

**PROJECT MANUAL**

**Potable Well No. 12 Reconstruction  
for City of Lake Worth, FL  
Lake Worth Solicitation No. IFB-15-101**

October 2014

*Prepared by:*

Mock, Roos & Associates, Inc.  
Engineers-Surveyors-Planners  
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West Palm Beach, Florida

Engineer's Project  
No. B 4015.00

PROJECT: Potable Well No. 12 Reconstruction  
for City of Lake Worth, FL  
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PROJECT: Potable Well No. 12 Reconstruction  
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Date: November 13, 2014

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

Sealed bids, in duplicate, will be received by City of Lake Worth Procurement Office, City Hall, 2<sup>nd</sup> Floor, 7 North Dixie Highway, Lake Worth, Florida 33460 for the subject Project until 2:00 p.m. local time, December 18, 2014, 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 Mock, Roos & Associates, Inc., 5720 Corporate Way, West Palm Beach, Florida 33407. The project includes drilling the well to deeper depth and reconstruction of the well.

Contract Documents may be purchased from Mock, Roos & Associates, Inc. at the following prices, which are non-refundable:

Drawings:	\$ 9.43	plus \$0.57	sales tax	=	\$10.00
Project Manual:	\$23.58	plus \$1.42	sales tax	=	\$25.00
Complete Set (Drawings and Project Manual):					\$35.00

Packaging & Mailing Charges/Set: \$ 15.00 (when delivered by UPS)

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No Bid may be withdrawn for a period of 120 days after the scheduled closing date for the receipt of bids except as otherwise provided in Article 13 of the Instructions to Bidders.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

/s/ Larry Johnson, Water Utilities Director

Publish: Palm Beach Post - November 16, 2014

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 (insert project name) TO BE OPENED (insert date and time as indicated in the Invitation to Bid or subsequent addenda)" 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.**

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: Potable Well No. 12 Reconstruction  
for City of Lake Worth, FL  
Lake Worth Solicitation No. IFB-15-101

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 Unit Price Schedule (Page 00300– thru 00300– ):

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 120 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 150 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) Unit Price Schedule on Page(s) 00300-5.
- (c) Trench Safety Affidavit on Page(s) 00300-6.
- (d) Schedule of Subcontractors (Page(s) 00300-7).
- (e) Schedule of Suppliers, Equipment and Materials (Page(s) 00300-8).

(f) Sworn Statements Under Section 287.133(3)(a), Florida Statutes, on Public Entity Crimes on Page(s) 00300-9 and 00300-10.

(g) Certification of Drug Free Workplace Program on Page 00300-11.

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

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.



**UNIT PRICE SCHEDULE**

<b>Item No.</b>	<b>Item Description</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Total Amount</b>
<b>Schedule A - General Requirements</b>					
A-1.	Bonds and Insurance	1	LS		\$
A-2.	Mobilization/Demobilization/General Conditions	1	LS		\$
A-3.	Permit Fees	1	LS		\$
A-4.	Video Taping	1	LS		\$
A-5.	Prepare and Furnish Record Drawings	1	LS		\$
A-6.	General Allowance	1	LS		\$ 20,000
<b>Total Schedule A</b>					<b>\$</b>
<b>Schedule B - Well Reconstruction</b>					
B-1.	Remove wellhead, column pipe, and well pump	1	LS		\$
B-2.	Remove existing riser casing and well screen	1	LS		\$
B-3.	Clean out borehole of existing well screen (total depth approximately 150 feet) to a nominal 19-inch diameter	70	FT	\$	\$
B-4.	Drill nominal 8-inch diameter pilot hole from base of existing well (total depth approximately 150 feet) to 250 feet	100	FT	\$	\$
B-5.	Geophysical Logging (Complete)	1	LS		\$
B-6.	Ream 8-inch diameter pilot hole to nominal 19-inch diameter borehole	100	FT	\$	\$
B-7.	Furnish and install 12-inch diameter stainless steel well screen from 200 feet to 250 feet	50	FT	\$	\$
B-8.	Furnish and install 12-inch diameter SDR17 PVC riser casing to 200 feet	200	FT	\$	\$
B-9.	Furnish and install gravel pack	300	CF	\$	\$
B-10.	Airlift Development	20	HR	\$	\$
B-11.	Jetting with simultaneous Airlift Development	80	HR	\$	\$
B-12.	Pump Development	40	HR	\$	\$
B-13.	Conduct Step Rate Test	8	HR	\$	\$
B-14.	Conduct Pre- and Post-Construction Video Logging	2	EA	\$	\$
B-15.	Furnish and install 6" Certa-Loc column pipe and appurtenances	100	FT	\$	\$
B-16.	Furnish and Install Well Pump	1	LS		\$
B-17.	Wellhead piping modifications	1	LS		\$
B-18.	Disinfection and Water Quality Sampling	1	LS		\$
B-19.	Painting and miscellaneous	1	LS		\$
B-20.	Extra work by drilling crew & drilling equipment	8	HR	\$	\$
B-21.	Extra work by drilling crew	8	HR	\$	\$
B-22.	Standby time with rig and drilling crew on-site	8	HR	\$	\$
B-23.	Standby time with rig on-site and crew off-site	8	HR	\$	\$
B-24.	Formation Water Disposal System	1	LS		\$
B-25.	Fence and Site Restoration	1	LS		\$
<b>Total Schedule B</b>					<b>\$</b>

**UNIT PRICE SCHEDULE**

<b>Item No.</b>	<b>Item Description</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Total Amount</b>
<b>Schedule C - Electrical and Instrumentation</b>					
C-1.	Flowmeter	1	LS		\$
C-2.	Instrumentation	1	LS		\$
C-3.	Misc. electrical wire, conduit, and boxes	1	LS		\$
<b>Total Schedule C</b>					\$
<b>Total Bid - Schedules A through C</b>					\$
<b>Total Bid (in words):</b>					

---

**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


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 Well Drilling License 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.

\_\_\_\_\_

- 1a. State the numbers of years your organization has been doing business in Florida.

\_\_\_\_\_

- 1b. State the numbers of years your organization has been doing business as a Licensed Well Driller in Florida.

\_\_\_\_\_

- 2a. We normally perform \_\_\_\_\_% of the work with our own forces.  
List trades below:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

- 4. BIDDER shall have constructed at least ten Surficial Aquifer supply wells within the past five years.

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

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

Owner: \_\_\_\_\_ Phone No: \_\_\_\_\_

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

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

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

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

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

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

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

5. BIDDER shall demonstrate the ability to complete projects on time within the contract completion dates. List ALL within the last three years (started, underway, or completed):

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

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

Actual Completion Schedule (days) \_\_\_\_\_

6. List ALL projects within the past five years (started, underway, or completed) in which liquidated damages (LD) were incurred, either directly or indirectly:

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

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

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

7. BIDDER shall demonstrate the proficiency in the performance of the following activities. Please provide specific experience with Surficial Aquifer supply wells over the past five years (started, underway and completed). Include the names and experience of subcontractors as applicable.

Well Cementing: \_\_\_\_\_

Geophysical Logging: \_\_\_\_\_

Surface and Piping Facilities: \_\_\_\_\_

8. BIDDER shall specifically name proposed superintendents and drillers to be utilized on this project and identify years of experience in well drilling and quantity of wells

completed by the proposed superintendents and drillers within the previous five years. It must be demonstrated that the experience is with the current bidder.

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

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

Years of Experience with BIDDERS: \_\_\_\_\_

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

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

9. BIDDERS shall identify below the information regarding last similar project the rig was utilized on:

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

Owner: \_\_\_\_\_ Phone No: \_\_\_\_\_

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

10. BIDDERS shall provide information related to the job safety and safety rating of the corporation: \_\_\_\_\_

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

12.

(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.

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

13. 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:

Reconstruction of Surficial Aquifer Well No. 12.

**ARTICLE 2. ENGINEER**

The Project has been designed by Mock, Roos & Associates, Inc., 5720 Corporate Way, West Palm Beach, FL 33407, 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 120 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 150 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 unit price(s) in the Bid Form Unit Price Schedule for Unit Bid Items numbered \_\_\_\_\_ to \_\_\_\_\_.

**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

AGREEMENT

00500-2

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 82 pages.
- 8.9. Drawings not attached hereto but are listed in Section 00860 List of Drawings.
- 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 \_\_\_\_\_, 2014 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: Potable Well No. 12 Reconstruction  
for City of Lake Worth, FL  
Lake Worth Solicitation No. IFB-15-101

**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\_\_\_\_\_.

00610  
**Construction Performance Bond**

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

CONTRACTOR (Name and Address):

SURETY (Name and Principal Place of Business):

OWNER (Name and Address):

**CONSTRUCTION CONTRACT**

Date:

Amount:

Description (Name and Location):

**BOND**

Date (Not earlier than Construction Contract Date):

Amount:

Modifications to this Bond Form:

**CONTRACTOR AS PRINCIPAL**

Company: \_\_\_\_\_ (Corp. Seal)

Signature: \_\_\_\_\_  
Name and Title:

**SURETY**

Company: \_\_\_\_\_ (Corp. Seal)

Signature: \_\_\_\_\_  
Name and Title:

**CONTRACTOR AS PRINCIPAL**

Company: \_\_\_\_\_ (Corp. Seal)

Signature: \_\_\_\_\_  
Name and Title:

**SURETY**

Company: \_\_\_\_\_ (Corp. Seal)

Signature: \_\_\_\_\_  
Name and 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 Contractors of America, and the American Institute of Architects.

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for 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 the 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 performing 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 not 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 complete the contract. Such Contractor 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 Contract; or
  - 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 the 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 reasonable 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 \*
  - 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 heirs, 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 obligations.
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 Contractor Default or within two years after the Contractor 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 herefrom 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.

\* resulting from the actions or failure to act of the Surety under Paragraph 4; and

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 (Architect, Engineer or other party):

Mock, Roos & Associates, Inc.  
5720 Corporate Way  
West Palm Beach, FL 33407

CONSTRUCTION PERFORMANCE BOND

00610-2

# Construction Payment Bond

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

CONTRACTOR (Name and Address):

SURETY (Name and Principal Place of Business):

OWNER (Name and Address):

### CONSTRUCTION CONTRACT

Date:

Amount:

Description (Name and Location):

### BOND

Date (Not earlier than Construction Contract Date):

Amount:

Modifications to this Bond Form:

### CONTRACTOR AS PRINCIPAL

Company: \_\_\_\_\_ (Corp. Seal)

Signature: \_\_\_\_\_  
Name and Title:

### SURETY

Company: \_\_\_\_\_ (Corp. Seal)

Signature: \_\_\_\_\_  
Name and Title:

### CONTRACTOR AS PRINCIPAL

Company: \_\_\_\_\_ (Corp. Seal)

Signature: \_\_\_\_\_  
Name and Title:

### SURETY

Company: \_\_\_\_\_ (Corp. Seal)

Signature: \_\_\_\_\_  
Name and Title:

ICDC No. 1910-28B (1984 Edition)

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

CONSTRUCTION PAYMENT BOND

00620-1

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, 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 the 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 and tendered defense of such 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 contract 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. <sup>(see Note 1)</sup>
- 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 performed 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 performed; 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 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 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.

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

Note 1: As an additional requirement any claimant, except a laborer, who is not in privity with the Contractor and who has not received payment for his or her work 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 (Architect, Engineer or other party):

Mock, Roos & Associates, Inc.  
5720 Corporate Way  
West Palm Beach, FL 33407

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 expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

11. No suit or action 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 years 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 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 herefrom 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.

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 of the Contractor 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.

PROJECT: Potable Well No. 12 Reconstruction  
for City of Lake Worth, FL  
Lake Worth Solicitation No. IFB-15-101

**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

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 Potable Well No. 12 Reconstruction for City of Lake Worth

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.

MOCK, ROOS & ASSOCIATES, INC.

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

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

(Title)

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 \$ \_\_\_\_\_

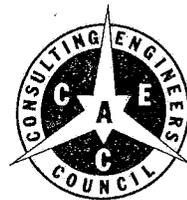
Accompanying Documentation (Contractor to itemize):

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

AMERICAN CONSULTING ENGINEERS COUNCIL

AMERICAN SOCIETY OF CIVIL ENGINEERS

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.

REPRODUCED FROM

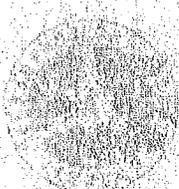
OF THE

CONSTRUCTION SPECIFICATIONS

INSTITUTION OF PROFESSIONAL ENGINEERS

VOL.

CONSTRUCTION SPECIFICATIONS



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# GENERAL CONDITIONS

## ARTICLE I—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 5.3 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 USC 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. (See **SC-5.1 of the Supplementary Conditions**)

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 of 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. **(See SC-9.6 of the Supplementary Conditions)**

*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

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

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. **(See SC-13.12 of the Supplementary Conditions)**

#### **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

***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. (See SC-14.13 of the **Supplementary Conditions**)

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). **(See SC-15.4 of the Supplementary Conditions)**

*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 1SC-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-

**(See Article 18 - SC-18.1 through SC-18.11 of the Supplementary Conditions)**

**(See SC-19 of the Supplementary Conditions)**

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.

**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 CORRECTION 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.

00840  
**LISTING OF THE DUTIES, RESPONSIBILITIES AND  
LIMITATIONS OF AUTHORITY OF THE  
RESIDENT PROJECT REPRESENTATIVE**

ENGINEER may furnish a Resident Project Representative (RPR), assistants and other field staff to assist ENGINEER in observing performance of the Work of the Contractor. RPR may only be part time on site, and CONTRACTOR shall coordinate with RPR as required in the Contract Documents.

Through on-site observations of the Work in progress and field checks of materials and equipment by the RPR and assistants, ENGINEER shall endeavor to provide further protection for OWNER against defects and deficiencies in the Work; but, the furnishing of such services will not make ENGINEER responsible for or give ENGINEER control over construction means, methods, techniques, sequences or procedures or for safety precautions or programs, or responsibility for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

The duties and responsibilities of the RPR are limited to those of ENGINEER in ENGINEER's agreement with the OWNER and in the construction Contract Documents, and are further limited and described as follows:

**A. GENERAL**

RPR is ENGINEER's agent at the site, will act as directed by and under the supervision of ENGINEER, and will confer with ENGINEER regarding RPR's actions. RPR's dealings in matters pertaining to the on-site work shall in general be with ENGINEER and CONTRACTOR keeping OWNER advised as necessary. RPR's dealings with subcontractors shall only be through or with the full knowledge and approval of CONTRACTOR. RPR shall generally communicate with OWNER with the knowledge of and under the direction of ENGINEER.

**B. DUTIES AND RESPONSIBILITIES OF RPR**

1. **SCHEDULES:** Review the progress schedule, schedule of Shop Drawing submittals and schedule of values prepared by CONTRACTOR and consult with ENGINEER concerning acceptability.
2. **CONFERENCES AND MEETINGS:** Attend meetings with CONTRACTOR, such as preconstruction conferences, progress meetings, job conferences and other project-related meetings, and prepare and circulate copies of minutes thereof.
3. **LIAISON:**
  - a. Serve as ENGINEER's liaison with CONTRACTOR, working principally through CONTRACTOR's superintendent and assist in understanding the intent of the Contract Documents; and assist ENGINEER in serving as OWNER's liaison with CONTRACTOR when CONTRACTOR's operations affect OWNER's on-site operations.
  - b. Assist in obtaining from OWNER additional details or information, when required for proper execution of the Work.
4. **SHOP DRAWINGS AND SAMPLES:**
  - a. Record date of receipt of Shop Drawings and samples.
  - b. Receive samples which are furnished at the site by CONTRACTOR, and notify ENGINEER of availability of samples for examination.

- c. Advise ENGINEER and CONTRACTOR of the commencement of any Work requiring a Shop Drawing or sample if the submittal has not been approved by ENGINEER.
5. REVIEW OF WORK, REJECTION OF DEFECTIVE WORK, INSPECTIONS AND TESTS:
  - a. Conduct on-site observations of the Work in progress to assist ENGINEER in determining if the Work is in general proceeding in accordance with the Contract Documents.
  - b. Report to ENGINEER whenever RPR believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise ENGINEER of Work that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
  - c. Verify that tests, equipment and systems startups and operating and maintenance training are conducted in the presence of appropriate personnel, and that CONTRACTOR maintains adequate records thereof; and observe, record and report to ENGINEER appropriate details relative to the test procedures and startups.
  - d. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Project, record the results of these inspections and report to ENGINEER.
6. INTERPRETATION OF CONTRACT DOCUMENTS: Report to ENGINEER when clarifications and interpretations of the Contract Documents are needed and transmit to CONTRACTOR clarifications and interpretations as issued by ENGINEER.
7. MODIFICATIONS: Consider and evaluate CONTRACTOR's suggestions for modifications in Drawings or Specifications and report with RPR's recommendations to ENGINEER. Transmit to CONTRACTOR decisions as issued by ENGINEER.
8. RECORDS:
  - a. Maintain at the job site or ENGINEER's office files for correspondence, reports of job conferences, Shop Drawings and samples, reproductions of original Contract Documents including all Work Directive Changes, Addenda, Change Orders, Field Orders, additional Drawings issued subsequent to the execution of the Contract, ENGINEER's clarifications and interpretations of the Contract Documents, progress reports, and other Project related documents.
  - b. Record names, addresses and telephone numbers of all CONTRACTORS, subcontractors and major suppliers of materials and equipment.
9. REPORTS:
  - a. Furnish ENGINEER periodic reports as required of progress of the Work and of CONTRACTOR's compliance with the progress schedule and schedule of Shop Drawing and sample submittals.
  - b. Consult with ENGINEER in advance of scheduled major tests, inspections or start of important phases of the Work.
  - c. Draft proposed Change Orders and Work Directive Changes, obtaining backup material from CONTRACTOR and recommend to ENGINEER Change Orders, Work Directive Changes, and Field Orders.
  - d. Report immediately to ENGINEER and OWNER upon the occurrence of any accident witnessed by RPR or that was otherwise made known to RPR.
10. PAYMENT REQUESTS: Review applications for payment with CONTRACTOR for compliance with the established procedure for their submission and forward with recommendations to

ENGINEER, noting particularly the relationship of the payment requested to the schedule of values, Work completed and materials and equipment delivered at the site but not incorporated in the Work.

11. CERTIFICATES, MAINTENANCE AND OPERATION MANUALS: During the course of the Work, verify that certificates, maintenance and operation manuals and other data required to be assembled and furnished by CONTRACTOR are applicable to the items actually installed and in accordance with the Contract Documents, and have this material delivered to ENGINEER for review and forwarding to OWNER prior to final payment for the Work.

12. COMPLETION:

- a. Before ENGINEER issues a Certificate of Substantial Completion, submit to CONTRACTOR a list of observed items requiring completion or correction.
- b. Conduct final inspection in the company of ENGINEER, OWNER and CONTRACTOR and prepare a final list of items to be completed or corrected.
- c. Observe that all items on final list have been completed or corrected and make recommendations to ENGINEER concerning acceptance.

### **C. LIMITATIONS OF AUTHORITY**

Resident Project Representative:

1. Shall not authorize any deviation from the Contract Documents or substitution of materials or equipment, unless authorized by ENGINEER.
2. Shall not exceed limitations of ENGINEER's authority as set forth in the Contract Documents.
3. Shall not undertake any of the responsibilities of CONTRACTOR, subcontractors or CONTRACTOR's superintendent.
4. Shall not advise on, issue directions relative to or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction unless such advice or directions are specifically required by the Contract Documents.
5. Shall not advise on, issue directions regarding or assume control over safety precautions and programs in connection with the Work.
6. Shall not accept Shop Drawing or sample submittals from anyone other than Contractor.
7. Shall not authorize OWNER to occupy the Project in whole or in part.
8. Shall not participate in specialized field or laboratory tests or inspections conducted by others except as specifically authorized by ENGINEER.

END OF SECTION

00860  
LIST OF DRAWINGS

The Drawings which form a part of the Contract Documents and show the Work to be performed are as follows:

<u>Drawing Title</u>	<u>Drawing Number</u>	<u>No. of Sheets</u>	<u>Dated</u>
Potable Well No. 12 Reconstruction	44-48-28-302	5	October 2014

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## SECTION 01000

### GENERAL REQUIREMENTS

#### 1.0 PROJECT LOCATION

- A. East of Lake Osborne Drive and South of Lake Worth Road.

#### 2.0 SCOPE OF WORK

- A. The Work to be performed by the Contractor includes permitting, inspecting, furnishing all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever necessary to modify, construct, complete, deliver and place in operation the subject Project as shown on the Drawings and/or as herein described as specified. All Work to be in accordance with the Contract Documents.

#### 3.0 REFERENCE POINTS

- A. Horizontal and vertical control have been provided in the Drawings. All construction staking to be provided by the Contractor.

#### 4.0 GRADES, DIMENSIONS, AND ELEVATIONS

- A. Written dimensions have preference over scaled dimensions. All elevations are based on the 1929 National Geodetic Vertical Datum (N.G.V.D.).

#### 5.0 EXISTING STRUCTURES AND UTILITIES

- A. All known utilities have been shown on the Drawings according to the best information available. It is the Contractor's responsibility to contact all owners of structures or utilities above ground, on the surface, or below the ground, within the Project area so that said owners may stake or otherwise mark or protect their facilities. The Contractor must provide facilities and be responsible for the protection of all structures, buildings and utilities, underground, on the surface, or above ground against trenching, dewatering, or any other activity connected with the Work throughout the entire Contract Time.
- B. When structures and utilities have been properly shown or marked and are disturbed or damaged in the execution of the Work, they must be repaired immediately in conformance with best standard practice and the approval of the owner of the damaged utility or structure. In the case of structures and utilities which have not been properly shown or located as outlined above and are disturbed or damaged in the prosecution of the Work, take whatever steps are necessary for safety and notify the affected utility owner and avoid any actions which might cause further damage to the structure or utility.
- C. Should the Work require repairs, changes or modifications of the Owner's utilities as well as other utilities, it is the responsibility of the Contractor to provide for the maintenance of continuous water, sewage, electric, telephone and other utility services to all present customers of such utilities, unless approval in writing is secured from the applicable utility company or Owner for interruption of such service.
- D. Contractor is responsible for verifying all vertical and horizontal locations of all existing utilities and structures, whether shown on the drawings or not, to verify any potential conflicts prior to ordering any materials.

## 6.0 QUALITY CONTROL

### A. Testing Laboratory Services:

All tests and analyses, which are called for in the Specifications and/or Drawings to be performed by an Independent Testing Laboratory, will be at the Owner's expense unless otherwise specified, provided the tests and analyses determine that the material(s) and/or Work meets the requirements as specified. All such tests that fail to meet the Project requirements are to be paid by the Contractor. Contractor shall be responsible for scheduling test lab visits in a manner to limit costs of stand-by time and non-tests assessed because of minimum per visit charges. Such excessive costs will be paid by Contractor.

### B. Field Observations:

Provide twenty-four (24) hour notification to the Engineer for all specified field observations, unless otherwise noted.

## 7.0 MOBILIZATION

- A. Consists of the 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, buildings, safety equipment and first aid supplies, sanitary and other facilities, as required by these Specifications, and State and local laws and regulations.

The costs of bonds, insurance and any other pre-construction expenses necessary for the start of the Work, excluding the cost of construction materials, is to be included in Mobilization.

- B. When the Bid Form includes a separate pay item for Mobilization, partial payments will be made in accordance with the following:

<u>Percent of Contract Price Less Mobilization Earned</u>	<u>Allowable Percent of the Lump Sum Price of Mobilization</u>
5	25
10	50
25	75
50	100

The standard retainage will be applied to these payments. Previous payments for Mobilization and unpaid amounts on Allowances will not be considered in calculating the percent of the Contract Price earned. Payments will be made in stepped increments as shown and will not be interpolated between steps.

- C. When the Bid Form does not include a separate item for Mobilization, all Work and incidental costs specified as being covered under Mobilization is to be included for payment under the several scheduled items on the Bid Form, and no separate payment will be made therefor.

## 8.0 MAINTENANCE OF TRAFFIC

- A. In the Contractor's use of streets and highways for the Work to be done under these Specifications, conform to all Municipal, County, State and Federal laws and regulations as applicable. Provide, erect and maintain effective barricades, warning lights, and signs on all intercepted streets or highways for protection of the Work and safety of the public. All barricades or obstructions which encroach on or are adjacent to the public rights of way should be provided with lights which are illuminated at all times between sunset and sunrise.

- B. Contractor shall schedule Work to cause minimum disturbance of normal pedestrian and vehicular traffic and be responsible for providing suitable means of access to all public and private properties during all stages of the construction. Other than for an emergency safety condition, the Contractor must contact the Owner and Engineer for approval prior to completely blocking off any street to vehicular traffic during construction. Contractor shall provide written notification to emergency, police, fire and other appropriate agencies at least 24 hours in advance of new work or changed work.
- C. Maintain traffic in accordance with Section 102 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2007 Edition, except as follows:
  - 1. Contractor is responsible for preparing a Maintenance of Traffic plan. Submit plan for Owner or roadway authority (City, County, D.O.T.) review.

The Maintenance of Traffic plan must be prepared by a person who is certified by an FDOT certified school or an engineer licensed in the State of Florida.
  - 2. When the Bid Form does not include a separate item for Maintenance of Traffic, the costs are to be included for payment under the several scheduled items on the Bid Form, and no separate payment will be made.

#### 9.0 PLACING EQUIPMENT INTO SERVICE

- A. Do not operate or place into service or energize, electrical and mechanical equipment until approved by the Owner and Engineer. Such approval may be granted only after all interested parties have been duly notified, have given approval for placing the equipment into service, and all interested parties are present or waived their right to be present. Contractor shall provide, in writing, seventy-two (72) hour notification for all item and equipment start-ups.

#### 10.0 SALVAGEABLE MATERIAL

- A. All salvageable material and/or equipment removed as a part of the Work for which specific use, relocation or other disposal is not specifically noted on the Drawings or otherwise specified, must be disposed of by the Contractor. All material and/or equipment not in salvageable condition as determined by the Engineer, must be disposed of by the Contractor. The actual storage site for salvageable material will be designated by the Owner.

#### 11.0 BORING LOGS, OTHER REPORTS AND DRAWINGS UTILIZED BY ENGINEER

- A. Boring Logs, other reports and Drawings utilized by Engineer, if attached at the end of these Specifications, are provided for Contractor's information in accordance with paragraph 4. of the Instructions to Bidders and are not a part of the Contract Documents. There is no technical data in the Boring Logs, other reports or Drawings that should be relied on by the Contractor. There also were no other reports or drawings utilized by Engineer in preparation of the Contract Documents that contained data that could be relied on by the Contractor.

#### 12.0 DISPOSAL OF EXCAVATED MATERIALS AND DEBRIS

- A. All excess excavated material and debris not required for backfill (unless otherwise noted), broken pipe, sidewalks, curbs and other concrete items, together with all roots, boards and other debris are to be disposed of by the Contractor at an appropriate legal site.

#### 13.0 TEMPORARY CONTROLS AND FACILITIES

- A. The Contractor is responsible for compliance with all NPDES regulations including submitting a Pollution Prevention Plan, submitting a Notice of Intent, conducting maintenance and inspection of controls, erosion and sediment controls and submitting a Notice of Termination.

- B. As part of the Work, the Contractor shall be responsible for applying for, obtaining and complying with all required dewatering permits. Contractor shall notify South Florida Water Management District (SFWMD) prior to all dewatering activities. All dewatering shall meet SFWMD requirements.
- C. Contractor shall install all turbidity control devices required by SFWMD, if necessary. Contractor shall notify SFWMD for inspection of turbidity control devices prior to any construction activities.

#### 14.0 CONSTRUCTION SCHEDULE MEETINGS

- A. Contractor shall submit a construction schedule in accordance with the General Conditions. Contractor's Project Manager and a representative of subcontractors performing work at the time of the meeting shall attend a coordination/progress meeting a minimum of once a month, as designated by the Owner, at the Owner's office during the progress of the Work. Contractor shall submit an updated construction schedule to the Engineer at each coordination/progress meeting.

#### 15.0 MISCELLANEOUS

- A. Prior to final payment, Contractor shall ensure that all fuel tanks, etc. are full.
- B. All bolts, nuts, washers, etc. and miscellaneous hardware shall be 316 stainless steel, unless otherwise indicated.

#### 16.0 CONTRACTOR'S SUBMITTALS

- A. Contractor shall be required to submit, with a letter of transmittal to the Engineer, a minimum of ten (10) copies of each checked and approved shop drawing, mix report, laboratory results, etc., where required in the specifications, Drawings or as appropriate, in lieu of the five (5) copies specified in Article 6 of the General Conditions or as specified elsewhere in these Specifications. Of the ten copies submitted, two copies will be returned to the Contractor for the Contractor's use. If the Contractor requires any additional approved copies, the Contractor shall submit additional copies at the time of initial submission. Allow a minimum of two weeks from date of receipt for review by the Engineer. Review of shop drawings will be general and will not relieve the Contractor from any responsibility.
- B. Contractor shall be required to submit, with a letter of transmittal to the Engineer, for review and approval, eight (8) hard copies and eight (8) copies in CD format of each Operation and Maintenance Manual for all equipment, regardless of the number of submittals specified elsewhere in these Specifications.

#### 17.0 CONSTRUCTION SEQUENCE

- A. In addition to requirements of the Specifications and Drawings, the Contractor shall submit Construction Schedule and Project Phasing and Temporary Facilities Plan to Engineer which will include coordination of the various elements of the Work.

#### 18.0 PROTECTION AND RESTORATION OF SURVEY MONUMENTS

- A. The Contractor shall be responsible for protecting and restoring all land and property corners, such as section corners, ¼ section corners, property corners or block control points, and for maintaining all horizontal and vertical control points. All surveying work shall be the responsibility of the Contractor and shall be performed under the supervision of a Florida Professional Surveyor and Mapper. Survey points that will be destroyed during construction shall be properly referenced and replaced at the Contractor's expense with permanent monuments approved by the ENGINEER.

## 19.0 GENERAL ALLOWANCE

- A. General Allowance: The work to be paid under this item may cover unforeseen and unanticipated costs associated with the work. Use of the General Allowance requires written authorization by the Owner prior to performing any work under this item. Any unused portion of the General Allowance will be credited to the Owner at the time of final payment.
- B. Other Allowances: Bid items B-19, B-20, B-21, and B-22 (Extra Work and Standby Time) are allowance items for additional work as may be ordered by the Owner. No work under these items shall be furnished by the Contractor until authorized by the Owner in writing.
- C. 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 or any credit due for unused allowance balances, and the Contract Price shall be correspondingly adjusted.

## 20.0 ORDER OF PRECEDENCE

- A. The Order of Precedence shall follow the order as set forth in Article B Contract Documents, page 00500-3 and 00500-4 of the Agreement.
- B. In the case of a discrepancy between any of the Contract Documents, the most restrictive requirement shall govern unless otherwise determined by the Engineer.
- C. In the event that a conflict cannot be resolved by the methods listed in paragraph A or B above, the Engineer shall review the dispute and issue a clarification to resolve the issue. The Engineer's decision shall be binding on all parties. In general the Engineer will consider the overall intent of the project as presented in the contract documents, and render a decision consistent with the overall project objectives.

## 21.0 APPROVED PRODUCTS LIST

- A. All materials furnished shall be the manufacture and model as included in the City of Lake Worth Water Utilities Department Approved Products List unless otherwise noted.

END OF SECTION

SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

- A. Furnish all labor, equipment, and materials necessary to deepening of existing production well 12 for the City of Lake Worth (Owner). Deepening of well 12 will include removal of the existing well screen and riser casing, video survey of the well, deepening the well to the depth selected based on geophysical logging, installation of new well screen, gravel pack and riser casing, development, testing and disinfection of the well.
- B. The Contractor shall be responsible for all labor, materials, transportation, tools, supplies, equipment, and appurtenances necessary to construct, develop, and test the wells and deepen production well 12 as specified herein. In general, all methods and material used under this construction shall be in accordance with the latest revisions of the American Water Works Association Standard for Wells (AWWA A100-06) and the National Water Well Association Standards as they apply to the particular needs or conditions encountered in the proposed work.

1.02 WORK BY OTHERS

- A. The Contractor will diligently perform the scope of work independently of all others who may perform concurrent tasks during execution of the scope of work.
- B. The Owner reserves the right to add to the work in accordance with the Contract Documents.
- C. Access to the well site and work areas shall be limited to the areas shown on the project drawings and as discussed in the pre construction meeting(s).

1.03 WORK SEQUENCE

- A. Contractor must contact the Palm Beach County Health Department and submit applicable portions of the "Well Construction Permit Application", and any others required for construction as filed by the Owner and Engineer prior to commencement of well drilling activities.
- B. Sequence of detailed work will be discussed at the Pre-Construction meeting. Alternative sequence of work may be considered if the proposed sequence is of benefit to the Owner. The Contractor shall be prepared to perform the sequence as outlined in the Specifications.

END OF SECTION

## SECTION 01025

### MEASUREMENT AND PAYMENT

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Measurement and payment criteria applicable to the Work performed under a Unit Price payment method.

##### 1.02 AUTHORITY

- A. Measurement methods delineated in the individual Specification sections are intended to complement the criteria of this Section. In the event of conflict, the requirements of the individual Specification section will govern.
- B. The Engineer will take all measurements and compute quantities unless noted otherwise herein.
- C. Contractor to assist Engineer by providing necessary equipment, workers, and survey personnel as required.

##### 1.03 UNIT QUANTITIES SPECIFIED

- A. Quantities and measurements indicated in the Bid Form are for bidding and Contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the Engineer will determine payment. Waste will not be included in the measurements or quantities.
- B. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the Contract Unit Price.

##### 1.04 VOLUME MEASUREMENT

- A. Measured by cubic dimension using mean length, width, and height or thickness.
- B. For excavation of lakes, canals, ditches, etc., material will be measured in its original position by a Professional Land Surveyor who is licensed in the State of Florida. The Surveyor will be retained by the Contractor. Quantities will be based on before and after cross sections determined by the Surveyor. Payment will not be made for excavation beyond the lines shown on the Drawings.

##### 1.05 AREA MEASUREMENT

- A. Measured by square dimension using mean length and width or radius.

##### 1.06 LINEAR MEASUREMENT

- A. Measured by linear dimension, at the item centerline or mean chord.
- B. For pipelines, the length will be measured from center of structure or fitting to center of structure or fitting.

##### 1.07 PAYMENT

- A. Payment Includes: Full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

- B. Final payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the Engineer multiplied by the unit price for Work which is incorporated in or made necessary by the Work.
- C. Payment for lump sum items will be made on the basis of percentage complete as approved by the Engineer.

## PART 2 PRODUCTS

Not Used.

## PART 3 EXECUTION

### 3.01 SCHEDULE A – GENERAL ITEMS

#### A. ITEM NO. 1 – BONDS AND INSURANCE

This pay item shall include the costs of bonds and any required insurance for the start of work, including temporary environmental controls, sanitary facilities, etc. Bonds and insurance shall be paid for at the Contract Lump Sum Price as listed on the Bid Form completed and accepted.

#### B. ITEM NO. 2 – MOBILIZATION/DEMobilIZATION/GENERAL CONDITIONS

The work specified in this item consists of the work and operations necessary in mobilizing and demobilizing for the work on described by the contract documents, including but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to and from the project site, as required by these specifications, including but not limited to, temporary environmental controls, sanitary facilities, and the special provisions made by State and local laws and regulations. This pay item shall include the costs to comply with all elements of the General Conditions of the Contract, including but not limited to: record keeping, safety and permitting. Payment for this item shall be made at 50% of the Contract Lump Sum Price following completion of mobilization and 50% following completion of demobilization to and from the well site and acceptance by the Owner. The Lump Sum price for mobilization/demobilization shall not exceed 10% of the total contract price.

#### C. ITEM NO. 3 - PERMITS

The work included in this item consists of obtaining all permits required for construction. This item shall include all permit fees. Payment will be made based on the actual cost for permits obtained for construction with any balance credited back to the Owner.

#### D. ITEM NO. 4 – VIDEO TAPING

The work included in this item consists of videotaping the pre-construction conditions of the project area and any areas that may be impacted by construction activities and providing the recording in standard DVD format. Payment will be made at the Contract lump sum amount for the item once completed and accepted by Owner.

#### E. ITEM NO. 5 – PREPARE AND FURNISH RECORD DRAWINGS

The work included in this item consists of the cost of preparing, submitting, and obtaining Owner approval of electronic as-built drawings, including GPS coordinates for all valves, fittings, meter boxes, fire hydrants, etc., and other data as may be required in the Contract Documents. Payment will be made on a lump sum basis based on the percentage of the item completed and accepted by Owner. Payment for this item will not be made until final record drawings (signed and sealed by a Florida registered surveyor) have been received and accepted by Owner. Substantial Completion on the Contract will not be granted or achieved until record drawings are submitted and accepted by the Owner.

F. ITEM NO. 6 - GENERAL ALLOWANCE

This item shall apply to items agreed to by the Engineer and Owner that are not otherwise covered in the Contract Bid Items, or where additional monies are necessary due to unforeseen circumstances, strictly out of the control of the Contractor. Application for payment of any monies in this allowance fund must be approved in writing by the Engineer and Owner before any monies can be expended from this pay item. Any monies not used from this allowance shall not be paid to the Contractor, and shall remain with the Owner at the conclusion of the project.

3.02 SCHEDULE B – WELL RECONSTRUCTION

A. ITEM NO. 1 – REMOVE WELLHEAD, COLUMN PIPE AND WELL PUMP

This item shall include removal of well pump, wellhead, column pipe, piping assemblies, electrical cable and controls. Payment shall be made at the Contract Lump Sum Price for the complete removal of pump and appurtenances.

B. ITEM NO. 2 - REMOVE EXISTING SCREEN AND RISER FROM WELL

This pay item includes the removal of the existing well screen and riser casing from the well and shall be paid at the Contract Lump Sum Price as listed on the bid form. The price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete the work.

C. ITEM NO. 3 – CLEAN OUT BOREHOLE OF EXISTING WELL

This pay item includes the work required to clean out fill from the existing borehole to the total existing drilled depth, as approved by the Engineer. Payment shall be paid at the Contract Lump Sum amount listed on the bid form. The lump sum price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete the work.

D. ITEM NO. 4 – DRILL NOMINAL 8-INCH PILOT HOLE

This pay item includes the actual length of hole drilled and shall be measured vertically from the base of the existing cleaned borehole to a total depth as determined by the Engineer. The drilled hole shall be paid at the Contract Unit Price per linear foot, drilled and accepted, as listed on the bid form. The unit price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete the work.

E. ITEM NO. 5 – GEOPHYSICAL LOGGING

Logging shall be paid for at the Contract Lump Sum Price as listed on the Bid Form for all logs specified in Section 02765, Geophysical and Video Logging for the production well and shall include but not be limited to furnishing all material, labor and equipment necessary to complete the work.

F. ITEM NO. 6 – REAM NOMINAL 8-INCH DIAMETER PILOT HOLE TO 19-INCH DIAMETER BOREHOLE

This pay item includes the actual length of hole drilled and shall be measured vertically from present total depth of well to the newly completed total depth of the well as directed by the Engineer. The drilled hole shall be paid at the Contract Unit Price per linear foot, drilled and accepted, as listed on the bid form. The unit price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete the work.

G. ITEM NO. 7 – FURNISH AND INSTALL 12-INCH STAINLESS STEEL SCREEN

The 12-inch screen furnished and installed in place shall be installed to the depth specified by the Engineer as listed on the Bid Form. It shall be paid at the Contract Unit Price per linear foot, installed and accepted, and shall include but not be limited to all labor, equipment and other materials necessary to properly install the screen as described in Section 02750, Well Screen and Gravel.

H. ITEM NO. 8 – FURNISH AND INSTALL 12-INCH DIAMETER SDR17 PVC RISER CASING

The 12-inch riser casing furnished and installed in place shall be installed to the depth specified by the Engineer as listed on the Bid Form. It shall be paid at the Contract Unit Price per linear foot, from land surface to the total depth installed and accepted, and shall include but not be limited to all labor, equipment and other materials necessary to properly install the casing as described in Section 02745, Well Casing and 02750, Well Screen and Gravel.

I. ITEM NO. 9 – FURNISH AND INSTALL GRAVEL PACK

Gravel pack installation will be paid for at the Contract Unit Price per cubic foot as listed in the Bid Form, including time, equipment and materials necessary for proper installation. Payment will be based on the actual units installed as described in Section 02750 Well Screen and Gravel.

J. ITEM NO. 10 – AIRLIFT DEVELOPMENT

Airlift development shall be paid for at the Contract Unit Price per hour of actual airlift time as determined by the Engineer as described in Section 02760 Well Development. The said Contract Unit Price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete development as specified. Payment begins upon initiation of development and ends at the completion of successful development as determined by the Engineer. Only time approved by the Engineer will be paid for under this pay item.

K. ITEM NO. 11 – JETTING WITH SIMULTANEOUS AIRLIFT DEVELOPMENT

Jetting with simultaneous airlift development shall be paid for at the Contract Unit Price per hour of actual jetting with simultaneous airlift time as determined by the Engineer as described in Section 02760 Well Development. The said Contract Unit Price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete development as specified. Payment begins upon initiation of development and ends at the completion of successful development as determined by the Engineer. Only time approved by the Engineer will be paid for under this pay item.

L. ITEM NO. 12 – PUMP DEVELOPMENT

Pump development shall be paid for at the Contract Unit Price per hour of actual pumping time as determined by the Engineer as described in Section 02760 Well Development. The said Contract Unit Price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete development as specified. Payment begins upon initiation of development and ends at the completion of successful development as determined by the Engineer. Only time approved by the Engineer will be paid for under this pay item.

M. ITEM NO. 13 – CONDUCT STEP RATE PUMPING TEST

The pumping test will be paid for at the unit price per hour of actual pumping time, as listed in the Bid Form and described in Section 02775 Pumping Tests. The said Contract Unit Price shall include the furnishing of all material, labor and equipment necessary to complete the test as specified. Payment begins upon initiation of pumping and ends at completion of pumping. Payment will be based on the actual hours of pump testing as approved by the Engineer.

N. ITEM NO. 14 – CONDUCT PRE- AND POST- CONSTRUCTION VIDEO LOGS

Acceptable video logs will be paid for at the unit price as listed in the Bid Form and described in Section 02765, Geophysical and Video Logging including time, equipment and materials necessary to complete the work. Payment will be made at the Contract Unit Price.

O. PAY ITEM NO. 15 – FURNISH AND INSTALL 6” CERTA-LOC COLUMN PIPE AND APPURTENANCES

This item includes all the materials and labor associated with complete installation of the column pipe, and appurtenances for a properly working pump assembly as specified in the Contract Documents. Payment for this item shall be made at the Contract Unit Price for the work completed and accepted by the Owner.

P. PAY ITEM NO. 16 FURNISH AND INSTALL WELL PUMP

This item includes all the materials and labor associated with complete installation of the well pump and motor, electrical cable, and other appurtenances for a properly working pump assembly as specified in the Contract Documents. Work shall include startup and witness testing. Payment for this item shall be made at the Contract Lump Sum amount for the work completed and accepted by the Owner.

Q. PAY ITEM NO. 17 – WELLHEAD AND PIPING MODIFICAITONS

This item includes all the materials and labor associated with complete installation of the wellhead, wellhead components, pipe extensions, concrete, and other appurtenances for a properly working assembly as specified in the Contract Documents. Payment for this item shall be made at the Contract Lump Sum amount for the work completed and accepted by the Owner.

R. PAY ITEM NO. 18 – WELL DISINFECTION AND WATER QUALITY SAMPLING

Work under this pay item shall include, but not be limited to, all equipment, materials and labor to satisfactorily disinfect the well, construct easily accessible sampling points, bacteriological sampling and testing, and water quality analytical testing as required by the contract documents, state and local laws and regulations as related to this pay item. Payment of this item will be made at the Contract Lump Sum Price as listed on the Bid Form. The Contractor shall be responsible for costs associated with re-chlorination, re-sampling, and re-testing as needed to satisfactorily disinfect the well and obtain passing and acceptable water quality test results as described in Section 02780, Well Disinfection and Sampling.

S. PAY ITEM NO. 19 – PAINTING AND MISCELLANEOUS

The work included in this item consists of all painting and other incidental work not otherwise specified, but obviously necessary for the proper completion of the project. Payment will be made at the Contract Lump Sum amount for the item once the entire project is completed and accepted by Owner.

T. ITEM NO. 20 – EXTRA WORK BY DRILLING CREW WITH DRILLING EQUIPMENT

Extra work performed by the drilling crew with drilling equipment shall be paid for at the specified Contract Unit Price per hour as listed on the Bid Form based on the amount of approved time used.

U. ITEM NO. 21 – EXTRA WORK BY DRILLING CREW

Extra work performed by the drilling crew shall be paid for at the specified Contract Unit Price per hour as listed on the Bid Form based on the amount of approved time used.

V. ITEM NO. 22 – STANDBY TIME WITH RIG AND DRILLING CREW ON-SITE

If standby time is required with the drilling crew and drilling rig on site, payment shall be made at the specified Contract Unit Price per hour as listed on the Bid Form based on the number of approved hours required.

W. ITEM NO. 23 – STANDBY TIME WITH RIG ON-SITE AND DRILLING CREW OFF-SITE

If standby time is required with the drilling crew off site and drilling rig on site, payment shall be made at the specified Contract Unit Price per hour as listed on the Bid Form based on the number of approved hours required.

X. ITEM NO. 24 – FORMATION WATER DISPOSAL SYSTEM

The work specified under this pay item includes the costs to supply, install, and maintain formation water disposal system as specified in the Contract Documents and accepted by the Engineer. This item includes all labor, material and equipment and removal of the piping from the project site after construction is complete. This pay item also includes the costs to maintain the disposal and settling system and shall include but not be limited to piping, fittings, pumps, monitoring, operation and maintenance. Payment shall be made per Contract Lump Sum Price as listed on the Bid Form.

Y. ITEM NO. 25 – FENCE AND SITE RESTORATION

The work specified under this pay item includes furnishing and installing the new fence, restoring the sites to their original condition, the intended grades as shown on the site plan, restoring all side slopes, and sodding all side slopes to the satisfaction of the Engineer and Owner. Payment shall be at the Contract Lump Sum Price as listed on the Bid Form and shall include all equipment, tools and labor necessary to restore the sites complete and accepted by the Owner.

3.03 SCHEDULE C – ELECTRICAL

A. PAY ITEM NO. C-1 – FLOWMETER

The work included under this item includes furnishing and installing the flowmeter, transmitter, pedestal stand, and all appurtenances, field testing, calibration, and startup services for a complete operable system. Payment will be made at the Contract Lump Sum amount for a complete system accepted by the Owner.

B. PAY ITEM NO. C-2 – INSTRUMENTATION AND SCADA PROGRAMMING

The work included in this item consists of placing into service all instrumentation and control equipment including but not limited to, making all electrical connections, field testing and calibration, and all miscellaneous accessories and appurtenances to provide a completely operational system. Payment will be made at the Contract Lump Sum Amount for a complete operable system accepted by the Owner.

C. PAY ITEM NO. C-3 – ELECTRICAL WIRE, CONDUIT, DISCONNECTS, AND BOXES

The work included in this item includes furnishing and installing electrical conduit and wires including, but not limited to coordination with Owner and Power Company, junction boxes, grounding, hardware, and all other work and materials required for a complete installation. Payment will be made at the Contract Lump Sum amount for a complete operable system accepted by the Owner.

END OF SECTION

## SECTION 01720

### RECORD DOCUMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. On site maintenance of Record Documents.
- B. Required record information.

##### 1.02 MAINTENANCE

- A. Maintain on site, one set of the following Record Documents; record actual revisions to the Work:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
  - 5. Shop Drawings, product data, and samples.
- B. Store Record Documents separate from documents used for construction.
- C. Record information concurrent with construction progress.
- D. In the interest of timely detection of non-conforming Work, all Record Drawing information must be furnished to the Engineer prior to submitting for payment of that particular item. No progress payment application requests will be approved by the Engineer without satisfactory record drawings for that particular items(s).
- E. Under no circumstances will roadway paving Work be allowed to start until the Engineer has reviewed the Record Drawing information for Work constructed within the roadway area that will be paved.
- F. All Record Drawing information such as elevations, distances, location of underground utilities, lake cross-sections, and road cross-sections must be obtained by a Professional Surveyor and Mapper, who is licensed in the State of Florida. The Surveyor will be retained by the Contractor. Information must be signed and sealed.
- G. Record Documents must be available to Engineer for examination at any time during the progress of the Work.
- H. Submit completed Record Documents upon completion of the Work and prior to application for final payment.
- I. Show record information in bold or boxed out to stand out from rest of Drawing.
- J. Record actual revision dates of the Work.

##### 1.03 REQUIRED RECORD DRAWING INFORMATION

- A. All elevations and horizontal locations shown on the Drawings must be verified. Verification or deviation must be clearly indicated on the Drawings.
- B. Water
  - 1. Top of pipe elevations at 100 foot intervals.

2. Distance from the reference points shown on the Drawings.
3. Horizontal location at 100 foot intervals.
4. Location of water services, valves, fittings, hydrants, blowoff points, etc. by stationing and offsetting from wastewater manholes. If wastewater manholes are not located nearby, use reference points shown on the Drawings.
5. Details of any design changes.
6. Location of utilities and miscellaneous structures encountered which are different from or not shown on the Drawings.
7. Elevations and clearances when water mains cross either wastewater or drainage pipe.
8. Changes in pipe material.
9. Finished well head elevation.
10. Depth of all drilled holes of each diameter.
11. Depth of each size casing pie and screen section.
12. Any changes to well construction, well head, surface piping, or site layout.

C. Conduit Sleeves

1. Horizontal location and size of conduit.

D. Structural

1. Obtain horizontal and vertical locations and elevations for all structural components, including but not limited to, intake structure including piles and cap, slabs, building and building features, grating, trash rack, etc.

E. General Site

1. Spot elevations shall be taken at a reasonable grid interval for finished grade verification. Obtain spot elevations at all grade or contours (as shown on the Drawings), grade breaks, property lines, and limits of construction.

## PART 2 PRODUCTS

Not Used.

## PART 3 EXECUTION

### 3.01 CONTRACTOR'S SURVEYOR RESPONSIBILITIES

- A. Engineer will provide the Contractor with electronic files of the construction drawings at the pre-construction conference. One copy of the electronic files will be provided on CD/DVD media in AutoDesk Civil 3D 2014 format. No warranty of the usability of the electronic files provided is expressed or implied. The cost of any required conversion or duplication of the electronic files from the format specified herein shall be the responsibility of the Contractor.
- B. The Owner and Engineer will advise the Contractor at the pre-construction conference of the acceptable method and file format by which the interim and final Record Drawing information will be provided to the Owner and/or Engineer.
- C. Record Drawing information shall be prepared electronically. The Record Drawing information shall be placed on a separate layer so that it is isolated from all other layers in the drawing file. This layer must be prepared in such a manner that it can be exported as a separate AutoCad file and subsequently inserted into an AutoCad drawing containing the approved design information. The AutoCad file shall be accompanied by an Adobe Acrobat portable document format (.pdf) file of the Record Drawings.
- D. Place information in the Drawings in a manner that indicates which elevations and dimensions have been checked. This is to be done by crossing through the design elevation or dimension and

placing the Record information next to it. If an elevation or dimension has not changed, the same procedures should be followed to confirm that it has been checked. Add new information in a manner to indicate that it is Record information and not design information.

- E. Each Record Drawing sheet must include the surveyor's name, company, address, license number, and date of field survey.
- F. Signed and sealed Record Drawings shall be submitted with all pay applications and at the conclusion of the Project.

### 3.02 CONTRACTOR RESPONSIBILITIES

- A. Record document information not required to be obtained by a Professional Surveyor and Mapper must be obtained by the Contractor.
- B. Mark Record information on one clean set of prints of the Contract Documents.
- C. Each Drawing must be stamped indicating that the information has been reviewed by the Contractor.
- D. Contractor's Surveyor will transfer Contractor supplied information to the record drawing.

END OF SECTION

## SECTION 02108

### VIDEO-TAPING OF EXISTING CONDITIONS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Video-recording the pre-construction conditions of the surface features within the construction conditions.

##### 1.02 SUBMITTALS

- A. Pre Construction: Submit two completed DVD media that is playable on standard DVD players to Engineer at least seven calendar days prior to commencing construction and delivery of any materials and/or equipment.
- B. Post Construction: Submit two completed DVD media that is playable on standard DVD players to Engineer for review prior to substantial completion.

##### 1.03 QUALITY ASSURANCE

- A. Video-recording must be done by a responsible commercial firm known to be skilled and regularly engaged in the business of pre-construction video documentation.
- B. A Contractor walk through with a handheld camera will not comply with these specifications.

#### PART 2 PRODUCTS

##### 2.01 MATERIALS

- A. DVD Media: Standard name-brand high quality write-once media. New, not previously used.

#### PART 3 EXECUTION

##### 3.01 PRE CONSTRUCTION VIDEO-RECORDING

- A. Video-recording shall be performed and submitted at least seven calendar days prior to the commencement of construction and delivery of any materials and/or equipment. Upon review by the Engineer, and prior to commencement of construction and delivery of any materials and/or equipment, additional video-recording of any portions of the construction areas that are not adequately documented on the initial video-tapes may be required.
- B. Video-record the pre-construction conditions of the surface features within the construction area.
- C. The video-record will serve as a record of the pre-construction conditions for disputes arising from restoration, and should, therefore, be taken within the construction area in sufficient detail as necessary to clearly depict pre-construction conditions.
- D. Indicate the date and time (hour, minutes and seconds) on which the video-records were recorded.
- E. Video-records shall record video with simultaneous audio to assist viewer orientation with any needed identification, differentiation, clarification, or objective description of the features being shown with audio recording of commentary by the camera operator. The audio recording shall be free of any conversations between the camera operator and other production technicians.
- F. Camera Height and Stability: Do not exceed 10 feet vertical distance between camera lens and the ground when conventional wheeled vehicles are used as conveyances for the recording system.

- G. Camera Control: Control camera pan, tilt, zoom-in and zoom-out rates such that recorded objects will be clearly viewed during video tape playback. Control or adjust camera and recording system controls such as lens focus, aperture, light, and white balance to maximize picture quality.
- H. Viewer Orientation Techniques: Use existing landmarks including but not limited to, all visible house and business addresses, to maintain viewer orientation.
- I. Video Record Log: Provide a written log of each video record's contents including but not limited to, the names of the streets or easements, coverage beginning and ending, directions of coverage, and the date upon which the recording was made.
- J. All video-records and DVD's become the property of the Owner.

### 3.02 POST CONSTRUCTION VIDEO RECORDING

- A. Video-record the post-construction conditions.

END OF SECTION

SECTION 02613  
DUCTILE-IRON PIPE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Ductile iron pipe and fittings for Potable Water, Wastewater, and Reclaimed Water Systems, sizes 3 inch diameter through 64 inches in diameter.

1.02 RELATED SECTIONS

- A. Section 02220 - Excavating, Backfilling and Compacting.
- B. Section 02675 - Disinfecting Water Mains.

1.03 REFERENCES

- A. ASTM A153-01 - Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- B. ASTM A 197-00 - Cupola Malleable Iron.
- C. ASTM A 307-00 - Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- D. ASTM A 506-00 – Alloy and Structural Alloy Steel, Sheet and Strip, Hot-Rolled and Cold-Rolled.
- E. ASTM A 536-99 - Ductile-Iron Castings.
- F. ASTM A 575-96 - Steel Bars, Carbon, Merchant Quality, M-Grades.
- G. ASTM D 1248-00 - Polyethylene Plastics Extrusion Materials for Wire and Cable.
- H. ASTM D 2794-93 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- I. AWWA C104-08 - Cement-Mortar Lining for Ductile-Iron Pipe and Fittings for Water.
- J. AWWA C105-10 - Polyethylene Encasement for Ductile-Iron Pipe Systems.
- K. AWWA C110-08 – Ductile-Iron and Gray-Iron Fittings, 3 inch through 48 inch for Water.
- L. AWWA C111-07 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
- M. AWWA C115-06 - Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.
- N. AWWA C150-08 - Thickness Design of Ductile-Iron Pipe.
- O. AWWA C151-09 - Ductile-Iron Pipe, Centrifugally Cast, for Water or Other Liquids.
- P. ANSI/AWWA C153/A21.53-11 (latest revision) - Ductile-Iron Compact Fittings.
- Q. AWWA C 600-05 - Installation of Ductile-Iron Water Mains and Their Appurtenances.

1.04 SUBMITTALS

- A. Manufacturer's technical product data for pipe and fittings.
- B. Manufacturer's certifications of product compliance with the referenced AWWA standards.

1.05 QUALITY ASSURANCE

- A. Each pipe and fitting must be marked with the following information: weight, pressure or thickness class (as applicable), manufacturer's mark, and the letters "DI" or "DUCTILE".

PART 2 PRODUCTS

2.01 PIPE

- A. Manufactured in accordance with AWWA C151.

Size (inches)	Pressure Class	Special Thickness Class
3-20	--	51
24	350	--
30-42	300	--
48-64	250	--

- B. Push-on type joints conforming to AWWA C111.
- C. Flanged Joints (where specified on the Drawings): Conform to AWWA C115. Ductile iron conforming to the chemical and physical properties specified in AWWA C110. Pipe to be Special Thickness Class 53. Do not thread or flange pipe in the field.

2.02 FITTINGS

- A. Mechanical: AWWA C153 compact fittings with joints conforming to AWWA C111. All buried fittings to be mechanical type.
- B. Flanged: AWWA C110 for 3 inch through 48 inch and AWWA C153 for 54 inch through 64 inch. Joints to conform to AWWA C111. All above ground fittings to be flanged.

2.03 COATINGS AND LININGS

- A. Cement-mortar lined in pipe used for Potable Water and Reclaimed Water Systems conforming to AWWA C104.

2.04 ACCESSORIES

- A. Clamps, straps and washers : ASTM A 506.
- B. Rods: ASTM A 575.
- C. Rod Couplings: ASTM A 197.
- D. Bolts and Nuts: ASTM A 307, Grade B.
- E. All bolts, nuts, washers, couplings, rods, clamps, and straps are to be hot-dipped galvanized per ASTM A153.

- F. Thrust Blocks: Concrete with a minimum compressive strength of 2500 psi at 28 days. Allowed only where specifically called for on the drawings.
- G. Restrain pipe joints using either 'Field Lok' gaskets as manufactured by U.S. Pipe or 'Fast Grip' gaskets as manufactured by American Ductile Iron Pipe.
- H. Restrain buried fittings using 'Megalugs' as manufactured by Ebaa Iron Sales, Inc. or approved equal.

## PART 3 EXECUTION

### 3.01 INSTALLATION

- A. Install ductile iron pipe in accordance with AWWA C600.
- B. Clean gaskets, sockets, and spigots of all foreign matter.
- C. When ductile iron pipe is cut in the field, smooth the rough cut edge with a grinder or coarse file and bevel the end so that the cut end does not damage the gasket.
- D. Lubricate the exposed face of the gasket and the spigot with the pipe and/or fitting manufacturers' recommended joint lubricant.
- E. The interior of the pipe must be thoroughly cleaned of all foreign matter before being lowered into the dry trench and kept clean during laying operations by means of plugs or other approved methods.
- F. Provide bell holes in the subgrade to accommodate the bells and to insure that the barrels are in contact with the foundation throughout it's full length exclusive of the bell.
- G. Restrain from movement all reaction forces at bends (11-1/4 degrees or greater), tees, valves, and plugs by concrete thrust blocks or mechanical restraints as specified on the Drawings.
- H. Provide minimum 30 inch depth of cover except where otherwise shown on the Drawings.
- I. Coat all bolts, nuts, studs, and other uncoated parts with a coal-tar epoxy coating prior to backfilling.

### 3.02 CLEANING

- A. Upon completion of the pipe installation, the mains are to be either cannon flushed or swabbed by forcing under water pressure a soft sided swab through the mains to remove dirt and any other foreign matter.
- B. When cannon flushing, achieve a minimum velocity of 2.5 feet per second in the pipe. The duration of the flushing to be sufficient to provide a minimum flush volume equal to three times the internal volume of the pipeline being flushed.
- C. The size of the swab is to be the same size as the main. Install launching and exit points as required for each pipe size. The swab is to be Style V, Type B as manufactured by Knapp, Inc. Supply sufficient water pressure to move the swab through the system. Should a single pass reveal, in the Engineer's opinion, an excessive amount of dirt and debris, a second pass may be required at no additional cost to the Owner. The Contractor is responsible for ensuring that all valves are properly opened or closed as appropriate to facilitate the swabbing process. Neither the Owner or the Engineer will be responsible for the swab getting hung up or stuck in a main and any resulting costs for removal.
- D. The cost of cannon flushing/swab cleaning, as applicable, is to be included in the cost of the pipe.

### 3.03 HYDROSTATIC TESTING

- A. All pressure mains must be subjected to a pressure and leakage test of at least 2 hours in duration.
- B. Test mains after the pipe and fittings are properly restrained but before backfilling the fittings.
- C. Contractor must furnish own source of potable water.
- D. The length of pipe to be tested at one time must not exceed the length allowed by the controlling utilities company, or 1500 feet, whichever is less.
- E. Before applying the specified test pressure, expel air completely from the pipe, valves, and hydrants.
- F. Subject pipelines to a gauge pressure of 150 psi. Subject fire service lines to a gauge pressure of 200 psi. The pressure must not vary by more than 5 psi for the duration of the test.
- G. Inspect the line being tested. Stop all visible leaks by an approved method regardless of the leakage test results.
- H. Maximum leakage allowed will be as set in Section 5.2 of AWWA Standard C600 or as noted on the drawings, whichever is more stringent.
- I. If leakage is at a rate in excess of that allowed, the Contractor must tighten the joints or replace the defective Work until the leakage is reduced to within the allowable amount.

### 3.04 DISINFECTION

- A. Disinfect potable water mains in accordance with Section 02675.

### 3.05 FIELD OBSERVATION

- A. Fittings, valves, thrust blocks, mechanical restraints, cannon flushing and swab cleaning are to be observed at the option of the Engineer.
- B. Engineer must be present during pressure tests.
- C. All pipe and fittings are subject to visual or other inspection by the Engineer at any time. Such sections that do not conform to these Specifications will be rejected when, in the opinion of the Engineer, the methods of manufacture fail to guarantee uniform results, where the materials used are such as to produce inferior pipe, or the pipe and/or fittings are otherwise damaged or defective.

END OF SECTION

## SECTION 02715

### CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

#### PART 1 GENERAL

##### 1.01 REQUIREMENTS INCLUDED

- A. Furnish install and maintain all methods, equipment and temporary utilities as required to provide controls over environmental conditions at the construction site and related areas under the Contractor's influence. Remove physical evidence of temporary facilities upon completion of work.
- B. Providing adequate facilities at every stage of performing the work is the Contractor's sole responsibility, and is not limited by the requirements hereof.
- C. Except as otherwise indicated, the cost of providing and using temporary utility services is to be included in the Contract Sum.
- D. Maintain distinct markers for underground lines and protect from damage during excavation operations.

##### 1.02 REQUIREMENTS OF REGULATORY AGENCIES

- A. Comply with the National Electrical Code.
- B. Comply with Federal, State and local codes, ordinances, rules, regulations, standards and permits.
- C. Comply with the "Manual of Accident Prevention in Construction" by the Associated General Contractors (AGC).

#### PART 2 PRODUCTS

##### 2.01 MATERIALS

- A. Materials may be new or used, but must be adequate in capacity for the required usage, must not create unsafe conditions, and must not violate requirements to applicable codes, ordinances, rules, regulations and standards.

##### 2.02 TEMPORARY ELECTRICITY AND LIGHTING

- A. Install circuit and branch wiring, with area distribution boxes located so that power and lighting is available throughout the construction by the use of construction type power cords, if necessary.
- B. Provide adequate artificial lighting for all areas of work when natural lighting is not adequate for work and night work is allowed by the contract documents.

##### 2.03 TEMPORARY PHONE SERVICE

- A. The Contractor shall provide onsite phone service, including cell phones, to the Contractor's project

superintendent and for each driller on site. Phone supplied personnel shall be available by phone during all working hours during execution of the scope of work.

#### 2.04 TEMPORARY WATER

- A. Only potable quality water will be used for well construction. Water necessary for construction activities shall be provided by the Owner at no cost to the Contractor. Wasteful use of Owner's water by Contractor will forfeit Contractor's free use of Owner's water and Contractor will be required to purchase water elsewhere. Wasteful use of water will be defined and determined by the Owner. Contractor shall be required to pay for and obtain a temporary construction meter from the Owner for use during construction. The meter must be locked at all times except while in use by the Contractor. Contractor will receive meter deposit reimbursement when the meter is returned to the Owner at the completion of the project.

#### 2.05 TEMPORARY SANITARY FACILITIES

- A. Provide sanitary facilities in compliance with laws, ordinances and regulations.
- B. Service, clean and maintain facilities and enclosures.

#### 2.06 TEMPORARY ACCESS ROAD, PARKING AND TRAFFIC CONTROL

- A. Construct and maintain new and existing temporary access roads over designated easements from public thoroughfare to sites.
- B. Maintain traffic areas free of excavated materials, construction equipment, products and debris.
- C. Traffic control warning signs and barricades shall be in strict accordance with the provisions of the Florida Department of Transportation Manual on Traffic Controls and Safe Practices for Street and Highway Construction Maintenance and Utility Operations latest revision.
- D. No road or street shall be closed to the public except with the permission of the Engineer and appropriate governmental agency.
- E. The work shall be conducted at all times so as to ensure the least possible obstruction to traffic and inconvenience to the general public and the residents in the vicinity of the work, and to insure the protection of persons and property.

#### 2.07 TEMPORARY CONTROLS

- A. Noise Control:
  - 1. Comply with all County and City ordinances.
  - 2. Contractor shall immediately cease operations and mitigate sound to the extent required by County and City ordinance if residents complain about noise.
- B. Light Control:

1. Contractor shall mitigate stray light during approved night work by directing light source to the work area only.
2. Lighting shall be directed away from nearby residences and properties.
3. Contractor shall immediately mitigate stray light upon complaint.

C. Dust Control:

1. Provide positive methods and apply dust control materials to minimize raising dust from construction operations, and provide positive means to prevent air-borne dust from dispersing into the atmosphere.
2. Contractor shall immediately mitigate dust upon complaint

D. Water Control:

1. Provide methods to control surface water to prevent damage to the project, the site, or adjoining properties.
2. Control fill, grading and ditching to direct surface drainage away from excavation, trenches, pits and other construction areas, and to direct drainage to proper runoff.
3. Provide, operate and maintain hydraulic equipment of adequate capacity to control surface water.
4. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to any portion of the site or adjoining areas.

E. Debris and Waste Materials Control:

1. Maintain all areas under the Contractor's control free of extraneous debris, garbage and waste matter.
2. Initiate and maintain a specific program to prevent accumulation of debris at the construction site, storage and parking areas, or along access roads and haul routes.
3. Provide acceptable containers for deposit of debris and waste.
4. Prohibit overloading of trucks to prevent spillage on access and haul roads.
5. Provide periodic inspection of traffic areas to enforce requirements.
6. Schedule periodic and as needed collection and disposal of debris and waste.

F. Pollution Control:

1. Provide methods, means and facilities required to prevent contamination of soil, water or air by the discharge of noxious substances from construction operations.

2. Immediately remove and properly dispose of all contaminated materials upon discovery of spillage of noxious substances.
3. Take special precautions to prevent harmful substances from entering public waters.
4. Provide systems for control of atmospheric pollutants and prevent toxic concentrations of chemicals.

G. Erosion Control:

1. Plan and execute construction and earthwork by methods to control surface drainage from cuts and fills and from borrow and waste disposal areas to prevent erosion and sedimentation.
2. Hold areas of bare soil exposed at one time to a minimum and provide temporary control measures such as berms, dikes and drains.
3. Construct fills and waste areas by selective placement to eliminate surface silts and clays from eroding.

## PART 3 EXECUTION

### 3.01 GENERAL

- A. Comply with all applicable requirements of local building codes.
- B. Maintain and operate systems to assure continuous service.
- C. Modify and extend systems as work progress requires.
- D. Preserve from damage all property along the line of work or which is in the vicinity of or is in any way affected by the Work. Wherever such property is damaged due to the activities of the Contractor, it shall be immediately restored to its original condition by the Contractor at no cost to the Owner.

### 3.02 INSPECTIONS

- A. Prior to placing temporary facilities into service, inspect and test each service and arrange for inspections and tests by governing authorities and obtain required certifications and permits for use thereof.

### 3.03 REMOVAL

- A. Completely remove temporary materials and equipment when their use is no longer required.
- B. Clean and repair damage caused by temporary installations or use of temporary facilities.
- C. Restore permanent facilities used for temporary services to specified conditions.

END OF SECTION

## SECTION 02720

### WELL CONSTRUCTION SEQUENCE

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. The following construction sequence applies to the deepening of the City of Lake Worth Surficial aquifer production well 12 located between Lake Osborne Drive and Interstate 95 in Lake Worth, Florida.
- B. Specific construction details, such as casing setting depths, screen interval, screen slot size, and gravel pack for the production well will be determined based on site specific lithologic conditions encountered during the pilot hole drilling and testing.

#### PART 2 PRODUCTS (NOT USED)

#### PART 3 EXECUTION

##### 3.01 WELL CONSTRUCTION SCHEDULE

- A. The construction schedule shall be met based on day work only (7:00 am to 7:00 pm) and excludes nights, weekends and Federal holidays. The Contractor will perform work on the site only within the designated official working hours unless otherwise approved by the Engineer.
- B. The Contractor shall procure all permits, certificates, and licenses required by law for the execution of the work. The Contractor shall comply with all federal, state, and local regulations and ordinances relating to the execution of the work. The Engineer must be furnished a copy of each permit prior to commencing work.

##### 3.02 WELL CONSTRUCTION SEQUENCE

- A. Mobilize to the well site and prepare the construction site for well deepening. Set up drilling rig and support equipment within the area shown on the project drawings or as approved by the Engineer.
- B. Perform a pre-construction down hole camera video log of the existing casing and screen. Pre-construction video shall be performed in dynamic and static conditions. Pumping rate during the dynamic video shall be at a minimum 500 gpm. All logging shall be supervised by the Engineer with 24 hours advanced notice. The Contractor is responsible to ensure that logs are complete and include the entire well screen and cased intervals as directed by the Engineer. If the Engineer determines that the video is unacceptable due to poor quality, the Contractor at his expense will obtain the necessary equipment to perform additional logging to the satisfaction of the Engineer. Logging shall be conducted by the Contractor in accordance with Section 02674, Borehole Geophysical Logging and Video Log.
- C. Remove the existing 10-inch diameter well screen and riser casing.
- D. Clean out the existing open borehole to the existing drilled depth (approximately 150 feet) using a nominal 19-inch diameter drill bit. This work will include all necessary equipment, materials and labor

needed to complete cleaning out of the borehole in accordance with Section 02740, Well Drilling.

- E. Drill a nominal 8-inch diameter borehole to a depth of approximately 250 feet below land surface from the base of the existing 19-inch borehole using the mud rotary method in accordance with Section 02740, Well Drilling. Formation samples shall be collected by the Contractor every 5 feet, at a minimum, or as otherwise specified by the Engineer.
- F. Prepare the 8-inch and 19-inch diameter borehole for geophysical logging by circulation of the drilling fluid until uniform and free of drill cuttings. Logging shall be conducted by the Contractor in accordance with Section 02674, Borehole Geophysical Logging and Video Log.
- G. Following completion of geophysical logging, ream the 8-inch pilot hole to a nominal 19-inch diameter to an approximate depth of 250 feet using the mud rotary method. A staged bit shall be used that includes an 8-inch diameter lead bit placed below the reaming bit assembly. Prepare the borehole for well screen and riser casing installation by circulating the drilling fluid until all drill cuttings have been removed. Drilling shall be performed in accordance with Section 02740, Well Drilling.
- H. Furnish and install approximately 50 feet of 12-inch diameter Type 316 stainless steel continuous slot screen. The top of the screen shall be fitted to 12-inch diameter SDR17 PVC riser casing which shall be continuous from approximately 200 feet below land surface up to land surface. Screen and casing lengths are approximate. Exact lengths will be determined based on results of geophysical logging. Screen and riser casing construction, assembly and installation will be in accordance with Section 02745, Well Casing and Section 02750, Well Screen and Gravel. Top of casing elevation shall be set as established in the project drawings.
- I. Furnish and install gravel pack in the annular space between the screen and the borehole. Gravel shall be placed using the tremmie method and continually flushed with water to a depth 50 feet below ground level and in accordance with Section 02750, Well Screen and Gravel.
- J. Develop the screened well using high velocity water jetting with simultaneous airlift development. Initial development shall be done using air lift alone to stabilize the gravel pack. Following initial airlift shall be high velocity water jetting with simultaneous airlift. After gravel pack has stabilized, perform pump development until well meets development criteria for sand and silt content. All well development shall be performed in accordance with Section 02760, Well Development.
- K. Conduct a five step, variable rate pumping test to measure drawdown, well efficiency and water quality. A submersible test pump shall be installed according to the Engineer recommended pump setting depth. Pump testing shall be in accordance with Section 02775, Pumping Tests.
- L. Perform water quality sampling of the well. Water quality sampling shall be in accordance with Section 02780, Well Facility Disinfection and Water Quality Sampling.
- M. Perform a final down hole camera video log of the existing casing and screen. Final well video shall be performed in dynamic and static conditions. Pumping rate during the dynamic video shall be at a minimum 500 gpm. All logging shall be supervised by the Engineer with 24 hours advanced notice. The Contractor is responsible to ensure that logs are complete and include the entire well screen and cased intervals as directed by the Engineer. If the Engineer determines that the video is unacceptable due to poor quality, the Contractor at his expense will obtain the necessary equipment to perform additional logging to the satisfaction of the Engineer. Logging shall be conducted by the Contractor in accordance with Section 02674, Borehole Geophysical Logging and Video Log.

- N. If directed, clean out development solids from the well screen, as determined by Engineer.
- O. Complete the wellhead as specified in the project drawings.
- P. The Contractor shall disinfect the well as soon as construction of the well, wellhead and cleaning procedures are completed or at another time if instructed to do so by the Engineer. Disinfection shall be in accordance with Section 02780, Well Facility Disinfection and Water Quality Sampling.
- Q. Perform complete site restoration as described in project specifications.

END OF SECTION

SECTION 02735

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

- A. The unit prices stated in the Contract shall be considered payment in full for the completion of all work. Payment shall be made under each item only for work as it is not specifically included under other items.
- B. The Contractor shall furnish all labor, equipment and material required to complete the deepening of the existing Surficial aquifer production well 12.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 SCHEDULE A - GENERAL ITEMS

A. ITEM NO. 1 – BONDS AND INSURANCE

This pay item shall include the costs of bonds and any required insurance for the start of work, including temporary environmental controls, sanitary facilities and permits. Bonds and insurance shall be paid for at the Contract Lump Sum Price as listed on the Bid Form completed and accepted.

B. ITEM NO. 2 – INDEMNIFICATION

One time Indemnification payment will be made upon the first Application for Payment for the Contract Lump Sum Price.

C. ITEM NO. 3 – GENERAL CONDITIONS

This pay item shall include the costs to comply with all elements of the General Conditions of the Contract, including but not limited to: insurance, record keeping, safety and permitting. Payment shall be made at the Contract Lump Sum Price as identified on the bid form upon completion of work identified in the general conditions. Measurement will be based on the percentage of work complete and does not include the percentage of any stored materials.

D. ITEM NO. 4 – MOBILIZATION/DEMOBILIZATION

The work specified in this item consists of the work and operations necessary in mobilizing and demobilizing for the work on described by the contract documents, including but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to and from the project site, as required by these specifications, including but not limited to, temporary environmental controls, sanitary facilities, and the special provisions made by State and local laws and regulations. Payment for this item shall be made at 50% of the Contract Lump Sum Price following completion of mobilization and 50% following completion of demobilization to and from the well site

and acceptance by the Owner. The Lump Sum price for mobilization/demobilization shall not exceed 10% of the total contract price.

E. ITEM NO. 5 - REMOVE EXISTING SCREEN AND RISER FROM WELL

This pay item includes the removal of the existing well screen and riser casing from the well and shall be paid at the Contract Lump Sum Price as listed on the bid form. The price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete the work.

F. ITEM NO. 6 – CLEAN OUT BOREHOLE OF EXISTING WELL

This pay item includes the work required to clean out fill from the existing borehole to the total existing drilled depth, as approved by the Engineer. Payment shall be paid at the Contract Unit Price per linear foot, drilled and accepted, as listed on the bid form. The unit price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete the work.

G. ITEM NO. 7 – DRILL NOMINAL 8-INCH PILOT HOLE

This pay item includes the actual length of hole drilled and shall be measured vertically from the base of the existing cleaned borehole to a total depth as determined by the Engineer. The drilled hole shall be paid at the Contract Unit Price per linear foot, drilled and accepted, as listed on the bid form. The unit price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete the work.

H. ITEM NO. 8 – GEOPHYSICAL LOGGING

Logging shall be paid for at the Contract Lump Sum Price as listed on the Bid Form for all logs specified in Section 02765, Geophysical and Video Logging for the production well and shall include but not be limited to furnishing all material, labor and equipment necessary to complete the work.

I. ITEM NO. 9 – REAM NOMINAL 8-INCH DIAMETER PILOT HOLE TO 19-INCH DIAMETER BOREHOLE

This pay item includes the actual length of hole drilled and shall be measured vertically from present total depth of well to the newly completed total depth of the well as directed by the Engineer. The drilled hole shall be paid at the Contract Unit Price per linear foot, drilled and accepted, as listed on the bid form. The unit price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete the work.

J. ITEM NO. 10 – FURNISH AND INSTALL 12-INCH STAINLESS STEEL SCREEN

The 12-inch screen furnished and installed in place shall be installed to the depth specified by the Engineer as listed on the Bid Form. It shall be paid at the Contract Unit Price per linear foot, installed and accepted, and shall include but not be limited to all labor, equipment and other materials necessary to properly install the screen as described in Section 02750, Well Screen and Gravel.

K. ITEM NO. 11 – FURNISH AND INSTALL 12-INCH DIAMETER SDR17 PVC RISER CASING

The 12-inch riser casing furnished and installed in place shall be installed to the depth specified by the Engineer as listed on the Bid Form. It shall be paid at the Contract Unit Price per linear foot, from

land surface to the total depth installed and accepted, and shall include but not be limited to all labor, equipment and other materials necessary to properly install the casing as described in Section 02745, Well Casing and 02750, Well Screen and Gravel.

L. ITEM NO. 12 – FURNISH AND INSTALL GRAVEL PACK

Gravel pack installation will be paid for at the Contract Unit Price per cubic foot as listed in the Bid Form, including time, equipment and materials necessary for proper installation. Payment will be based on the actual units installed as described in Section 02750 Well Screen and Gravel.

M. ITEM NO. 13 – AIRLIFT DEVELOPMENT

Airlift development shall be paid for at the Contract Unit Price per hour of actual airlift time as determined by the Engineer as described in Section 02760 Well Development. The said Contract Unit Price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete development as specified. Payment begins upon initiation of development and ends at the completion of successful development as determined by the Engineer. Only time approved by the Engineer will be paid for under this pay item.

N. ITEM NO. 14 – JETTING WITH SIMULTANEOUS AIRLIFT DEVELOPMENT

Jetting with simultaneous airlift development shall be paid for at the Contract Unit Price per hour of actual jetting with simultaneous airlift time as determined by the Engineer as described in Section 02760 Well Development. The said Contract Unit Price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete development as specified. Payment begins upon initiation of development and ends at the completion of successful development as determined by the Engineer. Only time approved by the Engineer will be paid for under this pay item.

O. ITEM NO. 15 – PUMP DEVELOPMENT

Pump development shall be paid for at the Contract Unit Price per hour of actual pumping time as determined by the Engineer as described in Section 02760 Well Development. The said Contract Unit Price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete development as specified. Payment begins upon initiation of development and ends at the completion of successful development as determined by the Engineer. Only time approved by the Engineer will be paid for under this pay item.

P. ITEM NO. 16 – CONDUCT STEP RATE PUMPING TEST

The pumping test will be paid for at the unit price per hour of actual pumping time, as listed in the Bid Form and described in Section 02775 Pumping Tests. The said Contract Unit Price shall include the furnishing of all material, labor and equipment necessary to complete the test as specified. Payment begins upon initiation of pumping and ends at completion of pumping. Payment will be based on the actual hours of pump testing as approved by the Engineer.

Q. ITEM NO. 17 – CONDUCT PRE- AND POST- CONSTRUCTION VIDEO LOGS

Acceptable video logs will be paid for at the unit price as listed in the Bid Form and described in Section 02765, Geophysical and Video Logging including time, equipment and materials necessary to

complete the work. Payment will be made at the Contract Unit Price.

R. ITEM NO. 18 – WELL DISINFECTION AND WATER QUALITY SAMPLING

Work under this pay item shall include, but not be limited to, all equipment, materials and labor to satisfactorily disinfect the well, construct easily accessible sampling points, bacteriological sampling and testing, and water quality analytical testing as required by the contract documents, state and local laws and regulations as related to this pay item. Payment of this item will be made at the Contract Lump Sum Price as listed on the Bid Form. The Contractor shall be responsible for costs associated with re-chlorination, re-sampling, and re-testing as needed to satisfactorily disinfect the well and obtain passing and acceptable water quality test results as described in Section 02780, Well Disinfection and Sampling.

S. ITEM NO. 19 – EXTRA WORK BY DRILLING CREW WITH DRILLING EQUIPMENT

Extra work performed by the drilling crew with drilling equipment shall be paid for at the specified Contract Unit Price per hour as listed on the Bid Form based on the amount of approved time used.

T. ITEM NO. 20 – EXTRA WORK BY DRILLING CREW

Extra work performed by the drilling crew shall be paid for at the specified Contract Unit Price per hour as listed on the Bid Form based on the amount of approved time used.

U. ITEM NO. 21 – STANDBY TIME WITH RIG AND DRILLING CREW ON-SITE

If standby time is required with the drilling crew and drilling rig on site, payment shall be made at the specified Contract Unit Price per hour as listed on the Bid Form based on the number of approved hours required.

V. ITEM NO. 22 – STANDBY TIME WITH RIG ON-SITE AND DRILLING CREW OFF-SITE

If standby time is required with the drilling crew off site and drilling rig on site, payment shall be made at the specified Contract Unit Price per hour as listed on the Bid Form based on the number of approved hours required.

W. ITEM NO. 23 – FORMATION WATER DISPOSAL SYSTEM

The work specified under this pay item includes the costs to supply, install, and maintain formation water disposal system as specified in the Contract Documents and accepted by the Engineer. This item includes all labor, material and equipment and removal of the piping from the project site after construction is complete. This pay item also includes the costs to maintain the disposal and settling system and shall include but not be limited to piping, fittings, pumps, monitoring, operation and maintenance. Payment shall be made per Contract Lump Sum Price as listed on the Bid Form.

X. ITEM NO. 24 – SITE RESTORATION

The work specified under this pay item includes restoring the sites to their original condition, the intended grades as shown on the site plan, restoring all side slopes, and sodding all side slopes to the satisfaction of the Engineer and Owner. Payment shall be at the Contract Lump Sum Price as listed on the Bid Form and shall include all equipment, tools and labor necessary to restore the sites complete

and accepted by the Owner.

END OF SECTION

**3.02 SCHEDULE B - 2-INCH DIAMETER TEST & MONITOR WELLS**

**A. ITEM NO. 10 – DRILL NOMINAL 6-INCH BOREHOLE**

This pay item includes the actual length of hole drilled and shall be measured vertically from land surface to the total depth of the borehole. The drilled hole shall be paid at the Contract Unit Price per linear foot, drilled and accepted, as listed on the bid form. The unit price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete the work.

**B. ITEM NO. 11 – GEOPHYSICAL LOGGING**

Logging shall be paid for at the Contract Lump Sum Price as listed on the Bid Form for all logs specified in SECTION 02765 GEOPHYSICAL LOGGING for the test wells and production well 15 and shall include but not be limited to furnishing all material, labor and equipment necessary to complete the work.

**C. ITEM NO. 12 – INSTALL AND GRAVEL PACK 2-INCH STEEL (OR APPROVED ALTERNATE) CASING AND SCREEN**

The 2-inch casing and screen furnished and installed in place shall be installed to the depth specified by the ENGINEER as listed on the Bid Form. It shall be paid for by the linear foot, from land surface to the total depth installed and accepted, and shall include but not be

limited to all labor, equipment and other materials necessary to properly install the casing, screen and gravel pack as described in SECTION 02745 WELL CASING and 02750 WELL SCREEN AND GRAVEL. Upon completion of the first test well, the 2-inch casing and screen shall be removed from the well and may be re-used on the subsequent well provided it is in good condition as determined by the ENGINEER.

**D. ITEM NO. 13 – WELL DEVELOPMENT AND INTERVAL TESTING**

Development and water quality sampling at each depth interval shall be paid for at the Contract Unit Price per hour of actual pumping time or sampling as determined by the ENGINEER as described in SECTIONS 02760 WELL DEVELOPMENT and 02785 FORMATION WATER DISPOSAL. The said Contract Unit Price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete development and sampling as specified. Payment begins upon initiation of development of each depth interval and ends at the completion of successful sampling as determined by the ENGINEER. Only time approved by the ENGINEER will be paid for under this pay item.

**E. ITEM NO. 14 -- CONVERT TEST WELL TO 2-INCH MONITOR WELL**

This item shall be paid for at the Contract Unit Price per foot of depth of the monitor well, as determined by the ENGINEER. The said Contract Unit Price shall include but not be limited to the furnishing of all material, labor and equipment necessary to complete the conversion to a 2-inch monitor well. Items covered include, but are not limited to, removal of the test well casing and screen, removal of gravel from the borehole, cleaning/reaming of the borehole to a depth determined by the ENGINEER, installation of new 2-inch PVC casing and screen to the determined depth, gravel pack and grouting.

**3.03 SCHEDULE C-SURFICIAL AQUIFER PRODUCTION WELL 15 DEEPENING**

## SECTION 02740

### WELL DRILLING

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This section covers the work, materials, and equipment necessary for drilling the boreholes for the production well.

##### 1.02 SCOPE OF WORK

- A. A list of any drilling additives intended for use on this project shall be submitted to the Engineer prior to drilling activities.
- B. A list of drilling equipment to be used on this project shall be submitted to the Engineer prior to mobilization, including drill bit diameters and dimensions of staged bit assemblies proposed for drilling.
- C. Manufacturer information for water well drilling, copper-free drilling joint compound.
- D. Location for disposal of waste solids.
- E. Drilling fluid solids management system specifications, mud pump type and pump curve, and anticipated up-hole mud velocities during drilling shall be submitted to the Engineer.

#### PART 2 SUBMITTALS

##### 2.01 DRILLING EQUIPMENT

- A. All equipment shall be in good working condition and suitable for the proposed work. The Contractor will provide assurances that he has the proper equipment to adequately complete the project and overcome possible complications. The Contractor shall provide all materials, equipment and labor reasonably inferable and required for proper completion of the work whether specifically outlined in the Contract Documents or not.
- B. The Owner will reserve the right to inspect the equipment of each Contractor submitting a bid as a part of the evaluation of bids.
- C. The Contractor will provide all tools, bits, and all other necessary equipment for drilling.
- D. Drilling equipment shall be capable of performing applicable drilling methods within the established time of construction.
- E. The Contractor will take special precautions to reduce to a minimum the nuisances and damage to property which could result from working adjacent to a road. Any damage to public or private property will be immediately repaired or paid for by the Contractor at no expense to the Owner. Equipment, tools and materials will be located in places where they will produce a minimum of nuisance. Contractor will take appropriate action to minimize noise, light and other nuisances caused

by the drilling operation. The appropriate warning signs will be posted on the streets and the appropriate police will be informed of the location of the construction site.

## 2.02 DRILLING FLUID

- A. The Contractor will provide all drilling fluids, water, and additives as required. Surface water shall not be used for any drilling or construction activities.

## 2.03 TEST AND SAMPLING EQUIPMENT

- A. Provide equipment for measuring drilling fluid properties including a marsh funnel, viscosimeter, filter press and a fluid density balance.
- B. Provide sampling bags or containers for collection and storage of formation samples.

## PART 3 EXECUTION

### 3.01 GENERAL REQUIREMENTS

- A. Notify the Engineer 7 days prior to drilling. Normal working hours shall be compliant with the City Code. Should the Contractor desire to carry on his work at night or outside regular working hours, they shall submit written notice to the Owner/Engineer and allow a minimum of 48 hours for satisfactory arrangements to be made and for inspecting the work in progress.
- B. Provide at all times a thoroughly experienced, competent, and Florida licensed driller during all operations at the drill site. Provide sufficient competent driller's helpers during all operations at the drill site.

### 3.02 DRILLING

- A. Anticipated borehole depths and diameters for the test well and the Surficial Aquifer production well is depicted on the project drawings. Borehole diameters are considered nominal dimensions. The Contractor shall recommend the appropriate bit size for drilling the correct borehole diameter. Borehole depths provided in the specifications are estimates, only; actual depths may vary and will be determined by the Engineer.
- B. Boreholes shall be advanced in such a manner that the drilled hole will proceed straight and plumb. The drilling rate shall be optimized for cuttings removal with minimal mixing and accurate formation sample collection. Pilot boreholes shall be advanced in 5-foot increments for more accurate sample collection. Cuttings shall be predominantly cleared from the borehole at the end of each increment (5-foot increments for pilot holes and reverse air drilled holes, 20 foot increments for reamed holes).
- C. Boreholes shall be drilled and conditioned to permit geophysical logging and casing installation as per Section 02740, Well Drilling and Section 02745, Well Casing. The borehole shall be cleared of cuttings and stable to permit subsequent tasks to be completed without impairment.
- D. The reaming assembly shall consist of a lead bit with the same outer diameter as the pilot hole and progressively larger diameter bits up to the reamed hole diameter. The reaming assembly should not exceed 8 feet in length.

### 3.03 DRILLING FLUIDS

- A. All drilling fluid storage tanks shall be above ground. Dug mud pits will not be permitted. Tanks shall be of sufficient length and construction to allow settling or removal of cuttings and prevent their reintroduction to the borehole. A mud system shall be used that includes a vibratory shale shaker and centrifugal desanders. Mud tanks shall be of sufficient length and construction to allow settling or removal of cuttings and prevent their reintroduction to the borehole.
- B. The Contractor shall routinely monitor and record drilling fluid properties including mud weight, viscosity, gel strength, pH, liquid and solids content. Monitoring shall be in accordance with manufacturer's recommendations, AWWA and International Association of Drilling Contractors (IADC). The mud and solids management systems used by the Contractor for this project shall meet the Contractor's proposed drilling fluid manufacturer specifications for the intended application.

### 3.04 ALIGNMENT REQUIREMENTS

- A. Pilot holes and reamed holes shall be drilled round and straight throughout.
- B. The completed well will be sufficiently plumb and straight so that there will be no interference with installation, alignment, operation or future removal of the permanent well pump.

### 3.05 COMPLIANCE WITH GOVERNMENTAL REGULATIONS

- C. Construct the well in strict conformance with all laws, rules, regulations, and standards related to the construction of wells in the State of Florida and local regulatory agencies.

### 3.06 FORMATION SAMPLES

- A. One (1) set of representative formation samples shall be collected by the Contractor for the well. Samples shall be taken at each 5-foot level and each change in formation or material type. The method must yield samples that are representative of the actual depth to which drilling has progressed.
- B. Each sample shall be approximately 8 ounces and be placed in a cotton, soil sample bag, Hubco or equivalent, or as approved by Engineer. Each sample shall be labeled with the date, well identification, and depth from which the sample was taken clearly marked on the container in indelible ink. The Contractor will store and protect the samples from damage or disturbance until they have been released to and accepted by the Engineer.

### 3.07 DRILLING LOGS

- A. Prepare a daily drilling log for inspection and submittal to the Engineer. Include in the log the depths and type of geologic formation encountered; drilling penetration rate, in minutes, for each five feet interval; general formation hardness based on drilling; type of drilling, chemical, water and mud additives; loss of circulation zones; additives to the well to control flow; water added to supplement reverse air drilling; problems during drilling; date, time, and depth for each entry. The log shall be kept current with a copy located at the drill site. The Contractor shall maintain an up to date drill string tallies and will be available for inspection by the Engineer.

- B. A final well log shall be prepared that includes copies of the above. An as-built drawing of the well shall be submitted showing casing dimensions and details; screen and riser dimensions; gravel pack type, size, placements depths; and borehole dimensions.
- C. Submittals will be made as required to the appropriate regulatory agencies per the applicable local, state and federal regulations. The Contractor will provide copies of all submittals to the Engineer.

### 3.08 WASTE DISPOSAL

- A. All solid and liquid waste, including but not limited to drilled solids, cuttings, drilling mud, drilling additives, spent or unused chemicals and unused products shall be disposed of or recycled by the Contractor in an environmentally responsible manner and in accordance with applicable regulations. The disposal or recycling location must be identified in a submittal to the Engineer. Prior to disposal, the location must be accepted by the Engineer. The Contractor will prevent wastes from migrating from the designated construction area and cuttings storage area. The Contractor will promptly clean up drilling by-products that migrate outside of the designated construction area. Further, the Contractor will minimize the spillage of formation water at all times and promptly repair leaks where formation water may be released to the ground surface.
- B. Remove from the drilling site all cuttings and other material removed by the drilling operations that are not required to complete the work. Solid material shall be disposed of in accordance with local and state regulations at an approved disposal site, approved by the Engineer. Removal of cuttings, mud and formation water from the site is considered incidental to the Work and does not constitute additional payment to the Contractor.
- C. Depressions left in the land surface from the cleanup of residues, or for any other reason resulting from the Contractor's activities, shall be filled with clean fill material and graded smoothly.

END OF SECTION

## SECTION 02745

### WELL CASING

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This section covers the work, equipment and materials necessary for furnishing and installing the well casing.

##### 1.02 SUBMITTALS

- A. Provide manufactures specifications and technical data on all well casings, centering guides, and casing elevators prior to installation.

#### PART 2 PRODUCTS

##### 2.01 GENERAL REQUIREMENTS

- A. All casings will be approved for use in municipal public supply wells, and to the specifications as outlined. Casing material and dimensions are provided in Section 02720, Well Construction Sequence and contract drawings. The Contractor will furnish and satisfactorily install each string of casing. All casings will be new, unused and in good physical condition. Warped or damaged casing will be rejected.
- B. The Contract will indicate an estimate for the amount of casing. The Owner or the Engineer will determine actual lengths. The Contractor shall be responsible for ensuring that the selected casing will withstand all stresses of construction without impairment.
- C. The Contractor will provide the Engineer with an inventory of all casing delivered to the site and maintain a tally during installation.
- D. All casing sections shall each be clearly marked with type, grade and manufacturer. If required by the Engineer, the Contractor shall provide additional backup supporting documentation from the manufacturer. Casing connections shall meet manufacturer specifications for water tightness. Connections shall have equal strength as the casing itself.

##### 2.02 STEEL CASING

- A. Not applicable.

##### 2.03 POLYVINYL CHLORIDE (PVC) CASING

- A. PVC casing and couplings shall be 12-inch (12.75-inch outside diameter) SDR17 Certa-lok by Certainteed or equivalent. Any equivalent casing selected must be shown to have sufficient joint and tensile strength, internal pressure rating, resistance to collapse and ability to withstand all stresses of construction. Any alternates must be approved in advance by the Engineer.
- B. All casings shall be clearly marked with type, grade and manufacturer. If required by the Engineer,

the Contractor will provide additional backup supporting documentation from the Manufacturer.

- C. Only the PVC manufacturer approved joint compound will be used for pipe assembly. The joint compound will be approved for water well construction.
- D. Only Certainteed Certa-lok splines will be used with Certa-lok couplings. The Contractor shall provide a copy of the installation and connection procedure on site for review prior to casing assembly. The fabricated reducer bushing shall have strength equal to or greater than the couplings.
- E. Final PVC well casing shall be completed as shown on the drawings.
- F. Bills of lading shall be provided for casings delivered for well construction.

#### 2.04 CENTERING GUIDES

- A. Casing centering guides (centralizers) will be placed on all casing strings, prior to installation, at 30-foot intervals with the first set of centralizers placed within 5 feet from the bottom of the casing. Centralizers will be fixed to the casing at coupling locations.
- B. Centralizer material will be steel when attached to carbon steel and stainless steel when attached to PVC casing. Guides will be welded when attached to steel; and steel strapped to PVC.
- C. Fixed centering guides shall extend outward from the casing to within 1/2 inch of the maximum drill bit dimension.

### PART 3 EXECUTION

#### 3.01 GENERAL

- A. Casings will be installed and completed as described in the specifications and drawings. Actual casing depths will be determined by the Engineer.
- B. The casing installation method shall be approved in advance by the Engineer and be consistent with manufacturer specifications.
- C. Casing failure by any means, including but not limited to: any collapse, breakage, separation, dents, tears or rips during construction that in any way impairs the use of the well in the opinion of the Engineer, shall be repaired or replaced at the Contractor's sole expense.
- D. Casing connections shall meet manufacture specifications for water tightness. Connections shall have equal strength to the casing itself.
- E. Steel casings shall have machine cut beveled ends and will be arc welded together by the standards of the American Welding Society. Welded casings shall be straight and true of alignment to the satisfaction of the Engineer. Only certified welders may perform the outlined work; proof of certification must be presented to the Owner if requested
- F. Casing elevators must be approved by the Engineer before use.

### 3.02 WELDING

- A. All welding performed shall be in accordance with the American Welding Society (AWS D1.1) and all applicable AWS and ASTM standards.
- B. The Contractor shall provide to the Engineer verification of state of Florida certification of all welders performing work prior to casing installation. The Contractor and the certified welder shall be responsible for the integrity of all steel casing welds.

END OF SECTION

## SECTION 02750

### WELL SCREEN AND GRAVEL PACK

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This section covers the work, equipment and materials necessary for furnishing and installing the well screen and gravel pack.

##### 1.02 SUBMITTALS

- A. Provide data on all proposed additives and manufacturer's specifications.
- B. Provide manufacturer's specifications and technical data on all screens and gravel to be provided for well construction.
- C. Provide grain size distribution data on gravel pack and a 16 ounce sample prior to use.
- D. Provide shop drawings showing screen/PVC casing transition coupling.

#### PART 2 PRODUCTS

##### 2.01 GENERAL REQUIREMENTS

- A. All screens shall be approved for use in municipal public supply wells, and to the specifications as outlined. The Contractor shall furnish, satisfactorily install and gravel pack the string of well screen and riser casing. All screens, riser casings couplings and adapters shall be new, unused, in good physical condition and delivered to the site in the original protective wood crates as provided by the manufacturer. Warped or damaged materials will be rejected.
- B. The well screen to be used for the construction of the production well shall be 12-inch diameter continuous slot, type 316 stainless steel well screens, of V-slot design, manufactured by Johnson Well Screens, Inc., or approved equal. Screen section shall be joined by welding connections. The weld will not decrease the corrosion resistance of the screen. If required, blank sections within the screened interval shall be "tight wound" type 316 stainless steel screen having less than 0.001" slot openings. The Engineer will determine the screen slot size within 5 working days of borehole drilling completion and Contractor submittal of sample gravel pack.
- C. The Bidding Documents indicate an estimate of the screen length. Actual lengths shall be determined by the Engineer.

##### 2.02 RISER CASING

- A. Riser casing shall consist of 12-inch outside diameter (O.D.) SDR17 Certainteed Certa-lok PVC casing and be in accordance with the casing requirements provided in Section 02745, Well Casing. For estimation purposes, the riser interval is shown on the project drawings; however, the amount of riser required may change based on the amount required. The riser will be continuous from the top of the screen to land surface or as determined by the Engineer.

- B. The riser casing will be securely connected with a coupling adapter to the stainless steel screen by Certainteed and installed by Engineer approved method. The Contractor is responsible for the intact placement of the screen and riser pipe to the depth specified by the Engineer.

## 2.03 CENTERING GUIDES

- A. Casing centering guides (centralizers) shall be placed on the screen and casing, prior to installation, at 30 feet intervals with the first set of centralizers placed within 5 feet from the bottom of the screen. Centralizers shall be fixed to the casing at weld ring or coupling locations. Centralizers shall be aligned so that they do not interfere with installation of gravel and cement installation tubing.
- B. Centralizer material shall be stainless steel or approved alternate. Guides shall be welded when attached to steel; and screw attached using a 1/4 inch screws or lags that penetrate not more than 80 percent of the coupling and casing when attached to PVC. Any casing penetrated will be rejected and shall be replaced at the Contractor's expense.
- C. Centralizer material shall be non ferrous and will not be attached by drilling into the casing. No ferrous materials will be used for attachment.

## 2.04 GRAVEL PACK MATERIAL

- A. Gravel pack material shall be a minimum of 95% silica, approved by the Engineer, sorted and graded so that there is 90% retention on the well screens installed. The Contractor shall provide a grain size analysis of gravel to be used during well construction. Based on the Contractor provided sample and grain size analysis, the Engineer shall provide to the Contractor well screen slot size.
- B. The type of gravel pack selected will be from a supplier located within the State of Florida.

## PART 3 EXECUTION

### 3.01 GENERAL

- A. Screens and casing risers shall be installed as described in the specifications and drawings. Actual casing depths will be determined by the Engineer.
- B. The screen assembly and installation method shall be approved in advance by the Engineer and be consistent with manufacturer specifications.
- C. Gravel pack will be installed in a water slurry by the tremmie method. The base of the tremmie pipe shall be placed at the gravel placement depth and be moved upward consistent with the gravel fill depth.
- D. Water required for the construction of the well shall be potable and meet primary and drinking water standards pursuant to Chapters 62-3 and 62-550 Florida Administrative Code.
- E. Screen or casing failure by any means, including but not limited to: collapse, breakage, separation, dents, tears or rips during construction, that in any way impair the use of the well in the opinion of the Engineer, shall be repaired or replaced at the Contractor's sole expense.
- F. Casing connections shall meet manufacture specifications for water tightness. Connections shall have

equal strength as the casing itself.

END OF SECTION

## SECTION 02760

### WELL DEVELOPMENT

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This section covers the labor, equipment and materials required to perform development of the well.
- B. The Contractor shall develop the well using a combination of compressed air, jetting with simultaneous airlift, and pumped water, until, to the satisfaction of the Engineer, the discharge water is free of sediments and the gravel pack has stabilized.
- C. The Contractor is solely responsible, by any and all methods necessary, to meet the requirements for discharge of water. If the Contractor fails to fulfill proper requirements of discharge water, the Contractor is responsible for complete restoration of the discharge location to the original condition at no cost to the Owner.

##### 1.02 SUBMITTALS

- A. Provide certificates of calibration for flow meters to be used for flow measurement by the Engineer.
- B. Provide shop drawings showing dimensions of the jetting tool.
- C. Submit a pump curve prior to installation for approval by the Engineer.
- D. Completed daily development logs for weekly submittal to the Engineer.

#### PART 2 PRODUCTS

##### 2.01 DEVELOPMENT EQUIPMENT

- A. Provide all pumps, motors, air compressors and other ancillary equipment needed to develop the well to the extent that, as practical, suspended solids are removed from the well bore. Provide all pipe, fittings, and valves required to transmit discharge water from the pump to the settling tanks as required in Section 02785, Formation Water Disposal System.
- B. The test pumping equipment shall have access ports, water level measurement setup and discharge piping as required in Section 02775, Pumping Tests.
- C. The Contractor shall provide a calibrated flow meter near the pump. The flow meter shall be accurate and precise within the range of 300 gpm to 2,000 gpm. The placement of the flow meter shall be in accordance with manufacturer recommendations for flow meter placement. The Contractor shall also consult the Engineer for optimal flow meter placement. Air release valves shall be provided and installed by the Contractor. The Contractor shall supply an orifice weir or other Engineer approved method to verify pumping rates.

## PART 3 EXECUTION

### 3.01 WELL DEVELOPMENT

- A. Develop the well using compressed air lift at a minimum air flow rate of 750 cubic feet per minute. The base of the air discharge will be set at the base of the screen during initial the development period. The initial airlift phase shall be not less than 8 hours. This step shall be considered initial development to remove the majority of drilling fluid from the borehole and to confirm the stability of the gravel pack. Air development shall include varying the depth of air discharge and periodically surging the well with the use of a surge tank. The top of the gravel pack shall be continuously monitored during air lift. If the top of the gravel pack is below the top of the desired level, then gravel must be added.
- B. Following initial development, high velocity jetting shall be done using chlorinated water for a period of time to be determined by the Engineer. A high velocity jetting tool having 4 nozzles shall be rotated and moved vertically throughout the entire screened portion of the well while chlorinated water is forced through the screen and into the gravel pack. The jetting tool and pumping equipment shall deliver a minimum flow rate of 500 gpm per nozzle. Each shall have an internal diameter of 1.0 inch. Alternate nozzle sizes and flow rates may be proposed. However, a minimum jetting velocity of 50 feet per second shall be maintained. The initial phase of jetting shall be done using a solution of BMR and chlorinated water having a minimum chlorine concentration of 50 milligrams per liter (mg/l). Thereafter, fresh water may be used for jetting development. Occasionally, at the direction of the Engineer, accumulating sand in the screen shall be removed by lowering the air lift set up to the bottom of the well.
- C. After thoroughly jetting and surging the well with the jetting tool, well development shall be completed using air lift at the base of the screen to clean out development solids from borehole or directed by the Engineer.
- D. Throughout development, at intervals specified by the Engineer, the Contractor shall conduct sand testing. Sand testing shall be conducted using a Rossum Sand Tester, or approved equal method.
- E. On a daily basis prior to start-up of airlift and jetting development and at other times as directed by the Engineer, the Contractor shall pump the well and accurately measure the static water level, drawdown, specific capacity and depth to the gravel pack. The pump shall be capable of a discharge rate of 100 gpm with a minimum drawdown of 25 feet below the pump level.
- F. After air lift and jetting with simultaneous airlift developments, the Contractor will continue development using the test pump setup (as described in Section 02775, Pumping Tests). The Contractor shall pump surge the well until, to the satisfaction of the Engineer, the pump discharge water is free of suspended material. The test pump will be capable of maintaining a steady pumping rate of 1,500 gallons per minute (gpm) and on/off surging.
- G. Upon completion of development or at other times as directed by the Engineer, the Contractor will check the total depth of the well in the presence of the Engineer.

### 3.02 DISCHARGE WATER

- A. The Contractor shall construct temporary settling tanks for settlement of solids from the discharge water in accordance with Section 02785, Formation Water Disposal System. A transfer pump shall be

used to pump discharge water to the designated outfall location if required by the Engineer. The Contractor shall provide sufficient temporary piping to transmit formation water from the well site to a discharge point as shown on the Contract Drawings. The Contractor shall set up and maintain discharge water transmission hose as determined necessary.

- B. Discharge water shall always be contained and under control by the Contractor. Any erosion that results from the discharge water shall be immediately repaired by the Contractor to its previous non-eroded condition.
- C. If required by the Engineer, silt booms will be provided, installed and maintained by the Contractor in any surface water body receiving the discharge water.
- D. The Contractor shall ensure that the discharge water does not impact adjoining property unless it is specifically approved by the Engineer, does not flood streets or impede any traffic flow in any way, and does not cause a nuisance in general.

END OF SECTION

## SECTION 02674

### BOREHOLE GEOPHYSICAL LOGGING AND VIDEO LOG

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This section covers the equipment, work and materials necessary to perform geophysical logging of the well.
- B. Provide the following geophysical logging and well survey equipment:
  - 1. Dual Induction
  - 2. Short normal, long normal, lateral and single point resistivity logs
  - 3. Natural gamma log.
  - 4. Spontaneous potential log.
  - 5. Caliper log.
  - 6. Video log.

#### PART 2 PRODUCTS (NOT USED)

#### PART 3 EXECUTION

##### 3.01 GENERAL

- A. All logging shall be supervised by the Engineer with 24 hours advanced notice. The Contractor is responsible to ensure that logs are complete and include the entire borehole and cased intervals as directed by the Engineer. Logging should be done as soon as possible after the drilling tools have been removed from the logged interval.
- B. When the hole has been drilled to a depth determined by the Engineer, it must be prepared for geophysical logging. Borehole preparation will include but not be limited to: i) continuation of drilling fluid circulation until drill cuttings have been removed from the borehole, and the fluid is uniform in the borehole; or ii) reverse air pumping until the discharge water is free of cuttings and suspended sediment. The Contractor must make all reasonable efforts to leave the borehole free from obstructions in preparation for geophysical logging. Logging must be done immediately following the completion of borehole preparation unless otherwise stated in the Contract or as stipulated by the Engineer.
- C. Each log must be run and recorded in a continuous fashion to qualify as an acceptable log.
- D. The Contractor is responsible to ensure that the logs are complete. Any obstructions or fill material or borehole of reduced diameter more than 1/2-inch in the borehole or cased intervals will be removed or reamed by the Contractor at his own expense.
- E. All logs will include a repeat section of not less than 50 feet of the portion of the hole. The Engineer will determine the repeat section.

- F. All logs shall be appropriately labeled with all appropriate information. Two (2) field copies shall be made available to the Engineer upon completion. Five (5) copies of finished logs are to be provided within two weeks of logging. The Contractor will furnish three (3) copies of the video to the Owner.
- G. A down hole video log in DVD format will be conducted to inspect the casing and screened interval of the well prior to demobilizing the drilling rig. The video will be conducted in the presence of the Engineer. The video camera lens will be color and capable of 360 degree movement; be controlled by the logging technician; be independent of the camera body; and have focus capability. The video camera will be centralized in the borehole. The centralizers will self-adjust to different casing and hole sizes as necessary. If the Engineer determines that the video is unacceptable due to poor quality, the Contractor at his expense will obtain the necessary equipment to perform additional logging to the satisfaction of the Engineer.
- H. Video logging will be conducted under both static and pumping conditions at the direction of the Engineer. Contractor shall ensure that the well is pumped sufficiently to ensure adequate visibility for the video survey as determined by the Engineer. Contractor shall use a submersible pump capable of a minimum of 500 gpm discharge rate.
- I. Following completion of the well video, the Contractor shall clean out development solids from borehole if necessary, as determined by Engineer at no additional cost to the Owner.

SCHEDULE OF GEOPHYSICAL AND VIDEO LOGS

Construction Phase	Log Type
Pre-construction	Static and dynamic color well video with rotating lens
Completion of 8-inch pilot hole	Dual Induction, short normal, long normal, lateral and single point resistivity, spontaneous potential, caliper, natural gamma ray
Well Completion	Static and dynamic color well video with rotating lens

END OF SECTION

## SECTION 02775

### PUMPING TESTS

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. This section covers the labor, equipment and material required to perform a step rate pumping test on the production well. The scope of work specified in this section also may be applicable to other sections by reference in those sections.

##### 1.02 SUBMITTALS

- A. Provide certificates of calibration for flow meters to be used for flow measurement by the Engineer.
- B. Submit a pump curve prior to installation for approval by the Engineer.

#### PART 2 PRODUCTS

##### 2.01 TEST PUMP

- A. Furnish the necessary instruments and pumping equipment capable of pumping at a steady rate ranging from 300 gpm to 1,500 gpm with a throttling device and gate valve so that the flow rate can be adjusted as directed by the Engineer.
- B. Furnish a gate valve, orifice plate and manometer to control and measure discharge. The Contractor shall supply an orifice weir or other Engineer approved method to verify pumping rates.
- C. Provide and install a 1 1/4-inch ID drop tube between the pump column and casing, from the water level access fitting at the wellhead to 5 feet above the pump intake. The drop tube will enable the Engineer to measure water levels without interference of the pump or pump column.

##### 2.02 FLOW METER

- A. Provide a calibrated flow meter with direct measurement and a totalizer to measure flow. Anticipated metered flows shall range from 300 to 1,500 gpm. Certification shall be no older than 60 days prior to notice to proceed and attest to an accuracy of 95 percent or greater for the range of the meter. The Contractor will supply an orifice weir to verify pumping rates.

##### 2.03 DISCHARGE PIPING

- A. Discharge water will be conveyed via pipe, hoses, fittings, and valves required to transmit discharge water from the pump to discharge point.

#### PART 3 EXECUTION

##### 3.01 PUMPING TEST

- A. Install and operate the pumping test equipment. Pumping test shall consist of five steps to be

performed at rates of between approximately 300 and 1,500 gpm or at other rates determined by the Engineer. Step duration shall continue until drawdown in the production well stabilizes or a maximum of approximately two hours per step. The Contractor shall determine the appropriate engine and gate valve settings for the desired pumping rate prior to the start of the test in order to achieve a constant rate as soon as possible after the start of the test.

- B. Sufficient time shall be permitted for the Engineer to collect a static water level in the well prior to step rate and constant rate pumping tests. The static water level shall be measured by the Contractor prior to the start of pumping.
- C. The Contractor shall furnish a gate valve, orifice plate and manometer to control and measure discharge.
- D. Discharged water shall be conducted from the pumped well to a location shown on the Contract Drawings or as otherwise directed by the Engineer. Discharged fluid shall be piped so as to prevent the recirculation of the discharged water into monitored aquifers.
- E. All equipment necessary to conduct these tests shall be supplied, operated, manned, and maintained by the Contractor. The Contractor shall be responsible for failure of equipment and materials associated with the pumping tests, and for negligence on the part of the Contractor. In the event of such failure or negligence that results in re-running the pumping test, the Contractor shall repeat the test at the Contractor's own expense.
- F. Under no circumstances shall the test pumping equipment create a vacuum within the well casing.

### 3.02 DISCHARGE WATER

- A. Discharge water shall be in accordance with the requirements in Section 02785, Formation Water Disposal System.

END OF SECTION

## SECTION 02780

### WELL DISINFECTION AND WATER QUALITY SAMPLING

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Provide labor, equipment and materials to disinfect the production well pursuant to the requirements of AWWA C654-03; including pump facilities, wellhead, and piping according to the requirements of AWWA C-601.
- B. Provide labor, equipment and materials to perform analytical tests including (1 complete set) Chapter 62-550 Florida Administrative Code (FAC) drinking water analysis on the production well. The Contractor shall subcontract with an analytical laboratory to perform analytical services in accordance with regulations. All water samples required shall be collected by an employee of a laboratory certified to perform drinking water analysis in accordance with F.S.§ 403.863 and Chapter 64E-1, F.A.C. The NELAC laboratory shall be certified to perform the scope of work by the Florida Department of Environmental Protection and Palm Beach County Health Department.

##### 1.02 SUBMITTALS

- A. State and County certifications for proposed laboratory, if requested.
- B. Provide sampling reports, completed chain of custody forms and analytical results for all consecutive sampling events.
- C. Bacteriological Testing Results

#### PART 2 PRODUCTS

##### 2.01 MATERIALS

- A. Sodium Hypochlorite or approved equal.

#### PART 3 EXECUTION

##### 3.01 WELL FACILITY DISINFECTION

- A. Provide notice to Engineer 48 hours in advance of treatment. Provide injection and measurement methods for approval.
- B. Post warning notices and secure the well facility from unauthorized access or use. Secure the area.
- C. The Contractor shall disinfect the well as soon as constructions of the well and cleaning procedures have been completed. The Contractor shall carry out adequate cleaning procedures immediately preceding disinfection where evidence indicates that normal well construction and development work have not adequately cleaned the well. All oil, grease, soil, and other materials, which could protect bacteria from disinfectants shall not be allowed in the hole. If evidence indicates that this material has entered the hole, it shall be thoroughly removed. The cleaning operation is to be carried out by

pumping and swabbing only. Where test pumping equipment is to be used, such equipment shall be thoroughly scrubbed, or otherwise cleaned of foreign material.

- D. Mix a sufficient concentration of chlorinated water solution to maintain a 200 parts per million chlorine residual throughout the well, pump and added piping facilities. Any well components sensitive to free chlorine or disinfecting agents will be disinfected and installed separately to prevent damage.
- E. Disinfection procedures shall ensure that the disinfecting agent is uniformly applied throughout the entire water depth of the well, without relying on subsequent mechanical or surging action for dispersing the disinfectant. For this purpose, the disinfecting agent shall be furnished or prepared in liquid form and placed in the well through a hose or liquid form and placed in the well through a hose or tremmie of sufficient length to extend to the bottom of the well. The disinfecting agent shall be applied through the hose, which is to be raised and lowered, to achieve uniform distribution of the solution throughout the well.
- F. All portions of the well above the water shall be maintained in a damp condition with water containing the required concentration of disinfecting agent for a period of not less than 20 minutes. The disinfecting agent shall be left in the well for a period of at least 24 hours.
- G. After a 24 hour or longer contact period, the well shall be pumped to clear it of the disinfecting agent. The disposal point for the purged water shall be selected so as to minimize potential damage to aquatic life or vegetation. Contractor may be requested to treat the purged water with a dechlorination agent prior to discharge.
- H. All water used for disinfection shall be potable and from a contaminant free source.
- I. The complete disinfection program and methods followed, especially if materially different from the AWWA standard shall be presented to the Engineer for review and acceptance.

### 3.02 BACTERIOLOGICAL ANALYSIS

- A. Purge detectable chlorine solution from the well facility.
- B. Following well disinfection, collect ten (10) water samples at an approved location over a minimum of 5 days after disinfection procedure. Sample collection and handling procedures shall be in accordance with state approved laboratory quality assurance plan by an experienced sampling technician.
- C. The Contractor shall continue to treat and conduct sample collection and analysis until acceptable results are obtained, in accordance with AWWA procedures. Any system disinfection (or any component thereof), sample collection or analysis required after an unsuccessful first attempt, shall be conducted at the Contractor's expense.

### 3.03 WATER QUALITY ANALYSIS

- A. Purge a minimum of five (5) well volumes of formation water from the production well. The Contractor shall coordinate with the Engineer and Owner for water quality analysis.
- B. Collect one (1) set of water samples from the well for drinking water analysis. The Contractor shall subcontract an analytical laboratory to perform field sampling and analytical services in accordance

with regulations. Sample analyses shall include all drinking water parameters required in Florida Department of Environmental Protection, Chapter 62-550 FAC. Sample collection and handling procedures shall be in accordance with state approved laboratory quality assurance plan by an experienced sampling technician.

END SECTION

## SECTION 02785

### FORMATION WATER DISPOSAL SYSTEM

#### PART 1 GENERAL

##### 1.01 SCOPE OF WORK

- A. Provide labor, equipment and materials to furnish, assemble and maintain pumps, transmission piping, settling tanks and other methods as required to transmit formation water from the Contractor's construction wellhead, to the discharge location as shown on the attached Project Drawings. All formation water discharged from the well must be contained at all times and be directed to the outfall via the formation water disposal system. discharge water shall be routed to the following outfall location: adjacent discharge pond located north of the well site. At no time shall direct discharge of formation water to Lake Osborne be permitted.
- B. The Contractor shall provide the Engineer access to collect water samples as needed to monitor discharge water quality.
- C. The Contractor is solely responsible, by any and all methods necessary, to meet the requirements for discharge of water. If the Contractor fails to fulfill proper requirements of discharge water, the Contractor is responsible for complete restoration of the discharge location to the original condition at no cost to the Owner.

#### PART 2 PRODUCTS

##### 2.01 EQUIPMENT

- A. The Contractor shall provide temporary transmission piping, couplings, valves, fittings and other items needed to assemble, operate and maintain the formation water disposal system. The Contractor shall maintain the transmission piping and ensure that it is free of leaks at all times. Any leaks found shall be repaired immediately. Transmission piping may be required from the well to the settling tanks and from the settling tanks to the discharge location. Multiple vessels may be connected parallel or in series to provide sufficient retention time for solids separation prior to fluid discharge.
- B. The Contractor shall provide, operate and maintain as many pumps as required to transmit water from the well to the discharge location. The pumps shall be capable of pumping at the maximum rates for the elements of work contemplated herein.
- C. The Contractor shall employ all means necessary to ensure that the erosion and turbidity at the discharge location does not exceed the prescribed limits.

#### PART 3 EXECUTION

##### 3.01 PREPARATION

- A. Review pipeline location with Engineer to confirm proper location and to minimize impact to site operations. The pipeline will be buried when crossing site access roads, or pedestrian paths.

##### 3.02 CONSTRUCTION

- A. Assemble the transmission piping as required to facilitate treatment and disposal of formation water.

### 3.03 OPERATION

- A. The formation water disposal piping will be monitored continuously for leaks and possible problem areas. A thorough inspection of the complete pipeline shall be conducted daily prior to startup. Repairs will be made prior to use.
- B. The Contractor shall coordinate discharge formation water activities with the Engineer.
- C. Pumps shall be capable of pumping water at the anticipated maximum rates of flow. Throttling devices shall be provided on the pumps to adjust the pumping rates accordingly. Valves shall be provided as needed to shut off flow and stop gravity drainage if necessary.
- D. Provide safety measures and controls as needed.

END OF SECTION

## SECTION 02938

### SODDING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Preparation of subsoil.
- B. Placing topsoil.
- C. Fertilizing.
- D. Sod installation.
- E. Maintenance.

##### 1.02 REGULATORY REQUIREMENTS

- A. Comply with regulatory agencies for fertilizer and herbicide composition.

##### 1.03 DELIVERY, STORAGE, AND HANDLING

- A. Deliver sod on pallets. Protect exposed roots from dehydration.
- B. Do not deliver more sod than can be laid within 24 hours.

##### 1.04 EXISTING CONDITIONS

- A. All existing grass areas which are damaged or destroyed during construction are to be replaced with new sod of the same variety, unless otherwise noted, which existed prior to construction.
- B. In all cases, Contractor is responsible for the restoration of the grass to the conditions that existed prior to construction.

##### 1.05 FIELD MEASUREMENTS

- A. On pipeline projects, sodded areas will be measured based on maximum trench widths shown on the Drawings. Sod placed in excess of the maximum trench widths or limits detailed on the Drawings will be at the full expense of the Contractor.

#### PART 2 PRODUCTS

##### 2.01 MATERIALS

- A. Topsoil: Muck; free of plants, weeds, and roots.
- B. Sod: In Kind. Live, fresh, and uninjured at time of planting, free of objectionable weeds, and have a soil mat of sufficient thickness adhering firmly to the roots to withstand all necessary handling. Transport within 24 hours after being stripped and plant as soon as possible.
- C. Fertilizer: 6 percent nitrogen - 6 percent phosphoric acid - 6 percent potash, 40 percent organics.
- D. Water: Free of excess and harmful chemicals, acids, alkalies, or any substance which might be harmful to plant growth. Salt water not allowed.
- E. Wood Pegs: Softwood; sufficient size and length to ensure anchorage of sod on a slope.

## PART 3 EXECUTION

### 3.01 PREPARATION OF SUBSOIL

- A. Prepare subsoil to eliminate uneven areas and low spots. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- B. Remove foreign materials, weeds and undesirable plants and their roots. Remove contaminated soil.

### 3.02 PLACING TOPSOIL

- A. Spread topsoil to a minimum depth of 2 inches over area to be sodded.
- B. Place topsoil during dry weather.
- C. Roto-till to a depth of 6 inches.
- D. Fine grade the area to be sodded to eliminate ridges, depressions and other irregularities, and to ensure positive drainage.

### 3.03 FERTILIZING

- A. Apply fertilizer uniformly at a rate of 16 pounds per 1000 square feet.
- B. Apply after smooth raking of topsoil and prior to installation of sod.
- C. Apply fertilizer no more than 48 hours before laying sod.
- D. Lightly water to aid the dissipation of fertilizer.

### 3.04 SOD INSTALLATION

- A. Moisten prepared surface immediately prior to laying sod.
- B. Place sod on the prepared surface with edges in close contact and embed firmly and smoothly by light tamping with appropriate tools.
- C. Do not stretch or overlap sod pieces.
- D. Where sodding is used in drainage ditches, the setting of the pieces must be staggered to avoid a continuous seam along the line of flow.
- E. In order to prevent erosion caused by vertical edges at the outer limits, tamp the outer pieces of sod so as to produce a feather edge effect.
- F. On slopes 6 inches per foot and steeper, lay sod perpendicular to slope and secure every row with wooden pegs at maximum 2 feet on center. Drive pegs flush with soil portion of sod.
- G. After installation, saturate sod with water to a depth of 4 inches into the soil.
- H. After sod and soil have dried, roll sodded areas to ensure good bond between sod and soil and to remove minor depressions and irregularities.
- I. After rolling, keep sod moist for the duration of the contract period and in no case less than 2 weeks. The moistened condition should extend at least to the full depth of the rooting zone.

END OF SECTION

## SECTION 09900

### PAINTING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Surface preparation and application of protective coatings.
- B. Interior and exterior coating systems.

##### 1.02 REFERENCES

- A. ASTM B117-90 - Salt Spray (Fog) Testing.
- B. ASTM D2247-87 - Testing Water Resistance of Coatings in 100% Relative Humidity.
- C. ASTM D3359-87 - Measuring Adhesion by Tape Test.
- D. ASTM D3363-74 - Film Hardness by Pencil Test.
- E. ASTM D4060-84 - Abrasion Resistance of Organic Coatings by the Taber Abraser.
- F. ASTM D4541-85 - Pull-Off Strength of Coatings Using Portable Adhesion-Testers.
- G. ASTM D4585-87 - Testing the Water Resistance of Coatings Using Controlled Condensation.
- H. AWWA C210-84 - Liquid Epoxy Coating System for the Interior and Exterior of Steel Water Pipelines.
- I. AWWA D102-78 - Painting Steel Water-Storage Tanks.
- J. Steel Structures Painting Council (SSPC) Specifications.
  - 1. SP-1 Solvent Cleaning: Remove all grease, oil, salt, acid, alkali, dirt, dust, wax, fat, foreign matter and contaminants, etc. by one of the following methods: steam cleaning, alkaline cleaning, or volatile solvent cleaning.
  - 2. SP-2 Hand Tool Cleaning: Removal of loose rust, loose mill scale and loose paint to a clean sound substrate by hand chipping, scraping, sanding and wire brushing.
  - 3. SP-3 Power Tool Cleaning: Removal of loose mill scale and loose paint to a clean sound substrate by power tool chipping, descaling, sanding, wire brushing and grinding.
  - 4. SP-5 White Metal Blast Cleaning: Complete removal of all mill scale, rust, rust scale, previous coating, etc., leaving the surface a uniform gray-white color.
  - 5. SP-6 Commercial Blast Cleaning: Complete removal of all dirt, rust scale, mill scale, foreign matter and previous coating, etc., leaving only shadows and/or streaks caused by rust stain and mill scale oxides. At least 66% of each square inch of surface area is to be free of all visible residues, except slight discoloration.
  - 6. SP-7 Brush-Off Blast Cleaning: Removal of rust scale, loose mill scale, loose rust and loose coatings, leaving tightly-bonded mill scale, rust and previous coatings. On concrete surfaces, brush-off blast clean to remove all laitance, form oils and solid contaminants. Blasting should be performed sufficiently close to the surface so as to open up surface voids, bugholes, air pockets and other subsurface irregularities, but so as not to expose underlying aggregate.

7. SP-8 Shop Pickled: Complete removal of rust and mill scale by acid pickling, duplex pickling or electrolytic pickling (may reduce the resistance of the surface to corrosion, if not to be primed immediately).
8. SP-10 Near-White Metal Blast Cleaning: Removal of all rust scale, mill scale, previous coating, etc., leaving only light stains from rust, mill scale and small specks of previous coating. At least 95% of each square inch of surface area is to be free of all visible residues and the remainder limited to slight discoloration.
9. VIS-1 Pictorial Surface Preparation Standards for Painting Steel Surfaces

#### 1.03 ABBREVIATIONS

- A. ASTM - American Society of Testing Materials
- B. AWWA - American Water Works Association
- C. DFT - Dry film thickness.
- D. Exterior - Outside, exposed to weather.
- E. Interior Dry - Inside, concealed or protected from weather.
- F. Interior Wet - Inside, subject to immersion service.
- G. NACE - National Association of Corrosion Engineers
- H. SSPC - Steel Structures Painting Council

#### 1.04 SUBMITTALS

- A. Product data sheets and application instructions.
- B. Color samples for selection by the Owner.
- C. For each coating application, submit an affidavit from the manufacturer stating that the paint selected is recommended for its intended use.
- D. When removal of lead containing paint is part of the Work, submit qualifications such as a copy of a Certification of Training, demonstrating that the person supervising the Work has been trained in removing lead containing paint. In addition, submit a plan for the methods to be employed for surface preparation, containment and ventilation, and collection of debris.

#### 1.05 QUALITY ASSURANCE

- A. All Work to be done by skilled and experienced craftsmen.
- B. When removal of lead containing paint is part of the Work, the person supervising the Work must be trained in lead paint removal by a nationally recognized training organization. A minimum of 16 hours classroom training is required.
- C. The following instruments must be available on the job site for Engineer's use, during all painting activities:
  1. Moisture meter.
  2. 'Tape' type mill profile micrometer.
  3. 'Nordson-Mikrotest' dry film gauge.
  4. Tooke - gauge.
  5. Sponge type holiday detector.

- D. Primers and other undercoat paint must be produced by same manufacturer as finish coats.
- E. Use only thinners approved by the paint manufacturer, and use only within recommended limits.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers.
- B. Container labeling to include manufacturer's name, type of paint, brand name, brand code, batch number, date of manufacturer, shelf life, coverage, surface preparation, drying time, cleanup, color designation, and instructions for mixing and reducing.
- C. Store painting materials in a clean, dry, well ventilated place, protected from sparks, flame, direct rays of the sun or from excessive heat.

1.07 REGULATORY REQUIREMENTS

- A. All coatings used for potable water service must be approved and certified for use by the National Sanitation Foundation (NSF) Standard 61 and conform to AWWA D-102 and AWWA C-210.
- B. All coatings must meet the requirements for volatile organic compounds (VOC) of not more than 3.5 lbs/gallon after thinning.
- C. Contain, handle, and dispose of all hazardous materials, including but not limited to lead containing paint, resulting from surface preparation and painting, in accordance with all applicable local, state and federal requirements.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Apply paint only on thoroughly dry surfaces and during periods of favorable weather, unless otherwise allowed by the paint manufacturer. Except as provided below, painting is not permitted when the atmospheric temperature is below 50° F, or when freshly painted surfaces may be damaged by rain, fog, dust, or condensation, and/or when it can be anticipated that these conditions will prevail during the drying period.
- B. Do not apply coatings unless the surface temperature is a minimum of 5° above the dew point; temperature must be maintained during curing.
- C. Dew Point Calculation Chart

Ambient Air Temperature - Fahrenheit

Relative Humidity	20	30	40	50	60	70	80	90	100	110	120
90%	18	28	37	47	57	67	77	87	97	107	117
85%	17	26	36	45	55	65	76	84	95	104	113
80%	16	25	34	44	54	63	73	82	93	102	110
75%	15	24	33	42	52	62	71	80	91	100	108
70%	13	22	31	40	50	60	68	78	88	96	105
65%	12	20	29	38	47	57	66	76	85	93	103
60%	11	29	27	36	45	55	64	73	83	92	101
55%	9	17	25	34	43	53	61	70	80	89	98
50%	6	15	23	31	40	50	59	67	77	86	94

45%	4	13	21	29	37	47	56	64	73	82	91
40%	1	11	18	26	35	43	52	61	69	78	87
35%	-2	8	16	23	31	40	48	57	65	74	83
30%	-6	4	13	20	28	36	44	52	61	69	77

SURFACE TEMPERATURE AT WHICH CONDENSATION OCCURS

- D. Suitable enclosures to permit painting during inclement weather may be used if provisions are made to control atmospheric conditions artificially inside the enclosure, within limits suitable for painting throughout the painting operations.

1.09 EXISTING CONDITIONS

- A. When unable to inspect the interior surfaces of existing tanks during bidding, assume 25 percent of the area is pitted as defined by the Steel Structures Painting Council.

1.10 EXTRA MATERIALS

- A. Provide a one gallon container of each color and surface texture to Owner.
- B. Label each container with color, texture, location used, in addition to the manufacturer's label.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. All materials specified herein are manufactured by the Tnemec Company, Inc., North Kansas City, Missouri, unless noted otherwise. These products are specified to establish standards of quality and are approved for use on this Project.
- B. Equivalent materials of other manufacturers may be substituted on approval of the Engineer. Requests for substitution must include manufacturer's literature for each product giving the name, generic type, descriptive information and evidence of satisfactory past performance and an independent laboratory certification that their product meets the performance criteria of the specified materials.
- C. Performance Criteria
  - 1. Abrasion - ASTM D4060, CS-17 Wheel, 1,000 grams load.
  - 2. Adhesion - ASTM D3359, Method B or ASTM D4541.
  - 3. Exterior Exposure - Exposed at 45 degrees facing the ocean (South Florida Marine Exposure).
  - 4. Hardness - ASTM D3363.
  - 5. Humidity - ASTM D2247 or ASTM D4585.
  - 6. Salt Spray (Fog) - ASTM B117.
- D. Substitutions which decrease the film thickness, the number of coats applied, change the generic type of coating, or fail to meet the performance criteria of the specified materials will not be approved. Primer and finish coats on all surfaces must be furnished by the same manufacturer.

## 2.02 MATERIALS

- A. Coatings: Ready mixed, except field catalyzed coatings. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating. Good flow and brushing properties; capable of drying or curing free of streaks or sags.
- B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified. Of commercial quality.
- C. Cement - Base Patching: Thorite by Thoro System Products of Miami, Florida.
- D. Colors: When not specified, as selected by the Owner.

## 2.03 EQUIPMENT

- A. Use effective oil/water separators on all compressed air lines serving spray painting and sandblasting operations to remove oil or moisture from the air before it is used. Place separators as far as practicable from the compressor.
- B. All equipment for application of the paint and the completion of the Work must be in first-class condition and comply with recommendations of the paint manufacturer.

## PART 3 EXECUTION

### 3.01 INSPECTION

- A. Applicator must examine areas and conditions under which painting Work is to be completed and notify Engineer in writing of conditions detrimental to proper and timely completion of Work.
- B. Inspect the substrate and report any unsatisfactory conditions. Contractor is not responsible for latent defects in the substrate which can not be detected during a reasonable visual inspection. Starting the Work indicates acceptance of the substrate as constructed.
- C. All surfaces to be painted are subject to review by the Engineer before application of the prime coat and each succeeding coat. Any defects or deficiencies are to be corrected by the Contractor before application of any subsequent coat.
- D. When any appreciable time has elapsed between coats, previously coated areas are to be reviewed by the Engineer. Where surfaces are damaged or contaminated, they are to be cleaned and recoated. Adhere to recoating times of manufacturer's printed instructions.

### 3.02 SURFACE PREPARATION

- A. General: Clean surfaces as specified and in accordance with the manufacturer's recommendation for the coating being used. If surfaces are subject to contamination other than mill scale or normal atmospheric rusting, the surfaces are to be pressure washed, and acid or caustic pH residues neutralized, in addition to the specified surface preparation.
- B. Concrete and Masonry: Remove all oil, grease, dirt, laitance and other foreign materials. Blast remove all existing coatings using equipment rated at 3500 psi. Acid etch with a solution of muriatic acid and then rinse with clean water. Verify required acid-alkali balance is achieved. Surface must be dry and free of dust prior to painting. New concrete and masonry must be cured a minimum of 28 days before treating and coating.

Repair damaged concrete using a cement base patching system. Use in strict accordance with the manufacturer's recommendations.

- C. Plaster: Remove dirt, loose mortar, scale, chalk, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry.

Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry. Fill hairline cracks, small holes, and imperfections with a latex patching plaster.

- D. Gypsum Drywall: Latex fill minor defects. Spot prime after repair. Remove dust from surface by wiping with clean rags or other means.
- E. Carbon Steel: Remove all oily and greasy residues in accordance with SSPC-SP1. Blast clean using Dupont's 'Starblast' as the blasting media in accordance with SSPC-SP10. 'Starblast' is the only blasting media allowed to be used. Apply primer coat before any rust bloom forms.
- F. Galvanized Steel and Other Non-Ferrous Metals: Surface to be clean and dry. Remove oil, grease, and protective mill coatings by solvent cleaning per SSPC-SP1. Remove white rust from galvanized steel by hand or power brushing. Take care not to damage or remove the galvanizing. Remove rust from old galvanized steel by hand or power tool cleaning in accordance with SSPC-SP2 or SSPC-SP3.
- G. PVC Pipe: Remove surface contaminants. Roughen surface by sanding to provide adhesion for primer coat.
- H. Wood: Remove dust, grit and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes and cracks. Wood must be clean and dry before application of coating.
- I. Fiberglass Reinforced Plastic: Roughen by brush blasting to provide adhesion for primer coat.

### 3.03 PROTECTION

- A. Protect elements surrounding the Work of this Section from damage or disfiguration.
- B. Repair damage to other surfaces caused by Work of this Section.
- C. Furnish drop cloths, shields, and protective methods to prevent spray or droppings from disfiguring other surfaces.
- D. Erect, maintain, and dismantle scaffolding without damage to structures, machinery, equipment or pipe. Use drop cloths to protect buildings and equipment.
- E. Construct a temporary shroud or cover to contain and collect all spent abrasives and old paint. Dispose of spent abrasives and old paint in accordance with all local, state and federal requirements.

### 3.04 APPLICATION

- A. Apply products in strict accordance with the coating manufacturer's instructions.
- B. Apply coating uniformly at the prescribed thickness. Prevent film defects that would adversely affect the appearance or performance.
- C. Apply prime coat immediately following surface preparation and in no case later than the same working day. Apply by brushing, paint mitt and roller, conventional spraying, or airless spraying, using equipment approved by the coatings manufacturer.
- D. Recoat as per the manufacturer's instructions. Coating is considered recoatable when an additional coat can be applied without any detrimental film irregularities such as lifting or loss of adhesion.
- E. Surfaces that will be inaccessible after assembly are to receive either the full specified paint system or three shop coats of the specified primer before assembly.

- F. Brushing or rolling is to be done so that a smooth coat as nearly uniform in thickness as possible is obtained. Smooth the film so as not to leave detrimental marks.
- G. When using an air, airless or hot spray, apply paint in a uniform layer, with a 50 percent overlap pattern. Brush out all runs and sags immediately or the paint will have to be removed and the surface resprayed.
- H. High build coatings should be applied by a cross-hatch method of spray application to ensure proper film thickness of the coating.
- I. Surfaces not accessible to brushes, rollers or sprays may be painted by a dauber, sheepskin, or paint mitt.
- J. Sand lightly between each succeeding alkyd enamel or varnish coat.

### 3.05 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Approval from the Owner is required prior to field painting in the vicinity of, or on, energized electrical and rotating equipment, and equipment and/or pipes in service.
- B. Exercise extreme care in the painting of operable equipment, such as valves, electric motors, etc., so that the proper functioning of the equipment will not be affected.
- C. Degloss factory finish.
- D. Do not paint identification markings or code required labels.
- E. Match associated piping color with finished paint color. See piping color code.

### 3.06 CLEANING

- A. Contain paint overspray and debris by suitable means, including but not limited to, full shrouding of the area.
- B. As Work proceeds, promptly remove paint where spilled, splashed or splattered.
- C. During progress of Work maintain premises free of unnecessary accumulation of tools, equipment, surplus materials, and debris.

### 3.07 COATING SYSTEMS - INTERIOR SURFACES

- A. Concrete Floors
  - 1. One coat of Tnemec Series 287 Enviro-Tread (Waterborne Epoxy) applied at 3.0 mils DFT (273 SF/Gal).
  - 2. A second coat of Tnemec Series 287 Enviro-Tread applied at 3.0 mils (273 SF/Gal).
  - 3. Where requested by Owner add or broadcast Series S287-300C (sand) to the 1<sup>st</sup> coat for a non-slip finish.
- B. Masonry Block Walls
  - 1. One coat Tnemec 54-WB surface coat masonry filler. Apply at a minimum rate of 80-100 square feet per gallon to concrete block surfaces only.
  - 2. One coat Series 113 H.B. Tnemec-Tufcoat water-base acrylic epoxy. Apply at a minimum rate of 120-170 square feet per gallon. Two coats will be required if applied by roller.
- C. Concrete (including exposed ceilings)

1. Two coats Series 113 H.B. Tnemec-Tufcoat water base acrylic epoxy. Apply at a minimum rate of 120-170 square feet per gallon.

D. Gypsum Drywall

1. One coat Tnemec-cryl Sealer (thinned 10%). Apply at a minimum rate of 400 square feet per gallon.
2. One coat Series 113 H.B. Tnemec-Tufcoat water-base acrylic-epoxy. Apply at a minimum rate of 120-170 square feet per gallon. Two coats will be required if applied by roller.

E. Carbon Steel, Ductile Iron, or Cast Iron

1. Prime coat Tnemec Series N69-1211 Epoxoline Primer epoxy-polyamide, 3-5 mils DFT.
2. Finish coat Tnemec Series N69 Hi-Build Epoxoline II epoxy-polyamide, 4-6 mils DFT.

F. Fuel Oil Tanks

1. Prime coat Series 61-5002 Tnemec-Liner high solids catalyzed epoxy, 8-12 mils DFT.
2. Finish coat Series 61-5001 Tnemec-Liner high solids catalyzed epoxy, 8-12 mils DFT.

G. Galvanized Steel and Other Non-Ferrous Metals

1. One coat Tnemec Series N69 Hi-Build Epoxoline epoxy-polyamide, 4-6 mils DFT.

H. PVC Piping

1. Two coats Tnemec Series N69 Hi-Build Epoxoline epoxy-polyamide. Apply at a minimum rate of 300 square feet per gallon per coat.

I. Shop Finished Electrical and Mechanical Equipment

1. One coat Tnemec Series 27 F/C/ Tu[ppxu (Fast Cure E[pxu), 2-6 mils DFT.
2. One coat Tnemec Series N69 Hi-Build Epoxoline epoxy-polyamide, 4-6 mils DFT.

J. Wood Trim and Doors - Painted

1. Prime coat of Tnemec Series 10-99 W Tnemec primer applied at 2.5 mils DFT (350± SF/Gal)..
2. Two coats of Tnemec Series 23 Enduratone (Semi-Gloss Alkyd Enamel) applied at 2.0 mils DFT per coat.

3.08 COATING SYSTEMS - EXTERIOR SURFACES

A. Carbon Steel, Ductile, or Cast Iron

1. Prime coat Tnemec Series 135 (Chembuild Surface Tolerant Epoxy), 3-5 mils DFT.
2. Finish coat Tnemec Series 73 Endura-Shield III high build acrylic polyurethane, 2-5 mils DFT.

B. Galvanized Steel and Other Non-Ferrous Metals

1. Prime coat Tnemec Series N69 Hi-Build Epoxoline epoxy-polyamide, 2-3 mils DFT.
2. Finish coat Tnemec Series 73 Endura-Shield III high build acrylic polyurethane, 2-5 mils DFT.

C. Above Ground Fuel Storage Tanks

1. Shop Primer: One coat Series 90-97 Tnemec-Zinc zinc-rich urethane, 2.5-3.5 mils DFT.
2. Field Touch-Up: Series 90-97 Tnemec-Zinc, 2.5-3.5 mils DFT.

3. Full first coat Tnemec Series N69 Hi-Build Epoxoline epoxy polyamide, 2-3 mils DFT.
4. Finish coat Tnemec Series 73 Endura-Shield III high-build acrylic polyurethane, 2-5 mils DFT.

D. PVC Piping

1. One coat Tnemec Series N69 Hi-Build Epoxoline epoxy polyamide. Apply at a minimum rate of 300 square feet per gallon.
2. One coat Tnemec Series 73 Endura-Shield III high-build acrylic polyurethane. Apply at a minimum rate of 300 square feet per gallon.

E. Fiberglass Reinforced Plastic

1. One coat Tnemec Series N69 Hi-Build Epoxoline epoxy polyamide. Apply at a minimum rate of 300 square feet per gallon.
2. One coat Tnemec Series 73 Endura-Shield III high-build acrylic polyurethane. Apply at a minimum rate of 300 square feet per gallon.

F. Shop Finished Electrical and Mechanical Equipment

1. Prime coat Tnemec Series 27 F.C. Typoxy (fast cure epoxy), 2-3 mils DFT.
2. Finish coat Tnemec Series 73 Endura-Shield III high-build acrylic polyurethane, 2-5 mils DFT.

G. Masonry Block Walls

1. Block Filler – Tnemec Series 54WB surface coat Masonry Filler applied at 80± SF/Gal.
2. Finish per requirements below.

H. Precast and Cast In Place Concrete

1. Above Grade Coating – Finish per requirements below.
2. Below Grade Coating – Apply one coat Series 46H-413 Hi-Build Theme-Tar (Coal Tar Epoxy), 14.0 to 20.0 mils DFT.

I. Plaster, Above Grade Concrete, and Stucco

1. Prime Coat: Thoro Primer 2K by Thoro System Products of Miami, Florida. Apply at the minimum rate of 200 square feet per gallon.
2. Finish Coats: Two coat Thorosheen by Thoro System Products of Miami, Florida. Apply at the minimum rate of 200 square feet per gallon.
3. See Section 07145 for additional requirements for new or repaired concrete and masonry surfaces.

3.09 PIPING COLOR CODE

Water Lines

Raw	Olive Green
Settled or Clarified	Aqua
Finished or Potable	Dark Blue

Chemical Lines

Alum or Primary Coagulant	Orange
Ammonia	White
Carbon Slurry	Black
Caustic	Yellow with Green Band
Chlorine (Gas and Solution)	Yellow
Fluoride	Light Blue and Red Band
Lime Slurry	Light Green
Ozone	Yellow with Orange Band
Phosphate Compounds	Light Green with Red Band

Polymers or Coagulant Aids	Orange with Green Band
Potassium Permanganate	Violet
Soda Ash	Light Green with Orange Band
Sulfuric Acid	Yellow with Red Band
Sulfur Dioxide	Light Green with Yellow Band

Fuel Oil Lines

Black Oil	Yellow
Diesel	Yellow

Waste Lines

Backwash Waste	Light Brown
Sludge	Dark Brown
Sewer (Sanitary and Other)	Dark Gray

Other

Compressed Air	Dark Green
Gas	Red
Other Lines	Light Gray

### 3.10 PAINTING SCHEDULE

- A. All above ground pipe and other miscellaneous metal.
- B. Exemptions: Stainless steel item, chain link fence and other factory finished items (with approval of the Engineer).

END OF SECTION

## SECTION 11213

### DEEPWELL TURBINE PUMPS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Turbine pumping units for submersible deepwell applications.
- B. Pump column pipe (drop pipe).

##### 1.02 PAYMENT

- A. Payment for materials and installation of the Pumping Unit(s) and the services of a Manufacturer's Field Representative shall be included in the Contract Lump Sum Price for turbine well pump, column pipe, etc., as detailed on the Bid Form.

##### 1.03 RELATED SECTIONS

- A. Section 02700 Series - Water Supply Well Construction

##### 1.04 REFERENCES

- A. ANSI/AWWA E101-77: Vertical Turbine Pumps

##### 1.05 DESIGN REQUIREMENTS

- A. Minimum Capacity at design head (gpm) - 800 gpm
- B. Datum Elevation to be determined in the field.
- C. Pumping level below Datum at design capacity – 80 feet (Assumed)
- D. Total head above Datum (static plus system friction) at design capacity - 40 feet
- E. Total pump head at design capacity - 120 feet
- F. Operating Range: Minimum Total Pump Head – 60 feet  
Maximum Total Pump Head – 140 feet
- G. Maximum Size of Electric Motor shall be 30 hp
- H. Pump Setting - 103 feet below Datum.
- I. Nominal diameter Pump Column – 6 inches
- J. Nominal diameter of Well Casing – 12 inches.
- K. Static water level below Datum – To be determined during construction
- L. Maximum shaft nominal speed to be 3600 rpm

##### 1.06 SUBMITTALS

- A. Six (6) copies of the manufacturer's information for the pumping unit including but not limited to certified copies of the pump performance curve indicating pumping head, capacity, efficiency and horsepower.

- B. Six (6) copies of the equipment manufacturer's installation, operating and maintenance manuals for the pumping unit.
- C. Pumping unit manufacturer's notarized statement that all equipment furnished complies with these Specifications and the applicable requirements of ANSI/AWWA E101-77.
- D. Provide certified pump curves of the factory pump test.

## PART 2 PRODUCTS

### 2.01 ACCEPTABLE MANUFACTURERS

- A. Pumping unit and motor to be furnished shall be manufactured by a company which maintains an established warehouse within the State of Florida for replacement parts.
- B. Manufacturers of pumping units approved to date of this printing are: Goulds Pumps and J-Line Pump Company
- C. Manufacturers of pump motors approved to date, as of this printing are: Franklin Electric

### 2.02 MATERIALS

- A. Materials to be utilized in the various components of the pump shall be as listed in Table 4 of AWWA E101-77 with the following exceptions:
  - 1. Suction interconnector bearings, and cable seal glands shall be bronze.
  - 2. The impeller Collet, strainer, and cable clamps shall be 316 stainless steel.
  - 3. Surface plate (sealed) shall be steel.
  - 4. Surface plate gasket shall be neoprene.
  - 5. Terminal box shall be stainless steel.
  - 6. Impellers and bowl assembly shall be nickel-aluminum-bronze.

### 2.03 EQUIPMENT

- A. The pump furnished shall be a submersible vertical pumping unit consisting of a pump bowl assembly with enclosed type impellers, column assembly, 316 stainless steel strainer, surface plate, discharge elbow, terminal box, submersible motor and cable.
- B. The submersible electric motor shall be 3-phase, 240 volts, 60 cycle and shall be as specified in Section B4 of AWWA E101-77. The motor shall be of proper size to drive the pump continuously over the specified operating range without the load exceeding the motor rating. Provide Subtrol-Plus monitoring unit from Franklin Electric.
- C. Motor case shall be 316 stainless steel.

### 2.04 PUMP COLUMN PIPE

- A. Materials: pipe and couplings shall be made from unplasticized PVC compounds having a minimum cell classification of 12454-B, as defined in ASTM D1784. The compound shall qualify for a Hydrostatic Design Basis (HDB) of 4000 psi for water at 73.4°, in accordance with the requirements of ASTM D2837. White pipe shall be supplied, unless otherwise approved by the Engineer.
- B. Approvals: Products shall be evaluated, tested, and certified for conformance with NSF61, or the health effects portion of NSF14, by an acceptable certifying organization.
- C. Physical Requirements: Standard pipe laying length shall be 20'. Nominal drop pipe diameter shall be as specified on the Drawings.

- D. All pipe supplied as part of this specification shall meet the performance requirements of ASTM D1785 for Schedule 80 pipe.
- E. Pipe shall be joined using a spline lock joint. High-strength, acid-resistant, flexible thermoplastic splines shall be inserted into mating precision-machined grooves to provide full 360° restraint with evenly distributed loading. No external pipe-to-pipe restraining devices that clamp onto or otherwise damage the pipe surface as a result of point-loading shall be permitted. The joining system shall incorporate elastomeric sealing gaskets that are designed to provide a watertight seal. Pipe with threaded joints shall not be accepted.
- F. The Drop Pipe shall be joined to pumps or other components using a 316 Stainless Steel Drop Pipe Adapter provided by the Drop Pipe manufacturer. Adaptors shall use the same spline lock joint as used on the drop pipe.
- G. The Drop Pipe shall be legibly and permanently marked with the following information:
- Manufacturer and Trade Name
  - Nominal Size & SCH Rating
  - Manufacturing Data Code
  - (NSF-61) or (NSF14)
- H. All Drop Pipe and couplings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions, blisters and dents, interior roughness, and other injurious defects that may affect wall integrity. The pipe and couplings shall be uniform in color, opacity, density and other physical characteristics.
- I. The Drop Pipe Manufacturer shall be Certa-Lok PVC Drop Pipe by CertainTeed Corporation, Valley Forge, PA 19482 or approved equal.

## PART 3 EXECUTION

### 3.01 INSTALLATION

- A. Installation shall comply with the Contract Drawings and Specifications.
- B. Assembly of pumping unit shall conform to the pump manufacturer's recommendations.

### 3.02 MANUFACTURER'S FIELD REPRESENTATIVE

- A. Contractor shall provide the services of the pumping unit manufacturer's authorized field representative to verify proper installation of each unit prior to start-up, and to check the operation of each unit during initial operation.

END OF SECTION

## SECTION 13100

### INSTRUMENTATION, CONTROLS, AND TELEMETRY

#### PART 1 - GENERAL

##### 1.01 SCOPE OF WORK

- A. The work covered by this section of the specifications consists of furnishing all labor, materials, and equipment, and performing all operations necessary for the installation of the complete instrumentation, control, and telemetry system ready for use as specified and shown on the drawings. Omission of a specific item obviously necessary for the proper function of the equipment shall not relieve the Contractor of the responsibility of furnishing and installing the item as a part of the Contract.
- B. The major components of the instrumentation, controls, and telemetry system are as follows:
  - 1. One (1) flow transmitter.
  - 2. One (1) level transmitter.
  - 3. Programming of the central station computer to include all control/status logic, screens, and report generation as required for the new systems.
  - 4. Other hardware as shown or as described in the specifications, or as is necessary for proper operation of the system.

##### 1.02 QUALITY ASSURANCE

- A. Codes and Standards: All work shall be performed in accordance with the following:
  - 1. Institute of Electrical and Electronic Engineers (IEEE)
  - 2. Instrument Society of America (ISA)
  - 3. National Electrical Manufacturers Association (NEMA)
  - 4. America National Standards Institute (ANSI)
  - 5. National Electric Code (NFPA70)
  - 6. Underwriter Laboratories (U.L.). The RTU shall meet UL 508 requirements and bear the U.L. label.

- B. The instrumentation, controls, and telemetry system is an integrated system which shall be furnished by one (1) Supplier who shall provide all of the equipment, regardless of Manufacturer, and shall be responsible to the Contractor for satisfactory operation of the entire system. The Supplier shall also coordinate the interconnecting control functions of all of the system equipment and shall be responsible for producing the complete instrumentation/control/telemetry system interconnection diagrams, wiring tables, and schematics.
- C. The Contractor shall coordinate work of the system Supplier, service personnel during construction, testing, calibration and acceptance of this system. The system Supplier shall provide service personnel as required to assist the Contractor in the location of sleeves, methods of installing conduit and special cable, mounting, piping, and wiring of the system equipment prior to placing it in service. The system Supplier shall also provide personnel as required for calibration, start-up and testing of the system equipment.
- C. All instruments, and telemetry system components, regardless of Manufacturer, shall be supplied by C.C. Control Corp. of West Palm Beach, Florida, or approved equal. Alternate Suppliers must meet the following conditions:
  - 1. At least two (2) full-time employees of the Supplier, with five (5) years of acceptable experience in the installation and programming of similar systems permanently located within twenty-five miles of the project site.
  - 2. U.L. certified instrumentation, controls, and telemetry assembly shop.

### 1.03 SUBMITTALS

- A. The following shall be provided for approval:
  - 1. A complete schematic of instrumentation/control/telemetry system wiring and equipment interconnection wiring with a full description of the operation and with each component identified. Final copies of the schematic shall be provided as AutoCAD files on disk.
  - 2. Component data sheets indicating pertinent data identifying each component by item number and nomenclature as indicated in the plans and specifications and on the above mentioned schematic drawings.
  - 3. Control loops as separate drawings shall be provided where needed to clarify the operation and connections of the equipment.
  - 4. A hard copy printout of the programs and ladder logic diagrams if applicable.
  - 5. Proposed computer screens for the central station computer shall be provided for review and comment prior to completion of the programming. Changes shall be made as requested at no additional cost.
- B. All literature and drawings being forwarded for approval shall be neatly bound in one volume labeled "Instrumentation/Controls/Telemetry". Sales bulletins and other general publications are not acceptable as material for approval. The intent is to provide the Owner and Engineer with a reusable reference.
- C. After the work is complete, the Supplier shall provide six (6) copies of complete operating and maintenance instructions and parts lists. These sets of instructions shall include copies of the original

drawing submitted for approval reflecting all “as-built” modifications. The manual shall also include functional description of the entire system. Special requirements particular to the system shall be clearly defined along with special calibration test procedures. Include all password keys. These manuals shall be in a hard cover 3-ring binder in single volume labeled “Instrumentation/Controls/Telemetry Operating and Maintenance Instructions”.

- D. The Supplier shall provide a minimum of eight (8) hours of instruction to maintenance personnel in the proper operation, calibration, and training on the use and maintenance of all equipment supplied.

#### 1.04 WARRANTY

- A. All equipment furnished, and all work performed under Division 13, shall be guaranteed by the Supplier against defects in workmanship, materials, and proper operation for a minimum period of one (1) year from date of acceptance.

### PART 2 - PRODUCTS

#### 2.01 ELECTROMAGNETIC FLOW METER

- A. Flow Element
  - 1. Type:
    - a. Pulsed DC electromagnetic induction type and shall provide a signal, which is linear to the liquid flow rate.
  - 2. Functional/Performance:
    - a. Power requirements - Match to converter/transmitter
    - b. Accuracy - Plus or minus 0.2 percent of reading, or +/- 1 millimeter per second, whichever is greater, irrespective of flow direction (including converter/ transmitter).
    - c. Temperature rating - Suitable for process liquid temperature up to 70 degrees C and an ambient of 65 degrees C.
    - d. RFI protection - Provide RFI protection.
    - e. Pressure rating - 240 psi if 150 lb flanges are used, 700 psi if 300 lb flanges are used.
    - f. Additional - Meter shall be capable of running empty indefinitely without damage to any component.
    - g. Additional - Meter shall be able to measure flowrate and flow total in both the forward and reverse directions.
  - 3. Physical:
    - a. Metering Tube: 304 stainless steel unless otherwise indicated.
    - b. Flanges: ANSI 150 lb, 304 stainless steel unless otherwise indicated.
    - c. Liner - Polyurethane for raw water.
    - d. Electrodes - Type 316 stainless steel, bullet nosed or elliptical self-cleaning type.
    - e. Housing - Meters shall be designed for continuous submergence in 30-ft of water.
    - f. Painting - All external surfaces shall be painted with a chemical and corrosion resistant epoxy finish.

4. Accessories/Options Required:
  - a. Factory calibration - All meters shall be factory calibrated. A copy of the report shall be provided.
  - b. Grounding - Meter shall be grounded per the manufacturers recommendation. Provide ground ring, ground wires, gaskets, etc, as required or as otherwise noted. All materials shall be suitable for liquid being measured.
5. Manufacturers:
  - a. Rosemont 8700 Series, no substitute.

B. Flow Converter/Transmitter

1. Type:
  - a. Match to flow element.
2. Functional/Performance:
  - a. Power requirements - 120 VAC plus or minus 10 percent.
  - b. Accuracy - As defined for flow element.
  - c. Temperature - minus 25 to plus 65 degrees C
  - d. Output - Isolated 4-20 mA into 0 to 1000 ohms, HART protocol.
3. Physical:
  - a. Housing - NEMA 4X wall mount.
4. Accessories/Options Required:
  - a. Cable - Provide signal cable between element and signal converter.
  - b. Indicator - provide local digital indicator with scale in engineering units which indicates actual flow rate.
  - c. Totalizer - Provide a seven digit, resettable or non-resettable totalizer on the face of the enclosure and a scalable pulse output to drive the totalizer. The totalizer multiplier shall be a power of 10.
  - d. Zero Return Unit - Provide a zero return unit. The unit shall be powered from the converter/transmitter and may be mounted in a separate NEMA 4X enclosure; the device shall drive the element output to 4 mADC on no flow conditions.
  - e. Password Protection - Meter software shall incorporate dual password features to prevent inadvertent program or unit changes.
5. Manufacturer:
  - a. Rosemont 8712 Series, no substitute.

2.02 LEVEL TRANSMITTER

A. Type:

1. Submersible
2. Pressure
3. 316SS Housing

B. Functional:

1. Range: 0-100 ft. w.c.
2. Power Supply: 24VDC (from receiver over signal leads)
3. Output: 4-20mA DC
4. Mounting Depth: 100 ft. below wellhead

C. Performance:

1. Accuracy: 0.25 percent of span
2. Stability: 0.1 percent of span per year

D. Installation:

1. Level transmitter shall be Pressure Systems, Inc. Series 700, KPSI, or approved equal.
2. Install the level transmitter in accordance with Manufacturer's instructions.
3. Coordinate with the mechanical contractor for proper mounting of equipment and required fittings.

2.03 INSTRUMENT POWER SUPPLIES

- A. Provide separate 0-24VDC power supplies, within the RTU enclosure, where required to power the 4-20mA instrument loops. These shall be isolated with lighting/surge protection as specified herein.

2.04 LIGHTING/SURGE PROTECTION

- A. General-Lighting/Surge protection shall be provided to protect the electronic instrumentation system from induced surges propagating along the signal and power supply lines. The protection systems shall be such that the protective level shall not interfere with normal operation, but shall be lower than the instrument surge withstand level, and be maintenance free and self-restoring. Instruments shall be housed in a suitable metallic case, properly grounded. Ground wires for all surge protectors shall be connected to a good earth ground and where practical each ground wire run individually and insulated from each other. These protectors shall be mounted within the instrument enclosure or a separate NEMA 4 junction box coupled to the enclosure.
- B. Power-Supply-Protection of all 120 VAC instrument power supply lines shall be provided. Cabinet(s)/panel(s) and groups of field instruments shall be protected by UL-listed isolation transformers and two-stage LTSS gas tube and zener diodes devices. Individual field instruments shall be protected by individual 120VAC two-stage LTSS gas tube and zener diodes devices. Maximum withstand ratings shall be coordinated with the electrical service entrance surge arrestors. Transformers shall be GE, SOLA, or equal. LTSS devices shall be Phoenix Contact, Joslyn, MCG Electronics, or equal.

- C. Signal Line-All signal lines when they enter a panel shall be protected through the use of UL-listed two-stage LTSS devices containing gas tube surge arrestors, inductor filters, and transorb diode protectors. Panel protectors shall be track-mounted. Field protectors shall be conduit-mounted. Devices shall be Phoenix Contact, Joslyn, Rosemount, EDCO, Weidmueller, or equal.

## PART 3 - EXECUTION

### 3.01 GENERAL

- A. All mounting hardware shall be stainless steel.
- B. Instrumentation and accessory equipment shall be installed in accordance with the Manufacturer's instructions. The locations of equipment, transmitters, and devices shown on the Drawings are approximate only. Exact locations shall be as approved by the Engineer during construction. Obtain in the field all information relevant to the placing of instruments and in case of any interference with other work, proceed as directed by the Engineer and furnish all labor and materials necessary to complete the work in an approved manner.
- C. Unless specifically shown in the contract Drawings, direct reading or electrical transmitting instrumentation shall not be mounted on process piping. Instrumentation shall be mounted on stainless steel unistrut supports. All instrumentation connections shall be provided with shutoff and drain valves. Diaphragm seals with flushing connections shall be provided.
- D. The shield on each process instrumentation cable shall be continuous from source to destination and be grounded as directed by the Manufacturer of the instrumentation equipment but in no case shall more than one ground point be employed for each shield.
- E. The system supplier shall complete the installation, the placing and location of system components, their connections to the process equipment panels, cabinets, and devices, subject to the Engineer's approval. He shall be responsible to insure that all field wiring for power and signal circuits are correctly done in accordance with best industry practice and provide for all necessary system grounding to insure a satisfactory functioning installation.
- F. Instrumentation shall be energized and started only by the instrumentation supplier's field representative.
- G. All instrumentation shall be carefully checked by the supplier's field service personnel for damage and shall be fully calibrated and put into operation. Field service personnel shall check calibration under actual conditions as equipment is put into service, and shall work closely with the Contractor and Owner/Engineer in obtaining desired control.
- H. After all adjustments are made, one (1) day shall be set aside to allow the system Supplier to demonstrate proper operation as specified, and to instruct maintenance and operations personnel in the operation, maintenance, and troubleshooting of all equipment supplied under this section.

### 3.02 CENTRAL STATION COMPUTER PROGRAMMING

A. The following control strategies and parameters described herein are written descriptions of the programming required to implement the operation of the entire system. The programming shall be implemented within the central station computer as required to provide the following control and status/alarm reporting functions:

1. Well No.12:
  - a. Pump Start/Stop (DO)
  - b. Pump Run (DI)
  - c. Pump Fail (DI)
  - d. Intrusion Alarm (DI)
  - e. Pressure (AI)
  - f. Level (AI)
  - g. Flow (AI)
  - h. Power Failure or RTU on Battery Backup (DI)

B. The Supplier shall test all individual control parameters to prove its integrity and the process control language in which it is implemented. Within the testing process the Supplier shall test all Loop-Specific and Non-Loop-Specific functions including but not limited to the following:

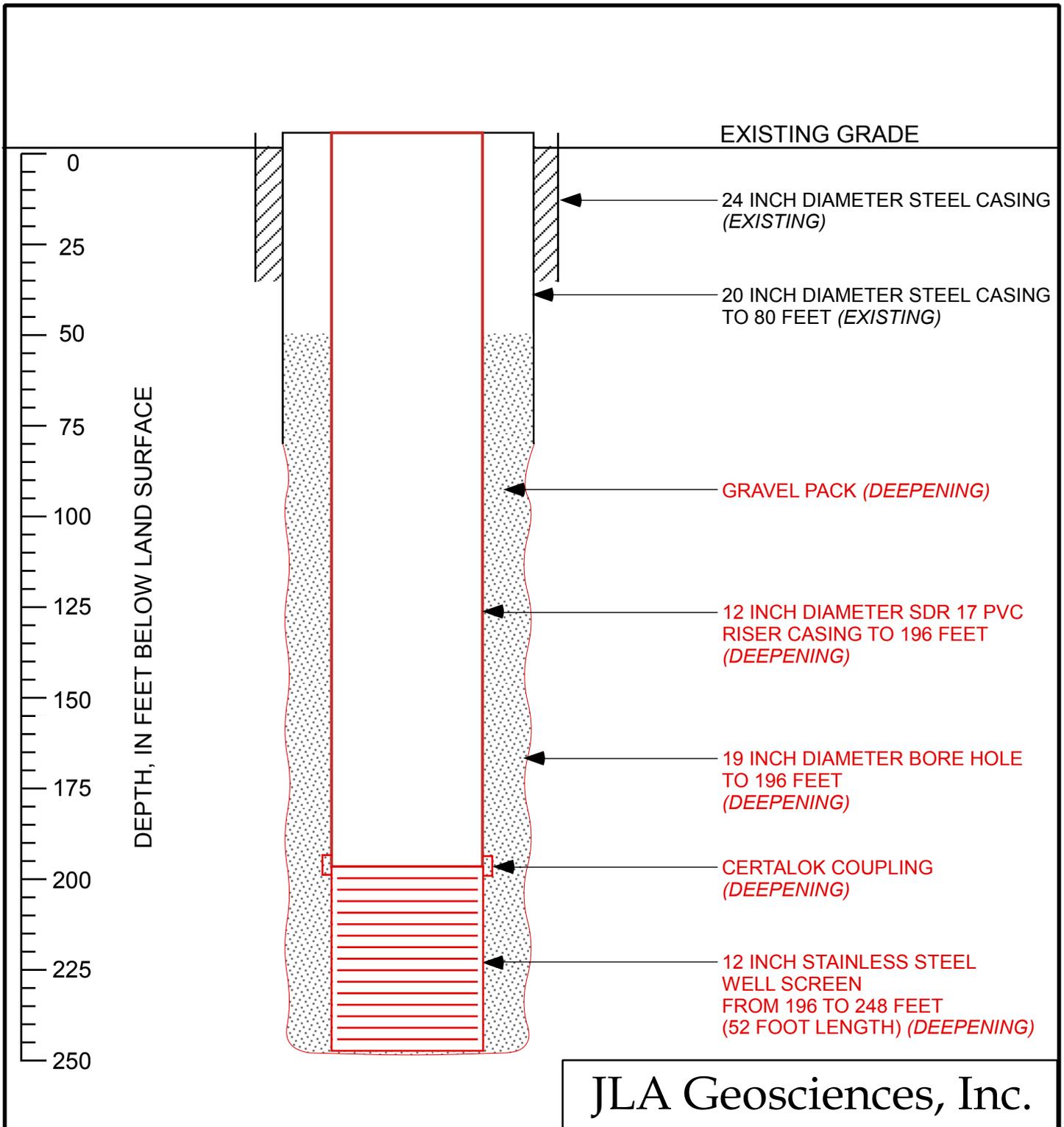
1. Failure Mode and Backup Procedures: power failure, program backup and reload, retentive outputs.
2. Communication with the remote terminal units via telemetry.
3. All remote I/O module functions.

Tests shall be performed locally and at the central station computer.

END OF SECTION

**APPENDIX A – FIGURE 1**

POTABLE WELL NO. 12 DEEPENING



LEGEND:		SCALE:	DATE:
CEMENT GROUT	PVC WELL CASING	AS SHOWN	07/22/2014
WELL SCREEN	STEEL CASING	DRAWN BY:	DWG #:
	GRAVEL PACK	RKS	
PROJECT SITE:		PROJECT NO:	
CITY OF LAKE WORTH		14-017	
FIGURE TITLE:		FIGURE NO:	
POTABLE WELL NO. 12 DEEPENING WELL CONSTRUCTION DETAILS		1	