  - c. M.A.B. - 1 Coat: Ply-Tile 520 High Build Solid Epoxy, 031 Line (6 D.F.T. per coat)  
2 Coats: Ply-Thane 890 High Solid Epoxy, 020 Line 6 D.F.T. per coat)
  
13. Concrete submerged or subject to splashing in all wastewater structures or precast manhole and valve vault structures.

If required, surfacer shall be applied to properly prepared concrete surfaces in  
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sufficient number of coats to fill all holes and voids leaving a smooth, pin hole free surface prior to application of topcoats.

- a. Tnemec - 1 Coat: Series 201 Epoxyprime  
- 2 Coats: Series 280 Tnemec-Glaze (6 D.F.T. per coat)
- b. M.A.B. - 1 Coat: Ply-Tile Epoxy Block Filler (60-80 sq. Ft. per gal. per coat)  
2 Coats: Hippo-Poxy- 52 Series 100% Solids (7 D.F.T. per coat)

- 14. Exterior surfaces of Manholes, Wetwells, and Valve Vaults
  - a. Tnemec - 2 Coats: Series 253 H.S. Teneme-Tar (8 D.F.T. per coat)
  - b. Koppers - 2 Coats: 300 M (8 D.F.T. per coat)
  - c. M.A.B. - 2 Coats: Ply-Tile Epoxy Coal Tar (8 D.F.T. per coat)

- 15. Parking stall lines on asphalt pavement:

Approved reflective pavement marking paint, white in color, conforming to AASHTO standards for materials and installation.

- C. Any surfaces not specifically named in the Schedule and not specifically excepted shall be prepared, primed and painted in the manner and with materials consistent with these Specifications. The ENGINEER shall select which of the MANUFACTURER'S products, whether the type is indicated herein or not, shall be used for such unnamed surfaces. No extra payment shall be made for this painting.

### **PART 3 EXECUTION**

#### **3.01 INSPECTION:**

- A. Applicator and paint manufacturer=s representative must examine the areas and conditions under which painting work is to be applied and notify the Contractor and Engineer in writing of conditions of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Applicator.
- B. Starting of painting work will be construed as acceptance of the surfaces and conditions within any particular area.
- C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to the information of a durable paint film.

#### **3.02 PREPARATION OF SURFACES:**

- A. General: Perform preparation and cleaning procedures in strict accordance with the paint manufacturer=s instructions and as herein specified, for each particular substrate condition. When the specified and recommended manufacturer=s surface preparation system differ, use the system which in the Engineer's opinion is the more restrictive (conservative). Tar stops shall not be applied to items with bitumastic coatings. The bitumastic coating shall be sandblasted off. All surfaces to be painted shall be prepared as specified herein and shall be dry and clean before painting.
- B. Carefully remove all hardware, hardware accessories, machine surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove if necessary, for the complete painting of the items and adjacent surfaces. Following completion of painting of each space or area, reinstall the removed items by workmen skilled in the trades involved.
- C. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program the cleaning and painting so that contaminants from the cleaning process will not fall onto wet, newly-painted surfaces.

- D. All metal welds, blisters, etc., shall be ground and sanded smooth in accordance with SSPC-SP-3, or in difficult and otherwise inaccessible areas, by hand cleaning in accordance with SSPC-SP2. All pits and dents shall be filled and all imperfections shall be corrected so as to provide a smooth surface for painting. All rust, loose scale, oil, grease and dirt shall be removed by use of approved solvents, wire brushing or sanding.
- E. Primed or Previously Painted Surfaces and Nonferrous Surfaces: All coated surfaces shall be cleaned prior to application of successive coats. Highly corroded surfaces shall be sand blasted in accordance with SSPC-SP-6. All nonferrous metals not to be coated shall be cleaned. This cleaning shall be done in accordance with SSPC-SP-1, Solvent Cleaning.
- F. Cementitious Materials:
  - 1. Prepare cementitious surfaces of concrete and concrete block to be painted by removing all efflorescence, chalk, dust, dirt, grease, oils, and by roughening as required to remove glaze.
  - 2. Determine the alkalinity and moisture content of the surfaces to be painted by performing appropriate tests. If the surfaces are found to be sufficiently alkaline to cause blistering and burning of the finish paint, correct this condition before application of paint. Do not paint over surfaces where the moisture content exceeds that permitted in the manufacturer's printed directions.
- G. Shop-Finished Surfaces: All shop-coated surfaces shall be protected from damage and corrosion before and after installation by treating damaged areas immediately upon detection. Abraded or corroded spots on shop-coated surfaces shall be "Hand Cleaned" and then touched up with the same materials as the shop coat. All shop coated surfaces which are faded, discolored, or which require more than minor touch-up in the opinion of the ENGINEER shall receive new surface preparation before being repainted. Cut edges of galvanized sheets and exposed threads and cut ends of galvanized piping, electrical conduit, and metal pipe sleeves, that are not to be finished painted, shall be "Solvent Cleaned" and primed with zinc dust-zinc oxide metal primer.
- H. Galvanized and Zinc-Copper Alloy Surfaces: Where these surfaces are specified to be painted they shall be "Solvent Cleaned" and/or sand blasted as shown on the plans and treated as hereinafter specified. Such surfaces not to be painted shall be "Solvent Cleaned".
- I. Aluminum embedded or in contact with concrete must be painted with one shop coat of zinc chromate followed by one heavy coat of aluminum pigmented asphalt paint.

### 3.03 WORKMANSHIP:

- A. General:
  - 1. Primer (spot) and paint used for a particular surface shall, in general, be as scheduled for that type of new surface. Confirm with the paint MANUFACTURER that the paint proposed for a particular repaint condition will be compatible with the existing painted surface. Sample repainted areas on the actual site will be required to ensure this compatibility. Finished repainted areas shall be covered by the same guarantee specified for remainder of work.

2. At the request of the ENGINEER, samples of the finished work prepared in strict accordance with these Specifications shall be furnished and all painting shall be equal in quality to the approved samples. Finished areas shall be adequate for the purpose of determining the quality of workmanship. Experimentation with color tints shall be furnished to the satisfaction of the ENGINEER where standard chart colors are not satisfactory.
3. Protection of movable objects, equipment, fittings and accessories shall be provided throughout the painting operations. Dripped or spattered paint shall be promptly removed. Lay drop cloths in all areas where painting is being done to adequately protect flooring and other work from all damage during the operation and until the finished job is accepted.
4. On metal surfaces apply each coat of paint at the rate specified by the MANUFACTURER to achieve the minimum dry mil thickness required. If material has thickened or must be diluted for application by spray gun, the coating shall be built up to the same film thickness achieved with undiluted material. One gallon of paint as originally furnished by the MANUFACTURER shall not cover a greater area when applied by spray gun than when applied unthinned by brush. Deficiencies in film thickness shall be corrected by the application of an additional coat(s). On masonry, application rates will vary according to surface texture, however, in no case shall the MANUFACTURER'S stated coverage rate be exceeded. On porous surfaces, it shall be the painter's responsibility to achieve a protective and decorative finish either by decreasing the coverage rate or by applying additional coats of paint.
5. Paints shall be mixed in proper containers of adequate capacity. All paints shall be thoroughly stirred before use and shall be kept stirred while using. No unauthorized thinners or other materials shall be added to any paint.
6. Only skilled painters shall be used on the work and specialists shall be employed where required.

B. Field Priming:

1. Steel members, metal castings, mechanical and electrical equipment and other metals which are shop primed before delivery at the site will not require a prime coat on the job. All piping and other bare metals to be painted shall receive one coat of primer before exposure to the weather, and this prime coat shall be the first coat as specified in the painting schedule.
2. Equipment which is customarily shipped with a baked-on enamel finish or with a standard factory finish shall not normally be field painted unless the prefinished equipment is specifically color selected and unless the finish has not been damaged in transit or during installation. Surfaces that have been shop painted and have been damaged, or where the shop coats or coats of paint have deteriorated, shall be properly cleaned and retouched before any successive painting is done on them in the field. All such field painting shall match as nearly as possible the original finish.

C. Field Painting:

1. All painting at the site shall be designated as Field Painting.
2. All paint shall be at room temperature before applying, and no painting shall be done when the temperature is below 50 degrees F., in dust-laden air, when rain or snow is falling, or until all traces of moisture have completely disappeared from the surface to be painted.
3. Successive coats of paint shall be tinted so as to make each coat easily distinguishable from each other with the final undercoat tinted to the approximate shade of the finished coat.
4. Finish surfaces shall not show brush marks or other irregularities. Undercoats shall

be thoroughly and uniformly sanded with No. 00 sandpaper or equal to remove defects and provide a smooth even surface. Top and bottom edges of doors shall be painted and all exterior trim shall be back-primed before installation.

5. Painting shall be continuous and shall be accomplished in an orderly manner so as to facilitate inspection. All exterior concrete and masonry paint shall be performed at one continuous manner structure by structure. Materials subject to weathering shall be prime coated as quickly as possible. Surfaces of exposed members that will be inaccessible after erection shall be cleaned and painted before erection.
6. All materials shall be brush painted unless spray painting is specifically approved by the ENGINEER. Any sprayed painted areas must be backrolled to provide "pinhole free" coating surface. The Contractor shall be responsible for all damage caused by overspray or drifting.
7. All surfaces to be painted as well as the atmosphere in which painting is to be done shall be kept warm and dry by heating and ventilation, if necessary, until each coat of paint has hardened. Any defective paint shall be scraped off and repainted in accordance with the ENGINEER'S directions.
8. All painted surfaces shall be "pinhole free" after coating system cures.
9. Before final acceptance of the work, all damaged surfaces of paint shall be cleaned and repainted as directed by the ENGINEER.
10. Any pipe scheduled to be painted and having received a coating of a tar or asphalt-compound shall be painted with two coats of Koppers Inertol Tar Stop, Porters Tarsol Standard 7000 or equal before successive coats are applied per the schedule. Tnemec recommends using 66 Hi-Build Epoxoline over tar, but a test patch must be run initially to test the paint's compatibility with the tar.

#### 3.04 QUALITY CONTROL

- A. The finished surfaces shall be free from runs, ridges, voids, drips, waves, laps, and variation in color, texture and finish. Painting found defective shall be scraped or sandblasted off and repainted as directed by the Engineer. Before final acceptance of the work, damaged surfaces of paint shall be cleaned and repainted or touched up as directed by the Engineer.
- B. Provide AWet Paint signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.
- C. At the completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.
- D. Successive coats of paints shall completely cover the previous coat so it cannot be seen. Each coat shall be tinted to make the various coats distinguishable. Successive coats shall be applied after a minimum 24 hour drying period unless otherwise recommended by the manufacturer.

#### 3.05 TESTING:

The Contractor shall have available at the site a Tooke thickness gauge and an elcometer or Micro-Test magnetic dry mil gauge for the determination of coating thicknesses. No intermediate or finish coats shall be applied until the Engineer has accepted the previous coat.

#### 3.06 PROTECTION:

Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to the Engineer.

3.07 TOUCH-UP:

The Contractor shall supply the Owner with one quart of each coating and color used on this project. Cans shall be unopened and properly identified.

3.08 CLEANUP:

- A. The premises shall at all times be kept free from accumulation of waste material and rubbish caused by employees or work. At the completion of the painting remove all tools, scaffolding, surplus materials and all rubbish from and about the buildings and leave work "broom clean" unless more exactly specified.
- B. Upon completion, remove all paint where it has been spilled, splashed, or splattered on all surfaces, including floors, fixtures, equipment, furniture, etc., leaving the work ready for inspection.

3.09 PAINT COLOR:

All colors shall be as selected by the Engineer from Color Cards to be submitted by the Contractor.

END OF SECTION

## **Appendix I**

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City of Lake Worth 2016 Mechanical Integrity Testing (MIT) Plan for  
Class 1 Deep Injection Well IW-1 and Associated FDEP Correspondence

City of Lake Worth  
Water Treatment Plant

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# *2016 Mechanical Integrity Testing (MIT) Plan for Class 1 Deep Injection Well (IW-1)*

July 2015

*Prepared By:*



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CIVIL ENGINEERS

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**CITY OF LAKE WORTH**  
**REVERSE OSMOSIS WATER TREATMENT PLANT**  
**2016 MECHANICAL INTEGRITY TESTING PLAN**  
**FOR CLASS 1 DEEP INJECTION WELL IW-1**

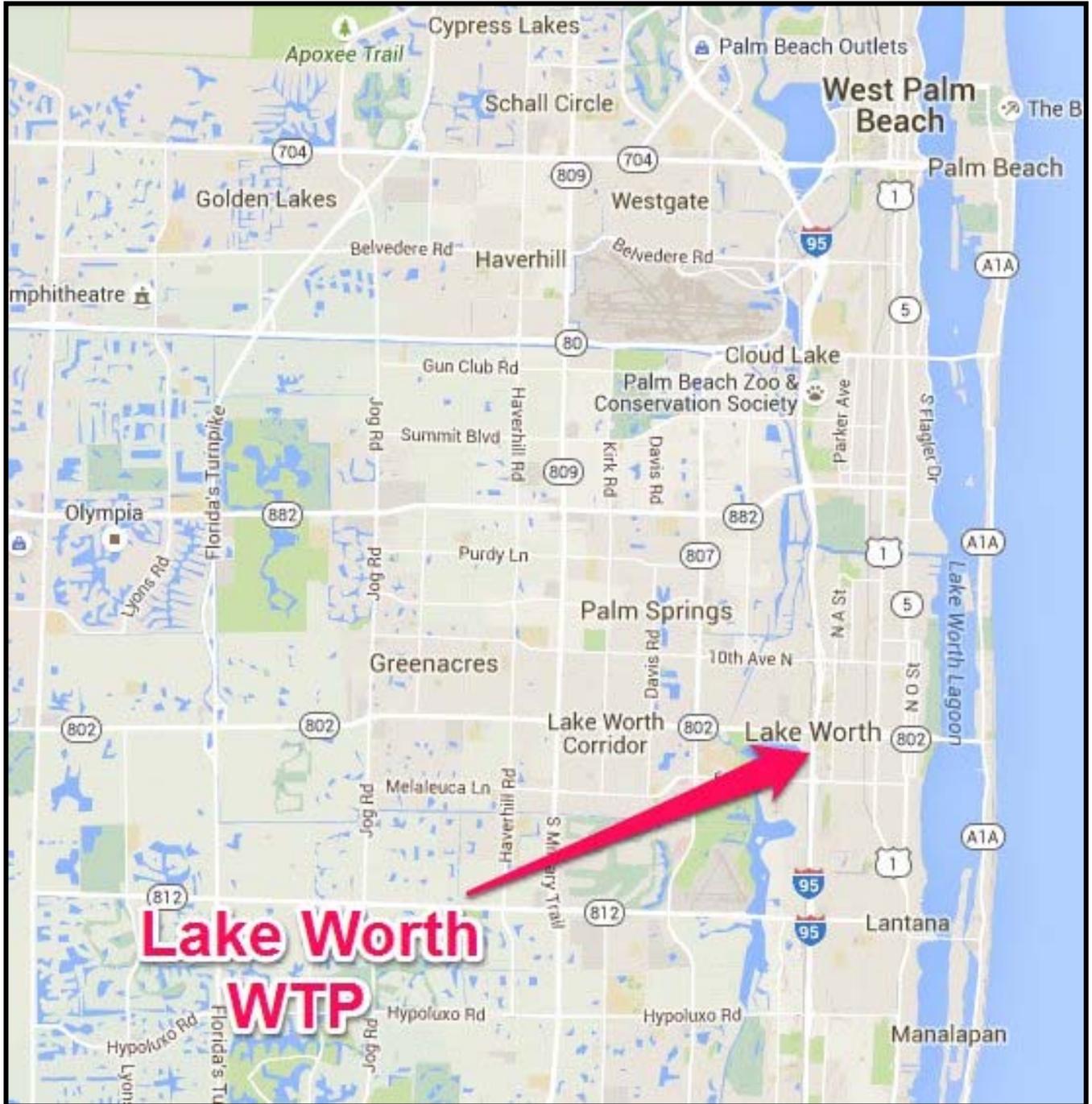
**Pressure Test, Video Survey, Caliper and Temperature Logs  
and Radioactive Tracer Survey**

Mechanical integrity testing of Deep Injection Well IW-1 will be performed to demonstrate that there are no leaks along the final injection casing, and that there are no channels or fractures around the final injection casing that will permit injected contaminants to migrate upward through the lowermost confining sequence above the base of the Underground Source of Drinking Water (USDW).

The possibility of leaks in the injection casing will be evaluated by pressure testing, temperature logging, and video surveying the inside of the injection casing. The possibility of upward migration through channels or fractures around the bottom of the injection casing will be evaluated by a static temperature survey and radioactive tracer surveys (RTS).

The following plan is for the mechanical integrity testing of injection well IW-1, located at the City of Lake Worth in Palm Beach County, Florida. A site location map and site plan is presented in Figures 1 and Figure 2. The construction detail for well IW-1 is shown in Figure 3. A summary of the casing depth injection and the monitoring zones for well IW-1 zone monitoring well is presented as Table 1. The wellhead detail for Injection Well IW-1 is shown in Figure 4.

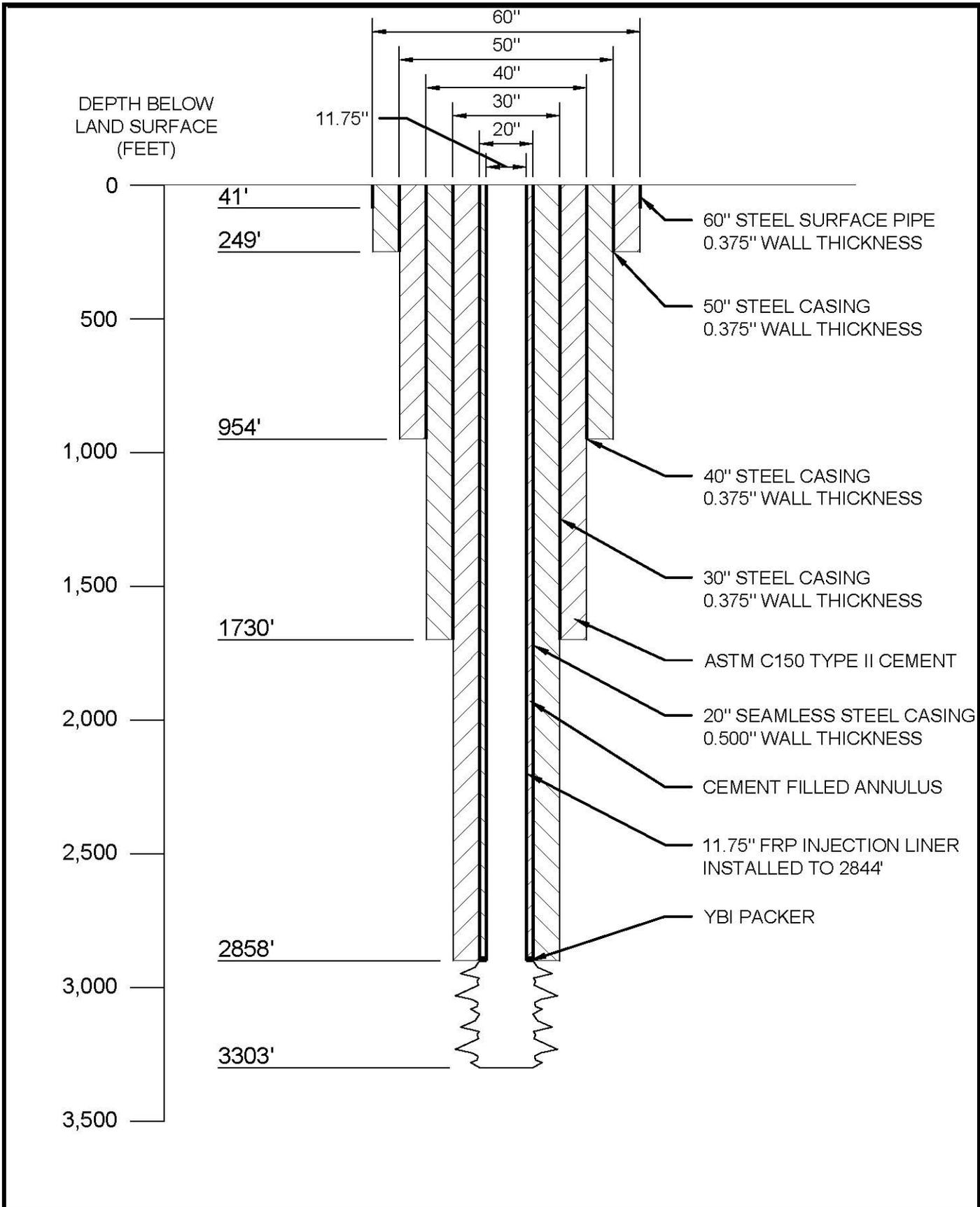
**Figure 1**



**Figure 2**



**Figure 3**



CITY OF LAKE WORTH

2016 MECHANICAL INTEGRITY TESTING PLAN  
FOR CLASS 1 DEEP INJECTION WELL IW-1

TABLE 1  
CASING AND MONITORING INTERVAL DEPTHS

<b>DESCRIPTION</b>	<b>Well IW-1</b>	<b>MW-1</b>
Casing Depth (feet)	2,858	N/A
Injection Zone (feet)	2,858 to 3,303	N/A
Upper Monitor Zone (feet)	N/A	1,688 to 1,717
Lower Monitor Zone (feet)	N/A	1,909 to 1,942

Note: Not Applicable (NA)

## GENERAL PROCEDURES FOR MECHANICAL INTEGRITY TESTING

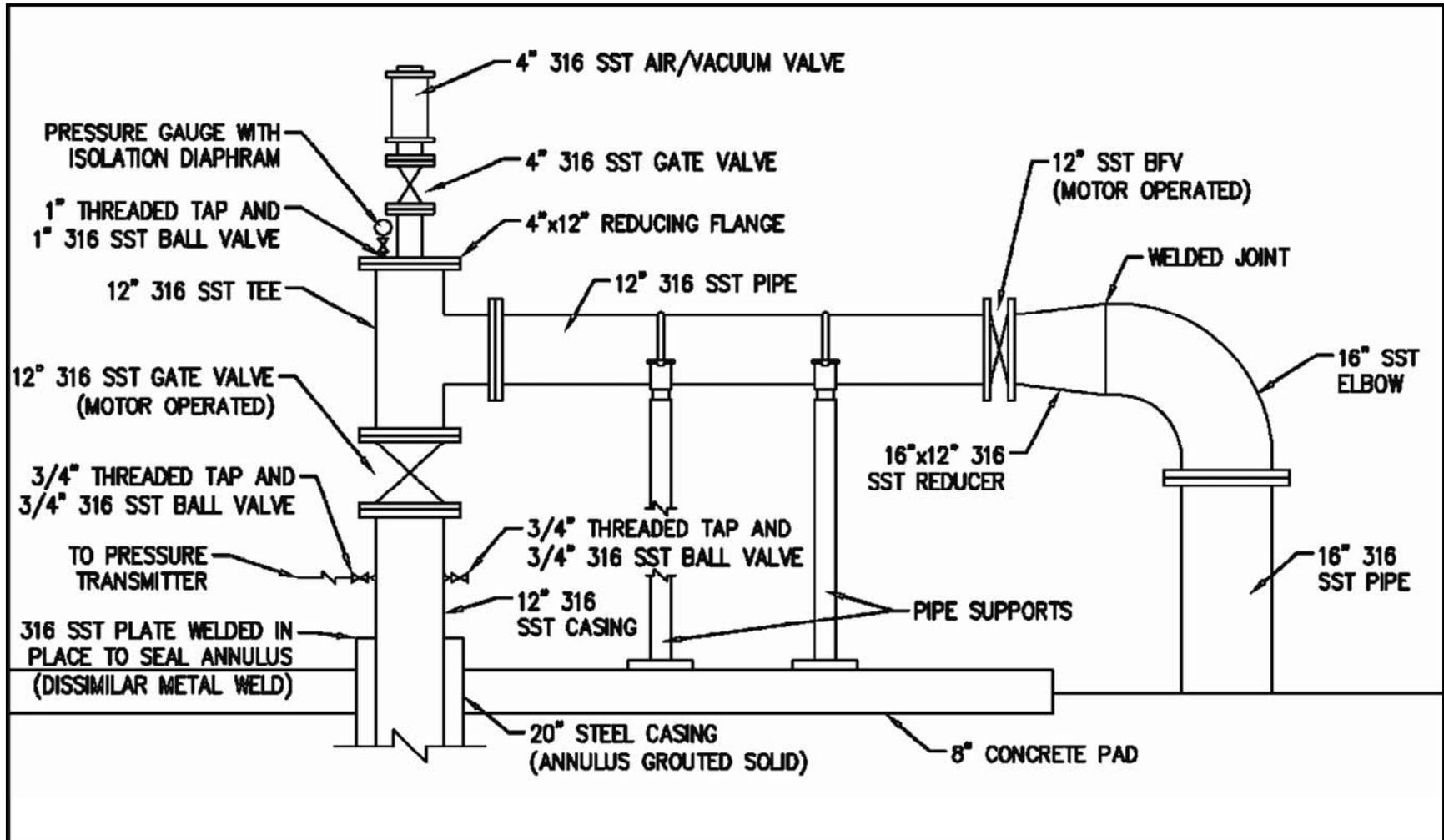
- All work will be performed by a qualified well contractor. A designated representative of the Florida Department of Environmental Protection (FDEP) will be notified at least 72 hours prior to the initiation of all tests. The tests will be performed during normal working hours (8 a.m. to 5 p.m., Monday through Friday) unless the FDEP representative agrees to an alternate schedule.
- Potable water will be used to flush the injection well and to perform the high rate dynamic portion of the RTS. Coordination with the plant operators will ensure they have an appropriate supply of potable water available prior to the performance of the RTS. All water lines for testing injection well IW-1 will be fitted with check valves to prevent backflow into the water supply.
- Well surveys will be performed through a suitable stripper head on the existing wellhead to prevent the release of contaminants. All tests will be performed on a concrete well pad to prevent the release of contaminants.
- Flow to the well for testing will be controlled through the valving illustrated in Figure 4.
- The monitoring well will be sampled 48 hours prior to the initiation and after the completion of mechanical integrity testing of the injection well system. The results of these analyses will be submitted to FDEP within 30 days after the final sampling event.
- The planned chronological order of the testing will be conducted as follows:
  1. Video Survey
  2. Caliper Log
  3. Pressure Testing
  4. Temperature Log
  5. Background Gamma Log
  6. Radioactive Tracer Survey

At the geophysical logging operator's option, the Temperature Log may be conducted at the same time as the Background Gamma Log.

- The overall testing schedule shall be as follows:

Well No.	Pressure Test Due Date	MIT Report Due Date
IW-1	1/18/2016	4/17/2016

**Figure 4**



## VIDEO SURVEY

The video survey will be used to assess the condition of the well and will visually evaluate the cased portion of the injection well, the final injection casing, and the open hole injection zone. The video survey will span the entire depth of the well from the bottom of the injection zone to the top of the final casing string. Prior to performing the color television survey on the injection casing, the injection well must be flushed with clear water in order to obtain a good visual picture when running the survey. It is anticipated that the flushing process will occur over a 24-hr period. The calculated volume for IW-1 is approximately 1,758 cubic feet or 13,200 gallons.

After the well has been flushed, the recording of the survey will begin at the top of the casing, with the reference datum for the survey being pad level. The video camera will be equipped with sufficient cable to enable the entire well to be surveyed, and will have sufficient lighting to ensure that a good quality picture of the well is obtained. The video camera will be centralized in the casing and borehole during the survey and be equipped with an accurate depth counter. The depth counter will be calibrated at the reference datum and the bottom of the casing.

The video camera will be equipped with a wide angle lens and have the capability to obtain both horizontal and vertical views of the well interior. The survey will be conducted to the satisfaction of the engineer, and in the presence of the engineer and FDEP representative. Final copies of the video will be requested in electronic DVD format.

The videotape from the survey will be reviewed by the engineer to determine the condition of casing interior and the open hole. Any visual imperfections in the casing or a plugged interval of the injection zone will be noted.

## CALIPER AND TEMPERATURE LOGS

The caliper and temperature logs will assist in determine the condition of the injection casing and open hole. The caliper log will confirm the diameter of the cased and open hole sections of the well. Knowledge of casing and hole diameter, measured with the caliper log, assists in determining if the casing has been damaged or if plugging of the open hole has occurred. Similarly, the temperature log can assist in determining casing integrity by identifying temperature anomalies that can occur from flow through casing breaches.

The existing wellhead will be used to perform the caliper and temperature surveys. Stripper heads, pack-offs, and valve subassemblies will be required to control flow during logging. These surveys will be conducted under static conditions prior to injecting fluids to perform the video survey and the RTS. The log recording should begin at land surface and end at the bottom of the injection zone, with the reference datum for the logs at the well pad.

The tool used to run the caliper log should be a four armed X-Y caliper tool that can accurately measure a diameter between 8 and 16 inches. The open hole may have a larger diameter;

therefore, the caliper tool should measure more than a 10-inch diameter area. The caliper tool must be calibrated prior to testing.

The temperature tool will be calibrated and capable of measuring accurately temperatures ranging from 50 to 150 degrees Fahrenheit. The temperature log will be run from the top to the bottom of the well in a downward direction. A minimum of 6 hours will transpire between cessation of injection and the initiation of the temperature log. The temperature log presentation will include both gradient and differential temperature measurements.

## PRESSURE TESTING

To demonstrate that there are no leaks in the final injection casing, IW-1 will be pressure tested under the criteria specified in Section 62-528.300(6) of the Florida Administrative Code (FAC). In preparation for the pressure test, flow in the subject well will be controlled by using weighted material, such as salt or barite, and the packer seat interval will be cleaned, if needed, to remove any scale or bacterial growth from the casing wall. The cleaning procedure will consist of hydrojetting, i.e., using high pressure water and an appropriate jetting nozzle or an appropriately sized casing brush.

The pressure test will be performed by installing a single element hydraulic packer (Baker, Tam International, or equivalent) with a rubber sleeve in the injection casing. The packer will be conveyed via drill pipe to the proposed setting depth at the bottom of each casing and which will vary depending on which well is being tested at any given time. The proposed setting depth was selected to set the packer in a cased interval with satisfactory support, within 40 feet (or less) from the bottom of the injection casing.

The packer element will be pressurized adequately to set it firmly in the casing. Once the packer is set, a wellhead will be put on the injection casing to allow for pressurization of the casing.

The regulations in Section 62-528.300(6)(e), FAC, call for a pressure test of a minimum one-hour duration, at a pressure of at least 1.5 times the expected well operational pressure, with less than a 5 percent change. Based on previous mechanical integrity tests performed, the test pressure will be 150 psi with no more than a +/- 7.5 psi change from the initial test pressure. The resolution of the pressure gauge face will be graduated to one psi increments.

The specified pressure can be achieved by using a high pressure water pump and will be held for one hour. Calibrated pressure gauges will be connected to the injection well wellhead so that readings may be recorded from the casing interior and the packer element. Pressure readings will be collected at five minute intervals for a period of one hour.

If the results from the pressure tests indicate a pressure fluctuation of less than 5 percent or 7.5 psi over the one hour test period, it can be concluded that the mechanical integrity of the wells final casing is satisfactory. At the end of the tests, the pressure held on the casing will be released. The total volume released will be measured to determine that an adequate amount of water was used to pressurize the casing. A copy of the pressure gauge calibration certification

must be submitted to the engineer and FDEP representative prior to the beginning of the test. The certifications should include the date and place of the certification. It will be required that the pressure gauge be calibrated within the past six months of the test date. The pressure gauge shall be indelibly marked so they can be readily cross-referenced to the calibration certification.

If a leak is detected by the pressure test, the contingency plan will be to move the packer up in 500-foot increments, reset it, and perform additional pressure tests until no leak is detected. Once the leak is no longer detected, the packer will be moved down 250 feet, reset, and a test run to determine if the leakage is in the upper or lower 250 foot interval. Confirmation of the suspected leakage depth will be attempted with the video survey and the temperature log.

After the pressure test is completed, the weighted material will be flushed from the well. It is anticipated that three casing volumes of potable water should be adequate to remove the weighted material and establish buoyancy similar to operating conditions. Three casing volumes for IW-1 is approximately 39,500 gallons.

### RADIOACTIVE TRACER SURVEY (RTS)

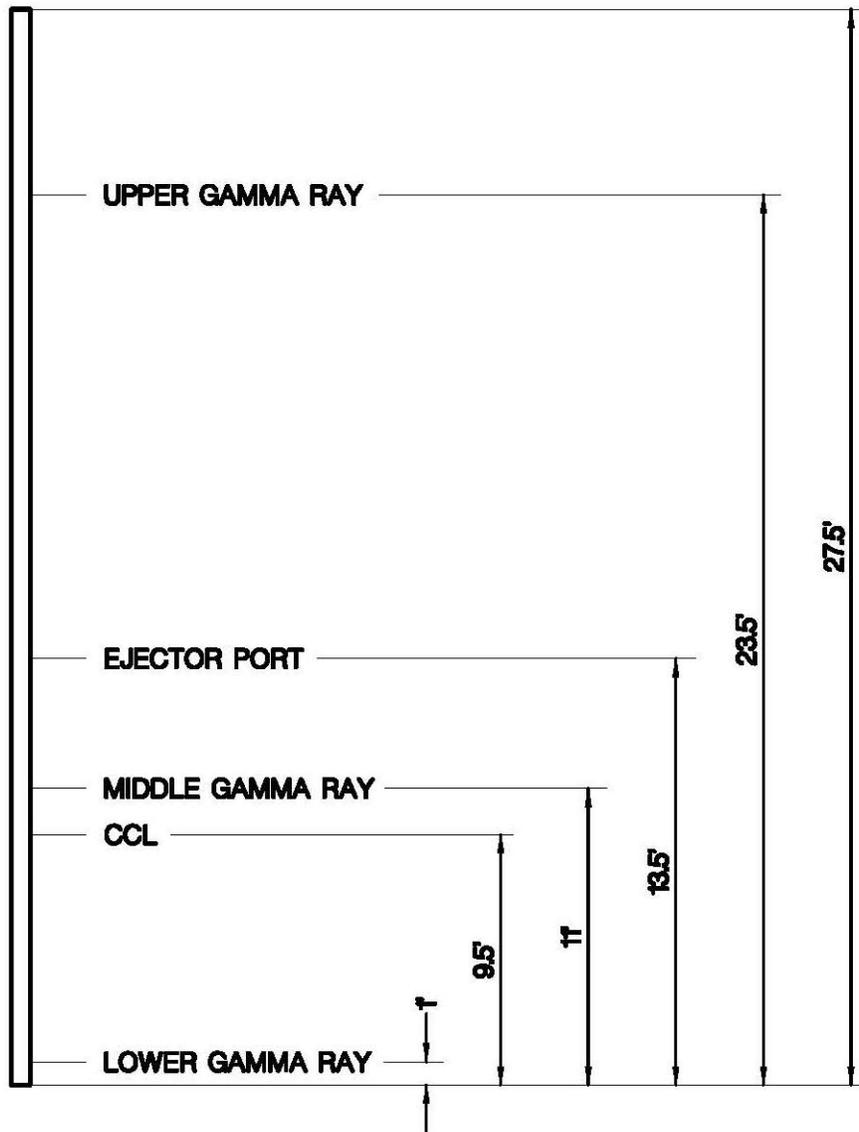
The existing wellhead assembly will be used to perform the radioactive tracer surveys. The wireline and tool string for the surveys will be run through a riser pipe of sufficient length and diameter to accommodate the tool string. The riser pipe will be equipped with a pack-off seal and stripper for the wireline and a subassembly with a valved fitting of sufficient size to allow injection of potable water at rates ranging from no flow to 500 gallons per minute (gpm). The proposed means of establishing the low flow rate for the dynamic test will be to tie into a fire hydrant and adjust the line pressure to establish the designated rate that will provide a flow velocity of 5 feet per minute. A pump capable of injecting at rates required for the low rate dynamic phases of the RTS may be necessary. The injection rate will be measured by a calibrated in-line totalizing flow meter. The RTS will be performed within the bounds of the concrete well pad to prevent spillage of contaminants.

The radioactive tracer tool assembly will approximate that shown in Figure 5. The radioactive tracer tool shall be loaded with tracer onsite and the engineer and the FDEP representative shall witness the loading.

The upper and lower gamma ray detectors will be at least six feet above and below the tracer ejector port. The radioactive isotope of Iodine (I-131) (medicinal quality) is proposed to be used as the tracer. The tracer will be dated less than one half-life at the time of use. The tool assembly will be equipped with a casing collar locator (CCL) to accurately determine the bottom of the casing.

Time will be recorded continuously during all surveys and will be included on the logging presentations. During tracer ejection, the precise ejection times (moments of ejection) will be recorded by the tool to plus or minus one millisecond. The engineer and the geophysical logging contractor will record the precise ejection times manually as a backup measure. The ejection times will be recorded on the appropriate RTS log headers. The project contract documents will allow no lag time between ejection and monitoring.

**Figure 5**



## RTS Procedures

Prior to the start of the RTS, the injection casing will be flushed with approximately 25,000 gallons of potable water to provide fluid buoyancy at the bottom of the casing. A pump will be required to perform the low rate phases of the RTS. The pump will use potable water from the plant as source water. The line going to the water source from the injection well will be equipped with a check valve and a manual valve to isolate the potable water from the well. The manual valve will be closed except for when the low rate dynamic phase of the test is being performed.

The surveys will then be conducted in the well, according to the following steps.

1. Prior to the initiation of the RTS, a radiation specialist shall perform a background Geiger counter survey around well IW-1
2. Perform a background natural gamma ray log (baseline gamma ray survey) from the reference datum of pad level to the bottom of the injection zone for IW-1, 3,303 feet bpl. A scintillation type gamma ray detector will be specified in the project contract documents.
3. Locate the bottom of injection casing accurately with CCL.
4. Perform Initial Low Rate Dynamic Radioactive Tracer Survey
  - a. Position the ejector port about five feet above the bottom of the final injection tubing for IW-1, 2,839 feet bpl.
  - b. Open valve on the water line and establish a 5.0 ft/min flow of potable water in the well by pumping. **(Do not exceed 5.0 ft/min of flow)**. As a result, well flow rate will equal 23 gpm at the velocity 5.0 ft/min. Eject 2.0 mci of the I-131 tracer and hold the tool stationary in position in time drive for one hour. If tracer is detected by the upper detector at any time during the time-drive monitoring periods following tracer ejection, move the logging position upwards in 20-foot increments as needed until tracer is not detected and resume time-drive monitoring for the remainder of the hour at the new position.
  - c. Cease injection, close valve on water line, then log out of position to 200 feet above the initial injection location. Compare gamma log with background gamma log. If tracer is above the original upper gamma ray detector location, perform overlapping passes with the RTS tool to locate and confirm the upper extent of the tracer.
  - d. Log down to the initial injection location. Flush with potable water for 30 minutes at 500 gpm. Log-up after flush to a minimum of 200 feet above the base of the casing or 200 feet above the upper most position which detected tracer. Compare gamma log with background gamma log.
  - e. If no upward movement of the tracer is indicated by the gamma log comparisons, proceed to the second low rate dynamic phase of the RTS.

- f. If upward movement is indicated, then increase the upward logging position to an additional 200 feet over the last identifiable occurrence of upward tracer migration. After there is no longer any detectable upward movement of the tracer during the initial low rate dynamic test phase, proceed to second low rate dynamic phase of the survey.

5. Perform Second Low Rate Dynamic RTS

- a. Position the ejector port about five feet above the bottom of the final injection tubing IW-1, 2,839 feet bpl. If the bottom of the injection casing exhibits staining, the logging tool will be raised in increments of five feet until staining is no longer detected.
  - b. Open valve on the water line and establish a 5.0 ft/min. flow of potable water in well by pumping. **(Do not exceed 5.0 ft/min of flow)**. Refer to 3.b for the flow in gpm. Eject 3.0 mci of the I-131 tracer and hold the tool stationary in position in time drive for one hour. If tracer is detected by the upper detector at any time during the time-drive monitoring periods following tracer ejection, move the logging position upwards in 20-foot increments as needed until tracer is not detected and resume time-drive monitoring for the remainder of the hour at the new position.
  - c. Cease injection, close valve on water line, then log out of position to 200 feet above the initial injection location. Compare gamma ray log with background gamma ray log. If tracer is above the original upper gamma ray detector location, perform overlapping passes with the RTS tool to locate and confirm the upper extent of the tracer.
  - d. Log down to the initial injection location. Flush with potable water for 30 minutes at 500 gpm. Log-up after flush to a minimum of 200 feet above the base of the casing or 200 feet above the upper most position which detected tracer. Compare gamma log with background gamma log.
  - e. If no upward movement of the tracer is indicated by the gamma ray log comparisons, proceed to final logging (Step 5).
  - f. If upward movement is indicated, then increase the upward logging position to an additional 200 feet over the last identifiable occurrence of upward tracer migration. After there is no longer any detectable upward movement of the tracer during the second low rate dynamic test phase, proceed to final logging (Step 5).
6. Final logging – Empty remaining tracer in the open hole below the casing in accordance with the following procedures:
- a. Lower the RTS tool to place the ejector port 1-2 feet above the depth of the uppermost flow interval of the injection zone (to be determined by the temperature logs and the video survey), while flushing with potable water at the 500 gpm rate for 30 minutes. The remaining I-131 tracer from the RTS tool will be evacuated into this

zone. The RTS tool will then be lowered to the total depth of the well. Under static conditions, a combination log-up after flush (LAF) and final background gamma-ray log will then be run from total depth back to land surface.

- b. Perform final gamma ray log from bottom of open hole to land surface. Compare final gamma ray log with background gamma ray log.
7. Unforeseen field conditions and logging responses may require modification to the overall procedures of RTS. Any field modifications will require the concurrence of the FDEP representative.
8. Following the completion of the RTS a radiation officer shall perform a Geiger counter survey around the 1 IW-1 site area after the RTS. The results for the pre and post Geiger counter survey shall be included in the summary report.

Upon completion of the RTS, the contractor will remove the stripper head, tool pack-off, and subassemblies, and return the injection well to operational service. The pump utilized to perform the RTS will be removed at this point. The wellhead has adequate valving to allow for the installation and removal of this equipment while controlling flow and protecting against the spillage of contaminants. Any spillage, should it occur, will be contained on the well pad.

#### EVALUATION OF MONITORING DATA

All available data for monitoring the performance of the injection well system will be assembled and evaluated. Included in the assessment will be the injection rate, injection and monitor zones pressures, and analyses of monitor zone water quality samples, in addition to specific injectivity data for the WWTP injection well system. Data will be presented in tabular and graphical form. These data will all be analyzed to confirm the mechanical integrity of the system.

#### SUMMARY REPORT

A report summarizing the results of the mechanical integrity tests will be prepared and sealed by the engineer of record. The report will include historical MOR results presented in tabulated and graphical formats pursuant to FDEP Permit No. 0297969-002-UO, condition 3.J. This report will be submitted to the FDEP's Tallahassee office for review and approval within 3 months of the completion date of the MIT field testing. The report will contained all data collected during the testing and monitoring phases, interpretations, conclusions, and recommendations. In addition, a copy of the cover letter for the MIT results shall be sent to the U.S. Environmental Protection Agency, Region 4, UIC Program located at 61 Forsyth St. Atlanta, GA 30303-8909.

## Rene Mathews

---

**From:** Rene Mathews  
**Sent:** Monday, August 10, 2015 5:35 PM  
**To:** 'Heuler, George'  
**Cc:** mshaner@lakeworth.org; TSloan@LakeWorth.org; Fishkin, Len; Haberfeld, Joe; Genung, Mary; Garcia, Leandro; Kyle Scott  
**Subject:** RE: Lake Worth MIT Plan

George:

We agree with your additional comment and have already planned to included the historical data with the final report.

Rene L. Mathews, P.E.  
President  
477 S. Rosemary Avenue, Suite 330  
West Palm Beach, Florida 33401  
561-655-6175  
561-655-6179 Fax  
[rmathews@mathewsconsultinginc.com](mailto:rmathews@mathewsconsultinginc.com)



---

**From:** Heuler, George [mailto:George.Heuler@dep.state.fl.us]  
**Sent:** Monday, August 10, 2015 5:00 PM  
**To:** Rene Mathews  
**Cc:** mshaner@lakeworth.org; TSloan@LakeWorth.org; Fishkin, Len; Haberfeld, Joe; Genung, Mary; Heuler, George; Garcia, Leandro; Kyle Scott  
**Subject:** RE: Lake Worth MIT Plan

**To:** Rene Mathews [mailto:RMathews@mathewsconsultinginc.com]  
**Cc:** [mshaner@lakeworth.org](mailto:mshaner@lakeworth.org); [TSloan@LakeWorth.org](mailto:TSloan@LakeWorth.org); Kyle Scott; Fishkin, Len; Haberfeld, Joe; [Leonardo.garcia@dep.state.fl.us](mailto:Leonardo.garcia@dep.state.fl.us); Genung, Mary  
**Subject:** RE: Lake Worth MIT Plan Approval

The Department has reviewed your responses to our letter concerning the MIT Plan for IW-1 at Lake Worth WTP. We approve of this plan in conjunction with your original submittal, with one additional condition to add to this approval:

I accidentally omitted one comment: the permittee should include a section in the MIT report which includes the historical MOR results of flow rates and pressures of IW-1, and chemical and pressure data of the monitor wells, presented in tabular and graphical formats, pursuant to FDEP Permit No. 0297969-002-UO, condition 3.J.

Attached please find your original Plan. If **you have** any questions, please contact me.

George Heuler, P.G.

PGII, Aquifer Protection Program  
Florida Department of Environmental Protection  
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Tallahassee, Florida 32399-2400  
Phone (850)245-8657  
[george.heuler@dep.state.fl.us](mailto:george.heuler@dep.state.fl.us)



## Rene Mathews

---

**From:** Rene Mathews  
**Sent:** Friday, August 07, 2015 7:55 AM  
**To:** 'Heuler, George'  
**Cc:** mshaner@lakeworth.org; TSloan@LakeWorth.org; Kyle Scott; Fishkin, Len; Haberfeld, Joe; Leonardo.garcia@dep.state.fl.us; Genung, Mary  
**Subject:** RE: Lake Worth MIT Plan

George, thank you for your review and comments. Our responses to your comments are as follows:

1. Eject depths for the two low flow tracer surveys will be revised to be 5 feet above the bottom of the tubing, whose depth is at 2844 feet, rather than 5 feet above the bottom of the casing.
2. A Geiger Counter survey will be required to be completed at IW-1 site prior to and after the RTS portion of the MIT to insure that no spillage of Iodine-131 has occurred at the surface during the RTS process. The results of the Geiger Counter surface survey will be included in the final report.
3. The final report for the demonstration of MIT shall be submitted to the Department's Tallahassee office for review and approval within three months of the MIT completion. In addition, a copy of the cover letter for the MIT results shall be sent to the U.S. Environmental Protection Agency, Region 4, UIC program, 61 Forsyth St. SW, Atlanta, GA 30303-8909.

The Revised MIT Plan will be included with the Contract Documents issued for bidding to the well testing contractor. Please let me know if we need to re-submit the Revised MIT Plan to your office prior to project bidding, or if this email confirmation of the items listed above suffices.

Thank you,

Rene L. Mathews, P.E.  
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West Palm Beach, Florida 33401  
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561-655-6179 Fax  
[rmathews@mathewsconsultinginc.com](mailto:rmathews@mathewsconsultinginc.com)



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**From:** Heuler, George [mailto:George.Heuler@dep.state.fl.us]  
**Sent:** Thursday, July 23, 2015 5:56 PM  
**To:** Rene Mathews  
**Cc:** mshaner@lakeworth.org; TSloan@LakeWorth.org; Kyle Scott; Fishkin, Len; Haberfeld, Joe; Leonardo.garcia@dep.state.fl.us; Genung, Mary  
**Subject:** Lake Worth MIT Plan

Facility Name: City of Lake Worth Class I Injection Well  
Permit No.: UIC 0297969-002-UO

WACS No.: 98622  
County: Palm Beach County

RE: Mechanical Integrity Test Demonstration Plan for Class I Injection well IW-1

Dear Ms. Rene L. Mathews:

The Department acknowledges the receipt of the mechanical integrity testing (MIT) plan for the City of Lake Worth Class I Injection Well **IW-1** received July 21, 2015. The Plan has been reviewed, and FDEP has the following comments:

1. Eject depths for the two low flow tracer surveys should be 5 feet above the bottom of the tubing, whose depth is at 2844 feet, rather than 5 feet above the bottom of the casing.
2. Please note that a Geiger Counter survey should be completed at IW-1 site prior to and after the RTS portion of the MIT to insure that no spillage of Iodine-131 has occurred at the surface during the RTS process. The results of the Geiger Counter surface survey should be included in the final report.
3. Pursuant to Rule 62-528.430(2)(b)2.a., F.A.C., the final report for the demonstration of MIT shall be submitted to the Department's Tallahassee office for review and approval within three months of the MIT completion. In addition, a copy of the cover letter for the MIT results shall be sent to the U.S. Environmental Protection Agency, Region 4, UIC program, 61 Forsyth St. SW, Atlanta, GA 30303-8909.

If any questions, please contact me.

George Heuler, P.G.  
PGII, Aquifer Protection Program  
Florida Department of Environmental Protection  
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Tallahassee, Florida 32399-2400  
Phone (850)245-8657  
[george.heuler@dep.state.fl.us](mailto:george.heuler@dep.state.fl.us)

CC: Monica Shaner, City of Lake Worth: [mshaner@lakeworth.org](mailto:mshaner@lakeworth.org)  
Tim Sloan, City of Lake Worth: [TSloan@LakeWorth.org](mailto:TSloan@LakeWorth.org)  
Kyle Scott, Mathews Consulting: [KScott@mathewsconsultinginc.com](mailto:KScott@mathewsconsultinginc.com)  
[Len.fishkin@dep.state.fl.us](mailto:Len.fishkin@dep.state.fl.us)  
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