

INDIAN RIVER COUNTY



BOARD OF COUNTY COMMISSIONERS

Department of Utility Services

**West Wabasso Community Gravity Sewer System
Phase 2**

Indian River County Bid No: 2019-020

INDIAN RIVER COUNTY

West Wabasso Community Gravity Sewer, Phase 2

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ADVERTISEMENT FOR BIDS

INDIAN RIVER COUNTY

The Indian River County Board of County Commissioners is accepting sealed bids for the construction of a **West Wabasso Community Gravity System, Phase 2.**

Bids will be received by Indian River County until **2:00 PM on December 18, 2018**. Each bid shall be submitted in a sealed envelope marked "**BID ENCLOSED**" and shall bear the name and address of the bidder on the outside and the words: "**West Wabasso Community Gravity Sewer System, Phase 2**"; **Bid No. 2019-020**. Only bids received on or before the time and date listed will be considered. Bids should be addressed to Purchasing Division, 1800 27th Street, Vero Beach, Florida 32960. All bids will be opened publicly and read aloud at 2:00 PM. Any bids received after **2:00 PM** will not be accepted or considered.

All material and equipment furnished and all work performed shall be in strict accordance with the Invitation to Bid documents pertaining thereto. Copies of the documents are available at: www.demandstar.com or by contacting the Purchasing Division at (772) 226-1416 or purchasing@ircgov.com. All communication concerning this bid should be directed to the Purchasing Division at purchasing@ircgov.com.

One original and two copies of bids shall be submitted on the Bid Forms provided within the Bidding Documents. BID SECURITY must accompany each Bid, and must be in the form of an AIA Document A310 Bid Bond, properly executed by the Bidder and by a qualified surety, or a certified check or a cashier's check, drawn on any bank authorized to do business in the State of Florida. Bid Security must be in the sum of not less than Five Percent (5%) of the total amount of the bid, made payable to Indian River County Board of County Commissioners. In the event the Contract is awarded to the Bidder and required insurance certificates are submitted, Bidder will enter in a Contract with the County and furnish the required 100% Public Construction Bond within the timeframe set by the County. If Bidder fails to do so, the Bid Security shall be retained by the County as liquidated damages and not as penalty.

A pre-bid meeting will be held at 2:00 PM on **December 4, 2018** in the Purchasing Conference Room (Room B1-303), 1800 27th Street, Vero Beach, FL. Attendance at the pre-bid is strongly encouraged but not mandatory.

This project is being funded by the St. Johns River Water Management District, Department of Environmental Protection, and Indian River Lagoon National Estuary Program. It is the County's intention to award the bid to the lowest, responsive and responsible bidder in the best interest of the County.

The County reserves the right: to delay awarding of the Contract for a period of sixty (60) days after the bid opening, to waive technicalities and irregularities in any Bid, or reject any or all bids in whole or in part with or without cause/or to accept the bid that, in its judgment, will serve the best interest of Indian River County, Florida. The County will not reimburse any Bidder for bid preparation costs.

INDIAN RIVER COUNTY
PURCHASING MANAGER

For Publication in the Indian River Press Journal (Date) **November 11, 2018**

Please furnish tear sheet and Affidavit of Publication to:

INDIAN RIVER COUNTY PURCHASING DIVISION
1800 27th Street
Vero Beach, Florida 32960

Statement of No Bid

Should you elect not to bid, please complete and send this page by email (purchasing@ircgov.com), fax (772-770-5140) or by mail to Indian River County Purchasing, 1800 27th Street, Vero Beach, FL 32960.

Please select all of the following that apply. Our decision not to bid on the subject project was based on:

☐ Project is located too far from our base of operations

☐ Project value too low

☐ Project specifications unclear (please explain below)

☐ Material availability may be a challenge

☐ Our current schedule will not allow us to perform

☐ Unable to meet insurance requirements

☐ Other:

☐ Other:

General comments regarding the bid and/or plans and specifications:

Bidder Information Form

Please return one copy of this form with your bid to assist us in learning more about where our solicitation opportunities are most often found.

Please tell us how you found out this Request for Qualifications was released/available:

- ☐ Indian River Press Journal (TCPalm)
- ☐ Demandstar/Onvia
- ☐ Email from Purchasing Division
- ☐ Indian River County Web Site
- ☐ Planroom (Please provide the name): _____
- ☐ Other (please describe): _____

SECTION 00100
INSTRUCTIONS TO BIDDERS
(Based Upon EJCDC No. C-700, 2002 Edition)

1.01 DEFINED TERMS

Terms used in these Instructions to Bidders, that are defined in the Standard General Conditions of the Construction Contract (No.C-700, 2002 edition), as may be amended by the Supplementary Conditions, 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, 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 for Bids, Instructions to Bidders, Bid Form, Sworn Statement Under the Florida Trench Safety Act, Disclosure of Relationships Statement, General Information Required of Bidders, and the proposed Agreement.

1.02 COPIES OF BIDDING DOCUMENTS

A. Copies of the Bid Documents and specifications containing the necessary contract documents are available from DemandStar or downloaded from their web site at: www.demandstar.com. Bid specifications are also available at Indian River County Purchasing Division at (772) 226-1416 or Email: purchasing@ircgov.com.

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

C. 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 of the Bidding Documents.

1.03 QUALIFICATIONS OF BIDDERS

To demonstrate qualifications to perform the work, each Bidder must be prepared to submit, within 5 days of Owner's request, written evidence, such as financial data, previous experience, present commitments, and other such data as may be necessary to prove to the satisfaction of the Owner that the Bidder is qualified by experience to do the work and is prepared to complete the work within the stated time period.

1.04 EXAMINATION OF CONTRACT DOCUMENTS AND SITE

A. 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 costs, 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. To obtain access to the West Wabasso Community Gravity Sewer, Phase II: head east on CR-510 to 64th Avenue as indicated on the construction drawings.

- B. Any information or data reflected in the Contract Documents with respect to underground facilities at or contiguous to the site is based upon information or data furnished to Owner and Engineer by owners of such underground facilities or others, Owner does not assume responsibility for the accuracy or completeness thereof unless it is expressly provided otherwise in the Supplementary Conditions.
- C. Before submitting a Bid, each Bidder will, at Bidder's own expense, make or obtain any 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.
- D. 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.
- E. The lands upon which the work is to be performed, right-of-way and easements for access thereto and other lands designed for use by the 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 and paid for by the Contractor. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by the Owner unless otherwise provided in the Contract Documents.
- F. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this the Instruction to Bidder, 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.

1.05 PRE-BID CONFERENCE

The date, time, and location for a Pre-Bid conference, if any, are specified in the Advertisement for Bids. Representatives of OWNER and ENGINEER will be present to discuss the Project. Bidders are strongly encouraged to attend and participate in the conference and highly recommended to attend subsequent site visit. OWNER will transmit to all prospective Bidders of record such Addenda as ENGINEER considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

1.06 INTERPRETATIONS AND ADDENDA

- A. **All questions about the meanings or intent of the Contract Documents are to be directed in writing to the Purchasing Department** by email to purchasing@ircgov.com. Interpretation or clarifications considered necessary by Owner in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents.

Questions received less than **ten (10) days** prior to the date for the opening of Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will not be binding and will be without legal effect.

- B. Addenda may also be issued to modify the Bidding Documents as deemed advisable by Owner or Engineer. Only the interpretation or correction issued by Owner or Engineer by Addendum shall be binding. Prospective Bidders are advised that no other source is authorized to give information concerning the documents or to explain or interpret the documents.
- C. All Bidders will acknowledge in the space provided for in Section 00310 BID FORM, the receipt of all Addenda and will confirm that the Addenda have been considered in the preparations of their proposal.

1.07 BID SECURITY

- A. Each Bid must be accompanied by Bid Security made payable to Owner in an amount of five percent of the Bidder's maximum base bid price and in the form of a certified check; cashier's check; or an AIA Document A310 Bid Bond issued by a surety meeting the requirements of Paragraph 5.01B of the General Conditions.
- B. The Bid Security of the Successful Bidder will be retained until such Bidder has executed the Agreement and furnished the required Public Construction Bond, and Insurance Certificates whereupon the Bid Security will be returned. If the Successful Bidder fails to execute and deliver the Agreement and furnish the required Public Construction Bond and required insurance certificates within fifteen calendar days after the Notice of Award, Owner may annul the Notice of Award, and the Bid Security of that Bidder will be retained by the County.
- C. The Bid Security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by the Owner until the earlier of the seventh (7th) day after the effective date of the Agreement or the sixty-first (61st) day after the Bid opening, whereupon Bid security furnished by such Bidders will be returned. Bid security with bids which are not competitive may be returned before the end of the sixty-day (60) period.

1.08 CONTRACT TIME

The number of days within which, or dates by which, the work is to be substantially completed and also complete and ready for final payment (the Contract Time) are set forth in the Agreement (Section 00530).

1.09 LIQUIDATED DAMAGES

Provisions for liquidated damages are set forth in the Agreement (Section 00530).

1.10 SUBSTITUTE OR "OR EQUAL" ITEMS

The Agreement, 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 Bidder 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 Bidder and consideration by Engineer is set forth in Paragraph 6.05 of the General Conditions and may be supplemented in the Supplementary Conditions.

1.11 BID FORM

- A. The Bid Form is included with the Bidding Documents.
- B. All blanks on the Bid Form must be completed in ink or by typewriter.
- C. 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. All names must be typed or printed below the signature.
- D. The Bid shall contain an acknowledgment of receipt of all Addenda (the number of which must be filled in on the Bid Form).
- E. Bids by partnership must be executed in the partnership name and signed by a partner, whose title must appear under the signature, and official address of the partnership must be shown below the signature.
- F. All names must be typed or printed below the signature.
- G. The address and telephone number for communications regarding the Bid must be shown.
- H. Additional forms to be submitted with Bid Form include: Section 00410 – “AIA Document A310 Bid Bond”; Section 00452 – “Disclosure of Relationships”; Section 00456 – “General Information Required of Bidders”; Section 00454 - “Trench Safety Act Compliance Statement”; and Section 00431 - Schedule of Subcontractors.

1.12 SUBMISSION OF BIDS

- A. All Bids shall be submitted at the time and place indicated in the Advertisement for Bids and shall be enclosed in an opaque sealed envelope, clearly marked on the outside with the following information: Project Name/Title; Bid Number; and the name and address of the Bidder. If the Bid is sent through the mail, overnight delivery system, or courier, the sealed envelope, marked as set forth above, shall be enclosed in a separate outer envelope with the notation "BID ENCLOSED" on the outside.
- B. The Bidder shall submit the Bid in triplicate (one original and two copies) on the Bid Forms, or an exact copy of the Bid Forms, furnished herewith. The blank spaces on the Bid Form shall be filled in correctly for each Bid Item for which a Bid is submitted. All Bids shall be accompanied by the Bid Security and other required documents.

1.13 MODIFICATION AND WITHDRAWAL OF BIDS

- A. 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.

- B. If, within two business days 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.

1.14 OPENING OF BIDS

Bids will be opened and (unless obviously non-responsive) read aloud publicly. An abstract of the amounts of base Bids and major alternates (if any) will be made available to Bidders after the opening of Bids.

1.15 BIDS TO REMAIN SUBJECT OF ACCEPTANCE

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

1.16 AWARD OF CONTRACT

- A. Owner reserves the right: to reject any and all Bids in whole or in part with or without cause; to waive any and all technicalities and informalities not involving price, time, or changes in the work; to negotiate contract terms with the Successful Bidder; to disregard all non-conforming, non-responsive, unbalanced, or conditional Bids; and to accept the bid that, in its judgment, will serve the best interest of Indian River County. 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. Owner reserves the right to cancel the award of any Agreement at any time before the execution of such Agreement by all parties without any liability to the Owner. For and in consideration of the Owner considering Bids submitted, the Bidder, by submitting its Bid, expressly waives any claim to damages, of any kind whatsoever, in the event the Owner exercises its right to cancel the award in accordance herewith.
- B. In evaluating Bids, Owner will consider the qualifications of the Bidder, 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.
- C. Owner may consider the qualifications and experience of subcontractors listed on the Schedule of Subcontractors (Section 00431), together with the qualifications and experience of other subcontractors, suppliers, and other persons and organizations proposed for the work that are required to be identified as provided in the Supplementary Conditions. Owner 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.
- D. Owner may conduct such investigations as Owner deems necessary to assist in the evaluation of any Bid and 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.

- E. If the Agreement 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 Owner.
- F. If the Agreement is to be awarded, Owner will give the Successful Bidder a Notice of Award within sixty days after the day of the Bid opening.
- G. More than one Bid from an individual, firm, partnership, corporation, or association under the same or different names will not be considered. Reasonable grounds for believing that one Bidder is financially interested in more than one bid for the same work will cause the rejection of all bids in which such Bidders are believed to be interested. Any or all bids will be rejected if there is reason to believe that collusion exists among the Bidders, and no participants in such collusion will be considered in future bids for the same work.
- H. Within fifteen (15) calendar days of the date of the Notice of Award of the Contract, the Bidder to whom the Contract is awarded shall execute and deliver two (2) original Contracts to the Owner and all required insurance certificates and public construction bond, before the Contract will be executed by the Owner.
- I. Failure upon the part of the Bidder to whom the Contract has been awarded to execute and deliver the required Public Construction Bond and insurance in the manner and within the time provided shall be just cause for cancellation of the award. It is understood and agreed by said Bidder, that if the award is cancelled for the above persons, the certified check or Bid Bond shall become the property of the Owner, not as a penalty, but as liquidated damages.

1.17 PUBLIC CONSTRUCTION BONDS

The successful Bidder as Contractor shall furnish the County immediately upon execution of the Contract a Public Construction Bond in an amount equal to 100-percent of the contract price. The Surety shall be authorized to issue surety bonds in Florida and be included in the most recent United States Department of Treasury List of Acceptable Sureties. The successful Bidder shall require the attorney-in-fact, who executed the Public Construction Bond, to affix to each a current certified copy of their Power of Attorney, reflecting such person's authority as Power of Attorney in the State of Florida. Further, at the time of execution of the Contract, the successful Bidder shall provide a copy of the Surety's current valid Certificate of Authority issued by the United States Department of the Treasury under 31 United States Code sections 9304-9308.

1.18 PUBLIC DISCLOSURE STATEMENT

Any entity entering into a contract with Indian River County as Owner shall disclose any relationship that may exist between the contracting entity and an Indian River County Commissioner or Indian River County employee. The relationship with either must be disclosed as follows: Father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, daughter-in-law, son-in-law, brother-in-law, sister-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, half brother, half sister, grandparent, or grandchild. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of the entity.

1.19 FLORIDA PRODUCED LUMBER

The selected Bidder as Contractor agrees to comply with the provisions of Section 255.20, Florida Statutes, as such statute may be amended from time to time, wherein Indian River County as Owner must specify lumber, timber and other forest products produced and manufactured in Florida whenever such products are available and their price, fitness and quality are equal.

1.20 TRENCH SAFETY

Florida Statutes Section 553.60 through 553.64, known as the "Trench Safety Act" requires all contractors engaged by Indian River County, Florida to comply with Occupational Safety and Health Administration's excavation safety standard, found in 29 C.F.R. s. 1926.650 Subpart P. All prospective subcontractors are required to sign a Trench Safety Act Compliance Statement and provide compliance cost information where indicated. The costs for complying with the Trench Safety Act must be incorporated into the Bid.

1.21 PUBLIC ENTITY CRIME STATEMENT

Pursuant to Florida Statutes Section 287.133(2)(a), all Bidders are hereby notified that 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, proposal, or reply on a contract to provide any goods or services to a public entity (defined as the State of Florida, any of its departments or agencies, or any political subdivision); may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Florida Statutes Section 287.017 for CATEGORY TWO [currently \$35,000] for a period of 36 months from the date of being placed on the convicted vendor list. A "public entity crime" means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid, proposal, reply, or contract for goods or services, any lease for real property, or any contract for the construction or repair of a public building or public work, involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

1.22 CERTIFICATION REGARDING SCRUTINIZED COMPANIES

"Contractor certifies that it and those related entities of respondent as defined above by Florida law above are not on the Scrutinized Companies that Boycott Israel List, created pursuant to Section. 215.4725 of the Florida Statutes, and are not engaged in a boycott of Israel. In addition, if this agreement is for goods or services of one million dollars or more, Contractor certifies that it and those related entities of respondent as defined above by Florida law are not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to Section 215.473 of the Florida Statutes and are not engaged in business operations in Cuba or Syria.

County may terminate this Contract if Company is found to have submitted a false certification as provided under section 287.135(5), Florida Statutes, been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with

Activities in the Iran Petroleum Energy Sector List, or been engaged in business operations in Cuba or Syria, as defined by section 287.135, Florida Statutes.

County may terminate this Contract if Company, including all wholly owned subsidiaries, majority-owned subsidiaries, and parent companies, that exist for the purpose of making profit, is found to have been placed on the Scrutinized Companies that Boycott Israel List or is engaged in a boycott of Israel as set forth in section 215.4725, Florida Statutes.

Accordingly, firms responding to this solicitation shall return with their response an executed copy of the attached "Certification Regarding Prohibition Against Contracting with Scrutinized Companies." Failure to return this executed form with submitted bid/proposal/statement of qualifications will result in the response being deemed non-responsive and eliminated from consideration."

1.23 PERMITS, IMPACT, AND INSPECTION FEES.

In accordance with Florida Statutes Section 218.80, the "Public Bid Disclosure Act", Indian River County as OWNER is obligated to disclose all license, permit, impact, or inspection fees that are payable to Indian River County in connection with the construction of the Work by the accepted bidder. ALL PERMIT, IMPACT, OR INSPECTION FEES PAYABLE TO INDIAN RIVER COUNTY IN CONNECTION WITH THE WORK ON THIS COUNTY PROJECT WILL BE PAID BY INDIAN RIVER COUNTY, WITH THE EXCEPTION OF RE-INSPECTION FEES AS SET FORTH IN THE CONTRACT. The Bidder shall not include ANY PERMIT, IMPACT, NOR INSPECTION FEES payable to Indian River County in the bid.

1.24 NON-DISCRIMINATION

Indian River County will not knowingly do business with vendors or contractors who discriminate on the basis of race, color or national origin, sex, sexual orientation, gender identity, age and/or disability. Through the course of providing services to the County, Contractors shall affirmatively comply with all applicable provisions of Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987 and the Florida Civil Rights Act of 1992, as well as all other applicable regulations, guidelines and standards. Any person who believes their rights have been violated should report such discrimination to the County's Title VI/Nondiscrimination Coordinator through the office of the County Attorney.

- 1.25** OWNER has no local ordinance or preferences, as set forth in FS 255.0991 (2) in place, therefore no preference prohibited by that section will be considered in the acceptance, review or award of this bid.

1.26 PROTEST PROCEDURE

Any actual or prospective bidder who is aggrieved in connection with a competitive selection process may protest to the Purchasing Manager. The protest shall be submitted to the Purchasing Manager in writing within seven (7) calendar days after the bidder knows or should have known of the facts giving rise to the protest. If the protest is not resolved by mutual agreement, the Purchasing Manager shall promptly issue a decision in writing, after consulting the Department and the Office of the County Attorney.

1.27 CONE OF SILENCE

Potential bidders/respondents and their agents must not communicate in any way with the Board of Commissioners, County Administrator or any County staff other than Purchasing personnel in reference or relation to this solicitation. This restriction is effective from the time of bid advertisement until the Board of County Commissioners meets to authorize award. Such communication may result in disqualification.

END OF SECTION

SECTION 00310
BID FORM
West Wabasso Community Gravity Sewer System
Phase 2
Bid 2019-020

THIS BID IS SUBMITTED TO: **Purchasing Division**
 1800 27th Street
 Vero Beach, FL 32960

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 the Contract Documents 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 for Bids and Instructions to Bidders. This Bid will remain subject to acceptance for **sixty (60) days** after the day of Bid opening. Bidder will sign and submit the Agreement with the insurance and other documents required by the Owner within fifteen (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
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

- (b) Bidder has familiarized itself with the nature and extent of the Contract Documents, the work, locality, and all local conditions and laws and regulations that in any manner may affect cost, progress, performance or finishing of the work.
 - (c) Bidder acknowledges and agrees that it is bidding on construction of a gravity collection system in West Wabasso. Please refer to the construction drawings labeled: West Wabasso Community Gravity Sewer System-Phase II.
 - (d) Bidders are notified that the estimates of the quantities of the various items of Work and materials as set forth in the Bid Proposal (Schedule of Bid Items) are approximate only and are given solely to be used as a uniform basis for the comparison of Bids. The quantities actually required to complete the Project and Work may be less or more than so estimated, and, if so, no action for damages or for loss of profits shall accrue to the CONTRACTOR by reason thereof.
 - (e) 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 will complete and include with the bid the Bid Proposal (Schedule of Bid Items) attached to this Bid Form. The quantities shown on the Bid Proposal Schedule of Bid Items) are approximate quantities. The actual quantities may vary.
5. The following documents are attached to and made a part of this Bid:
 - (a) Bid Form (Section 00310);
 - (b) Statement of No Bid (Section 00030);
 - (c) Bidder Information Form (Section 00040);
 - (d) Schedule of Subcontractors (Section 00431);
 - (e) Certification Regarding Prohibition Against Contracting with Scrutinized Companies (Section 00432)
 - (f) Disclosure of Relationships (Section 00452);
 - (g) Sworn Statement Under the Florida Trench Safety Act (Section 00454);
 - (h) General Information Required of Bidders (Section 00456);
 - (i) A current certificate of insurance evidencing coverages and limits in the amounts required by the Contract Documents.

SECTION 00310-3-SCHEDULE A**SCHEDULE OF BID ITEMS****BID NUMBER 2019-020****PROJECT IDENTIFICATION:****Dated: 11/9/18****West Wabasso Community Gravity Sewer
System, Phase 2****THIS BID IS SUBMITTED TO:****By:****INDIAN RIVER COUNTY PURCHASING DIVISION****1800 27th STREET****VERO BEACH, FLORIDA 32960****Company Name**

Bid Item No	Bid Item Description	Unit of Measure	Unit Price	Quantity	Bid Item Total (in figures)
1	8" PVC Gravity Sewer 0' - 6' Deep	LF		1,000	
2	8" PVC Gravity Sewer 6' - 8' Deep	LF		2,000	
3	8" PVC Gravity Sewer 8' - 10' Deep	LF		1,250	
4	8" PVC Gravity Sewer 10' - 12' Deep	LF		1,000	
5	8" PVC Gravity Sewer 12' - 14' Deep	LF		500	
6	4' Diam. Manholes 0' - 6' Deep	EA		7	
7	4' Diam. Manholes 6' - 8' Deep	EA		5	
8	4' Diam. Manholes 8' - 10' Deep	EA		4	
9	5' Diam. Manholes 10' - 12' Deep	EA		3	
10	5' Diam. Manholes 12' - 14' Deep	EA		3	
11	4" Ø Force Main Directional Bore (DR-11 HDPE)	LF		80	
12	4" Ø Force Main C-900 PVC	LF		180	
13	12"x4" Stainless Steel Tapping Sleeve & 4" R.S. Gate Valve	EA		1	
14	Type SP 12.5 (Traffic C) (1.5" Thick)- Per FDOT Spec 334-7	SY		12,100	
15	Optional Base Group 4 (6-inches)-FDOT Spec 285	SY		12,700	
16	Type B Stabilized Subgrade (12")- Per FDOT Spec 160-4 (LBR 40)	SY		13,300	
17	6" Thermoplastic White Per FDOT Spec 711-11	LF		50	
18	Install 6-inches of millings over 12-inches of Type B stabilized subgrade on 64th Avenue from approximately station 307+40 to 310+00.	LF		260	
19	6" Single Sewer Laterals with Clean Out (C.O)	EA		30	
20	6" Double Sewer Laterals with Clean Out (C.O)	EA		40	

Bid Item No	Bid Item Description	Unit of Measure	Unit Price	Quantity	Bid Item Total (in figures)
21	Sewer Service Lateral from C.O. at R/W to extend 75-LF including a C.O. at house connection as directed by Utility inspector, restoration of all disturbed areas with sod. Building Division permit will be required (\$75) and also to be included with the price of each service lateral. Any additional costs will be included in the unit price for gravity pipe installation.	EA		65	
22	Septic tank pump out and abandonment per FDOH requirements, fill, restoration of all disturbed areas with sod.	EA		65	
23	Construct County Lift Station, Complete and Operable. Furnish Pumps Package and Dataflow System. Pump package will include pumps, cables, guide rails and assemblies, float assembly, anchor bolts and washers and nuts, lifting bails, SS nipples and elbows, float switches, hatch covers, duplex control panel, SS base plates and spare parts, concrete drive and housekeeping pad. Lift Station construction also includes connection to the 4" force main on the east side of 63rd Court. The price to include Dataflow equipment with the spare Telemetry Control Unit (TCU) Supply spare parts per IRCBUS Construction Standards Section 10.	LS		1	
24	Temporary Traffic Control	LS		1	
25	Restoration (Sod)	LF		6,000	
26	Testing (TV & Exfiltration of all gravity mains, includes pressure test of force main)	LS		1	
27	As-built Survey	LS		1	
28	Stakeout Survey	LS		1	
29	Clearing & Grubbing 84th Place	LS		1	
30	Erosion & Sediment Control	LS		1	
31	Public Construction Bond	LS		1	
CONSTRUCTION COST - SUBTOTAL "A"					
30	Mobilization, Demobilization, MOT (See Section 01025)	LS		1	
CONSTRUCTION COST plus MOB/DEM & MOT- SUBTOTAL "B"					
31	Force Account				\$75,000.00
TOTAL LUMP SUM CONTRACT AMOUNT					

TOTAL BID PRICE IN WORDS:

**The unit prices bid for furnishing and installation of the sewer main, lift station and appurtenances shall include, but is not limited to, utilities exploration/excavation, coordination with any permitting agencies, storm water permit, audio-visual documentation, land clearing/tree removal necessary for utility installation, trenching, removing, disposing of and replacing unsuitable (i.e., plastic or organic) material, dewatering, sheeting/shoring of the excavation, installation of pipe, structures and all appurtenances, trace wires, sleeves, fittings, restrainers, connection requirements including locating, excavating existing pipe, restraining existing pipe and fittings, density testing, filling trench, soil compaction, filling, pressure testing, flushing/cleaning, density testing, irrigation repair, removal, disposition and replacement of surface over trench to pre-construction conditions, restoration of any sidewalk, landscaping or sod damaged or destroyed, removal and resetting or replacing existing guard rail or signs necessary for utility installation and Trench Safety Act Compliance. The unit price(s) bid will also include restoration of any existing utilities, drainage facilities, signs, mailboxes, driveways, etc. disturbed or damaged by the construction. All materials and installation shall be per Indian River County Utility Standards and Specifications unless otherwise noted in the bid documents. The PVC force main shall be C-900 and the PVC gravity sewer shall be SDR 26. Contractor will be provided with a copy of construction plans in AutoCADD format to use for construction stake-out and for use in preparing Record Drawings. The TOTAL of the bid above represents the total amount the contractor agrees to receive to construct a complete and*

Bid Item No	Bid Item Description	Unit of Measure	Unit Price	Quantity	Bid Item Total (in figures)
<i>operational collection and transmission sewer system as shown on the construction plans and bid documents.</i>					

The undersigned hereby certifies that they have read and understand the contents of this solicitation and agrees to furnish at the prices shown any or all of the items above, subject to all instructions, conditions, specifications and attachments hereto. Failure to have read all the provisions of this solicitation shall not be cause to: 1) alter any resulting contract; or 2) request additional compensation.

Respectfully Submitted,

Name of Firm

Address

Authorized Signature

City, State, Zip Code

Title

(_____) _____-_____
Phone

Date Signed

(Corporate Seal)

E-mail: _____

Business Tax Receipt No. _____

FEIN Number: _____

SECTION 00410

AIA DOCUMENT A310 BID BOND

The Contractor shall use the document form entitled "AIA Document A310 Bid Bond".

END OF SECTION

SECTION 00431

SCHEDULE OF SUBCONTRACTORS

PLEASE LIST ALL SUBCONTRACTORS ANTICIPATED TO RECEIVE \$10,000 (TEN THOUSAND DOLLARS) OR MORE OF WORK UNDER THIS PROJECT, INCLUDING NAME; ADDRESS; SPECIALTY; AND LICENSE TYPE AND NUMBER. The following are the subcontractors to be used if the undersigned is awarded the contract for this project.

NAME & ADDRESS

TYPE OF WORK

LICENSE #

Total dollar amount that will be awarded to Sub-contractors AND INCLUDED IN THE
TOTAL AMOUNT OF THE BID \$ _____

NOTE: The above Schedule of Subcontractors must be submitted with the Bid Form and will become a part of the Contract Documents.

END OF SECTION

CERTIFICATION REGARDING PROHIBITION AGAINST CONTRACTING WITH SCRUTINIZED COMPANIES

I hereby certify that neither the undersigned entity, nor any of its wholly owned subsidiaries, majority-owned subsidiaries, parent companies, or affiliates of such entities or business associations, that exists for the purpose of making profit have been placed on the Scrutinized Companies that Boycott Israel List created pursuant to s. 215.4725 of the Florida Statutes, or are engaged in a boycott of Israel.

In addition, if this solicitation is for a contract for goods or services of one million dollars or more, I hereby certify that neither the undersigned entity, nor any of its wholly owned subsidiaries, majority-owned subsidiaries, parent companies, or affiliates of such entities or business associations, that exists for the purpose of making profit are on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to s. 215.473 of the Florida Statutes, or are engaged in business operations in Cuba or Syria as defined in said statute.

I understand and agree that the County may immediately terminate any contract resulting from this solicitation upon written notice if the undersigned entity (or any of those related entities of respondent as defined above by Florida law) are found to have submitted a false certification or any of the following occur with respect to the company or a related entity: (i) it has been placed on the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel, or (ii) for any contract for goods or services of one million dollars or more, it has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or it is found to have been engaged in business operations in Cuba or Syria.

Name of Respondent: _____

By: _____
(Authorized Signature)

Title: _____

Date: _____

SECTION 00452

**SWORN STATEMENT UNDER SECTION 105.08, INDIAN RIVER COUNTY
CODE, ON DISCLOSURE OF RELATIONSHIPS**

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

1. This sworn statement MUST be submitted with Bid No. 2019-020

for West Wabasso Community Gravity Sewer System Phase 2

This sworn statement is submitted by: _____

(Name of entity submitting Statement)

whose business address is:

3. My name is _____
(Please print name of individual signing)

and my relationship to the entity named above is _____

4. I understand that an “affiliate” as defined in Section 105.08, Indian River County Code, means:

The term “affiliate” includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of the entity.

5. I understand that the relationship with a County Commissioner or County employee that must be disclosed as follows:

Father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, daughter-in-law, son-in-law, brother-in-law, sister-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half brother, half sister, grandparent, or grandchild.

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, have any relationships as defined in section 105.08, Indian River County Code, with any County Commissioner or County employee.

_____ 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 have the following relationships with a County Commissioner or County employee:

Name of Affiliate
or entity

Name of County Commissioner
or employee

Relationship

(Signature)

(Date)

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me this ____ day of _____, 20____, by _____
_____, who is personally known to me or who has produced _____
_____ as identification.

NOTARY PUBLIC

SIGN: _____

PRINT: _____

Notary Public, State at large
My Commission Expires:

(Seal)

SECTION 00454 - Sworn Statement Under the Florida Trench Safety Act

THIS FORM MUST BE SIGNED BY THE BIDDER WHO WILL BE RESPONSIBLE FOR THE EXCAVATION WORK ("BIDDER"), OR ITS AUTHORIZED REPRESENTATIVE, IN THE PRESENCE OF A NOTARY PUBLIC AUTHORIZED TO ADMINISTER OATHS.

1. This Sworn Statement is submitted with Bid No. 2019-020 for
West Wabasso Community Gravity Sewer System Phase 2
(Name of Project)
2. This Sworn Statement is submitted by _____
(Legal Name of Entity Submitting Sworn Statement)
_____, hereinafter
"BIDDER". The BIDDER's address is _____
_____.
BIDDER's Federal Employer Identification Number (FEIN) is _____.
3. My name is _____ and my relationship to the BIDDER
(Print Name of Individual Signing)
is _____
(Position or Title)
I certify, through my signature at the end of this Sworn Statement, that I am an authorized representative of the BIDDER.
4. The Trench Safety Standards that will be in effect during the construction of this Project are contained within the Trench Safety Act, Section 553.60 et.seq. Florida Statutes and refer to the applicable Florida Statute(s) and/or OSHA Regulation(s) and include the "effective date" in the citation(s). Reference to and compliance with the applicable Florida Statute(s) and OSHA Regulation(s) is the complete and sole responsibility of the BIDDER. Such reference will not be checked by OWNER or ENGINEER and they shall have no responsibility to review or check the BIDDER's compliance with the Trench Safety Standards.
5. The BIDDER assures the OWNER that it will comply with the applicable Trench Safety Standards.
6. The BIDDER has allocated and included in its bid the total amount of _____, based on the linear feet of trench to be excavated over five (5) feet deep, for compliance with the applicable Trench Safety Standards, and intends to comply with said standards by instituting the following specific method(s) of compliance on this Project:

_____.

The determination of the appropriate method(s) of compliance is the complete and sole responsibility of the BIDDER. Such methods will not be checked by the OWNER or ENGINEER for accuracy, completeness, or any other purpose. The OWNER and ENGINEER shall have no responsibility to review or check the BIDDER's compliance with the Trench Safety Standards.

7. The BIDDER has allocated and included in its bid the total amount of \$_____ based on the square feet of shoring to be used for compliance with shoring safety requirements and intends to comply with said shoring requirements by instituting the following specific method(s) of compliance on this Project: _____.

The determination of the appropriate method(s) of compliance is the complete and sole responsibility of the BIDDER. Such methods will not be checked by the OWNER or ENGINEER for accuracy, completeness or any other purpose. The OWNER and ENGINEER shall have no responsibility to review or check the BIDDER's compliance with the Trench Safety Standards.

8. The BIDDER, in submitting this bid, represents that it has obtained and considered all available geotechnical information, has utilized said geotechnical information and that, based on such information and the BIDDER's own information, the BIDDER has sufficient knowledge of the Project's surface and subsurface site conditions and characteristics to assure BIDDER's compliance with the applicable Trench Safety Standards in designing the trench safety system(s) for the Project.

BIDDER: _____

By: _____

Position or Title: _____

Date: _____

STATE OF _____
COUNTY OF _____

Personally appeared before me, the undersigned authority, _____
who after first being sworn by me, affixed his/her signature in the space provided above on this
_____ day of _____, 20____.

Notary Public, State at Large
My Commission Expires:

*** * END OF SECTION * ***

SECTION 00456

GENERAL INFORMATION REQUIRED OF BIDDERS

The undersigned Bidder guarantees the truth and accuracy of all statements and answers herein contained. Failure to comply with these requirements may be considered sufficient justification to disqualify a Bidder. Additional sheets shall be attached as required.

Documentation Submitted with Indian River County Bid No: 2019-020 for the West Wabasso Community Gravity Sewer System, Phase 2

1. How many years has your organization been in business as a General Contractor?

2. Describe and give the date and owner of the last project that you have completed similar in type, size, and nature as the one proposed?

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

4. Provide the name, title, and contact information, including email address and phone numbers, of three individuals or corporations for which you have performed similar work that Indian River County may contact for a reference:

5. Name of person who inspected site or proposed work for your firm:

Name: _____ Date of Inspections: _____

Describe any anticipated problems with the site and your proposed solutions:

6. Will you Subcontract any part of this Work? If so, describe which portions:

7. Please list the names and addresses of the subcontractors to be used for the portions of the work listed below. Additional information will be required in accordance with the Instruction to Bidders (Section 00100).

PAVING: _____

SURVEYING: _____

TESTING LAB: _____

8. What equipment do you own that is available for the work?

9. What equipment will you purchase for the work?

10. What equipment will you rent for the work?

11. Florida General Contractor's License No: _____

12. The following is given as a summary of the Financial Statement of the undersigned: (List Assets and Liabilities and use insert sheet if necessary.)

13. List the names and titles of **ALL** officers of Contractor's firm:

_____	_____
_____	_____
_____	_____
_____	_____

14. State the true and exact, correct, and complete name under which you do business.
BIDDER is:

15. State your total bonding capacity:

16. State your bonding capacity per job.

17. Please provide name, address, telephone number, and contact person of your bonding company.

NOTE: To demonstrate qualifications to perform the work, each Bidder must be prepared to submit, within 5 days of Owner's request, written evidence, such as financial data, previous experience, present commitments, and other such data as may be necessary to prove to the satisfaction of the Owner that the Bidder is qualified by experience to do the work and is prepared to complete the work within the stated time period.

END OF SECTION

SECTION 00530 – EJCDC STANDARD FORM OF AGREEMENT
BETWEEN OWNER AND CONTRACTOR ON THE BASIS OF A STIPULATED PRICE
West Wabasso Community Gravity Sewer System Phase 2

THIS AGREEMENT (“Agreement” or “Contract”), dated the _____ day of _____ in the year 2018 by and between Indian River County, a political subdivision of the State of Florida (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 as an independent contractor and not as an employee shall furnish and complete all of the necessary labor, material, and equipment to perform the work as specified or indicated in the Contract Documents and per FDEP, FDOT, Indian County Department of Utility Services (IRCDUS) and County Engineering Department standards. The work is generally described as follows:

IRCDUS proposes to construct a new 8” Gravity Sewer Collection System within The Whitfield Subdivision of West Wabasso. The facilities shall provide sewage collection infrastructure to serve about one hundred and one (101) lots on CR 510, 64th Avenue, 86th Street, 86th Lane, 65th Drive, 65th Court and 64th Drive. The gravity sewer main will consist of about 5,000 feet of 8” PVC gravity sewer, 15 manholes, service laterals, and a new IRCDUS sanitary sewer lift station. The Contractor shall also demolish all septic tanks on the lots to be connected to the laterals per the DOH standards and requirements. The Contractor will direct purchase and furnish the ABS pumps and electrical package for the lift station which includes two pumps, lifting cables, guide rails, guide rail assemblies, float hangar bracket, anchor bolts, lifting bales, upper guide brackets, SS nipples and elbows, float switches, hatch covers for both the wet well and valve vault, duplex control panel and spare parts set. The Contractor will install the furnished pumps and all appurtenances required to make the lift station operational. The Contractor will also direct purchase the Dataflow telemetry system and the Contractor will install telemetry at the lift station and schedule Dataflow to program telemetry and all necessary start-up features to make remote monitoring and operation of lift station functional. Upon successful operation of lift station, Contractor shall schedule a start-up with ABS to certify lift station has been installed in accordance with manufacturer’s requirements to affect warranty. No existing culverts are proposed to be replaced. Any existing culverts damaged shall be restored to pre-construction condition.

The construction of the utility improvements described above shall also consist of, but not limited to: resetting of signs, mailboxes, and other existing facilities disturbed during construction; utilities exploration; coordination with any permitting agencies; trenching; clearing and tree removal; dewatering; installation of pipe, structures and all appurtenances; soil backfill compaction; testing; (including T.V. testing, exfiltration testing, backfill and subgrade testing); road, landscape and driveway restoration; regrading and grassing (sod); and traffic control. All right –of-way shall be restored to like or better condition including sidewalks and drainage.

No excavation shall be left open when work is not actively being performed. Construction fencing used in the work area shall not block sight distance near intersections or driveways. All construction equipment and materials shall be stored a minimum of 15 feet from the edge of pavement and shall be protected by Type II barricades with flashing yellow lights.

The Contractor shall submit a Traffic Control Plan to the County Traffic Engineering Division a minimum of 72 hours prior to construction and notify County Traffic Engineering a minimum of 24 hours before any lane closures. A temporary access plan shall be provided indicating how local traffic will be maintained if the existing road is removed and reconstructed. Stand mounted Advance Construction signing shall be installed in accordance with FDOT Index 602. One lane closures shall be in accordance with FDOT Index 603. When any work encroaches the area between the centerline and two (2) feet outside the edge of pavement, traffic shall be restricted to a single lane.

The construction will provide existing utility customers that currently only are provided with water service, the ability to connect to the IRC regional wastewater collection and treatment system; and the connection of existing customers to the system will provide opportunities for existing residences to abandon existing septic systems, which shall benefit the environment and water quality enjoyed by all Indian River County residents.

ARTICLE 2 ENGINEER

The West Wabasso Community Sewer System- Phase II has been designed by IRCDUS, 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 CONTRACTOR shall be substantially completed with the following timeframe

- (a) Within 15 calendar days from effective date of Notice to Proceed, Contractor shall complete the following tasks:
 - 1. Obtain all necessary permits.
 - 2. Receive approved shop drawings for all materials and equipment to be utilized on the job.
 - 3. Perform all photographic recording and documentation of conditions prior to construction.
 - 4. Locate all existing utilities in the area of work.
 - 5. Submit and secure approval of shop drawings.
 - 6. Mobilize all labor, equipment, and materials.
 - 7. Deliver and store all equipment and materials to the job site.
 - 8. Notify all utilities and other affected parties prior to initiating construction.
- (b) From 16 calendar days to 180 calendar days from the effective date of Notice to Proceed, the CONTRACTOR shall complete the following tasks:

1. Install all pipe and appurtenant items.
2. Perform all testing.
3. Restore all disturbed areas to their pre-construction condition.
4. Correct all deficiencies noted by Engineer.

Completion of all tasks outlined above (i.e., Subparagraphs a) and b) constitutes Substantial Completion.

(c) From 181 calendar days to 210 calendar days from the effective date of Notice to Proceed, the CONTRACTOR shall complete the following tasks:

1. Clean up project area.
2. Remove all equipment and material from project site.
3. Perform contract closeout procedures.

3.2 Completion of all tasks outlined above (i.e., Subparagraphs a, b, and c) constitute Final Completion.

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 Paragraphs 3.1 and 3.2 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 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 four-hundred and fifty dollars (\$450.00) for each day that expires after the time specified in Paragraph 3.1 for 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 four-hundred and fifty dollars (\$450.00) for each day that expires after the time specified in Paragraph 3.2 for completion and readiness for final payment.

3.3.1 The CONTRACTOR and OWNER agree that OWNER is authorized to deduct all or any portion of the above-stated liquidated damages due to the Owner from payments due to the Contractor; or, in the alternative, all or any portion of the above-stated liquidated damages may be collected from the Contractor or its Surety or Sureties. These provisions for liquidated damages shall not prevent the OWNER, in case of the CONTRACTOR's default, from terminating the Contractor's right to proceed as provided in this AGREEMENT.

3.3.2 In addition to the above-stated liquidated damages, the CONTRACTOR shall be responsible for reimbursing OWNER to third party consultants in administering the Project beyond the Substantial Completion date specified in this Agreement, or beyond an approved extension of time granted to CONTRACTOR, whichever date is later.

ARTICLE 4 CONTRACT PRICE

- 4.1 OWNER shall pay CONTRACTOR for completion of the work in accordance with the Contract Documents in current funds in the amount of \$ _____

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 and the Contract Documents.

- 5.1 Progress Payments. The OWNER shall make progress payments to the CONTRACTOR on the basis of the approved partial payment request as recommended by ENGINEER in accordance with the provisions of the Local Government Prompt Payment Act, Florida Statutes section 218.70 ET. seq. The OWNER shall retain ten percent (10%) of the payment amounts due to the CONTRACTOR until fifty percent (50%) completion of the work. After fifty percent (50%) completion of the work is attained as certified to OWNER by ENGINEER in writing, OWNER shall retain five percent (5%) of the payment amount due to CONTRACTOR until final completion and acceptance of all work to be performed by CONTRACTOR under the Contract Documents. Pursuant to Florida Statutes section 218.735(8) (b), fifty percent (50%) completion means the point at which the County as OWNER has expended fifty percent (50%) of the total cost of the construction services work purchased under the Contract Documents, together with all costs associated with existing change orders and other additions or modifications to the construction services work provided under the Contract Documents.
- 5.2 Pay Requests. Each request for a progress payment shall be submitted on the application for payment form supplied by OWNER and the application for payment shall contain the CONTRACTOR's certification. All progress payments will be on the basis of progress of the work measured by the schedule of values established, or in the case of unit price work based on the number of units completed. After fifty percent (50%) completion, and pursuant to Florida Statutes section 218.735(8)(d), the CONTRACTOR may submit a pay request to the County as OWNER for up to one half (1/2) of the retainage held by the County as OWNER, and the County as OWNER shall promptly make payment to the CONTRACTOR unless such amounts are the subject of a good faith dispute; the subject of a claim pursuant to Florida Statutes section 255.05(2005); or otherwise the subject of a claim or demand by the County as OWNER or the CONTRACTOR. The CONTRACTOR acknowledges that where such retainage is attributable to the labor, services, or materials supplied by one or more subcontractors or suppliers, the Contractor shall timely remit payment of such retainage to those subcontractors and suppliers. Pursuant to Florida Statutes section 218.735(8) (c) (2005), CONTRACTOR further acknowledges and agrees that: 1) the County as OWNER shall receive immediate written notice of all decisions made by CONTRACTOR to withhold retainage on any subcontractor at greater than five percent (5%) after fifty percent (50%) completion; and 2) CONTRACTOR will not seek release from the County as OWNER of the withheld retainage until the final pay request.
- 5.3 Paragraphs 5.1 and 5.2 do not apply to construction services work purchased by the County as OWNER which are paid for, in whole or in part, with federal funds and are subject to federal grantor laws and regulations or requirements that are contrary to any provision of the Local Government Prompt Payment Act. In such event, payment and retainage provisions

shall be governed by the applicable grant requirements and guidelines.

- 5.4 ACCEPTANCE AND FINAL PAYMENT: Upon receipt of written notice that the work is ready for final inspection and acceptance, the ENGINEER will promptly make such inspection and when the ENGINEER finds the work acceptable under the terms of the Contract and the Contract fully performed, the ENGINEER will promptly issue a final completion certificate stating that the work provided for in this Contract has been completed, and acceptance by the OWNER under the terms and the conditions thereof is recommended and the entire balance found to be due the CONTRACTOR, will be paid to the CONTRACTOR by the OWNER following County Commission approval of the final Contract payment.
- 5.5 Acceptance of Final Payment as Release. The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER from all claims and all liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with the work under this Contract and for every act and neglect of the OWNER and others relating to or arising out of the work. Any payment, however, final or otherwise, shall not release the CONTRACTOR or its sureties from any obligations under the Contract Documents or the Payment and Performance Bonds.

ARTICLE 6 INTEREST

Not Applicable.

ARTICLE 7 CONTRACTOR'S REPRESENTATIONS

In order to induce 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 Supplementary Conditions as provided in Paragraph 4.02 of the General Conditions, and accepts the determination set forth in Paragraph SC-4.02 of the Supplementary Conditions of the extent of the technical data contained in such reports and drawings upon which CONTRACTOR is entitled to rely.
- 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 (in addition to or to supplement those referred to in Paragraph 7.2 above) which pertain to the subsurface or 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 of 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 4.02 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 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 4.04 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.

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 (Section 00530).
- 8.2 Schedule of Subcontractors (Section 00431).
- 8.3 Disclosure of Relationships (Section 00452).
- 8.4 Sworn Statement under the Florida Trench Safety Act (Section 00454).
- 8.5 General Information Required of Bidders (Section 00456).
- 8.6 Public Construction Bond (Section 00600).
- 8.7 Notice of Award and Notice to Proceed (examples in Section 00800).
- 8.8 General Conditions (Section 00700).
- 8.9 Supplementary Conditions (Section 00800).
- 8.10 Documents/Specifications bearing the title **“West Wabasso Community Gravity Sewer System- Phase II / Bid No 2019-020”**
- 8.11 Addenda numbers _____ to _____, inclusive.
- 8.12 CONTRACTOR'S Bid (Section 00300).
- 8.13 Specifications bearing the title **“IRCDUS Water and Wastewater Utility Standards, March 2018”, or the latest version thereof.**
- 8.14 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 3.04 of the General Conditions.

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 3.04 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 It is agreed that the CONTRACTOR shall not assign, transfer, convey, or otherwise dispose of the contract or its right, title, or interest in or to the same or any part thereof, or allow legal action to be brought in its name for the benefit of others, without previous consent of the OWNER and concurred to by the sureties. Any attempted assignment shall be void and may, at the option of the OWNER be deemed an event of default hereunder. Nothing herein shall be construed as creating any personal liability on the part of any officer or agent of the OWNER who may be a party hereto.
- 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 The CONTRACTOR shall be properly licensed to practice its trade or trades which are involved in the completion of this Agreement and the work thereunder.
- 9.5 This Agreement shall be governed by the laws of the State of Florida. Venue for any lawsuit brought by either party against the other party or otherwise arising out of this agreement shall be in Indian River County, Florida, or, in the event of federal jurisdiction, in the United States District Court for the Southern District of Florida.
- 9.6 The CONTRACTOR shall indemnify and hold harmless the County, and its officers and employees, from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the CONTRACTOR and persons employed or utilized by the CONTRACTOR in the performance of the construction contract.
- 9.7 Pledge of Credit. The CONTRACTOR shall not pledge the OWNER'S credit or make it a guarantor of payment or surety for any Agreement, debt, obligation, judgment, lien or any form of indebtedness. The CONTRACTOR further warrants and represents that it has no obligation of indebtedness that would impair its ability to fulfill the terms of this Agreement.
- 9.8. Counterparts. This Agreement may be executed in one or more counterparts, but all such counterparts, when duly executed, shall constitute one and the same Agreement.
- 9.9. Public Records. Indian River County is a public agency subject to Chapter 119, Florida Statutes. The Contractor shall comply with Florida's Public Records Law. Specifically, the Contractor shall:
- A. Keep and maintain public records required by the County to perform the service.
 - B. Upon request from the County's Custodian of Public Records, provide the County with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119 or as otherwise provided by law.
 - C. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for

the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the County.

- D. Upon completion of the contract, transfer, at no cost, to the County all public records in possession of the Contractor or keep and maintain public records required by the County to perform the service. If the Contractor transfers all public records to the County upon completion of the contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon completion of the contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the County, upon request from the Custodian of Public Records, in a format that is compatible with the information technology systems of the County.

- E. **IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:**

(772) 226-1424

publicrecords@ircgov.com

Indian River County Office of the County Attorney

1801 27th Street

Vero Beach, FL 32960

- F. Failure of the Contractor to comply with these requirements shall be a material breach of this Agreement.

This Agreement will be effective on _____, 2018 (the date the Contract is approved by the Indian River County Board of County Commissioners, which is the Effective Date of the Agreement).

OWNER:

INDIAN RIVER COUNTY _____

By: _____
_____, Chairman

By: _____
Jason E. Brown, County Administrator

APPROVED AS TO FORM AND LEGAL
SUFFICIENCY:

By: _____
Dylan Reingold, County Attorney

Jeffrey R. Smith, Clerk of Court and Comptroller

Attest: _____
Clerk of Court and Comptroller
(SEAL)

Designated Representative:

Name:

Title:

Contact Info:

CONTRACTOR:

By: _____
(Contractor)

(CORPORATE SEAL)

Attest _____

Address for giving notices:

License No. _____
(Where applicable)

Agent for service of process: _____

Designated Representative:

Name: _____

Title: _____

Address: _____

Phone: _____

Facsimile: _____

(If CONTRACTOR is a corporation or a partnership, attach evidence of authority to sign.)

SECTION 00600
PUBLIC CONSTRUCTION BOND

INSTRUCTION FOR PUBLIC CONSTRUCTION BOND

The front or cover page to the required public construction payment and performance bond shall contain the information required by Fla. Stat. 255.05(1)(a), and be substantially in the format shown on the first page following this instruction.

The Public Construction Bond shall be in the form suggested by Fla. Stat. 255.05(3) as shown on the second page following this instruction.

A Power of Attorney from a surety insurer authorized to do business in Florida, authorizing the signature of the Attorney in Fact who executes the Public Construction Bond shall accompany that Bond.

**Public Work
F.S. Chapter 255.05 (1)(a)
Cover Page**

THIS BOND IS GIVEN TO COMPLY WITH SECTION 255.05 OR SECTION 713.23 FLORIDA STATUTES, AND ANY ACTION INSTITUTED BY A CLAIMANT UNDER THIS BOND FOR PAYMENT MUST BE IN ACCORDANCE WITH THE NOTICE AND TIME LIMITATION PROVISIONS IN SECTION 255.05(2) OR SECTION 713.23 FLORIDA STATUTES.

BOND NO: _____

CONTRACTOR NAME: _____

CONTRACTOR ADDRESS: _____

CONTRACTOR PHONE NO: _____

SURETY COMPANY NAME: _____

**SURETY PRINCIPAL
BUSINESS ADDRESS:** _____

SURETY PHONE NO: _____

OWNER NAME: _____

OWNER ADDRESS: _____

OWNER PHONE NO: _____

OBLIGEE NAME: _____
(If contracting entity is different from
the owner, the contracting public entity)

OBLIGEE ADDRESS: _____

OBLIGEE PHONE NO: _____

BOND AMOUNT: _____

CONTRACT NO: _____
(If applicable)

DESCRIPTION OF WORK: _____

PROJECT LOCATION: _____

LEGAL DESCRIPTION: _____
(If applicable)

FRONT PAGE

All other bond page(s) are deemed subsequent to this page regardless of any page number(s) that may be printed thereon.

PUBLIC CONSTRUCTION BOND

Bond No. _____
(enter bond number)

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

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the contract dated _____, _____, between Principal and Owner for construction of _____, the contract being made a part of this bond by reference, at the times and in the manner prescribed in the contract; and
2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the contract; and
3. Pays Owner all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that Owner sustains because of a default by Principal under the contract; and
4. Performs the guarantee of all work and materials furnished under the contract for the time specified in the contract, then this bond is void; otherwise it remains in full force.

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

Any changes in or under the contract documents and compliance or noncompliance with any formalities connected with the contract or the changes does not affect Surety's obligation under this bond.

DATED ON _____,

(Name of Principal)

By _____
(As Attorney in Fact)

(Name of Surety)

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the Controlling Law.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By



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a practice division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

AMERICAN COUNCIL OF ENGINEERING COMPANIES

AMERICAN SOCIETY OF CIVIL ENGINEERS

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The Associated General Contractors of America



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These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor Nos. C-520 or C-525 (2002 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC Construction Documents, General and Instructions (No. C-001) (2002 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. C-800) (2002 Edition).

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GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*--Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*--The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

3. *Application for Payment*--The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Asbestos*--Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

5. *Bid*--The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

6. *Bidder*--The individual or entity who submits a Bid directly to Owner.

7. *Bidding Documents*--The Bidding Requirements and the proposed Contract Documents (including all Addenda).

8. *Bidding Requirements*--The Advertisement or Invitation to Bid, Instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

9. *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 Times, issued on or after the Effective Date of the Agreement.

10. *Claim*--A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

11. *Contract*--The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*-- Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor's submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

13. *Contract Price*--The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

14. *Contract Times*--The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any, (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

15. *Contractor*--The individual or entity with whom Owner has entered into the Agreement.

16. *Cost of the Work*--See Paragraph 11.01.A for definition.

17. *Drawings*--That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

18. *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.

19. *Engineer*--The individual or entity named as such in the Agreement.

20. *Field Order*--A written order issued by Engineer which requires minor changes in the Work but which does

not involve a change in the Contract Price or the Contract Times.

21. *General Requirements*--Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.

22. *Hazardous Environmental Condition*--The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto in connection with the Work.

23. *Hazardous Waste*--The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

24. *Laws and Regulations; Laws or Regulations*--Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

25. *Liens*--Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

26. *Milestone*--A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*--The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.

28. *Notice to Proceed*--A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

29. *Owner*--The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

30. *PCBs*--Polychlorinated biphenyls.

31. *Petroleum*--Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

32. *Progress Schedule*--A schedule, prepared and maintained by Contractor, describing the sequence and

duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

33. *Project*--The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

34. *Project Manual*--The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

35. *Radioactive Material*--Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

36. *Related Entity* -- An officer, director, partner, employee, agent, consultant, or subcontractor.

37. *Resident Project Representative*--The authorized representative of Engineer who may be assigned to the Site or any part thereof.

38. *Samples*--Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.

39. *Schedule of Submittals*--A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

40. *Schedule of Values*--A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

41. *Shop Drawings*--All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.

42. *Site*--Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.

43. *Specifications*--That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

44. *Subcontractor*--An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

45. *Substantial Completion*--The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

46. *Successful Bidder*--The Bidder submitting a responsive Bid to whom Owner makes an award.

47. *Supplementary Conditions*--That part of the Contract Documents which amends or supplements these General Conditions.

48. *Supplier*--A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or any Subcontractor.

49. *Underground Facilities*--All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

50. *Unit Price Work*--Work to be paid for on the basis of unit prices.

51. *Work*--The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

52. *Work Change Directive*--A written statement 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 subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive 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 Times.

1.02 Terminology

A. The following words or terms are not defined but, when used in the Bidding Requirements or Contract Documents, have the following meaning.

B. Intent of Certain Terms or Adjectives

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered", "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. Day

1. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. Defective

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

- a. does not conform to the Contract Documents, or
- b. does not meet the requirements of any applicable inspection, reference standard, test, or

approval referred to in the Contract Documents, or

c. 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 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide*

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

4. When "furnish," "install," "perform," or "provide" is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, "provide" is implied.

F. Unless stated otherwise in the Contract Documents, words or phrases which have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which

Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times 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 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule; indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other

submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one is as binding as if required by all.

B. 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 labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be provided whether or not specifically called for at no additional cost to Owner.

C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the 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 in the Contract Documents.

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, or Engineer, or any of, their Related Entities, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. Reporting Discrepancies

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Work or of any standard, specification, manual or code, or of any instruction of any Supplier, Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof.

B. Resolving Discrepancies

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

- a. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
- b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;
2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3); or
3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, shall not:

1. 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 or Engineer's consultants, including electronic media editions; or

2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaption by Engineer.

B. The prohibition of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

A. Copies of data furnished by Owner or Engineer to Contractor or Contractor to Owner or Engineer that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.

C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor

may make a Claim therefor as provided in Paragraph 10.05.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents; and
2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Contract Documents.

B. *Limited Reliance by Contractor on Technical Data*

Authorized: Contractor may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition at or contiguous to the Site that is uncovered or revealed either:

1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer's Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. *Possible Price and Times Adjustments*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
- b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

c. Contractor failed to give the written notice as required by Paragraph 4.03.A.

3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, Owner and Engineer, and any of their Related Entities shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *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, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data; and

2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

a. reviewing and checking all such information and data,

b. locating all Underground Facilities shown or indicated in the Contract Documents,

c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction, and

d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

A. 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, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument 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 or property monuments by professionally qualified personnel.

4.06 Hazardous Environmental Condition at Site

A. Reports and Drawings: Reference is made to the Supplementary Conditions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized by the Engineer in the preparation of the Contract Documents.

B. Limited Reliance by Contractor on Technical Data

Authorized: Contractor may rely upon the general accuracy of the “technical data” contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such “technical data” is identified in the Supplementary Conditions. Except for such reliance on such “technical data,” Contractor may not rely upon or make any claim against Owner or Engineer, or any of their Related Entities with respect to:

1. the completeness of such reports and drawings for Contractor’s purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any.

E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered to Contractor written notice:

(i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or
(ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner’s own forces or others in accordance with Article 7.

G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual’s or entity’s own negligence.

I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 - BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

A. 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 of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall 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 Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's authority to act.

C. If the surety on any bond furnished by Contractor is declared 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 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

A. Contractor shall deliver to Owner, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence

of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.

B. Owner shall deliver to Contractor, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

5.04 *Contractor's Liability Insurance*

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

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
4. claims for damages insured by reasonably available 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. 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; and
6. 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.

B. The policies of insurance required by this Paragraph 5.04 shall:

1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insured (subject to any customary exclu-

sion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

3. include completed operations insurance;

4. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

6. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment.

a. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured;

2. be written on a Builder's Risk "all-risk" or open peril or special causes of loss policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, false work, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage, (other than caused by flood) and such other perils or causes of loss as may be specifically required by the Supplementary Conditions;

3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;

5. allow for partial utilization of the Work by Owner;

6. include testing and startup; and

7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. 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, and Engineer, and

any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.

D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, 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.

E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. 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.

5.07 *Waiver of Rights*

A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or additional insureds thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and,

in addition, waive all such rights against Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured or additional insured (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.

B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the insureds, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. 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.

B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make

settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any 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 canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, 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. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign 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 or received from the superintendent shall be binding on Contractor.

6.02 *Labor; Working Hours*

A. 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.

B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, 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 performance, testing, start-up, and completion of the Work.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

1. "*Or-Equal*" Items: If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that:

1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole,

3) it has a proven record of performance and availability of responsive service; and

b. Contractor certifies that, if approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times, and

2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items

a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

b. Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.

d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

1) shall certify that the proposed substitute item will:

a) perform adequately the functions and achieve the results called for by the general design,

b) be similar in substance to that specified, and

c) be suited to the same use as that specified;

2) will state:

a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time;

- b) whether or not use of the proposed substitute item 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 other work on the Project) to adapt the design to the proposed substitute item; and
 - c) whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
- 3) will identify:
- a) all variations of the proposed substitute item from that specified, and
 - b) available engineering, sales, maintenance, repair, and replacement services;
- 4) and shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change,

B. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

C. Engineer's Evaluation: Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

D. Special Guarantee: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

E. Engineer's Cost Reimbursement: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute

item so proposed or submitted by Contractor, Contractor shall reimburse Owner for the charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

F. Contractor's Expense: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 Concerning Subcontractors, Suppliers, and Others

A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner'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 individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

- 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity, nor

2. shall anything in the Contract Documents 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 individual or entity except as may otherwise be required by Laws and Regulations.

D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

F. 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.

G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, and Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

A. 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.

B. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to 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.

6.08 *Permits*

A. 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. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the 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.

B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on

entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

A. 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.

6.11 *Use of Site and Other Areas*

A. Limitation on Use of Site and Other Areas

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas 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 adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the

Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* 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.

6.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

A. Contractor shall be solely 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:

1. all persons on the Site or who may be affected by the Work;
2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
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.

B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property 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 other 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.

C. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or

indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform 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 , or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

D. Contractor's duties and responsibilities for safety and for 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 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor 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 or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the acceptable Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. Shop Drawings

a. Submit number of copies specified in the General Requirements.

b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples*: Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals.

a. Submit number of Samples specified in the Specifications.

b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. Submittal Procedures

1. Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:

a. all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

b. the suitability of all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

c. all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto; and

d. shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the

requirements of the Work and the Contract Documents.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations, that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawing's or Sample Submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer's Review

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for 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.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures

1. 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.

6.18 *Continuing the Work*

A. 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 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its Related Entities shall be entitled to rely on representation of Contractor's warranty and guarantee.

B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
2. normal wear and tear under normal usage.

C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;
2. recommendation by Engineer or payment by Owner of any progress or final payment;
3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
4. use or occupancy of the Work or any part thereof by Owner;
5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;
6. any inspection, test, or approval by others; or
7. any correction of defective Work by Owner.

6.20 Indemnification

A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage 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 but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

B. In any and all claims against Owner or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A 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, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners, employees, agents, consultants and subcontractors arising out of:

1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 Delegation of Professional Design Services

A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures.

Contractor shall not be required to provide professional services in violation of applicable law.

B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 - OTHER WORK AT THE SITE

7.01 Related Work at Site

A. Owner may perform other work related to the Project at the Site with Owner's employees, or via other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

1. written notice thereof will be given to Contractor prior to starting any such other work; and
2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and shall properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering their work and will only cut or alter their work with the written consent of Engineer and 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.

C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
2. the specific matters to be covered by such authority and responsibility will be itemized; and
3. the extent of such authority and responsibilities will be provided.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.

B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and

disruption costs incurred by Contractor as a result of the other contractor's actions or inactions.

C. Contractor shall be liable to Owner and any other contractor for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's action or inactions.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. Owner's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by Engineer in preparing the Contract Documents.

8.06 *Insurance*

A. Owner's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility in respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

A. If and to the extent Owner has agreed to furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents, Owner's responsibility in respect thereof will be as set forth in the Supplementary Conditions.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

A. 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 will not be changed without written consent of Owner and Engineer.

9.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site 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 generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

A. 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 Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by 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 Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

A. Engineer will have authority to reject Work which Engineer believes to be defective, or that 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. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the 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 decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question

B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believe that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.

D. When functioning as interpreter and judge under this Paragraph 9.08, 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.

9.09 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to, the Resident Project Representative, if any, and assistants, if any.

10.01 *Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. 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).

B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.B.

10.03 *Execution of Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; 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 6.18.A.

10.04 *Notification to Surety*

A. 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 Times) 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. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

1. deny the Claim in whole or in part,
2. approve the Claim, or
3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 - COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. 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 11.01.B.

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. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time at the Site. 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' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

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 returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any 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 and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

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.

5. Supplemental costs including the following:

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

- b. 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.

- c. 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, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the 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.

- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, imposed by Laws and Regulations.

- e. 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.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages 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.

g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, expresses, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. Costs Excluded: The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety 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 branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

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.

4. 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.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A and 11.01.B.

C. Contractor's Fee: When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

D. Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 Allowances

A. 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 performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. Cash Allowances

1. Contractor agrees that:

a. the cash 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

b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. Contingency Allowance

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. 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.

11.03 Unit Price Work

A. 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 unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. 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 subject to the provisions of Paragraph 9.07.

C. 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.

D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. 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
2. there is no corresponding adjustment with respect any other item of Work; and
3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 Change of Contract Price

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier

Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

f. 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 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made thereafter as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

D. Owner, Engineer and the Related Entities of each of them shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of Engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

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

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspecting, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's Site safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections,

tests, or approvals required by the Contract Documents except:

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and
3. as otherwise specifically provided in the Contract Documents.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation.

F. Uncovering Work as provided in Paragraph 13.03.E 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.

13.04 *Uncovering Work*

A. 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.

B. 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.

C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.

D. If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to 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, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

A. Promptly after receipt of notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed 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, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
2. correct such defective Work; or
3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

C. 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.

D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, 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.

E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution 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 the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. 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, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, 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 or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or 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, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, 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. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

A. The Schedule of Values established as provided in Paragraph 2.07.A 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.

14.02 *Progress Payments*

A. Applications for Payments

1. At least 20 days before the date established in the Agreement for each progress payment (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 and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications*

1. Engineer will, within 10 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.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations on the Site of the executed Work as an experienced and qualified design professional and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally 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 9.07, and to any other qualifications stated in the recommendation); and

c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

b. that there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment,

including final payment, will impose responsibility on Engineer:

- a. to supervise, direct, or control the Work, or
- b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
- c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
- d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
- e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
- b. the Contract Price has been reduced by Change Orders;
- c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
- d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. Reduction in Payment

1. Owner may refuse to make payment of the full amount recommended by Engineer because:

- a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
- b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
- c. there are other items entitling Owner to a set-off against the amount recommended; or
- d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.

3. If it is subsequently determined that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1.

14.03 Contractor's Warranty of Title

A. 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.

14.04 Substantial Completion

A. 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.

B. Promptly after Contractor's notification, , 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.

C. If Engineer considers the Work substantially complete, Engineer will 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 14 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 14 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.

D. 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, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing 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.

E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions.

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor will certify to Owner and Engineer that such part of the Work is substantially complete and request Engineer to issue

a certificate of Substantial Completion for that part of the Work.

2. 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.

3. 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 Paragraph 14.04 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.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly 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 complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. Application for Payment

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:

- a. all documentation called for in the Contract Documents, including but not limited to the

evidence of insurance required by Paragraph 5.04.B.7;

- b. consent of the surety, if any, to final payment;
- c. a list of all Claims against Owner that Contractor believes are unsettled; and
- d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) 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. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. Engineer's Review of Application and Acceptance

1. 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 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 for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment 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 for Payment.

C. Payment Becomes Due

1. 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.

14.08 *Final Completion Delayed*

A. 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 (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, 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 5.01, 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.

14.09 *Waiver of Claims*

A. The making and acceptance of final payment will constitute:

- 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 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
- 2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive 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 granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure 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 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
3. Contractor's disregard of the authority of Engineer; or
4. Contractor's violation in any substantial way of any provisions of the Contract Documents.

B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

1. 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),
2. 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
3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

E. 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.

F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B, and 15.02.C.

15.03 *Owner May Terminate For Convenience*

A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment

within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or
2. agrees with the other party to submit the Claim to another dispute resolution process, or

3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 - MISCELLANEOUS

17.01 *Giving Notice*

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. 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
2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

A. 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.

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto 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. 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.

17.04 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

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

SECTION 00800

**SUPPLEMENTARY CONDITIONS
BID NO. 2019-020**

West Wabasso Community Gravity Sewer System Phase 2

**INDIAN RIVER COUNTY DEPARTMENT OF UTILITY SERVICES
BOARD OF COUNTY COMMISSIONERS
1801 27th Street, Vero Beach, Florida 32960**



**SUPPLEMENTARY CONDITIONS
TO THE
GENERAL CONDITIONS**

PART I - AMENDMENTS TO GENERAL CONDITIONS

PART II – FORMS TO BE USED DURING PROJECT CONSTRUCTION

NOTICE OF AWARD – (Sample)
NOTICE TO PROCEED (Sample)
FIELD ORDER
WORK CHANGE DIRECTIVE
CHANGE ORDER
APPLICATION FOR PAYMENT
CERTIFICATE OF SUBSTANTIAL COMPLETION
FINAL RELEASE OF LIEN
DUTIES RESPONSIBILITIES AND LIMITATIONS OF AUTHORITY OF
RESIDENT PROJECT REPRESENTATIVE

SUPPLEMENTARY CONDITIONS

PART I - AMENDMENTS TO GENERAL CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (EJCDC Document No. C-700, 2002 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.

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

SC 1.01 A.53 Defined Terms

A Whenever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

- 53. Modification--A change, revision or deviation in the Work as originally planned or designed as a result of unknown or unexpected field conditions, laws or rules revisions, or discovery of a more efficient or logical method or completion of the Work after notice to proceed.

ARTICLE 2 - PRELIMINARY MATTERS

SC-2.01. Delete paragraphs 2.01A and B of the General Conditions in its entirety.

SC 2.03A. Delete paragraph 2.03A of the General Conditions in its entirety, and replace with the following:

The Contract Times will commence to run on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 60 days after the Effective Date of the Agreement.

SC 2.05A1. Add the following immediately at the end of subparagraph 2.05A1: using the Critical Path Method (CPM).

SC 2.05A.4 Add new subparagraph 4 after the existing text of 2.05 of the General Conditions:

4. If this Project is an addition to an existing working plant, then the Contractor shall coordinate with the Owner on tie-ins. The Owner shall have final say on plant shut down times and duration to make tie-ins.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

SC-3.01D. Add new paragraph D immediately after Paragraph 3.01C of the General Conditions:

D. Each and every provision of law and clause required by law to be inserted in these Contract Documents shall be deemed to be inserted herein, and they shall be read and enforced as though it were included herein.

SC3.03A.3. Delete existing subparagraph 3.03A.3 of the General Conditions in its entirety and replace with the following:

Contractor shall not be liable to Owner or Engineer for failure to report any such conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or, in the exercise of ordinary care, reasonably should have recognized such conflict, error, ambiguity, or discrepancy and failed to report it in writing to the Owner and the Engineer.

SC 3.03B. Delete existing paragraph 3.03B of the General Conditions in its entirety and replace with the following

B. Resolving Discrepancies. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall be read together as a whole not in isolation so as to give meaning to each provision; however, to the extent there is a conflict or inconsistency between or among provisions, the strictest or most stringent standard shall apply.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

SC 4.01A. Delete existing paragraph 4.01A of the General Conditions in its entirety and replace it with the following:

A. Owner shall furnish the Site.

SC 4.01B. Delete existing paragraph 4.01B of the General Conditions in its entirety.

SC 4.01D. Add the following after paragraph 4.01C of the General Conditions:

D. Contractor shall provide to the Owner written evidence of authorization to use any private land for staging or storage of material and equipment on the private land. Such written evidence of authorization must be provided to the Owner prior to use of the private land.

SC 4.02A. Delete paragraph 4.02 A. of the General Conditions in its entirety and replace it with the following:

Reports and Drawings: The Contract Documents may identify reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Contract Documents. Engineer has relied upon the data obtained from subsurface investigations made at the Site in the form of test borings. Such data is in the form of boring logs, which are available upon request. The locations of the test borings are indicated on the Drawings. Such logs and samples are not part of the Contract Documents. Contractor shall have full responsibility for physical conditions, and Underground Facilities owned by owner or others, shown or indicated in the Contract Documents.

SC-4.02A.2. Add the following new sentences immediately at the end of existing paragraph 4.02A.2. of the General Conditions which is to read as follows:

In the preparation of Drawings and Specifications, the Engineer has relied upon the reports listed in Appendix A and tests of subsurface physical conditions at the Site. Copies of these reports are available upon request. The foregoing information and data shown or indicated in the Contract Documents is based on information and data furnished to owner or the Engineer by others. The Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data, and the contractor shall have full responsibility for requesting, reviewing, and checking all such information and data.

SC-4.02B. Delete paragraph 4.02B in its entirety and replace with the following:

The information and data shown or indicated in the Contract Documents with respect to Underground Facilities owned by others or contiguous to the Site is based on information and data furnished to Owner or the Engineer by the owners of such Underground Facilities or by others. The Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data, and the Contractor shall have full responsibility for reviewing and checking all such information and data.

SC 4.02C, D, and E. Add new paragraphs C, D, and E immediately after Paragraph 4.02B of the General Conditions to read as follows:

C. Field Measurements: Before undertaking each part of the construction, 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 the Owner any conflict, error or discrepancy which Contractor or any of his Subcontractors or Suppliers may discover and shall obtain a written interpretation or clarification from Owner before proceeding with any aspect of the work affected thereby; provided, however, Contractor shall not be liable to the Owner for failure to report any conflict, error or discrepancy unless Contractor or any of his Subcontractors or Suppliers had actual knowledge thereof or should reasonably have known thereof.

D. Scheduling: Unless it prejudices Work already excavated and uncovered, Contractor shall schedule layout, excavating and uncovering of Work or Underground Facilities a sufficient time in advance to allow the Engineer's review, and the possible amending or supplementing of the Contract Documents via a Work Change Directive or Change Order.

E. UTILITY COORDINATION.

1. Contractor's Responsibility: The Contractor shall be responsible for making all necessary arrangements with governmental departments, public utilities, public carriers, service companies and corporations owning or controlling roadways, railways, water, sewer, gas, electrical, cable television, telephone, and telegraph facilities such as pavements, tracks, piping, wires, cables, conduits, poles, guys, etc., including incidental structures connected therewith, that are encountered in the Work in order that such items may be properly shored, supported and protected, or the Contractor shall be solely responsible for coordinating their relocation. The Contractor shall give proper notices, shall comply with requirements of such parties in the performance of the Work, shall permit entrance of such parties on the Work controlled by the Contractor, and shall pay all charges and fees made by such parties for its Work. The Contractor's attention is called to the fact that there may be delays on the Project due to Work to be done by governmental departments, public utilities,

and others in repairing poles, conduits, etc. The Contractor shall cooperate with the above parties, in every way possible, so that the construction can be completed in the least possible time.

2. Connection: At all points where the Work constructed by the Contractor connects to existing utilities and services, the actual Work of making the necessary connection to the existing service or utility shall be arranged for by Contractor at no additional expense to Owner (unless specifically indicated otherwise). Services and utilities included within (but not limited to) this responsibility are roads, ditches, electrical, sewer, mechanical, utilities, water, fencing, etc. Connections shall be made at a time that will result in the least possible interference with existing services.

SC 4.03A. Delete 4.03 A of the General Conditions in its entirety and replace with the following:

A. Notice. The Contractor shall promptly, and before conditions of an unusual nature or differing materially from those indicated in the Contract are disturbed, and in no event later than 10 days after first observance of the conditions, notify the Owner and Engineer in writing of: (1) subsurface or latent physical conditions at the Site differing materially from those indicated in this Contract Documents, or (2) unknown physical conditions at the site of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in Work of the character provided for in the Contract Documents. The Owner will promptly investigate the conditions, and if it finds that such conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the Work under the Contract Documents, unless the Contract is terminated a Change Order shall be issued accordingly based on the Schedule of Values and executed by the Owner and the Contractor. Contractor's failure to provide notice upon discovery of the differing site condition shall waive any entitlement to such an adjustment in the Contract Price or Contract Time. Further, no Claim of the Contractor under this paragraph 4.03A shall be allowed unless the Contractor has given the notice as required in this paragraph 4.03A.

SC 4.03B. Delete paragraph 4.03B of the General Conditions in its entirety.

SC 4.03C.1. Delete subparagraphs 4.03C1b. of the General Conditions in its entirety.

SC 4.03C3. Delete paragraph 4.03C3. of the General Conditions in its entirety.

SC-4.05B. Add the following new paragraph immediately after paragraph 4.05B. of the General Conditions to read as follows:

The Contractor shall furnish all stakes, templates and other materials necessary for establishing and maintaining the lines and grades necessary for control and construction of the Work. Engineer may check the lines, elevations, reference marks, batter boards, etc., set by Contractor, and Contractor shall correct any errors disclosed by such check. Such a check shall not be considered as approval of Contractor's work and shall not relieve Contractor of the responsibility for accurate construction of the entire Work. Contractor shall furnish personnel to assist Engineer in checking lines and grades.

SC 4.06D. Delete the last sentence of paragraph 4.06D of the General Conditions in its entirety

SC 4.06G. Delete paragraph 4.06G of the General Conditions in its entirety.

SC 4.07. Add new paragraph 4.07 of the General Conditions to read as follows:

4.07. Archaeological or Historical Resources at Site. If Archaeological or Historical Resources are revealed, uncovered, or discovered at the Site, Contractor shall cease work immediately and

promptly, and before such conditions are disturbed, and in no event later than 5 days after first observance of the conditions, notify the Owner and Engineer in writing of such conditions. Owner shall obtain the services of an Archaeologist registered with the State of Florida Register of Professional Archaeologists. Based on Archaeologist's determination, if Owner finds that such conditions cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the Work under this Contract, unless Contract is terminated a Change Order shall be entered accordingly. Contractor's failure to provide notice upon discovery of the Archaeological or Historical Resources shall waive any entitlement to Contractor for such an adjustment in the Contract Price or Contract Time.

ARTICLE 5 - BONDS AND INSURANCE

SC 5.01A. Delete existing paragraph 5.01A of the General Conditions in its entirety and replace with the following:

5.01A. Contractor shall furnish Performance and Payment Bonds, each in an amount 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 is made, except as provided otherwise by Laws or Regulations or by the Contract Documents. Pursuant to Florida Statutes section 255.05(1)(c) (2007), any claimant (as such term is defined in Florida Statutes section 713.01) may apply to Indian River County as Owner for copies of the Agreement and the recorded payment and performance bonds and shall thereupon be furnished with certified copies of such documents.

SC 5.02A. Delete the words "Owner or" in line two.

SC 5.03B. Delete existing paragraph 5.03B of the General Conditions in its entirety.

SC 5.04B. Delete existing paragraph 5.04B of the General Conditions in its entirety and replace with the following:

B. The Contractor shall not commence Work under the Agreement until it has obtained all insurance required under the Contract Documents and the Indian River County Risk Manager has approved such insurance. The Contractor shall procure and maintain, as set forth herein, the minimum insurance coverage as set forth in the Contract Documents. The cost of such insurance shall be included in the Contract Price.

SC 5.04. Add Sections C, D, E, F and G

C. The insurance required by paragraph 5.04A of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation: To meet statutory limits in compliance with the Workers' Compensation Law of Florida. This policy must include employers' liability with a limit \$500,000 for each accident, \$500,000 disease policy limit and \$100,000 disease each employee. Such policy shall include a waiver of subrogation as against Owner on account of injury sustained by an employee(s) of the Contractor.
2. Commercial General Liability: A per occurrence form policy, including Premise Operations, Independent Contractors, Products and Completed Operations including X, C, U (Explosion, Collapse, Underground) Broad Form Property Damage, Broad Form Property Damage Endorsement, with a combined single limit of not less than \$1,000,000 general aggregate to

include products/completed operations, personal injury/advertising liability, fire damage/legal liability, and medical payments. Limits can be layered with an Excess Liability Policy (Umbrella).

3. Business Auto Liability: Business Auto Liability: Coverage shall include Owned vehicles and Hired/Non-Owned vehicles, for a combined single limit (bodily injury and property damage) of not less than \$1,000,000/combined single limit (Bodily Injury/Property Damage); personal injury protection -- statutory limits; \$300,000 uninsured/underinsured motorist; \$300,000/hired/non-owned auto liability. Limits can be layered with Excess Liability Policy (Umbrella).
4. Contractor's Builders' Risk "All Risk" Insurance: – All risk coverage with limits equal to one hundred percent (100%) of the completed value of the Work. There shall be a waiver of occupancy endorsement to enable the Owner to occupy the facility under construction during such activity. The policy must be endorsed to provide machinery/equipment endorsement during transit and installation, and Owner direct purchase materials, if any. The maximum deductible under this coverage is \$10,000 per claim, except Wind Storm coverage which will have a maximum deductible equal to 2 percent of the completed value of the work.
5. Flood Insurance - Contractor shall maintain coverage when the buildings or structures are located within an identified special flood hazard area. Such flood insurance shall protect the interests of the Contractor and the County and shall be afforded for the lesser of the total insurable value of such buildings or structures, or, the maximum amount of flood insurance coverage available under the National Flood Insurance Program.

D. Insurance Requirements – Ten (10) days prior to the commencement of any Work under the Contract Documents, a certificate of insurance shall be provided to the Indian River County Risk Manager for review and approval. The certificate shall provide that: (a) Indian River County as Owner and Engineer be named as an additional insured on the commercial general liability, auto liability, and Contractor's Builders' Risk "All Risk" insurance policies; (b) the Contractor's insurance coverage shall be primary; and (c) Indian River County as Owner and will be given thirty (30) days' notice prior to cancellation or modification of any required insurance and such notice shall be in writing by registered mail, return receipt requested and addressed to the Indian River County Risk Manager. The Contractor shall be responsible to ensure that all subcontractors comply with all insurance requirements of the Contract Documents.

E. All coverage shall be maintained without interruption from the date of commencement of the Work and remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07. In addition, with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, such insurance shall remain in effect for at least two years after final payment. Contractor shall furnish Owner and Engineer with evidence satisfactory to Owner of the continuation of such insurance at final payment and again one year thereafter, so that Owner is assured of such continuing coverage.

F. All insurers must be authorized to do business in Florida and have a Best Key Rating of A- VII.

G. The insurance companies selected shall send written verification to the Indian River County Risk Manager that they will provide 30 days prior written notice to the Indian River County Risk Manager of its intent to cancel or modify any required policies of insurance.

SC 5.05. Delete existing paragraph 5.05 of the General Conditions in its entirety.

SC-5.06. Delete existing paragraph 5.06 of the General Conditions in its entirety.

SC-5.07. Delete existing paragraph 5.07 of the General Conditions in its entirety and replace with the following.

5.07. All insurance policies provided by the Contractor shall contain provisions to the effect that the insurer waives all rights of subrogation against any of the insured, additional insured, (and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them) Owner and the Engineer.

SC-5.08. Delete existing paragraph 5.08 of the General Conditions in its entirety.

SC-5.09. Delete existing paragraph 5.09 of the General Conditions in its entirety.

SC-5.10. Delete existing paragraph 5.10 of the General Conditions in its entirety.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

SC 6.01B. Delete paragraph 6.01B of the General Conditions in its entirety, and replace with the following:

6.01B. Contractor shall employ a competent superintendent and necessary assistants who shall be assigned to, and in attendance at, the Project Site during performance of the Work. The superintendent shall be reasonably satisfactory to the Owner. So long as the superintendent remains employed by the Contractor or any related entity, the superintendent shall not be replaced without the Owner's prior written consent, except under extraordinary circumstances. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

SC-6.02C and D. Add the following new paragraphs immediately after paragraph 6.02B. of the General Conditions which are to read as follows:

C. Regular working hours are defined as 8 hours per day, Monday through Friday, excluding holidays, between the hours of 7:00 AM and 7:00 PM. Requests to work other than regular working hours shall be submitted to Engineer not less than 48 hours prior to any proposed weekend work or scheduled extended work weeks. Occasional unscheduled overtime on weekdays may be permitted provided two hours notice is given to Engineer.

D. Contractor shall reimburse the Owner for additional engineering and/or inspection costs incurred as a result of overtime work in excess of the regular working hours stipulated in SC-6.02C. At Owner's option, overtime costs may either be deducted from the Contractor's monthly payment request or deducted from the retainage prior to release of final payment. Overtime costs for the Owner's personnel shall be based on the individual's current overtime wage rate. Overtime costs for personnel employed by the Engineer or Owner's independent testing laboratory shall be calculated in accordance with the terms of their respective contracts with the Owner.

SC 6.04A.1 Add the following sentence immediately after the existing text in paragraph 6.04 A.1 of the General Conditions:

Additionally, any and all changes to the Project's critical path must be reflected in each Project schedule.

SC-6.04.A.3 Add the following paragraph immediately after paragraph GC-6.04.A.2 of the General Conditions:

6.04.A.3. Contractor shall give Owner full information in advance as to its plans for performing each part of the Work. If at any time during the progress of Work, Contractor's actual progress is inadequate to meet the requirements of the Contract Documents, Owner may, but is not obligated to, so notify Contractor. In such event, Contractor acknowledges and agrees that Contractor shall implement some or all of the following remedial actions at the sole cost and expense of Contractor: (a) Increase manpower in such quantities and crafts as necessary to eliminate the backlog of Work; (b) Increase the number of working hours per shift, shifts per working day, working days per week, the amount of construction equipment, or any combination of the foregoing to eliminate the backlog of Work; or (c) Reschedule the Work in conformance with the specifications. Neither such notice by Owner nor Owner's failure to issue such notice shall relieve Contractor of its obligation to achieve the quality of Work and rate of progress required by the Contract Documents. Failure of Contractor to implement some or all of the remedial actions may be grounds for determination by Owner that Contractor is not prosecuting its Work with such diligence as will assure completion within times specified. Upon such determination, Owner may terminate Contractor's right to proceed with the performance of the Contract Documents, or any separable part thereof, in accordance with the applicable provisions of this Contract Documents.

SC-6.06A. Delete Paragraph 6.06A of the General Conditions in its entirety and replace with the following:

A. Contractor shall not employ any Subcontractor, Supplier or other person or organization, (including those who are to furnish the principal items of materials or equipment), whether initially or as a substitute, against whom Owner may have reasonable objection. Acceptance of any Subcontractor, Supplier or other person or organization by Owner shall not constitute a waiver of any right of Owner to reject defective Work. Contractor shall not be required to employ any Subcontractor, Supplier or other person or organization against whom Contractor has reasonable objection.

SC-6.06B. Delete Paragraph 6.06B of the General Conditions in its entirety.

SC-6.08. Delete Paragraph 6.08 of the General Conditions in its entirety and replace with the following:

ALL PERMIT, IMPACT, OR INSPECTION FEES APPLICABLE AT THE TIME OF OPENING OF BIDS THAT ARE PAYABLE TO INDIAN RIVER COUNTY IN CONNECTION WITH THE WORK ON THIS COUNTY PROJECT WILL BE PAID BY INDIAN RIVER COUNTY. Contractor acknowledges that the foregoing items are governed by the provisions of Florida Statutes section 218.80, Public Bid Disclosure Act. Further, Contractor shall pay the applicable business tax and obtain a business tax receipt from the Indian River County Tax Collector. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all applicable construction permits. Owner shall reimburse Contractor for the cost of such permits on the basis of actual cost. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. As set forth in the Contract Documents, re-inspection fees are payable solely by Contractor. Owner has applied for and received: **Florida Department of Environmental Protection (FDEP)** Wastewater Construction Permit and **Indian River County** Right-of-Way Permit and such permits are included in the Contract Documents. Any permits issued after issuance of bid documents will be provided as an Addendum. Contractor acknowledges that the foregoing items are governed by the provisions of Florida Statutes section 218.80 (2014), Public Bid Disclosure Act.

SC 6.11 A.3. Delete the words: "arbitration or" in line 9 of paragraph 6.11 A.3 of the General Conditions.

SC-6.20A. Delete paragraph 6.20A of the General Conditions in its entirety and replace with the following:

To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the commissioners, officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all liability claims, costs, losses, and damages 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-6.21E. Delete paragraph 6.21E of the General Conditions in its entirety and replace with the following:

E. Contractor shall not be responsible for the adequacy of the performance criteria or design criteria required by or contained in the Contract Documents.

ARTICLE 7 OTHER WORK AT THE SITE

SC-7.01A. Delete paragraph 7.01A of the General Conditions in its entirety and replace with the following:

7.01A. Related Work at Site. Owner may perform other work related to the Project at the Site with Owner's employees, or pursuant to direct contracts with others. If such other work is not noted in the Contract Documents, then written notice thereof will be given by Owner to Contractor prior to Owner starting any such other work; and Contractor shall perform in accordance with Article 7 of the General Conditions.

ARTICLE 8 OWNER'S RESPONSIBILITIES

SC-8.02. Delete paragraph 8.02 of the General Conditions in its entirety and replace with the following:

If Owner terminates the employment of Engineer, Owner may appoint another engineer whose status under the Contract Documents shall be that of the former Engineer.

SC-8.04. Delete paragraph 8.04 of the General Conditions in its entirety and replace with the following:

Payments under this contract are governed by the Local Government Prompt Payment Act, Florida Statutes section 218.70 et. seq.

SC-8.06. Delete paragraph 8.06 of the General Conditions in its entirety.

SC-8.11. Delete paragraph 8.11 of the General Conditions in its entirety.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

SC 9.02. Delete the first sentence of paragraph 9.02A of the General Conditions in its entirety and replace with the following:

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified Engineer the progress that has been made and the quality of the various aspects of Contractor's executed Work.

SC-9.03B. Add the following new paragraph immediately after paragraph 9.03A of the General Conditions which is to read as follows:

B. Engineer will furnish a part-time Resident Project Representative. Contractor is responsible to give 24-hour notice on all required inspections so that the Resident Project Representative may be present.

SC 9.04 A. Delete the third sentence of paragraph 9.04A of the General Conditions in its entirety and replace with the following:

However, if Contractor claims entitlement to additional time or money as a result of the Field Order, such entitlement is conditioned upon obtaining a Change Order authorized and executed by Owner after timely making a Claim as provided in the Contract Documents.

SC 9.08 A. Delete the second sentence of 9.08A of the General Conditions in its entirety and replace with the following:

Except for: (a) Claims for differing subsurface or physical conditions governed by paragraph 4.03; and (b) claims for time extensions governed by paragraph 12.03, all matters in question and other matters between Owner and Contractor arising prior to the date final payment is due, relating to the acceptability of the Work and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 15 days after occurrence of the event giving rise to such Claim or within 15 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later; provided, however, the Owner shall make all final determinations of such matters.

SC 9.08 C. Delete paragraph 9.08C of the General Conditions in its entirety

SC 9.08 D. Delete paragraph 9.08D of the General Conditions in its entirety

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

SC 10.03 A.3. Delete subparagraph 10.03.A.3 of the General Conditions in its entirety

SC 10.05.A. Delete paragraph 10.05.A of the General Conditions in its entirety and replace with the following:

A. All Claims shall initially be referred to the Engineer for decision.

SC 10.05.B. Delete paragraph 10.05.B of the General Conditions in its entirety and replace with the following:

Notice: Except for: (a) Claims for differing subsurface or physical conditions governed by paragraph 4.03; and (b) claims for time extensions governed by paragraph 12.03, Claims by either party shall be initiated within 15 days after occurrence of the event giving rise to such Claim or within 15 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later, by written notice of the amount or extent of the Claim, dispute, or other matter with supporting data to the Engineer and the other party by written notice stating the general nature of each Claim, dispute, or other matter delivered by the claimant to Engineer and the other party to the Contract. A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of paragraph 12.02.B. No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under the Contract Documents.

SC 10.05 C, D, and E. Delete paragraphs 10.05C, D, and E of the General Conditions in its entirety.

ARTICLE 11 - COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

SC 11.01A. Delete paragraph 11.01.A of the General Conditions in its entirety.

SC 11.01B. Delete paragraph 11.01B of the General Conditions in its entirety.

SC 11.02A. Delete paragraph 11.02.A of the General Conditions in its entirety and replace with the following:

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 performed for such sums as may be acceptable to Owner.

SC 11.02 B, C, and D. Delete paragraphs 11.02B, C, and D of the General Conditions in their entirety.

ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

SC 12.01A. Delete paragraph 12.01A of the General Conditions in its entirety and replace with the following:

The Contract Price may only be changed by a Change Order or by a Work Change Directive. Any Claim for an adjustment in the Contract Price shall be based on written notice in accordance with the provisions of paragraph 10.05.

SC 12.01B2. Delete paragraph 12.01B2 of the General Conditions in its entirety and replace with the following:

2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum.

SC 12.01B3. Delete paragraph 12.01B3 of the General Conditions in its entirety.

SC12.01C. Delete paragraph 12.01C of the General Conditions in its entirety.

SC 12.03A and B. Delete paragraphs 12.03.A and 12.03B of the General Conditions in their entirety and replace with the following:

A. Where Contractor is delayed or prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if (1) a Claim is made therefore as provided in paragraph 12.02.A and (2) Contractor provides evidence that the delay impacted the critical path of the Project. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, abnormal weather conditions or acts of God. The Contractor must request the extension of time in writing and must provide the following information within the time periods stated hereafter. Failure to submit such information and in compliance with the time requirements given in Section 00530 of the Contract Documents, shall constitute a waiver by the Contractor and a denial of the claim for extension of time:

1. Nature of the delay or change in the Work;
2. Dates of commencement and cessation of the delay or change in the Work;
3. Activities on the current progress schedule affected by the delay or change in the Work;
4. Identification and demonstration that the delay or change in Work affects the critical path;
5. Identification of the source of delay or change in the Work;
6. Anticipated extent of the delay or change in the Work; and
7. Recommended action to minimize the delay.

B. Contractor hereby affirms that the extension of time granted herein is the Contractor's sole and exclusive remedy. Apart from extension of time, no payment or claim for damages shall be made to the Contractor as compensation for damages for any delays or hindrances from any cause whatsoever in the progress of the Work whether such delay is avoidable or unavoidable.

SC 12.03C. Delete paragraph 12.03.C of the General Conditions in its entirety.

SC 12.03D. Delete paragraph 12.03D of the General Conditions in its entirety and replace with the following:

In no event shall Owner, Engineer, or the Related Entities of either of them be liable to Contractor, any Subcontractor, any Supplier, any other person or organization, or any surety for or employee or agent of any of them, for any claim, cost, loss, or damages of any nature whatsoever arising out of or resulting from delays.

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

SC 13.04C. Delete paragraph 13.04.C of the General Conditions in its entirety and replace with the following:

If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price.

SC 13.04D. Delete paragraph 13.04.D of the General Conditions in its entirety and replace with the following:

If, the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction.

SC 13.06A. Delete the words: "arbitration or" in line 9 of paragraph 13.06.A of the General Conditions.

SC13.07A. Add the following sentence at the beginning of paragraph 13.07A of the General Conditions:

Owner and Contractor agree that a warranty inspection shall be scheduled no later than eleven (11) months after final payment under the Contract Documents so that Owner and Contractor may inspect and otherwise examine the Work prior to the expiration of the Performance Bond.

SC 13.07E. Delete paragraph 13.07E of the General Conditions in its entirety and replace with the following:

Contractor's obligations under this paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this paragraph 13.07 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or any way to limit the Contractor's continued liability for defective Work, including but limited to latent defects.

SC 13.08A. TWO changes:

1. Delete the words: "arbitration or" in line 8 of paragraph 13.08.A of the General Conditions.
2. Delete the phrase "(such costs to be approved by Engineer as to reasonableness)" in lines 10 and 11 of paragraph 13.08.A of the General Conditions.

13.09C. Delete the words: "arbitration or" in line 4 of paragraph 13.09.C of the General Conditions.

ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

SC 14.02A1. Delete the first sentence of paragraph 14.02.A.1 of the General Conditions in its entirety and replace with the following:

On or before the tenth (10th) day of each month, and not more often than once a month, the Contractor shall submit completed partial progress payment requests to the Engineer, as set forth herein. 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 for Payment and accompanied by such supporting documentation as is required by the Contract Documents. Such supporting documents shall include but not be limited to, the required Contractor's certification; retainage as set forth in the Contract Documents; and a monthly dated CPM schedule for the Project. The Contractor shall make the following certification (Affidavit) on each Application for Payment: "I hereby certify that the labor and materials listed on this Application for Payment have been used in the construction of this Work and payment received from the last request for payment has been used to make payments to all subcontractors, laborers, material, men and suppliers except as listed below: All payments by Indian River County as Owner shall be made in accordance with the Local Government Prompt Payment Act, Florida Statutes section 218.70 et. seq.

SC 14.02A4. Add a new paragraph immediately after paragraph 14.02A.3 of the General Conditions, which is to read as follows:

4. Contractor shall furnish satisfactory proof to Owner and Engineer that payment received from Owner for materials and equipment not incorporated into the Work and suitably stored, has in fact been paid to the respective supplier(s) within ten (10) days of Contractor's receipt of payment from Owner. Failure to provide such evidence of payment shall result in the withdrawal of previous approval(s) and removal of the cost of related materials and equipment from the next submitted Application for Payment, and shall be deemed a default under the Contract.

SC 14.02C1. Delete paragraph 14.02.C1 of the General Conditions in its entirety and replace with the following: All payments by Indian River County as Owner shall be made in accordance with the Local Government Prompt Payment Act, Florida Statutes section 218.70 et. seq.

SC 14.02D1d. Delete paragraph 14.02D1d of the General Conditions in its entirety and replace with the following:

d. Owner has actual knowledge of the occurrence or probable occurrence of any of the events enumerated in paragraphs 14.02.B.5.a through 14.02.B.5.c or paragraph 15.02.A.

SC 14.02D2. Delete paragraph 14.02D2 of the General Conditions in its entirety and replace with the following:

If Owner refuses to make payment of the full amount recommended by Engineer, Owner shall provide notice to Contractor in accordance with the provisions of the Local Government Prompt Payment Act, Florida Statutes section 218.70 et. seq. and pay Contractor any amount remaining after deduction of the amount so withheld in accordance with the provisions of the Local Government Prompt Payment Act, Florida Statutes section 218.70 et. seq. Owner shall pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, in accordance with the provisions of the Local Government Prompt Payment Act, Florida Statutes section 218.70 et. seq.

SC 14.02D3. Delete paragraph 14.02D3 of the General Conditions in its entirety

SC 14.03A. Add the following sentences to the end of the existing paragraph 14.03A of the General Conditions as follows:

No materials or supplies for the Work shall be purchased by Contractor or his Subcontractors subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. Contractor warrants that Contractor has good title to all materials and supplies used by Contractor in the Work, free from all liens, claims or encumbrances.

SC 14.04C. Delete paragraph 14.04C of the General Conditions in its entirety and replace with the following:

If Engineer considers the Work substantially complete, Engineer will prepare and deliver to Owner a tentative certificate of Substantial Completion that shall fix the date of Substantial Completion. In accordance with the provisions of Florida Statutes section 218.735(7)(a)(2016), upon receipt of the tentative certificate of Substantial Completion from Engineer, the Owner, the Engineer, and the Contractor shall conduct a walk-through inspection of the Project to document a list of any items required to render the Work on the Project complete, satisfactory, and acceptable under the

Contract Documents (herein the "Statutory List"). The Statutory List shall be reduced to writing and circulated among the Owner, the Engineer, and the Contractor by the Owner or the Engineer within 30 calendar days after Substantial Completion. The Owner and Contractor acknowledge and agree that: 1) the failure to include any corrective work, or pending items that are not yet completed, on the Statutory List does not alter the responsibility of the Contractor to complete all of the Work under the Contract Documents; 2) upon completion of all items on the Statutory List, the Contractor may submit a pay request for all remaining retainage except as otherwise set forth in the Contract Documents; and 3) any and all items that require correction under the Contract Documents and that are identified after the preparation of the Statutory List remain the obligation of the Contractor to complete to the Owner's satisfaction under this Agreement. After receipt of the Statutory List by the Contractor, the Contractor acknowledges and agrees that it will diligently proceed to complete all items on the Statutory List and schedule a final walk-through in anticipation of final completion on the Project.

SC 14.04D. Delete paragraph 14.04D of the General Conditions in its entirety and replace with the following:

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, and protection of the Work, maintenance, HVAC, utilities, insurance, and warranties and guarantees.

SC14.07A.3. Delete paragraph 14.07A.3 of the General Conditions in its entirety.

SC14.07B.1. Delete paragraph 14.07B.1 of the General Conditions in its entirety and replace with the following:

1. 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 indicate, within twenty days after receipt of the final Application for Payment, in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. Thereupon Engineer will give written notice to Owner and Contractor that the Work is acceptable. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

SC-14.07.C.1. Delete paragraph GC-14.07.C.1 in its entirety and replace with the following:

Payment shall be made by Owner to Contractor according to the Local Government Prompt Payment Act, Florida Statutes section 218.70. et.seq.

SC 14.08. Delete paragraph 14.08 of the General Conditions in its entirety.

SC 14.09. Delete paragraph 14.09 of the General Conditions in its entirety.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

SC-15.02.A.1. Delete subparagraph 15.02.A1 of the General Conditions in its entirety, and replace with the following:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents;

SC-15.02.A.4. Delete subparagraph 15.02.A 4 of the General Conditions in its entirety, and replace with the following:

4. Contractor's violation of any material provisions of the Contract Documents.

SC 15.02.A.5 and 6: Add the following new subparagraphs at the end of paragraph GC-15.02.A

5. Failure of Contractor to make proper payments to Subcontractors or others for labor, services, materials or equipment in connection with the Work;

6. If Contractor abandons the Work.

SC 15.02.C. Delete the words: "arbitration or" in line 7 of paragraph 15.02.C of the General Conditions.

SC 15.02.G. Add the following new paragraph immediately following paragraph 15.02.F of the General Conditions:

G. If, after termination of the Contract by the Owner for cause as set forth in paragraph 15.02, it is determined that the Contractor had not failed to fulfill its contractual obligations, the termination under paragraph 15.02 shall be deemed to have been for the convenience of the Owner. In such event, adjustment of the Contract Price shall be made as provided in paragraph 15.03

SC15.03.A.3 and 15.03 A 4. Delete subparagraphs 15.03.A3 and 15.03 A 4 of the General Conditions in its entirety.

ARTICLE 16 - DISPUTE RESOLUTION

SC16.01A. Delete paragraph 16.01A of the General Conditions in its entirety and replace with the following:

A. Prior to the filing of any suit or other legal proceedings, the parties shall endeavor to resolve claim disputes or other matters in question by mediation. Mediation shall be initiated by any party by serving a written request for same on the other party. The parties shall, by mutual agreement, select a circuit court mediator as certified by the Supreme Court of Florida within 15 days of the date of the request for mediation. If the parties cannot agree on the selection of a circuit court mediator as certified by the Supreme Court of Florida, then the Owner shall select the mediator, who shall be a circuit court mediator as certified by the Supreme Court of Florida. The mediator's fee shall be paid in equal shares by Owner and Contractor.

SC 16.01C. Delete paragraph 16.01 C of the General Conditions in its entirety and replace with the following:

C. Contractor shall carry on the Work and maintain the Progress Schedule during the dispute resolution proceedings, unless otherwise agreed by Contractor and Owner in writing.

ARTICLE 17 - MISCELLANEOUS

SC 17.01A. Delete paragraph 17.01A of the General Conditions in its entirety and replace with the following

Notices: Any notice, request, demand, consent, approval, or other communication required or permitted by the Contract Documents shall be given or made in writing and shall be served, as elected by the party giving such notice, by any of the following methods: (a) Hand delivery to the other party; (b) Delivery by commercial overnight courier service; or (c) Mailed by registered or certified mail (postage prepaid), return receipt requested at the addresses of the parties shown in the Contract Documents. Notices shall be effective when received at the address as specified above. The original of the notice must additionally be mailed. Either party may change its address, for the purposes of this paragraph, by written notice to the other party given in accordance with the provisions of this paragraph.

SC 17.02 through and including 17.03. Replace Sections 17.02 and 17.03:

17.02. Utilities. The Contractor shall, at its expense, arrange for, develop and maintain all utilities in Work areas to meet the requirements of the Contract Documents. Such utilities shall be furnished by Contractor at no additional cost to the Owner, and shall include, but not be limited to the following: public telephone service for the Contractor's use; construction power as required at each point of construction; and water as required throughout the construction. Prior to final acceptance of the Work the Contractor shall, at its expense, satisfactorily remove and dispose of all temporary utilities developed to meet the requirements of the Contract.

17.03. Drainage. The Contractor shall so conduct its operations and maintain the Work in such condition that adequate drainage will be in effect at all times. Existing functioning storm sewers, gutters, ditches, and other run-off shall not be obstructed.

17.07. Fire Hydrants. Fire hydrants on or adjacent to the highway shall be kept accessible to fire apparatus at all times and no material or obstruction shall be placed within fifteen feet (15') of any such hydrant.

17.08. Protection of Structures. Heavy equipment shall not be operated close enough to pipe headwalls or other structures to cause their displacement.

17.09. Fencing. On all Work which includes fencing and where the Engineer determines it to be necessary for maintaining the security of livestock or adjacent property, or for protection of pedestrians who are likely to gain access to the Work from adjacent property, the Contractor shall erect an appropriate temporary security fence as a first order of business. Temporary fencing shall be installed at temporary construction easement areas on all commercial and residential properties appropriate to secure the Work area and protect persons and domestic animals. At all times, the Contractor shall conduct the Work under secure temporary fencing. Permanent fencing shall be addressed as required by the Plans and Specifications.

17.10. Record Drawings. The Contractor shall keep one record copy of all Specifications, Drawings, Addenda, Modifications, and Shop Drawings at the site in good order and annotated to show all changes made during the construction process. These items shall be available to the Engineer and shall be delivered to the Engineer for the Owner. Record Drawings shall be submitted with each pay request. Record Drawings shall be submitted with each pay request. Final acceptance of the Work will be withheld until the approval of such documents are made by the Owner.

17.11. Progress Videotapes. Contractor shall deliver to the Owner both prior to commencing the Project and before receipt of Final Payment, a DVD Type color videotape of the Project showing the Site before and after Work has been completed. Contractor shall audibly identify on the videotape the station numbers as those areas of the Project are taped. The cost of the videotaping is included in the bid submitted by the Contractor.

17.12. Commercial Activities. Contractor shall not establish any commercial activity or issue concessions or permits of any kind to third parties for establishing commercial activities on land owned or controlled by Owner. Contractor shall not allow its employees to engage in any commercial activities on the Project site.

PART II – FORMS TO BE USED DURING PROJECT CONSTRUCTION (Pages 20 through 37)

NOTICE OF AWARD – (Sample)
NOTICE TO PROCEED
FIELD ORDER
WORK CHANGE DIRECTIVE
CHANGE ORDER
APPLICATION FOR PAYMENT
CERTIFICATE OF SUBSTANTIAL COMPLETION
FINAL RELEASE OF LIEN
DUTIES RESPONSIBILITIES AND LIMITATIONS OF AUTHORITY OF
RESIDENT PROJECT REPRESENTATIVE

**(SAMPLE)
NOTICE OF AWARD**

Dated _____, 20__

TO: _____

ADDRESS: _____

REFERENCE: INDIAN RIVER COUNTY BID NO. **2019**
West Wabasso Community Gravity Sewer System Phase 2

Dear _____

I am pleased to inform you that on [DATE], the Board of County Commissioners awarded the above-referenced project to your company. In accordance with section 255.05(1)(a), Florida Statutes, you are required to execute a Public Construction Bond for the above referenced project.

The following documents are required before the applicable County department can issue a "Notice to Proceed" letter:

1. Public Construction Bond in the amount of **100%** of the contract amount.
2. Certificate of Insurance, **must** name Indian River County as an additional insured and **must** provide for a 30 day Notice of Cancellation.
3. W-9 Form.
4. Two Signed Copies of Enclosed Agreement.

Please execute both copies of the enclosed Agreement and return them together with the required Bond, W-9, and Certificate of Insurance to this office at the address provided below no later than _____.

Failure to comply with the established deadline for submittal of required documents may be grounds for cancellation of the award.

Thank you for your prompt attention and if you have any questions, please do not hesitate to contact this office.

Sincerely,

Jennifer Hyde, Purchasing Manager

SAMPLE NOTICE TO PROCEED

_____, 20__

CONTRACT FOR: West Wabasso Community Gravity Sewer System Phase 2

CONTRACTOR:

Gentlemen:

You are hereby notified to commence work on the subject contract on or before _____, 20__ and are to fully complete the work within _____ calendar days. In accordance with the contract documents, the Substantial Completion date is _____, (_____ days) with the Final Completion date being _____ (_____ days). Extension in time will be by written change order only.

The contract provides for assessment of liquidated damages for each consecutive calendar day that the work remains incomplete after the above established substantial completion date the sum of \$ _____ and for each consecutive calendar day that the work remains incomplete after the above established final completion date the sum of \$ _____.

Indian River County, Florida
(OWNER)

By: _____
(Authorized Signature)

(Printed Name & Title of Above Signer)

NOTE: Attach this notice to your contract making it a part thereof.

FIELD ORDER

PROJECT: _____

OWNER: _____

TO: _____

FIELD ORDER NO.: _____

DATE: _____

CONTRACT: _____

OWNER'S PROJECT NO.: _____

CONTRACT DATE: _____

This Field Order is issued to interpret/clarify the Contract Documents, order minor changes in the work and/or memorialize trade-off agreements. Both parties hereby agree that the work described by this Field Order is to be accomplished without change in Contract Sum, Contract Time, and/or claims for other costs.

DESCRIPTION: (Here insert a written description of the interpretation, change or agreement.)

FIELD ENGINEER: _____

BY: _____

DATES: _____

CONTRACTOR: _____

BY: _____

DATE: _____

WORK CHANGE DIRECTIVE

No. _____

PROJECT: West Wabasso Community Gravity Sewer System Phase 2

DATE OF ISSUANCE:

OWNER: Indian River County Utilities 1801 27th Street, Vero Beach, FL 32960

(Name, Address)

CONTRACTOR:

OWNER's Project No.: 2019-020

ENGINEER: _____

CONTRACT FOR:

ENGINEER's Project No.: _____

You are directed to proceed with the following change(s):

Description: _____

Purpose of Work Directive Change: _____

Attachment(s) (list documents supporting change):

If a claim is made that the above change(s) have affected Contract Price or Contract Time, any claim for a Change Order based thereon will involve one of the following methods of determining the effect of the change(s).

Method of determining change in Contract Price:
Time:

☐ Time and Materials

☐ Unit Prices

☐ Cost plus fixed fee

Method of determining change in Contract

☐ Contractor's records

☐ Engineer's records

☐ Other _____

Estimated increase (decrease) in Contract Price
\$ _____. If the
change involves an increase, the estimated
amount is not to be exceeded without further
authorization.

Estimated increase (decrease) in Contract Time
_____ days. If the change involves an
increase, the estimated time is not to be exceed
without further authorization.

Once the Work covered by the directive is completed or final cost and time determined, Contractor should submit documentation for inclusion in a change Order.

THIS IS A DIRECTIVE TO PROCEED WITH A CHANGE THAT MAY AFFECT THE CONTRACT PRICE OR THE CONTRACT TIME. A CHANGE ORDER, IF ANY, SHOULD BE CONSIDERED PROMPTLY.

RECOMMENDED:

APPROVED:

By: _____
Engineer

Date: _____

By: _____
Owner

Date: _____

ACCEPTED:

By: _____
Contractor

Date: _____

CHANGE ORDER

No. _____

PROJECT: West Wabasso Community Gravity Sewer System Phase 2

DATE OF ISSUANCE _____ EFFECTIVE DATE _____

OWNER Indian River County Department of Utilities Services

OWNER's Contract No. 2019-020

Project No. _____

CONTRACTOR _____ ENGINEER _____

You are directed to make the following changes in the Contract Documents:

Description: _____

Reason for change order: _____

Attachments: (List documents supporting change) _____

CHANGE IN CONTRACT PRICE	CHANGE IN CONTRACT TIME
Original Contract Price \$ _____	Original Contract Times Substantial Completion: _____ Ready for final payment: _____ Days or dates
Net changes from previous Change Orders No. ____ to No. ____ \$ _____	Net change from previous Change Orders No. ____ to No. ____ _____ days
Contract Price prior to this Change Order \$ _____	Contract Time prior to this Change Order Substantial Completion: _____ Ready for final payment: _____ Days or dates
Net Increase (decrease) in this Change Order \$ _____	Net Increase in this Change Order _____ days
Contract Price with all approved Change Orders \$ _____	Contract Time with all approved Change Orders Substantial Completion: _____ Ready for final payment: _____ Days or dates

RECOMMENDED:

APPROVED:

ACCEPTED:

By: _____

Engineer (Authorized Signature)

By: _____

Owner (Authorized Signature)

By: _____

Contractor (Authorized Signature)

Date: _____

Date: _____

Date: _____

EJCDC No. C-700 (2002 Edition)

Prepared by the Engineers Joint Contract Documents Committee and endorsed by The Associated General Contractors of America.

APPLICATION FOR PAYMENT NO. _____

To: Indian River County Department of Utilities Services (OWNER)

From: _____ (CONTRACTOR)

Contract: _____

PROJECT: West Wabasso Community Gravity Sewer System Phase 2

OWNER's Contract No. 2019-020 ENGINEER's Project No. _____

For Work accomplished through the date of: _____.

1. Original Contract Price: \$ _____

2. Net change by Change Orders and Written Amendments (+ or -): \$ _____

3. Current Contract Price (1 plus 2): \$ _____

4. Total completed and stored to date \$ _____

5. Retainage (per Agreement):
_____ % of completed Work: \$ _____

_____ % of retainage: _____

Total Retainage: \$ _____

6. Total completed and stored to date less retainage (4 minus 5): \$ _____

7. Less previous Application for Payments: \$ _____

8. DUE THIS APPLICATION (6 MINUS 7): \$ _____

Accompanying Documentation: _____

CONTRACTOR'S Certification:

The undersigned CONTRACTOR certifies that (1) title to all Work, 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, security interests and encumbrances; (2) all Work covered by this Application for Payment is in accordance with the Contract Documents and not defective; and (3) the labor and materials listed on this Application for Payment have been used in the construction of this Work and payment received from the last progress payment has been used to make payments to all subcontractors, laborers, materialmen and suppliers except as listed below: _____"

Dated _____

CONTRACTOR

By: _____

State of _____

County of _____

Subscribed and sworn to before me this _____

day of _____, _____

Notary Public

My Commission expires: _____

Payment of the above AMOUNT DUE THIS APPLICATION is recommended.

Dated _____

ENGINEER

By: _____

EJCDC No. C-700-E (2002 Edition)

Prepared by the Engineers Joint Contract Documents Committee and endorsed by The Associated General Contractors of America and the Construction Specification Institute.

CERTIFICATE OF SUBSTANTIAL COMPLETION

PROJECT: West Wabasso Community Gravity Sewer System Phase 2

DATE OF ISSUANCE

OWNER Indian River County Board of County Commissioners

OWNER's Contract No. 2019-020 **ENGINEER's Project No.**

CONTRACTOR **ENGINEER** [INSERT NAME OF ENGINEER]

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

To: Indian River County Department of Utilities Services
OWNER

And To
CONTRACTOR

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, CONTRACTOR and ENGINEER, and that Work is hereby declared to be substantially complete in accordance with the contract Documents on

DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within _____ Days of the above date of Substantial Completion.

EJCDC No. C-700 (2002 Edition)

Prepared by the Engineers Joint Contract Documents Committee and endorsed by The Associated General Contractors of America.

From the date of Substantial Completion, the responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees shall be as follows:

RESPONSIBILITIES:

OWNER: _____

CONTRACTOR: _____

The following documents are attached to and made a part of this Certificate:

[For items to be attached see definition of Substantial Completion as supplemented and other specifically noted conditions precedent to achieving Substantial Completion as required by Contract Documents.]

This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of CONTRACTOR's obligation to complete the Work in accordance with the Contract Documents.

Executed by ENGINEER on _____

ENGINEER

By: _____
(Authorized Signature)

CONTRACTOR accepts this Certificate of Substantial Completion on _____, 20____

CONTRACTOR

By: _____

OWNER accepts this Certificate of Substantial Completion on _____, 20____

INDIAN RIVER COUNTY DEPARTMENT OF UTILITIES SERVICES
OWNER

By: _____
(Authorized Signature)

FINAL RELEASE OF LIEN

KNOW ALL MEN BY THESE PRESENTS, that

(Company Name)

The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER from all claims and all liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with the work under this Contract and for every act and neglect of the OWNER and others relating to or arising out of the work.

For all in consideration of

_____ dollars (\$_____)
(Total Amount of Contract)

paid to _____ by receipt of which is hereby acknowledged,
(Contractor)

do _____ hereby release and quit claim to the OWNER, its successors
(I/We)

or assigns, all liens, lien rights, claims or demands of any kind whatsoever

which _____ now have or might have against the property, building, and/ or
(I/We)

for any incidental expense for the construction of

(Project Number)

West Wabasso Community Gravity Sewer System Phase 2

(Project Name)

IN WITNESS WHEREOF I have hereunto set my hand and seal this ____ day of _____,
20____.

(SEAL)

By _____

WITNESS:

Title _____

DUTIES, RESPONSIBILITIES AND LIMITATIONS OF AUTHORITY OF RESIDENT PROJECT REPRESENTATIVE

A. GENERAL

Resident Project Representative is ENGINEER'S Agent, will act as directed by and under the supervision of ENGINEER, and will confer with ENGINEER regarding his actions. Resident Project Representative's dealings in matters pertaining to the on-site Work shall in general be only with ENGINEER and CONTRACTOR, and dealings with Subcontractors shall only be through or with the full knowledge of CONTRACTOR. Written communication with OWNER will be only through or as directed by ENGINEER.

B. DUTIES AND RESPONSIBILITIES

Resident Project Representative will:

1. Schedules: Review the progress schedule, schedule of Shop Drawing submissions and schedule of values prepared by CONTRACTOR and consult with ENGINEER concerning their acceptability.
2. Conferences: Attend preconstruction conferences. Arrange a schedule of progress meetings and other job conferences as required in consultation with ENGINEER and notify those expected to attend in advance. Attend meetings, and maintain and circulate copies of minutes thereof.
3. Liaison:
4. Serve as ENGINEER'S liaison with CONTRACTOR, working principally through CONTRACTOR'S superintendent and assist him in understanding the intent of the Contract Documents. Assist ENGINEER in serving as OWNER'S liaison with CONTRACTOR when CONTRACTOR'S operations affect OWNER'S on-site operations.
5. As requested by ENGINEER, assist in obtaining from OWNER additional details or information, when required at the job site for proper execution of the Work.
6. Shop Drawings and Samples:
 - a. Receive and record date of receipt of Shop Drawings and samples, receive samples which are furnished at the site by CONTRACTOR, and notify ENGINEER of their availability for examination.
 - b. Advise ENGINEER and CONTRACTOR or his superintendent immediately of the commencement of any Work requiring a Shop Drawing or sample submission if the submission has not been approved by the ENGINEER.
7. 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 proceeding in accordance with the Contract Documents and that completed Work will conform to the Contract Documents.
 - b. Report to ENGINEER whenever he believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or does not meet the requirements of any inspections, tests or approval required to be made or has been damaged prior to final payment; and advise ENGINEER when he believes Work 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 instructions are conducted as required by the Contract Documents and in presence of the required personnel, and that CONTRACTOR maintains adequate records thereof; 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 outcome of these inspections and report to ENGINEER.
- 8. Interpretation of Contract Documents: Transmit to CONTRACTOR engineer's clarifications and interpretations of the Contract Documents.
- 9. Modifications: Consider and evaluate CONTRACTOR'S suggestions for modifications in Drawings or Specifications and report them with recommendations to ENGINEER.
- 10. Records:
 - a. Maintain at the job site orderly files for correspondence, reports of job conferences, Shop Drawings and samples submissions, reproductions of original Contract Documents including all 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. Keep a diary or log book, recording hours on the job site, weather conditions, data relative to questions of extras or deductions, list of visiting officials and representatives of manufacturers, fabricators, suppliers and distributors, daily activities, decisions, observations in general and specific observations in more detail as the case of observing test procedures. Send copies to ENGINEER.
 - c. Record names, addresses and telephone numbers of all contractors, Subcontractors and major suppliers of materials and equipment.
- 11. Reports:
 - a. Furnish ENGINEER periodic reports as required of progress of the Work and CONTRACTOR'S compliance with the approved progress schedule and schedule of Shop Drawing submissions.
 - b. Consult with ENGINEER in advance of scheduled major tests, inspections or start of important phases of the Work.
 - c. Report immediately to ENGINEER upon the occurrence of any accident.
- 12. Payment Requisitions: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward them with recommendations to ENGINEER, noting particularly their relation to the schedule of values, Work completed and materials and equipment delivered at the site but not incorporated in the Work.
- 13. 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 deliver this material to ENGINEER for his review and forwarding to OWNER prior to final acceptance of the Work.
- 14. 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. Verify that all items on final list have been completed or corrected and make recommendations to ENGINEER concerning acceptance.

C. LIMITATIONS OF AUTHORITY

Except upon written instructions of ENGINEER, Resident Project Representative:

15. Shall not authorize any deviation from the Contract Documents or approve any substitute materials or equipment.
16. Shall not exceed limitations on ENGINEER'S authority as set forth in the Contract Documents.
17. Shall not undertake any of the responsibilities of CONTRACTOR, Subcontractors or CONTRACTOR'S superintendent, or expedite the Work.
18. Shall not advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract Documents.
19. Shall not advise on or issue directions as to safety precautions and programs in connection with the Work.
20. Shall not authorize OWNER to occupy the Project in whole or in part.
21. Shall not participate in specialized field or laboratory tests.

END OF SECTION

DIVISION I

GENERAL REQUIREMENTS

SECTION 01000

SUMMARY OF WORK

PART 1 -- GENERAL

1.01 LOCATION OF WORK

The work is located in the right-of-way of 64th Avenue, 63rd Court, 63rd Avenue, 62nd Avenue, 84th Place and 84th Street in Indian River County, Florida.

1.02 DESCRIPTION OF WORK

Contractor as an independent contractor and not as an employee shall furnish and complete all of the necessary labor, material and equipment to perform the work as specified or indicated in the Contract Documents and per FDEP, the Indian River County Department of Utility Services and County Engineering Department standards. The work is generally described as follows:

IRCDUS proposes to construct a new 8" Gravity Sewer Collection System within The Douglas Subdivision of West Wabasso. The facilities shall provide sewage collection infrastructure to serve about one hundred and one (101) lots on CR 510, 64th Avenue, 84th Street, 84th Place, 64th Avenue, 63rd Court, 63rd Avenue and 62nd Avenue. The gravity sewer main will consist of about 5,000 feet of 8" PVC gravity sewer, 15 manholes, service laterals, and a new Indian River County Department of Utility Services sanitary sewer lift station. The Contractor shall also demolish all septic tanks on the lots to be connected to the laterals per the DOH standards and requirements. The County will direct purchase and furnish the ABS pumps and electrical package for the lift station which includes two pumps, lifting cables, guide rails, guide rail assemblies, float hanger bracket, anchor bolts, lifting bales, upper guide brackets, SS nipples and elbows, float switches, hatch covers for both the wet well and valve vault, duplex control panel and spare parts set. The Contractor will install the furnished pumps and all appurtenances required to make the lift station operational. The County will also direct purchase the Dataflow telemetry system and the Contractor will install telemetry at the lift station and schedule Dataflow to program telemetry and all necessary start-up features to make remote monitoring and operation of lift station functional. Upon successful operation of lift station, Contractor shall schedule a start-up with ABS to certify lift station has been installed in accordance with manufacturer's requirements to affect warranty. No existing culverts are proposed to be replaced. Any existing culverts damaged shall be restored to pre-construction condition.

The construction of the utility improvements described above shall also consist of, but not limited to: resetting of signs, mailboxes, and other existing facilities disturbed during construction; utilities exploration; coordination with any permitting agencies; trenching; clearing and tree removal; dewatering; installation of pipe, structures and all appurtenances; fittings and restrainers; soil backfill compaction; testing; (including backfill and subgrade testing); road, landscape and driveway restoration; re-grading and grassing (sod); mobilization, demobilization and traffic control. All right-of-way shall be restored to like or better condition including asphalt pavement, sodding, sidewalks and drainage swales. No excavation shall be left open when work is not actively being performed. Construction fencing used in the work area shall not block sight distance near intersections or driveways. All construction equipment and materials shall be stored a minimum of 15 feet from the edge of pavement and shall be protected by Type II barricades with

flashing yellow lights.

The Contractor shall submit a Traffic Control Plan to the Indian River County Public Works Traffic Engineering Division a minimum of 72 hours prior to construction and notify County Traffic Engineering a minimum of 24 hours before any lane closures. A temporary access plan shall be provided indicating how local traffic will be maintained while the existing road is removed and reconstructed. Stand mounted Advance Construction signing shall be installed in accordance with FDOT Index 602. One lane closure shall be in accordance with FDOT Index 603. When any work encroaches the area between the centerline and two (2) feet outside the edge of pavement, traffic shall be restricted to a single lane.

PART 2 -- PRODUCTS

Not applicable

PART 3 -- EXECUTION

Not applicable

*** * END OF SECTION * ***

SECTION 01024

FORCE ACCOUNT

1.1 General

CONTRACTOR shall furnish all labor, materials, equipment and incidentals necessary to perform additional work not covered on the Contract Drawings. The force Account is intended as a contingency for unforeseen work.

1.1 PAYMENT

Lump sum amount for Force Account work is included in the bid schedule. The value of Force Account work will be determined in accordance with Article 12 of the General Conditions.

+ + END OF SECTION + +

SECTION 01025

MEASUREMENT AND PAYMENT FOR ALL UTILITY DEPARTMENT PROJECTS

PART 1 – GENERAL

1.01 GENERAL

Measurement and payment will be based upon work completed and accepted in accordance with the Contract Documents. No separate payment will be made for excavation, trenching, backfilling, compacting, leakage tests, surveying, construction staking or other incidental items of work not shown in the Contract Documents.

- 1.02 Partial payment for materials in storage at the site of the work or other approved storage site **will not** be made.

1.03 MEASUREMENT

- A. Mobilization, Demobilization and Traffic Maintenance and Control: Measurement (MOT) shall be based on the subtotal of bid items cost as shown in 00310-3, Schedule of Bid Items, and determined using the table below. The cost of videotaping the pre-construction site condition shall be included in the lump-sum cost of mobilization.

<u>ORIGINAL CONTRACT AMOUNT (\$)</u>		<u>MAXIMUM AMOUNT</u>
<u>FROM MORE THAN</u>	<u>TO AND INCLUDING</u>	<u>FOR MOB, DEMO. MOT.</u>
0	100,000	3,000
100,000	500,000	15,000
500,000	1,000,000	30,000
1,000,000	2,000,000	60,000
2,000,000	3,000,000	90,000
3,000,000	4,000,000	120,000
4,000,000	5,000,000	125,000
5,000,000	6,000,000	150,000
6,000,000	7,000,000	175,000
7,000,000	10,000,000	250,000

Should the lump sum bid price for the item Mobilization, Demobilization & MOT exceed the maximum amount allowed for this item as specified above, the bid price will be reduced to the maximum permissible amount and the reduced price will be used in correctly determining the total price for comparison of bids received.

- B. Driveway Bore: Measurement of Driveway Bore shall include equipment, supplies, fuel, labor, sheeting and bracing, excavation, dewatering, backfilling and compaction for installing pipe, mechanical fittings, and restoration. **Driveway Bore payment shall be paid under unit bid price for pipe.**

- C. Lift Station: Construction of a new lift station and valve box with all associated appurtenances and construction of a 6-foot chain link fence with a 12 foot swing gate (or two 2 foot gates) will be lump sum.
- D. Gravity Sewer: Measurement of gravity sewer shall be for lineal foot for construction in accordance with the plans and specifications, or as directed by the Engineer. The work shall include, but shall not be limited to, cutting of existing pavement where required, excavation, installation of pipe, backfilling, compaction, fittings, and all restoration in kind. The replacement of pavement and roadway restoration shall comply with standards and specifications of the Indian River County Department of Public Works. The services shall be of a type and size specified, and shall be constructed in accordance with these Plans and Specification, or as directed by the Engineer. The depth of gravity sewer for various pay ranges shall be determined by taking the difference between the natural ground or manhole rim elevation, as applicable, and the invert elevation.
- E. Sewer laterals: The quantity to be paid for shall be the number of each (EA) sanitary sewer lateral of each designated size (in inches) and type (single or double) furnished and installed, and shall include all piping, fittings, connections, and other appurtenances to collect and carry wastewater from existing, proposed or future utility customers from a clean-out at the edge of the public easement or right of way to the public sanitary sewer collection main within the street right-of-way or easement. The work shall include, but not be limited to, cutting of existing pavement where required, jack and bore or directional bore under pavement where required, excavation, dewatering, backfilling, testing; installation of marking balls and other required marking and identification materials, all necessary sleeves, fittings and appurtenances to install connections to new or existing mains; and all restoration in kind. When the construction of the building sewer connection is designated on the plans, as is the case here, the unit price bid shall also include the furnishing and installation of the piping, clean-outs, fittings and all else incidental to connect the building sewer with a clean-out and piping to the structure, to the clean-out at the edge of the property line/easement or right-of-way line. Also included is the pump out of the existing septic tank and its demolition as well as the Building Division and Health Department permit fees.
- F. Manholes: The quantity to be paid for shall be the number of each (EA) structure of each designated type completed and accepted, and the number of each (EA) of the structures adjusted, and shall include: clear and grubbing, excavation, dewatering, backfilling, compaction, disposal of surplus material, testing; furnishing and placing of frames and covers; interior coating/lining (bituminous or fiberglass per plan); concrete bench; fittings and other material required for interior or exterior drops; bricking, mudding and grouting; concrete slab tops when necessary; and all incidentals to furnish and install the structures. A separate quantity and pay item will not be included for adjusting existing manhole tops, etc., necessary for minor grade changes (+ 3 inches). This work shall be included in the contract unit price(s) for roadway, sidewalk, pavement and parking area construction. The depth of the manhole to be used for various pay ranges shall be determined by taking the difference between the rim elevation and the invert of deepest sewer.

- G. Concrete Sidewalk and Driveway Replacement: Payment **shall be made under unit bid price for gravity sewer pipe.**
- H. Concrete Encasement: Measurement of concrete for encasement shall be on the basis of the number of cubic yards of concrete installed, except that the maximum allowable quantity of concrete installed shall not exceed the values given below:

<u>Pipe Size (Inches)</u>	<u>Max. Concrete for Encasement (CY/LF of Pipe)</u>
6	0.09
8	0.10
10	0.11
12	0.12

- I. Asphaltic Pavement Replacement: Payment **shall be made under unit bid price for milling, Type SP 9.5 and 12.5 Asphaltic Concrete within the entire width of 64th Ave, 63rd Ct, 63rd Ave, 62nd Ave and a portion of 84th Street under pay items 12, 13 and 15.** Those will be paid under the unit price of square yards and linear feet. Unit price shall include saw-cutting, base and sub-grade materials, compaction, etc.
- J. Grassing: Measurement of grassing (seed or sod) shall be computed using the square yard of grassed area disturbed and restored as a result of Contractor's operations. The entire area of the disturbed area shall be grassed. Payment shall include all necessary grading, soil preparation, seeding, sodding, fertilizer, mulch, and irrigation and paid under the **unit bid price for Turf Material as Lump Sum.**
- K. Unimproved Driveway Replacement: Shall include (dirt, marl, shell, or gravel) driveway replacement/reconstruction removed and replaced as a result of the construction operations. Work shall include subgrade and surface (shell, marl, gravel) materials, compaction, density testing, etc. Unimproved driveway replacement shall be included in the unit cost bid for the gravity sewer main.
- L. Connect to Existing: Measurement of "Connect to Existing" shall include the installation / connection of the new or replacement utility main to the existing utility main, manhole or structure (as depicted on the plans), and shall include the cost of the "Tapping Sleeve and Valve" or "Core Saw and Connect" when depicted or called for in the plans, and for all additional work and materials required for the connection including excavation and location of existing utilities, removal of fittings, restraint of existing pipe and fittings, grouting and repairs, all necessary adaptors, gaskets or fittings, connection to the existing utility, disinfection and flushing of the utility, testing (pressure, bac-t, soil compaction, or exfiltration and T.V. testing/lamping, as applicable), means to provide a temporary bypass when noted on plans (pumps, hoses, etc.), installation of temporary jumper and all other necessary work required to make a connection.

When a separate bid item (or items) "Connect to Existing" is listed in the bid form, then the above described work shall be computed as a lump sum cost for the installation / connection of the new or replacement utility main to the

existing utility main, at each location depicted in the plans and listed in the bid form.

When a separate bid item "Connect to Existing" is not listed in the bid form, then the above described work shall be included in the unit price bid for that portion of the utility main construction within the project that is benefitting from the connection (the adjacent connected main).

- M. Construction Stake-Out: Measurement of construction stake-out shall be computed as a lump sum item, for all required construction stake-out, including: layout and survey of the proposed construction, setting of stakes as required, necessary computations to establish the exact position of the work, establish reference to baselines, and provide and maintain off-set stakes outside the limits of construction and marked to show offset distance.
- N. Record Drawings/As-built Survey: Measurement of record drawings/as-built survey shall be computed as a lump sum item, for the preparation of "As-built Drawings", including field survey, drawing preparation in "AutoCad", with ties to state plan coordinates, all in accordance with IRCUDS water and wastewater utility standards. The as-built drawings shall be provided certified by a licensed and registered land surveyor.
- O. "Remove" and or "Abandon & Grout" Existing Utilities: The measurement of the "Remove" and/or "Abandonment and Grout" of utility infrastructure shall be computed using linear foot, as measured along the centerline of the pipe "Removed" or "Abandoned and Grouted" and shall include but not be limited to the complete removal of the utility; or the abandonment and fully grouting of the utility mains together with the removal of portions of the utility infrastructure; and all excavation, backfilling, restoration, M.O.T., and all else necessary.
- P. Testing (TV of Mains): Measurement of TV testing all gravity sewer shall be for lineal foot in accordance with the plans and specifications

1.04. PAYMENT

Payment will be made at the respective contract unit and/or lump sum price for each item shown in the Agreement, installed and accepted, which price and payment shall constitute full compensation for performing all work in connection therewith and incidental thereto.

1.05 RESTORATION OF DAMAGED SURFACES, STRUCTURES AND PROPERTY

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

**** END OF SECTION ****

SECTION 01035

CHANGE ORDER PROCEDURES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDE

- A. Promptly implement Change Order Procedures
 - 1. Provide full written data required to evaluate changes.
 - 2. Maintain detailed records of work done on a time-and-material/force account basis.
 - 3. Provide full documentation to Engineer on request.
- B. Designate in writing the member of Contractor's organization:
 - 1. Who is authorized to accept changes in the Work,
 - 2. Who is responsible for informing others in the Contractor's employ of the authorization of changes in the Work.
- C. Owner will designate in writing the person who is authorized to execute Change Orders.

1.02 RELATED REQUIREMENTS

- A. The amount of established unit prices.
- B. Conditions of the Contract:
 - 1. Methods of determining cost or credit to Owner resulting from changes in Work made on a time-and-materials basis.
 - 2. Contractor's claims for additional costs.
- C. Schedule of Values is included in Section 00300.
- D. Applications for Payment are included in Section 01052.
- E. Construction Schedules is included in Section 01311.

1.03 DEFINITIONS

- A. Change Order: See General Conditions

1.04 PRELIMINARY PROCEDURES

- A. Owner or Engineer may initiate changes by submitting a proposal Request to Contractor. Request will include the following:
 - 1. Detailed description of the Change, Products, and location of the change in the Project.
 - 2. Supplementary or revised Drawings and Specifications.

3. The projected time span for making the change and a specific statement as to whether overtime work is, or is not, authorized.
 4. A specific period of time during which the requested price will be considered valid.
 5. Such request is for information only, and is not an instruction to execute the changes, nor to stop work in progress.
- B. Contractor may initiate changes by submitting a written notice to Engineer, containing:
1. Description of the proposed changes
 2. Statement of the reason for making the changes.
 3. Statement of the effect on the Contract Sum and the Contract Time.
 4. Statement of the effect on the work of separate contractors.
 5. Documentation supporting any changes in Contract Sum or Contract Time, as appropriate.

1.05 CONSTRUCTION CHANGE AUTHORIZATION

- A. In lieu of Proposal Request, Engineer may issue a "Work Directive Change" for Contractor to proceed with a change for subsequent inclusion in a Change Order.
- B. Authorization will describe changes in the work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.
- C. Owner and Engineer will sign and date the Work Directive Change as authorization for the Contractor to proceed with the Changes.

1.06 DOCUMENTATION OF PROPOSALS AND CLAIMS

- A. Support each quotation for a lump sum proposal, and for each unit price which has not previously been established, with sufficient substantiating data to allow Engineer to evaluate the quotation.
- B. On request, provide additional data to support time and cost computation including the following:
1. Labor required.
 2. Equipment required.
 3. Products required:
 - a. Recommended source of purchase and unit cost.
 - b. Quantities required.
 4. Taxes, insurance bonds.
 5. Credit for work deleted from Contract, similarly documented.
 6. Overhead and profit.
 7. Justification for any change in Contract Time.
- C. Support each claim for additional costs, and for work done on a time-and-material / force account basis, with documentation as required for a lump sum proposal, plus the following additional information:
1. Name of the Owner's authorization agent who ordered the work, and date of the order.
 2. Dates and time work performed, and by whom.
 3. Time record, summary of hours worked, and hourly rates paid.

- 4. Receipts and invoices for:
 - a. Equipment used, listing dates and times of use.
 - b. Products used, listing quantities.
 - c. Subcontracts.

D. Document requests for substitutions for Products as specified in Section 01630.

1.07 PREPARATION OF CHANGE ORDERS

- A. Engineer will prepare each Change Order.
- B. Form: Change Order format provided in the Contract Documents.
- C. Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of change.
- D. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

1.08 LUMP SUM / FIXED PRICE CHANGE ORDER

- A. Content of Change Orders will be based on either:
 - 1. Engineer's Proposal Request and Contractor's responsible Proposal as mutually agreed upon between OWNER and Contractor.
 - 2. Contractor's Proposal for a change, as recommended by Engineer.
- B. Owner and Engineer will sign and date the Change Order as authorization for the contractor to proceed with the changes.
- C. Contractor shall sign and date the Change Order to indicate agreement with the terms therein.

1.09 UNIT PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
 - 1. Engineer definition of the scope of the required changes.
 - 2. Contractor's Proposal for a change, as recommended by Engineer.
 - 3. Survey of completed work
- B. The amount of the unit prices shall be:
 - 1. Those stated in the Agreement.
 - 2. Those mutually agreed upon between Owner and Contractor.
- C. When quantities of each of the items affected by the Change Order can be determined prior to start of the work:
 - 1. Owner and Engineer will sign and date the Change Order as authorization for Contractor to proceed with the changes.
 - 2. Contractor shall sign and date the Change Order to indicate agreement with the terms therein.
- D. When quantities of the items cannot be determined prior to start of the work:

1. Engineer or Owner will issue a Change Order directing Contractor to proceed with the change on the basis of unit prices, and will cite the applicable unit prices.
2. At completion of the change, Engineer will determine the cost of such work based on the unit prices and quantities used.
 - a. Contractor shall submit documentation to establish the number of units of each item and any claims for a change in Contract Time.
3. Engineer will sign and date a second Change Order to establish the change in Contract Sum and in Contract Time.
4. Owner and Contractor will sign and date the second Change Order to indicate their agreement with the terms therein.

1.10 TIME AND MATERIAL / FORCE ACCOUNT CHANGE ORDER / CONSTRUCTION AUTHORIZATION

- A. Engineer and Owner will issue a Work Directive Change directing Contractor to Proceed with the changes on a time-and-material / force account basis.
- B. At completion of the change, Contractor shall submit itemized accounting and supporting data as provided in the Article "Documentation of Proposals and Claims" of this section.
- C. Engineer will determine the allowable cost of such work, as provided in General Conditions and Supplementary Condition.
- D. Engineer will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
- E. Owner and Contractor will sign and date the Change Order to indicate their agreement therein.

1.11 CORRELATION WITH CONTRACTOR'S SUBMITTALS

- A. Contractor shall periodically revise Schedule of Values and Request for Payment forms to record each change as a separate item of Work, and to record the adjusted Contract Sum.
- B. Contractor shall periodically revise the Construction Schedule to reflect each change in Contract Time.
 1. Revise sub-schedules to show changes for other items of work affected by the changes.
- C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

PART 2 – PRODUCTS

Not Applicable

PART 3 – EXECUTION

Not Applicable

END OF SECTION

SECTION 01050
FIELD ENGINEERING

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Provide and pay for field engineering services required for project.
 - 1. Survey work required in execution of project.
 - 2. Civil, structural or other professional Engineering services specified, or required to execute Contractor's construction methods.
- B. The Contractor shall retain the services of a registered land surveyor licensed in the State of Florida:
 - 1. Identify existing control points and property line corner stakes indicated on the Drawings, as required.
 - 2. Maintain an accurate location of all buried piping 4-inch in diameter and larger.

1.02 RELATED WORK

- A. Standard General Conditions of the Construction Contract are included in Section 00700.
- B. Summary of Work is included in Section 01000.
- C. Applications for Payment are included in Section 01052.
- D. Contract Closeout is included in Section 01700.

1.03 SUBMITTALS

- A. Submit, in accordance with Section 01300, name and address of registered land surveyor or professional Engineer.
- B. On request of the Engineer, submit documentation to verify accuracy of field engineering work.
- C. Submit certificate signed by registered Engineer or land surveyor certifying that elevations and locations of improvements are in conformance, or non-conformance, with Contract Documents.
- D. At the end of the project, and prior to final payment, submit certified drawings with the Surveyors title block (signed and sealed by the registered land surveyor) of the items listed below. Vertical Control shall conform to NAVD 1988 datum.

These drawings shall be included with, and made a part of, the project record documents.

1. Certified site survey at 1-inch = 40-feet scale or larger but not greater than 1-inch = 20-feet scale, on reproducible mylar(s) 24-inch by 36-inch, indicating the building corners, sidewalks, paved areas and location of all above ground structures within the plant or project site.
2. Certified drawing showing the location, lines and grades of all lines 4-inch in diameter and larger buried and exterior to buildings and other buried facilities (e.g. valves, tanks, vaults, etc) installed as a result of the work. This shall be at the same scale as the Engineer's yard piping drawing and submitted on reproducible mylar.
3. Certified survey at the same scale as the Engineer's line drawings (e.g. transfer piping, force main, water transmission, etc) indicating lines, grades, elevations and stationing at 20-feet increments. Provide elevations of structure bottom, pipe invert(s) and rim elevations on all manholes.

E. Topographical surveys shall meet the following criteria:

1. 1-inch = 100-feet scale reproducible plot, 2 foot contours.
2. Produced on national map accuracy standards for 1-inch = 100-feet scale maps with 2 foot contour intervals
3. Contractor shall submit computer generated drawing files in AutoCAD 2005 format on CD-R/RW disks. All entries shall be place on layers named to describe the entity being mapped. All elevation information in the AutoCAD file shall be in an appropriate three-dimensional format. A digital terrain model (DTM) AutoCAD file containing adequate three-dimensional points and break lines to accurately model the surface shall be submitted. The DTM file shall be compatible for use with SoftDesk S.7 software.

F. Survey shall include all the requirements as outlined in Paragraph 1.06 below.

1.04 QUALIFICATIONS OF SURVEYOR OR ENGINEER

- A. Registered professional Engineer or land surveyor of the discipline required for the specific service on the project, currently licensed in the State of Florida.

1.05 SURVEY REFERENCE POINTS

- A. Existing basic horizontal and vertical control points for the project are those designated on Drawings.
- B. Locate and protect control points prior to starting site work and preserve all permanent reference points during construction.
 1. Make no changes or relocations without prior written notice to the Engineer.
 2. Report to the Engineer when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.
 3. Require surveyor to correctly replace project control points which may be lost or destroyed.
 - a. Establish replacements based on original survey control.

1.06 PROJECT SURVEY REQUIREMENTS

- A. Establish a minimum of two permanent bench marks on site, referenced to data established by survey control points.
 - 1. Record locations, with horizontal and vertical data, on Project Record Documents.
- B. Establish lines and levels, locate and lay out, by instrumentation and similar appropriate means:
 - 1. Site improvements
 - a. Stakes for grading, fill and topsoil placement.
 - b. Utility slopes and invert elevations.
 - 2. Batter boards for structures.
 - 3. Building foundation, column locations and floor levels.
 - 4. Controlling lines and levels required for mechanical and electrical trades.
- C. From time to time, verify layouts by same methods.
- D. Establish all lines and grades prior to construction of line work for all force mains, raw water mains and transmission mains at 100-foot increments and at defined breaks in grade.

1.07 RECORDS

- A. Maintain a complete, accurate log of all control and survey work as it progresses.
- B. Update the project record drawings on a monthly basis based on the work performed during the month ending at the pay request as a condition for approval of monthly progress payment requests.
- C. Maintain an accurate record of piping changes, revisions, and modifications.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

****END OF SECTION****

SECTION 01052

APPLICATIONS FOR PAYMENT

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Submit Applications for Payment to Engineer in accordance with the schedule established by Conditions of the contract and Agreement between Owner and Contractor.
- B. The accepted Schedule of Values, Section 00300, shall be used as the basis for the CONTRACTOR's Application for Payment.

1.02 RELATED REQUIREMENTS

- A. In other parts of the Construction Documents:
 - 1. Agreement between Owner and Contractor
 - 2. General Conditions of the Contract
 - 3. Article 14 – Payments to Contractor and Completion
- B. Specified in Other Sections:
 - 1. Summary of Work is included in Section 01000.
 - 2. Contract Closeout is included in Section 01700.

1.03 FORMAT AND DATA REQUIRED

- A. Submit itemized applications typed in a format approved by Engineer. All applications for payment must be numbered, dated, and signed by the Contractor.
- B. Provide itemized data on payment application (format, schedules, line items and values accepted by Engineer).

1.04 PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT

- A. Application Form:
 - 1. Fill in required information, including that for Change Orders executed prior to the date of submittal of application
 - 2. Fill in summary of dollar values
 - 3. Execute certification with the signature of a responsible officer of the contract firm
 - 4. Have resident project representative review and sign application prior to submission to Engineer

1.05 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

- A. When the Owner or the Engineer requires substantiating data, Contractor shall submit suitable information, with a cover letter identifying:
 - 1. Project
 - 2. Application number and date
 - 3. Detailed list of enclosures
 - 4. ~~For stored products:~~ **NOT APPLICABLE FOR THIS PROJECT**
 - a. ~~Item number and identification~~
 - b. ~~Description of specific material~~
- B. Submit one copy of data and cover letter for each copy of application.

1.06 PREPARATION OF APPLICATION FOR FINAL PAYMENT

- A. Application for payment is required for progress payments
- B. Only one application will be acceptable in any one month

1.07 SUBMITTAL PROCEDURE

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

PART 2 – PRODUCTS

Not applicable

PART 3 – EXECUTION

Not applicable

****END OF SECTION****

SECTION 01060

REGULATORY REQUIREMENTS AND NOTIFICATION

PART 1 – GENERAL

1.01 GENERAL

- 1 Contractor shall comply with and furnish all items necessary to satisfy any general and specific conditions that are part of the Owner and Contractor obtained permits and licenses.
- 2 Obtain and pay for all permits and licenses as provided for in the General Conditions, except as otherwise provided herein.
- 3 Schedule all inspections and obtain all written approvals of the agencies required by the permits, easements, and licenses.
- 4 A copy of the permits and easements obtained by the Owner will be furnished to the Contractor.
- 5 The Contractor shall keep a copy of all permits and easements complete with conditions, attachments, exhibits, and modifications at the work site. And provide copies of the permits to the appropriate subcontractors. The contractor is responsible for ensuring that the permit conditions are explained to the appropriate construction personnel.

1.02 PERMITS/EASEMENTS BY OWNER

The following is a list of permits that have been submitted by and/or received by the Owner and a copy is provided in APPENDIX A in these Specifications::

- 1 Indian River County Right-of-Way Permit
- 2 FDEP Wastewater Construction Permit

1.03 PERMITS BY CONTRACTOR

- A. If required, the Contractor shall prepare, submit, and pay for the Notice of Intent (NOI) to use the Generic Permit for Stormwater Discharge from Construction Activity, which will include Stormwater Pollution Prevention Plan (SWPPP) as required by F.A.C. 62-621.300(4) and the Environmental Protection Agency (EPA) as part of the National Pollutant Discharge Elimination System (NPDES) prior to beginning work. The Contractor will be responsible for the \$250 application fee and the costs associated with preparation of the NOI and SWPPP. The Contractor shall conform to the conditions of this permit as part of this Contract.
- B. Other Permits Required: The Contractor is responsible for obtaining any temporary discharge permits that may be required by local drainage districts as well as any right-of-way permits necessary to complete the Work.

1.04 NOTIFICATION

- A. Indian River County: The Contractor is required to notify the Indian River County Utilities Department 48 hours prior to initiating construction (Arjuna Weragoda, P.E., 772-226-1821). The Contractor is required to notify the Indian River County Road and Bridge Department 72 hours prior to blocking any County roads or detouring any traffic (Will. Scott, 772-770-5085).
- B. Utility Companies: Contractor shall notify the utility companies in the area 48 hours prior to initiating construction and contact SunShine State One Call by dialing 811.
- C. The Contractor shall give the Engineer/ not less than seven (7) calendar days notice of the time and place (or places) where he will start the work.
- D. When the Contractor's excavating operations encounter prehistoric remains or artifacts of historical or archeological significance, the operations shall be temporarily discontinued in that area and the Engineer shall be notified. The Engineer will consult archaeological authorities and determine the disposition of the remains or artifacts. The Contractor agrees that he will make no claim for additional payment or for extension of time because of any delays in or alteration of his procedure due to removal of any such remains or artifacts.

PART 2 – PRODUCTS

Not applicable

PART 3 – EXECUTION

Not applicable

END OF SECTION

SECTION 01090

REFERENCE STANDARDS

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

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

1.02 QUALITY ASSURANCE

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

1.03 ABBREVIATIONS, NAMES, AND ADDRESSES OR ORGANIZATIONS

- A. Obtain copies of reference standards direct from publication source, when needed for proper performance of work, or when required for submittal by Contract Documents.
- B. The following, as appropriate to project, is a list of referenced standards and their mailing addresses for requesting copies of standards:

AA	Aluminum Association 818 Connecticut Avenue, NW Washington, D.C. 20006
AABC	Associated Air Balance Council 1000 Vermont Avenue, NW Washington, D.C. 20005
AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, NW Washington, D.C. 20001
ACI	American Concrete Institute Box 19150 Redford Station Detroit, MI 48219

ADC	Air Diffusion council 435 North Michigan Avenue Chicago, IL 60611
AI	Asphalt Institute Asphalt Institute Building College Park, MD 20740
AISC	American Institute of Steel Construction 1221 Avenue of the Americas New York, NY 10020
AISI	American Iron and Steel Institute 1000 16 th Street, NW Washington, D.C., 20036
AMCA	Air Movement and Control Association 30 West University Drive Arlington Heights, IL 60004
ANSI	American National Standards Institute 1430 Broadway New York, NY 10018
ARI	Air Conditioning and Refrigeration Institute 1815 North Fort Myer Drive Arlington, VA 22209
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers 345 East 47 th Street New York, NY 10017
ASME	American Society of Mechanical Engineers 345 East 47 th Street New York, NY 10017
ASPA	American Sod Producers' Association Association Building Ninth and Minnesota Hastings, NE 68901
ASSE	American Society of Sanitary Engineers 960 Illuminating Building Cleveland, OH 44113
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
AWI	Architectural Woodwork Institute 2310 South Walter Reed Drive

Arlington, VA 22206

AWPA	American Wood-Preservers Association 7735 Old Georgetown Road Bethesda, MD 20014
AWS	American Welding Society 2501 NW 7 th Street Miami, FL 33125
AWWA	American Water Works Association 6666 W. Quincy Avenue Denver, CO 80235
CDA	Copper Development Association 57 th Floor, Chrysler Building 405 Lexington Avenue New York, NY 10017
CLFMI	Chain Link Fence Manufacturers Institute 1101 Connecticut Avenue Washington, D.C. 20036
CRSI	Concrete Reinforcing Steel Institute 180 North LaSalle Street, Suite 2110 Chicago, IL 60601
FDOT	Florida Department of Transportation Haydon Burns Building 605 Suwannee Street Tallahassee, FL 32301
FM	Factory Mutual System 1151 Boston-Providence Turnpike Norwood, MA 02062
FS	Federal Specifications General Services Administration Specifications and Information Distribution Section (WFSIS) Washington Navy Yard, Bldg. 197 Washington, D.C. 20407
GA	Gypsum Association 1603 Orrington Avenue Evanston, IL 60201
MFMA	Maple Flooring Manufacturers Association 2400 East Devon, Suite 205 Des Plaines, IL 60018

MIL	Military Specification Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, PA 19120
MLSFA	Metal Lath / Steel Framing Association 221 North LaSalle Street Chicago, IL 60601
NAAMM	National Association of Architectural Metal Manufacturers 221 North LaSalle Street Chicago, IL 60601
NEBB	National Environmental Balancing Bureau 8224 Old Courthouse Road Vienna, VA 22180
NEMA	National Electrical Manufacturers Association 2101 L Street, NW Washington, D.C. 20037
NFPA	National Fire Protection Association 470 Atlantic Avenue Boston, MA 02210
NFPA	National Forest Products Association 1619 Massachusetts Avenue, NW Washington, D.C. 20036
NOFMA	National Oak Flooring Manufacturers Association 804 Sterick Building Memphis, TN 38103
NSF	National Sanitation Foundation NSF Building 3475 Plymouth Road Ann Arbor, MI 48106
NSWMA	National Solid Waste Management Association 1120 Connecticut Avenue, NW Washington, D.C. 20036
NTMA	National Terrazzo and Mosaic Association 3166 Des Plaines Avenue Des Plaines, IL 60018
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 20076
PCI	Prestressed Concrete Institute 20 North Wacker Drive

	Chicago, IL 60606
PS	Product Standard U.S. Department of Commerce Washington, D.C. 20203
RCSHSB	Red Cedar Shingle and Handsplit Shake Bureau 515 116 th Avenue Bellevue, WA 98004
SDI	Steel Deck Institute Box 3812 St. Louis, MO 63122
SDI	Steel Door Institute 712 Lakewood Center North Cleveland, OH 44107
SIGMA	Sealed Insulating Glass Manufacturers Association 111 East Wacker Drive Chicago, IL 60601
SJI	Steel Joint Institute 1703 Parham Road, Suite 204 Richmond, VA 23229
SMACNA	Sheet Metal and Air Conditioning Contractor's National Association 8224 Old Courthouse Road Vienna, VA 22180
TCA	Technical Aid Series Construction Specifications Institute 1150 Seventeenth Street, NW Washington, D.C. 20036
TCA	Tile Council of America, Inc. Box 326 Princeton, NJ 08540
UL	Underwriters Laboratories, Inc. 333 Pfingston Road Northbrook, IL 60062

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

Not Applicable

END OF SECTION

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SECTION 01200

PROJECT MEETINGS

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The Engineer shall schedule and administer pre-construction meeting, periodic progress meetings and specially called meetings throughout progress of the work.
 - 1. Prepare agenda for meetings.
 - 2. Make physical arrangements for meetings.
 - 3. Preside at meetings.
 - 4. Record the minutes; include significant proceedings and decisions.
 - 5. Reproduce and distribute copies of minutes within 15 working days after each meeting.
 - a. To participants in the meeting.
 - b. To parties affected by decisions made at the meeting.
- B. Representatives of Contractors, Subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
- C. Attend meetings to ascertain that work is expedited consistent with Contract Documents and construction schedules.

1.02 RELATED REQUIREMENTS

- A. Instructions to Bidders are included in Section 00100.
- B. Construction Schedules are included in Section 01311.
- C. Shop Drawings, Working Drawings and Samples are included in Section 01340.
- D. Contract Closeout is included in Section 01700.

1.03 PRE-CONSTRUCTION MEETING

- A. Schedule a preconstruction meeting no later than 15 days after date of Notice to Proceed.
- B. Location: A central site, convenient for all parties, designated by the Owner.
- C. Attendance
 - 1. Owner's Representative.
 - 2. Engineer and his/her professional consultants.
 - 3. Resident Project Representative.
 - 4. Contractor's Superintendent.
 - 5. Major Subcontractors.
 - 6. Major suppliers.
 - 7. Utilities
 - 8. Others as appropriate.

- D. Suggested Agenda
1. Distribution and discussion of:
 - a. List of major Subcontractors and suppliers.
 - b. Projected Construction Schedules.
 2. Critical work sequencing.
 3. Major equipment deliveries and priorities.
 4. Project Coordination.
 - a. Designation of responsible personnel.
 5. Procedures and processing of:
 - a. Field decisions.
 - b. Proposal requests.
 - c. Submittals.
 - d. Change Orders.
 - e. Applications for Payment.
 6. Adequacy of distribution of Contract Documents.
 7. Procedures for maintaining Record Documents.
 8. Use of premises:
 - a. Office, work and storage areas.
 - b. Owner's requirements.
 9. Construction facilities, controls and construction aids.
 10. Temporary utilities.
 11. Housekeeping procedures.

1.04 PROGRESS MEETINGS

- A. Schedule regular progress meetings. The progress meetings will be held every 30 days, with the first meeting 30 days after the pre-construction meeting or 30 days after the date of Notice to Proceed.
- B. Hold called meetings as required by progress of the work.
- C. Location of the meetings: Project field office of Contractor or Engineer.
- D. Attendance
1. Engineer and his/her professional consultants as needed.
 2. Subcontractors as appropriate to the agenda.
 3. Suppliers as appropriate to the agenda.
 4. Others as appropriate.
- E. Suggested Agenda
1. Review, approval of minutes of previous meeting.
 2. Review of work progress since previous meeting.
 3. Field observations, problems and conflicts.
 4. Problems which impede Construction Schedule.
 5. Review of off-site fabrication, delivery schedules.
 6. Corrective measures and procedures to regain projected schedule.
 7. Revisions to Construction Schedule.
 8. Progress, schedule, during succeeding work period.
 9. Coordination of schedules.
 10. Review submittal schedules; expedite as required.

11. Maintenance of quality standards.
 12. Pending changes and substitutions.
 13. Review proposed changes for:
 - a. Effect on Construction Schedule and on completion date.
 - b. Effect on other contracts of the project.
 14. Other business.
 15. Construction schedule.
 16. Critical/long lead items.
- F. Attend progress meetings and is to study previous meeting minutes and current agenda items, in order to be prepared to discuss pertinent topics such as deliveries of materials and equipment, progress of the work, etc.
- G. Provide a current submittal log at each progress meeting in accordance with Section 01300.

1.05 SPECIAL SHOP DRAWING REVIEW MEETING (if required)

- A. Within twenty-one (21) calendar days following the Notice to Proceed (NTP) the Contractor shall schedule a special shop drawing review meeting to facilitate the review of the systems.
- B. The purpose of this meeting is to expedite the review process so that the Contractor may place orders with his Supplier's as soon as possible.
- C. At this meeting, the Contractor shall provide the shop drawings for the items and equipment required. The number of shop drawings required shall be as specified in *Section 01340*.
- D. The Contractor shall schedule a special shop drawing review meeting every twenty-one (21) calendar days following the initial meeting until the items and equipment have been approved to a degree acceptable to the Engineer, as applicable.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. This Section specifies the general methods and requirements of submissions applicable to Shop Drawings, Product Data, Samples, Audio-Visual Documentation, and Construction or Submittal Schedules. Additional general submission requirements are contained in Article 6.17 of the General Conditions. Detailed submittal requirements are specified in the technical Sections.
- B. All submittals shall be clearly identified by reference to Section Number, Paragraph, Drawing Number or Detail as applicable. Submittals shall be clear and legible and of sufficient size for presentation of data.
- C. The Contractor is to maintain an accurate updated submittal log and will bring this log to each scheduled progress meeting with the Owner and the Engineer. This log should include the following items:
 - 1. Submittal-Description and File number assigned.
 - 2. Date to Engineer.
 - 3. Date returned to Contractor from Engineer.
 - 4. Status of submittal (approved/resubmit/rejected).
 - 5. Date of re-submittal and return (as applicable).
 - 6. Date material released for fabrication.
 - 7. Projected date of fabrication.
 - 8. Projected date of delivery to site.
 - 9. Status of O&M submittal.

1.02 SHOP DRAWINGS, PRODUCT DATA, SAMPLES

- A. Shop Drawings
 - 1. Shop drawings as specified in individual Sections include, custom-prepared data such as fabrication and erection/installation (working) drawings, scheduled information, setting diagrams, actual shop work manufacturing instructions, custom templates, special wiring diagrams, coordination drawings, individual system or equipment inspection and test reports including performance curves and certifications, as applicable to the work.
 - 2. All shop drawings submitted by subcontractors shall be sent directly to the Contractor for checking. The Contractor shall be responsible for their submission at the proper time so as to prevent delays in delivery of materials.
 - 3. Check all subcontractors' shop drawings regarding measurements, size of members, materials and details to make sure that they conform to the intent of the Drawings and related Sections. Return shop drawings found to be inaccurate or otherwise in error to the subcontractors for correction before submission thereof.
 - 4. All details on shop drawings shall show clearly the relation of the various parts to the main members and lines of the structure and where correct fabrication of the work depends upon field measurements, such

measurements shall be made and noted on the drawings before being submitted.

B. Product Data

1. Product data as specified in individual Sections include, standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer's product specification and installation instructions, availability of colors and patterns, manufacturer's printed statements of compliances and applicability, roughing-in diagrams and templates, catalog cuts, product photographs, standard wiring diagrams, printed performance curves and operational-range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance instructions and recommended spare-parts listing and printed product warranties, as applicable to the work.

C. Samples

1. Samples specified in individual Sections include, physical examples of the work such as sections of manufactured or fabricated work, small cuts or containers of materials, complete units of repetitively-used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effect, graphic symbols and units of work to be used by the Engineer or Owner for independent inspection and testing, as applicable to the work.
2. The Contractor shall prepare a transmittal letter in triplicate for each shipment of samples. Contractor shall enclose a copy of this letter with the shipment and send a copy of this letter to the Engineer. Approval of a sample shall be only for the characteristics or use named in such approval and shall not be construed to change or modify any Contract Requirements.

1.03 CONTRACTOR'S RESPONSIBILITIES

- A. Review shop drawings, product data and samples, including those by subcontractors, prior to submission to determine and verify the following:
1. Field measurements
 2. Field construction criteria
 3. Catalog numbers and similar data
 4. Conformance with related Sections
- B. Each shop drawing, sample and product data submitted by the Contractor shall have affixed to it the following Certification Statement including the Contractor's Company name and signed by the Contractor: "Certification Statement: by this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements." Shop drawings and product data sheets 11-inch by 17-inch and smaller shall be bound together in an orderly fashion and bear the above Certification Statement on the cover sheet. The cover sheet shall fully describe the packaged data and include a listing of all items within the package. Provide to the Resident Project Representative a copy of each transmittal sheet for shop drawings, product data and samples at the time of submittal to the Engineer.

- C. Notify the Engineer in writing, at the time of submittal, of any deviations in the submittals from the requirements of the Contract Documents.
- D. The review and approval of shop drawings, samples or product data by the Engineer shall not relieve the Contractor from the responsibility for the fulfillment of the terms of the Contract. All risks of error and omission are assumed by the Contractor and the Engineer will have no responsibility therefor.
- E. No portion of the work requiring a shop drawing, sample, or product data shall be started nor shall any materials be fabricated or installed prior to the approval or qualified approval of such item. Fabrication performed, materials purchased or on-site construction accomplished which does not conform to approved shop drawings and data shall be at the Contractor's risk. The Owner will not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.
- F. Project work, materials, fabrication, and installation shall conform with approved shop drawings, applicable samples, and product data.

1.04 SUBMISSION REQUIREMENTS

- A. Make submittals promptly in accordance with approved schedule and in such sequence as to cause no delay in the Work or in the work of any other contractor.
- B. Each submittal, appropriately coded, will be returned within 30 calendar days following receipt of submittal by the Engineer.
- C. Number of submittals required:
 - 1. Shop Drawings: Five copies.
 - 2. Product Data: Three copies.
 - 3. Samples: Submit the number stated in the respective Sections.
- D. Submittals shall contain:
 - 1. The date of submission and the dates of any previous submissions.
 - 2. The Project title and number.
 - 3. Contractor identification.
 - 4. The names of:
 - a. Contractor
 - b. Supplier
 - c. Manufacturer
 - 5. Identification of the product, with the section number, page and paragraph(s).
 - 6. Field dimensions, clearly identified as such.
 - 7. Relation to adjacent or critical features of the work or materials.
 - 8. Applicable standards, such as ASTM or Federal Standards numbers.
 - 9. Identification of deviations from Contract Documents.

10. Identification of revisions on re-submittals.
11. A blank space suitably sized for Contractor and Engineer stamps.
12. Where calculations are required to be submitted by the Contractor, the calculations shall have been checked by a qualified individual other than the preparer. The submitted calculations shall clearly show the names of the preparer and of the checker.

1.05 REVIEW OF SHOP DRAWINGS, PRODUCT DATA, WORKING DRAWINGS AND SAMPLES

- A. The review of shop drawings, data and samples will be for general conformance with the design concept and Contract Documents. They shall not be construed:
 1. as permitting any departure from the Contract requirements;
 2. as relieving the Contractor of responsibility for any errors, including details, dimensions, and materials;
 3. as approving departures from details furnished by the Engineer, except as otherwise provided herein.
- B. The Contractor remains responsible for details and accuracy, for coordinating the work with all other associated work and trades, for selecting fabrication processes, for techniques of assembly, and for performing work in a safe manner.
- C. If the shop drawings, data or samples as submitted describe variations and show a departure from the Contract requirements which Engineer finds to be in the interest of the Owner and to be so minor as not to involve a change in Contract Price or Contract Time, the Engineer may return the reviewed drawings without noting an exception.
- D. Submittals will be returned to the Contractor under one of the following codes.

Code 1 -"APPROVED" is assigned when there are no notations or comments on the submittal. When returned under this code the Contractor may release the equipment and/or material for manufacture.

Code 2 -"APPROVED AS NOTED". This code is assigned when a confirmation of the notations and comments IS NOT required by the Contractor. The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product.

Code 3 -"APPROVED AS NOTED/CONFIRM". This combination of codes is assigned when a confirmation of the notations and comments IS required by the Contractor. The Contractor may, at his own risk, release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product. This confirmation shall specifically address each omission and nonconforming item that was noted. Confirmation is to be received by the Engineer within 15 calendar days of the date of the Engineer's transmittal requiring the confirmation.

Code 4 -"APPROVED AS NOTED/RESUBMIT". This combination of codes is assigned when notations and comments are extensive enough to require a resubmittal of the package. This resubmittal is to address all comments, omissions and non-conforming items that were noted. Resubmittal is to be received by the Engineer within 15 calendar days of the date of the Engineer's transmittal requiring the resubmittal.

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

Code 6 -"COMMENTS ATTACHED" is assigned where there are comments attached to the returned submittal which provide additional data to aid the Contractor.

Codes 1 through 5 designate the status of the reviewed submittal with Code 6 showing there has been an attachment of additional data.

- E. Resubmittals will be handled in the same manner as first submittals. On resubmittals the Contractor shall identify all revisions made to the submittals, either in writing on the letter of transmittal or on the shop drawings by use of revision triangles or other similar methods. The resubmittal shall clearly respond to each comment made by the Engineer on the previous submission. Additionally, the Contractor shall direct specific attention to any revisions made other than the corrections requested by the Engineer on previous submissions.
- F. Partial submittals may not be reviewed. The Engineer will be the only judge as to the completeness of a submittal. Submittals not complete will be returned to the Contractor and will be considered "Not Approved" until resubmitted. The Engineer may at his option provide a list or mark the submittal directing the Contractor to the areas that are incomplete.
- G. Repetitive Review
 - 1. Shop Drawings and other submittals will be reviewed no more than twice at the Owner's expense. All subsequent reviews will be performed at times convenient to the Engineer and at the Contractor's expense based on the Engineer's then prevailing rates. The Contractor shall reimburse the Owner for all such fees invoiced to the Owner by the Engineer. Submittals are required until approved,
 - 2. Any need for more than one resubmission, or any other delay in obtaining Engineer's review of submittal will not entitle Contractor to extension of the contract time.
- H. If the Contractor considers any correction indicated on the shop drawings to constitute a change to the Contract Documents, the Contractor shall give written notice thereof to the Engineer at least 7 working days prior to release for manufacture.
- I. When the shop drawings have been completed to the satisfaction of the Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.

1.06 DISTRIBUTION

- A. Distribute reproductions of approved shop drawings and copies of approved product data and samples, where required, to the job site file and elsewhere as directed by the Engineer. Number of copies shall be as directed by the Engineer but shall not exceed six.

1.07 GENERAL PROCEDURES FOR SUBMITTALS

- A. Coordination of Submittal Times: Prepare and transmit each submittal sufficiently in advance of performing the related work or other applicable activities, or within the time specified in the individual work of other related Sections, so that the installation will not be delayed by processing times including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery and similar sequenced activities. No extension of time will be authorized because of the Contractor's failure to transmit submittals sufficiently in advance of the Work.

P.E. CERTIFICATION FORM

The undersigned hereby certifies that he/she is a professional engineer registered in the State of Florida and that he/she has been employed by

_____ to design
(Name of Contractor)

(Insert P.E. Responsibilities)

in accordance with Section _____ for the

West Wabasso Community Gravity Sewer System Phase 2
(Name of Project)

The undersigned further certifies that he/she has performed the design of the _____, that said design is in conformance
(Name of Project Element)

with all applicable local, state and federal codes, rules, and regulations, and that his/her signature and P.E. stamp have been affixed to all calculations and drawings used in, and resulting from, the design.

The undersigned hereby agrees to make all original design drawings and calculations available to the

Indian River County Department of Utility Services
(Insert Name of Owner)

or the Owner's authorized representative within seven days following written request therefor by the Owner.

P.E. Name

Contractor's Name

Signature

Signature

Address

Title

Address

END OF SECTION

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SECTION 01311

CONSTRUCTION SCHEDULES

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Promptly after award of the Contract, Contractor shall prepare and submit to the Owner and Engineer estimated construction progress for the Work, with sub-schedules of related activities which are essential to its progress.
- B. Coordinate the work and scheduling with and around other Contractors and individual trades performing work on the Project.
- C. Submit revised progress schedules with each application for payment.
- D. Progress Schedule shall become part of Contract Documents after approval by Engineer/Owner.

1.02 RELATED REQUIREMENTS

- A. In other parts of the Contract Documents:
 - 1. General Conditions:
 - a. Articles 2 and 6 – Schedules, Reports, and Records
 - b. Sections 6.01 and 6.02 – Supervision by Contractor
 - c. Article 15 – Supervision of Work, Termination, and Delay
- B. Specified in other sections:
 - 1. Summary of Work is included in Section 01000.
 - 2. Submittals are included in Section 01300.

1.03 FORM OF SCHEDULES

- A. Prepare schedules in the form of a horizontal bar chart as follows:
 - 1. Provide separate horizontal bar for each trade or operation
 - 2. Horizontal time scale: Identify the first work day of each week
 - 3. Scale and spacing: To allow space for notations and future revisions
 - 4. Minimum sheet size: 11 inch by 17 inch
- B. Format of listings: The chronological order of the start of each item of work.
- C. Identification of listings: By major specification section numbers.

1.04 CONTENT OF SCHEDULES

- A. Construction Progress Schedule shall:
 - 1. Show the complete sequence of construction by activity.
 - 2. Show the dates for the beginning and completion of each major element of construction; specifically list (at a minimum):

- a. Subcontractor work
 - b. Utility Construction
 - c. Restoration
- 3. Show projected percentage of completion for each item, as of the first day of each month.
- 4. Show projected dollar cash flow requirements for each month of construction.

1.05 PROGRESS REVISIONS

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

1.06 SUBMISSIONS

- A. Submit initial schedules within ten (10) days after award of Contract; Engineer will review schedules for information only.
- B. Submit revised progress schedules with each application for payment or monthly, whichever is the shortest period.
- C. Submit the number of opaque reproductions which the Contractor requires, plus five (5) additional copies; one for Owner and one for Engineer.

1.07 DISTRIBUTION

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

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

3.01 RESPONSIBILITY FOR SCHEDULE COMPLIANCE

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

3.02 ADJUSTMENT OF CONTRACT SCHEDULE AND COMPLETION TIME

- A. If the Contractor desires to make changes in his method of operating which affect the approved schedule, he shall notify the Owner/Engineer in writing stating what changes are proposed and the reason for the change. If the Owner/Engineer approves these changes, the Contractor shall revise and submit for approval, without additional cost to the Owner, all of the affected portion of the schedule. The schedule shall be adjusted by the Contractor only after prior approval of his proposed changes by the Owner/Engineer.
- B. Adjustments may consist of changing portions of the activity sequence and/or activity durations, division of approved activities, or other adjustments as may be approved by the Owner/Engineer. The addition of extraneous, non-working activities and/or activities which add unapproved restraints to the schedule shall not be approved.
- C. If the completion of any activity, whether or not critical, falls more than 100 percent behind its approved duration, the Contractor shall submit for approval a schedule adjustment showing each such activity divided into two activities reflecting completed versus uncompleted work.

- D. Shop drawings which are not approved on the first submittal or within the scheduled time shall be immediately rescheduled, as well as pipelines and tanks which do not pass leak tests.
- E. The contract completion time will be adjusted only for causes specified in this contract. In the event the Contractor requests an extension of any contract completion date, he shall furnish such justification and supporting evidence as the Owner/Engineer may deem necessary for determination as to whether the Contractor is entitled to an extension of time under the provisions of the contract. Owner/Engineer will, after receipt of such justification and supporting evidence make findings of fact and will advise the Contractor in writing thereof. If the Owner/Engineer finds that the Contractor is entitled to any extension of any contract completion date under the provisions of this contract, the Owner/Engineer's determination as to the total number of days of extension shall be based upon the currently approved schedule and on all data relevant to the extension. Such data shall be included in the next monthly updating of the schedule. The Contractor acknowledges and agrees that actual delays in activities which, according to the schedule, do not affect any contract completion date shown by the critical path in the schedule do not have any affect on the contract completion date or dates, and therefore, will not be the basis for a change therein.
- F. From time to time it may be necessary for the contract schedule and/or completion time to be adjusted by the Owner/Engineer to reflect the effects of job conditions, weather, technical difficulties, strikes, unavoidable delays on the part of the Owner or his representatives, and other unforeseeable conditions which may indicate schedule adjustments and/or completion time extension. Under such conditions, the Contractor shall reschedule the work and/or contract completion time to reflect the changed conditions and the Contractor shall revise his schedule accordingly. No additional compensation shall be made to the Contractor for such schedule changes except for unavoidable overall contract time extensions beyond the actual completion of all unaffected work in the contract, in which case the Contractor shall take all possible action to minimize any time extension and any additional cost to the Owner. It is specifically pointed out that the use of available float time in the schedule may be used by the Owner as defined by the Owner/Engineer, as well as by the Contractor. Float time is defined as the amount of time between the early start date, and the late start date, or the early finish date and the late finish date, of any of the activities in the schedule.
- G. The Owner controls the float time in the approved schedule and, therefore, without obligation to extend either the overall completion date or any intermediate completion dates set out in the schedule, the Owner may initiate changes to the contract work that absorb float time only. Owner-initiated changes that affect the critical path on the approved schedule shall be the sole grounds for extending (or contracting) said completion dates. Contractor-initiated changes that encroach on the float time identified in the approved schedule may be accomplished with the Owner's concurrence. Such changes, however, shall give way to Owner-initiated changes competing for the same float time.

3.03 COORDINATING SCHEDULES WITH OTHER CONTRACT SCHEDULES

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

END OF SECTION

SECTION 01340

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART 1

GENERAL

1.01

REQUIREMENTS INCLUDED

- A. Submit Shop Drawings, Product Data, Samples and Certificates required by the Contract Documents.
- B. Review and approval by Contractor of submitted material.

1.02

RELATED REQUIREMENTS

- A. In other parts of the Contract Documents:
 - 1. Definitions and Additional Responsibilities of Parties:
 - a. General Conditions of the Contract
 - (1) Sections 6.23 – 6.28: Shop Drawings
- B. Specified in other sections:
 - 1. Section 01311: Construction Schedules.
 - 2. Section 01720: Record Documents
- C. Designate in the construction schedule, or in separate coordinated schedule, the dates for the submission and the dates that reviewed Shop Drawings, Product Data and Samples will be needed.

1.03

SHOP DRAWINGS

- A. Drawings shall be presented in a clear and thorough manner.
 - 1. Details shall be identified by reference to sheet and detail of schedule shown on Contract Drawings.
- B. Minimum sheet size: Manufacturer's standard; adequate to clearly illustrate.

1.04

PRODUCT DATA

A. Preparation:

1. Clearly mark each copy to identify applicable products, models, options, and other data.
2. Show performance characteristics and capacities.
3. Show dimensions and clearances required.
4. Show wiring or piping diagrams and controls.

B. Manufacturer's standard schematic drawings and diagrams:

1. Modify drawings and diagrams to delete information which is not applicable to the work.
2. Supplement standard information to provide information specifically applicable to the work.
3. Include manufacturer's installation instructions when required by the Specifications Section.

1.05

SAMPLES

A. Office Samples: Limit to items requiring color, pattern and similar selections and shall be sufficient size and quantity to clearly illustrate:

1. Full range of color, texture and pattern
2. Submit samples for selection of finishes within sixty (60) days after date of Agreement, or when directed by Engineer.

B. Field Samples and Mock-ups:

1. Functional characteristics of the product, with integrally-related parts and attachment devices.
2. Contractor shall erect, at the Project Site, at a location acceptable to the Engineer
3. Size of Area: that specified in the respective specification section.
4. Fabricate each sample and mockup complete and finished.
5. Include identification on each sample, giving full information.
6. Remove samples at conclusion of Work, or when acceptable to the Engineer.

1.06**MANUFACTURER'S CERTIFICATES**

- A. Submit Certificates, in duplicate, in accordance with requirements of each specification section.

1.07**CONTRACTOR RESPONSIBILITIES**

- A. Review Shop Drawings, Product Data and samples prior to submission.
- B. Determine and verify:
 - 1. Field measurements
 - 2. Field construction criteria
 - 3. Catalog numbers and similar data
 - 4. Conformance with specifications
- C. Coordinate each submittal with requirements of the work and of the Contract Documents.
- D. Notify the Engineer in writing at the time of submission of ANY AND ALL DEVIATIONS in the submittals from requirements of the Contract Documents. All of the Contractor's comments and notations shall be in red ink.
- E. Begin no fabrication of work which requires submittals until return of submittals with Engineer's approval.

1.08**SUBMISSION REQUIREMENTS**

- A. Make submittals promptly in accordance with approved schedule, and in such sequence as to cause no delay in the work of any other Contractor.
- B. Number of submittals required:
 - 1. Shop Drawings: Submit the number of opaque reproductions which the contractor requires, plus four (4) copies which will be retained by the Engineer.
 - 2. Product Data: Submit the number of copies which the Contractor requires, plus four (4) which will be retained by the Engineer.
 - 3. Samples: Submit the number stated in each specification section.
- C. Submittals shall contain:
 - 1. The date of submission and the dates of any previous submissions.
 - 2. The project title and number
 - 3. Contract identification

4. The name of:
 - a. Contractor
 - b. Supplier
 - c. Manufacturer
5. Identification of the project, with specification section number.
6. Field dimensions, clearly identified as such.
7. Relation to adjacent or critical features of the Work or materials.
8. Applicable standards, such as ASTM or Federal Specification numbers.
9. Identification of deviations from Contract Documents
10. Identification of revisions on resubmittals.
11. An 8" x 3" blank space for Contractor and Engineer stamps
12. Contractor's stamp or review and approval, initialed or signed, certifying to review of initialed or signed, certifying to review of submittal, verification of products, field measurements and field construction criteria, and coordination of the information within the submittal with requirements of the work and of Contract Documents.

1.09

RESUBMISSION REQUIREMENTS

- A. Make any corrections or changes in the submittals required by the Engineer and resubmit until approved.
- B. Shop Drawings and Product Data:
 1. Revise initial drawings or data, and resubmit as specified for initial submittal.
 2. Indicate any changes which have been made other than those requested by the Engineer.
- C. Samples: Submit new samples as required for initial submittal.

1.10

DISTRIBUTION

- A. Distribute reproductions of Shop Drawings and copies of Product Data which carry the Engineer's stamp or review to:
 1. Job site file.
 2. Record Documents file.
 3. Other affected contractors
 4. Subcontractors
 5. Supplier or fabricator
- B. Distribute samples which carry the Engineer's stamp of approval as directed by the Engineer.

1.11**ENGINEER'S DUTIES**

- A. Review submittals with reasonable promptness and in accordance with schedule.
- B. Affix stamp and initials / signature, and indicate requirements for resubmittal, or review without comments of submittal. All of Engineer's comments shall be made in green ink.
- C. Return submittals to Contractor for distribution, or for resubmission.

PART 2 -- PRODUCTS

Not Applicable

PART 3 -- EXECUTION

Not Applicable

**** END OF SECTION ****

SECTION 01381

AUDIO-VISUAL DOCUMENTATION

PART 1 – GENERAL

1.01 SCOPE OF WORK

Prior to commencing of the Work, the Contractor shall have a continuous color audio-video tape recording taken along the entire length of the project to serve as a record of preconstruction conditions.

1.02 RELATED WORK

- A. Summary of Work is included in Section 01000.
- B. Contract Closeout is included in Section 01700.

1.03 APPROVAL

No construction shall begin prior to review and acceptance of the tapes covering the construction area by the Owner/Engineer. The Owner/Engineer shall have the authority to reject all or any portion of a videotape not conforming to specifications and order that it be redone at no additional charge. The Contractor shall reschedule unacceptable coverage within five (5) days after being notified. The Owner/Engineer shall designate those areas, if any, to be omitted from or added to the audio-video coverage. Tape recordings shall not be made more than thirty (30) days prior to beginning of construction of any area. All tapes and written records shall become the property of the Owner. The tapes shall be delivered to the Owner as soon as possible after recording.

1.04 QUALITY ASSURANCE

The Contractor shall engage the services of a professional videographer. The color audio-video tapes shall be prepared by a responsible commercial firm known to be skilled and regularly engaged in the business of preconstruction color audio-video tape documentation.

PART 2 – PRODUCTS

2.01 GENERAL

All equipment, accessories, materials, and labor to perform this service shall be furnished by the Contractor.

2.02 QUALITY

The total audio-video system shall reproduce bright, sharp, clear pictures with accurate colors and shall have minimal distortion, tearing, rolls, or other imperfections. The audio portion of the recording shall reproduce the commentary of the camera operator with proper volume and clarity and be free from distortion and interruptions.

2.03 CAMERA

The color video camera used in the recording system shall have a horizontal resolution of 300 lines at center, a luminance signal-to-noise ratio of 45dB, and a minimum illumination requirement of 25 foot candles.

2.04 TAPES

Audio-video shall be new. Reprocessed tapes will not be acceptable. The tapes shall be one-half inch, high energy, extended still frame capable videocassette, shall be interchangeable with the color videocassette player, and shall be compatible for playback with the player-receiver.

PART 3 – EXECUTION

3.01 VIDEOTAPING PROCEDURES

- A. Each tape shall begin with the current date, project name, and municipality, and be followed by the general location; i.e., name of street, house address, viewing side, and direction of progress. The audio track shall consist of an original live recording. The recording shall contain the narrative commentary.
- B. All video recordings must, by electronic means, display continuously and simultaneously generate, with the actual taping, transparent digital information to include the date and time of recording, and station numbers, if shown on the Drawings. The date information shall contain the month, day, and year. The time information shall contain the hour, minute, and second. Additional information shall be displayed periodically. Such information shall include, but not be limited to, project name, contract number, name of street, house address, direction of travel, and the viewing side. The transparent information shall appear on the screen.
- C. All taping shall be done during times of good visibility. No taping shall be done during precipitation, mist, or fog. The recording shall be done only when sufficient sunlight is present to properly illuminate the subjects of recording and to produce bright, sharp video recordings of those subjects.
- D. The rate of speed in the general direction of travel of the vehicle used during taping shall not exceed 44 feet per minute. Panning, zoom-in, and zoom-out rates shall be sufficiently controlled to maintain a clear view of the object.
- E. Tape coverage shall include all surface features located within the zone of influence of construction supported by appropriate audio coverage. Such coverage shall include, but not be limited to, existing driveways, sidewalks, curbs, pavements, ditches, mailboxes, landscaping, culverts, fences, signs, and headwalls within the area covered.
- F. When conventional wheeled vehicles are used, the distance from the camera lens to the ground shall not be more than twelve (12) feet. In some instances, audio-video tape coverage may be required in areas not accessible by conventional wheeled vehicles. Such coverage shall be obtained by walking or special conveyance approved by the Engineer.

END OF SECTION

SECTION 01410

TESTING LABORATORY SERVICES

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Contractor will employ and pay for the services of an independent testing laboratory to perform certain specified testing. All testing described in the contract Documents shall be paid for by the Contractor. This requirement takes precedence over any other specification that may indicate that the testing fees (including collection, shipping and laboratory fees) be paid for by the Owner or any other party other than the Contractor.
 - 1. Contractor shall cooperate with the laboratory to facilitate the execution of its required services.
 - 2. Employment of the laboratory shall in no way relieve Contractor's obligations to perform the work of the Contract.
- B. Selection of testing laboratory shall be approved by Engineer and Owner.

1.02 RELATED REQUIREMENTS

- A. General Conditions of the contract: Inspections and testing required by laws, ordinances, rules, regulations, orders or approvals of public authorities.
- B. Respective sections of specifications: Certification of Products.
- C. Each specification section listed: Laboratory tests required and standards for testing.
- D. Testing Laboratory inspection, sampling and testing is required for but not limited to the following:
 - 1. Densities and Proctors (for soil compaction)
 - 2. Bacteriological Clearance
 - 3. Concrete Strength
 - 4. Any water quality monitoring as required by the project permits
 - 5. Other operations specified in these specifications or as required by the Engineer or Owner.

1.03 QUALIFICATION OF LABORATORY

- A. Meet "Recommended Requirements for Independent Laboratory Qualification," published by American Council of Independent Laboratories.
- B. Meet basic requirements of ASTM E329, "Standards of Recommended Practice for Inspection and Testing Agencies for Concrete and Steel as Used in Construction."

- C. Authorized to operate in the State in which the Project is located.
- D. Submit copy of report of inspection of facilities made by Materials Reference Laboratory of National Bureau of Standards during the most recent tour of inspection, with memorandum of remedies of any deficiencies reported by the inspection.
- E. Testing Equipment:
 - 1. Calibrated at reasonable intervals by devices of accuracy traceable to either:
 - a. National Bureau of Standards
 - b. Accepted values of national physical constants.

1.04 LABORATORY DUTIES

- A. Cooperate with Engineer and Contractor; provide qualified personnel after due notice.
- B. Perform specified inspections, sampling, and testing of materials and methods of construction:
 - 1. Comply with specified standards
 - 2. Ascertain compliance of materials with requirements of Contract Documents.
- C. Promptly notify Engineer and Contractor of observed irregularities or deficiencies of work or products.
- D. Promptly submit written report of each test and inspection; one copy each to Engineer, Owner, and Contractor, and one copy to Record Documents File. Each report shall include:
 - 1. Date issued
 - 2. Project title and number
 - 3. Testing laboratory name, address, and telephone number
 - 4. Name and signature of laboratory inspector
 - 5. Date and time of sampling or inspection
 - 6. Record of temperature and weather conditions
 - 7. Date of test
 - 8. Identification of product and specification section
 - 9. Location of sample or test in the Project
 - 10. Type of inspection or test
 - 11. Results of tests and compliance with Contract Documents
 - 12. Interpretation of test results, when requested by Engineer
- E. Perform additional tests as required by Engineer or the Owner

1.05 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY

- A. Laboratory is not authorized to:
 - 1. Release, revoke, alter, or enlarge on requirements of Contract Documents

2. Approve or accept any portion of the work
3. Perform any duties of the Contractor

1.06 CONTRACTOR'S RESPONSIBILITIES

- A. Employ and pay for the services of an independent testing laboratory.
- B. Cooperate with laboratory personnel, and provide access to work and to manufacturer's facilities.
- C. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.
- D. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other material mixes which require control by the testing laboratory.
- E. Materials and equipment used in the performance of work under this Contract are subject to inspection and testing at the point of manufacture or fabrication. Standard specifications for quality and workmanship are indicated in the Contract Documents. The Engineer may require the Contractor to provide statements or certificates from the manufacturers and fabricators that the materials and equipment provided by them are manufactured or fabricated in full accordance with the standard specifications for quality and workmanship indicated in the Contract Documents. All costs of this testing and providing statements and certificates shall be a subsidiary obligation of the Contractor, and no extra charge to the Owner shall be allowed on account of such testing and certification.
- F. Furnish incidental labor and facilities:
 1. To provide access to work to be tested
 2. To obtain and handle samples at the project site or at the source of the product to be tested
 3. To facilitate inspections and tests
 4. For storage and curing of test samples
- G. Notify laboratory, in advance of operations to allow for laboratory assignments of personnel and scheduling of tests.
- H. If the tests and any subsequent retests indicate the materials and equipment fail to meet the requirements of the Contract Documents, the Contractor shall pay for the laboratory costs directly to the testing firm, and these costs will not be reimbursable to the Contractor.

PART 2 – PRODUCTS

Not applicable.

PART 3 – EXECUTION

Not applicable.

END OF SECTION

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SECTION 01610

MATERIAL AND EQUIPMENT

PART 1 – GENERAL

1.01 SCOPE OF WORK

Material and equipment incorporated into the work:

- A. Conform to applicable specifications and standards.
- B. Comply with size, make, type and quality specified, or as specifically approved in writing by the Engineer.
- C. Manufactured and Fabricated Products
 - 1. Design, fabricate and assemble in accord with the best Engineering and shop practices.
 - 2. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
 - 3. Two or more items of the same kind shall be identical, by the same manufacturer.
 - 4. Products shall be suitable for service conditions.
 - 5. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
- D. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.02 RELATED WORK

- A. Conditions of the Contract
- B. Summary of Work is included in Section 01010.
- D. Submittals are included in Section 01300.
- E. Substitutions and Product Options are included in Section 01630.
- F. Cleaning is included in Section 01710.
- G. Warranties and Bonds are included in Section 01740.

1.03 APPROVAL OF MATERIALS

- A. Only new materials and equipment shall be incorporated in the work. All materials and equipment furnished shall be subject to the inspection and approval of the Engineer. No material shall be delivered to the work without prior approval of the Engineer.
- B. Within 30 days after the effective date of the Agreement, submit to the Engineer, data relating to materials and equipment proposes to be furnished for the work. Such data

shall be in sufficient detail to enable the Engineer to identify the particular product and to form an opinion as to its conformity to the specifications. The data shall comply with Section 01300.

- C. Facilities and labor for handling and inspection of all materials and equipment shall be furnished by the Contractor. If the Engineer requires, either prior to beginning or during the progress of the work, submit samples of materials for such special tests as may be necessary to demonstrate that they conform to the specifications. Such samples shall be furnished, stored, packed, and shipped as directed at the Contractor's expense. Except as otherwise noted, the Owner will make arrangements for and pay for the tests.
- D. Submit data and samples sufficiently early to permit consideration and approval before materials are necessary for incorporation in the work. Any delay of approval resulting from the failure to submit samples or data promptly shall not be used as a basis of claim against the Owner or the Engineer.
- E. In order to demonstrate the proficiency of workmen or to facilitate the choice among several textures, types, finishes and surfaces, provide such samples of workmanship or finish as may be required.
- F. The materials and equipment used on the work shall correspond to the approved samples or other data.

1.04 MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION

- A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including five (5) copies to the Engineer.
 - 1. Maintain one (1) set of complete instructions at the job site during installation and until completion.
- B. Handle, install, connect, clean, condition and adjust products in strict accord with such instructions and in conformity with specified requirements.
 - 1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Engineer for further instructions.
 - 2. Do not proceed with work without clear instructions.
- C. Perform work in accordance with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

1.05 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of products in accord with construction schedules, coordinate to avoid conflict with work and conditions at the site.
 - 1. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
 - 2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and undamaged.
- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

1.06 STORAGE AND PROTECTION

- A. Furnish a covered, weather-protected storage structure providing a clean, dry, non-corrosive environment for all mechanical equipment, valves, architectural items, electrical and instrumentation equipment and special equipment to be incorporated into this project. Storage of equipment shall be in strict accordance with the "instructions for storage" of each equipment supplier and manufacturer including connection of heaters, placing of storage lubricants in equipment, etc. Furnish a copy of the manufacturer's instructions for storage to the Engineer prior to storage of all equipment and materials. Corroded, damaged or deteriorated equipment and parts shall be replaced before acceptance of the project. Equipment and materials not properly stored will not be included in a payment estimate.
- B. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible.
 - 1. Store products subject to damage by the elements in weathertight enclosures.
 - 2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.
 - 3. Store fabricated products above the ground, on blocking or skids, prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
 - 4. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- C. All materials and equipment to be incorporated in the work shall be handled and stored before, during and after shipment in a manner to prevent warping, twisting, bending, breaking, chipping, rusting and any injury, theft or damage of any kind whatsoever to the material or equipment.
- D. Cement, sand, and lime shall be stored under a roof and off the ground and shall be kept completely dry at all times. All structural and miscellaneous steel and reinforcing steel shall be stored off the ground or otherwise to prevent accumulations of dirt or grease and in a position to prevent accumulations of standing water and to minimize rusting. Beams shall be stored with the webs vertical. Precast concrete beams shall be handled and stored in a manner to prevent accumulations of dirt, standing water, staining, chipping, or cracking. Brick, block, and similar masonry products shall be handled and stored in a manner to reduce breakage, chipping, cracking, and spalling to a minimum.
- E. All materials which, in the opinion of the Engineer, have become so damaged as to be unfit for the use intended or specified shall be promptly removed from the site of the work and the Contractor shall receive no compensation for the damaged material or its removal.
- F. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions and free from damage or deterioration.
- G. Protection after Installation
 - 1. Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove covering when no longer needed.

- H. The Contractor shall be responsible for all material, equipment, and supplies sold and delivered to the Owner under this Contract until final inspection of the work and acceptance thereof by the Owner. In the event any such material, equipment and supplies are lost, stolen, damaged, or destroyed prior to final inspection and acceptance, the Contractor shall replace same without additional cost to the Owner.
- I. Failure to take proper action on storage and handling of equipment supplied under this Contract within seven days after written notice to do so has been given, the Owner retains the right to correct all deficiencies noted in previously transmitted written notice and deduct the cost associated with these corrections from the Contract. These costs may be comprised of expenditures for labor, equipment usage, administrative, clerical, Engineering and any other costs associated with making the necessary corrections.

1.07 SPECIAL TOOLS

- A. Manufacturers of equipment and machinery shall furnish any special tools (including grease guns or other lubricating devices) required for normal adjustment, operations and maintenance, together with instructions for their use. Preserve and deliver to the Owner these tools and instructions in good order no later than 10 days prior to plant start-up.

1.08 STORAGE AND HANDLING OF EQUIPMENT ON SITE

- A. Because of the long period allowed for construction, special attention shall be given to the storage and handling of equipment on site. As a minimum, the procedure outlined below shall be followed.
 - 1. Equipment shall not be shipped until approved by the Engineer. The intent of this requirement is to reduce on-site storage time prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one (1) month prior to installation without written authorization from the Engineer. Operation and maintenance data as described in Section 01730 shall be submitted to the Engineer for review prior to shipment of equipment.
 - 2. All equipment having moving parts such as gears, electric motors, etc, and/or instruments shall be stored in a temperature and humidity controlled building approved by the Engineer, until such time as the equipment is to be installed.
 - 3. All equipment shall be stored fully lubricated with oil, grease, etc, unless otherwise instructed by the manufacturer.
 - 4. A copy of the manufacturer's storage instructions shall be given to the Engineer and shall be carefully studied by the Contractor and reviewed with the Engineer by him. These instructions shall be carefully followed and a written record of this kept by the Contractor.
 - 5. Moving parts shall be rotated a minimum of once weekly to insure proper lubrication and to avoid metal-to-metal "welding". Upon installation of the equipment, start the equipment, at least half load, once weekly for an adequate period of time to ensure that the equipment does not deteriorate from lack of use.
 - 6. Lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. Mechanical equipment to be used in the work, if stored for longer than ninety days, shall have the bearings cleaned, flushed and lubricated prior to testing and startup, at no additional cost to the Owner.
 - 7. Prior to acceptance of the equipment, have the manufacturer inspect the equipment and certify that its condition has not been detrimentally affected by the

long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in a condition equal to that of equipment that has been shipped, installed, tested and accepted in a minimum time period. As such, the manufacturer will guarantee the equipment equally in both instances. If such a certification is not given, the equipment shall be judged to be defective. It shall be removed and replaced at the Contractor's expense.

1.09 WARRANTY

For all major pieces of equipment, submit a warranty from the equipment manufacturer as specified in Section 01740.

1.10 SPARE PARTS

Collect and store all spare parts as required by the manufacturer in accordance with Paragraph 1.08 above. In addition, furnish to the Engineer an inventory listing all spare parts, the equipment they are associated with, the name and address of the supplier and the delivered cost of each item. Copies of actual invoices for each item shall be furnished with the inventory to substantiate the delivered cost. Deliver the spare parts to the Owner not later than ten (10) days prior to plant start-up.

1.11 GREASE, OIL AND FUEL

- A. All grease, oil and fuel required for testing of equipment shall be furnished with the respective equipment. The Owner shall be furnished with a year's supply of required lubricants including grease and oil of the type recommended by the manufacturer with each item of equipment supplied.
- B. The Contractor shall be responsible for changing the oil in all drives and intermediate drives of each mechanical equipment after initial break-in of the equipment, which in no event shall be any longer than three weeks of operation.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

*** END OF SECTION ***

SECTION 01630

SUBSTITUTIONS AND PRODUCT OPTIONS

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Furnish and install products specified, under options and conditions for substitutions and “Or Equal” stated in this Section.
- B. Whenever a product, material or item of equipment is specified or described by using the name of a proprietary product or the name of a particular manufacturer or vendor, followed by the phrase "or equal," the specific item mentioned shall be the basis upon which bids are to be prepared, and shall be understood as establishing the type, function, dimension, appearance and quality desired. Other manufacturer's or vendor's products not named will be considered as substitutions, provided the required information is submitted in the manner set forth in this section, will result in significant cost savings to Owner, and provided the substitution will not require substantial revision to the Contract Documents.

1.02 RELATED WORK

- A. Instructions to Bidders are included in Section 00100.
- B. Bid Form is included in Section 00300.
- C. Approval of substitutions and “Or Equal” procedures are included in Sections 00100, 00700, and 00800.

1.03 SUBMITTAL OF LIST OF PROPOSED SUBSTITUTIONS OR “OR EQUAL”

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. The procedure for submission of any such application by Contractor and consideration by Engineer is set forth in Paragraph 6.05 of the General Conditions (Section 00700) and may be supplemented in the General Requirements (Section 00800).

1.04 CONTRACTOR'S OPTIONS

- A. For Products specified only by reference standard, select product meeting that standard, by any manufacturer.
- B. For Products specified by naming several products or manufacturers, select any one of products and manufacturers named which complies with Specifications.
- C. For products specified by naming one or more products or manufacturers and stating "or equal," submit a request as for substitutions, for any product or manufacturer which is not specifically named.
- D. For products specified by naming only one product and manufacturer, there is no option and no substitution will be allowed.

1.05 SUBSTITUTIONS

- A. In order for substitutions to be considered, the selected Contractor shall submit, within 30 days of issuance of Notice of Award, complete data as set forth herein to permit

complete analysis of all proposed substitutions noted on his substitutions list. No substitution shall be considered unless the Contractor provides the required data in accordance with the requirements of Section 00700 and this section within the thirty (30) day period.

B. Submit separate request for each substitution. Support each request with:

1. Complete data substantiating compliance of proposed substitution with requirements stated in Contract Documents:
 - a. Product identification, including manufacturer's name and address.
 - b. Manufacturer's literature; identify:
 - 1) Product description.
 - 2) Reference standards.
 - 3) Performance and test data.
 - 4) Operation and maintenance data.
 - c. Samples, as applicable.
 - d. Name and address of similar projects on which product has been used, and date of each installation.
2. Itemized comparison of the proposed substitution with product specified; List significant variations. Substitution shall not change design intent and shall perform equal to that specified.
3. Data relating to impact on construction schedule occasioned by the proposed substitution.
4. Any effect of substitution on separate contracts.
5. List of changes required in other work or products.
6. Accurate cost data comparing proposed substitution with product specified including the amount of net reduction of Contract Sum.
7. Designation of required license fees or royalties.
8. Designation of availability of maintenance services, sources of replacement materials.

C. Substitutions will not be considered for acceptance when:

1. They are indicated or implied on shop drawings or product data submittals without a formal request from Contractor.
2. They are requested directly by a Subcontractor or supplier.
3. Acceptance will require substantial revision of Contract Documents.

D. Requests for substitutions submitted more than thirty (30) days after Notice of Award will not be considered unless evidence is submitted to the Engineer that all of the following circumstances exist:

1. The specified product is unavailable for reasons beyond the control of the Contractor. Such reasons shall consist of strikes, bankruptcy, discontinuance of manufacturer, or acts of God.
2. The Contractor placed, or attempted to place, orders for the specified products within ten (10) days after Notice of Award.
3. Request for substitution is made in writing to the Engineer within ten (10) days of the date on which the Contractor ascertains that he cannot obtain the item specified.

4. Complete data as set forth herein to permit complete analysis of the proposed substitution is submitted with the request.
- E. The Engineer's decision regarding evaluation of substitutions shall be considered final and binding. Requests for time extensions and additional costs based on submission of, acceptance of, or rejection of substitutions will not be allowed. All approved substitutions will be incorporated into the Agreement by Change Order.

1.06 CONTRACTOR'S REPRESENTATION

- A. In making formal request for substitution, Contractor represents that:
1. He has investigated proposed product and has determined that it is equal to or superior in all respects to that specified.
 2. He will provide same warranties or bonds for substitution as for product specified.
 3. He will coordinate installation of accepted substitution into the Work, and will make such changes as may be required for the Work to be complete in all respects.
 4. He waives claims for additional costs caused by substitution which may subsequently become apparent.
 5. Cost data is complete and includes related costs under his Contract, but not:
 - a. Costs under separate contracts.
 - b. Engineer's costs for redesign or revision of Contract Documents.

1.07 ENGINEER EVALUATIONS

Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Section 00700 Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

1.08 SPECIAL GUARANTEE

Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

1.09 ENGINEER'S COST REIMBURSEMENT

Engineer shall record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Section 00700 – Paragraphs 6.05.A.2, 6.05.B and 6.05.E. The County shall pay the Engineer directly for the costs incurred for review of substitute equipment. The Contractor shall reimburse the County for Engineer's costs whether or not the substitute is approved.

END OF SECTION

SECTION 01700
PROJECT CLOSEOUT

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. This Section specifies administrative and procedural requirements for project closeout, including but not limited to:
 - 1. Closeout procedures.
 - 2. Final cleaning.
 - 3. Adjusting.
 - 4. Project Record documents.
 - 5. Spare parts and maintenance materials.

1.02 RELATED WORK

- A. Warranties and Bonds are included in Section 01740.

1.03 SUBSTANTIAL COMPLETION

- A. Substantial completion shall be defined as beneficial use of the finished water stabilization lime slurry and CO₂ systems, including functional use of ancillary equipment of each system.
- B. When Contractor considers the Work is substantially complete, Contractor shall submit to Engineer:
 - 1. A written notice that the Work or designated portion thereof, is substantially complete.
- C. Within a reasonable time after receipt of such notice, Engineer will perform a field investigation to determine the status of completion.
- D. Should Engineer determine that the Work is not substantially complete:
 - 1. Engineer will promptly notify the Contractor in writing, giving the reasons therefore.
 - 2. Contractor shall remedy the deficiencies in the Work, and send a second written notice of substantial completion to the Engineer.
 - 3. Engineer will reinvestigate the Work.
- E. When the Engineer finds that the Work is substantially complete, he will:
 - 1. Prepare and deliver to Owner a tentative Certificate of Substantial Completion, with a tentative list of items to be completed or corrected before final payment.

2. After consideration of any objections made by the Owner and when Engineer considers the Work substantially complete, he will execute and deliver to the Owner and the Contractor a definite Certificate of Substantial Completion with a revised tentative list of items to be completed or corrected.

1.04 FINAL SITE REVIEWS

- A. When Contractor considers Work is complete, he shall submit written certification that:
 1. Contract Documents have been reviewed.
 2. Work has been investigated for compliance with Contract Documents.
 3. Work has been completed in accordance with Contract Documents.
 4. Equipment and systems have been tested in the presence of the Owner's representative and are operational.
 5. Work is completed and ready for Final Investigation.
- B. Engineer will perform a field investigation to verify the status of completion with reasonable promptness after receipt of such certification.
- C. Should Engineer consider that the Work is incomplete or defective:
 1. Engineer will promptly notify the Contractor in writing, listing the incomplete or defective work.
 2. Contractor shall take immediate steps to remedy the stated deficiencies, and send a second written certification to Engineer that the Work is complete.
 3. Engineer will reinvestigate the Work.

When the Engineer finds that the Work is acceptable under the Contract Documents, he shall request the Contractor to make closeout submittals.

1.05 CONTRACTOR'S CLOSEOUT SUBMITTALS TO ENGINEER

- A. Project Record Drawings to the requirements specified.
- B. Operating and Maintenance Manuals to the requirements specified.
- C. Contractor's affidavit of payment of debts and claims.
 1. Contractor's release or waiver of liens.
- D. Separate releases or waivers of liens for subcontractors, suppliers and others with lien rights against property of Owner, together with list of those parties.

1.06 RECORD DOCUMENTS

- A. Maintain on site, one set of the following documents; actual revisions to the work shall be recorded in these documents:
 - 1. Contract Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other Modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
- B. Store Record Documents separate from documents used for construction.
- C. Record information concurrent with construction progress.
- D. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and Modifications.
- E. Contract Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish floor elevation datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the work.
 - 4. Field changes of dimension and detail.
 - 5. Details not on original Contract Drawings.
- F. Submit documents to Engineer with Application for Final Payment.

1.07 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, work has been inspected and that work is complete in accordance with Contract Documents and ready for Engineer's inspection.
- B. Provide submittals to Engineer that are required by governing or other authorities.

1.08 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in the Condition of the Contract.
- B. Submit Application for Final Payment identifying total adjusted Contract Sum, previous payments and sum remaining due.

1.09 FINAL CERTIFICATE FOR PAYMENT

- A. Engineer will issue final certificate in accordance with provisions of the Contract Documents.

END OF SECTION

SECTION 01710

CLEANING

PART 1 -- GENERAL

1.01 REQUIREMENTS INCLUDED

Execute cleaning, during progress of the work, and at completion of the work, as required by General conditions.

1.02 DISPOSAL REQUIREMENTS

Conduct cleaning and disposal operations to comply with codes, ordinances, regulations, and anti-pollution laws.

PART 2 -- PRODUCTS

2.01 MATERIALS

- A. Use only those cleaning materials which will not create hazards to health or property and which will not damage finishes and surfaces.
- B. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.
- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 -- EXECUTION

3.01 DURING CONSTRUCTION

- A. Execute periodic cleaning to keep the work, the site, and adjacent properties free from accumulation of waste materials, rubbish, and windblown debris resulting from construction operations.
- B. Dispose of waste materials, cartons, crating, debris, and rubbish at designated waste receptacles.
- C. For exterior utility work (such as underground pipelines, roadways, service areas, etc.), these shall be cleaned daily. Not less frequently than once weekly. Roadways shall be mechanically broomed.

3.02

DUST CONTROL

- A. General Contractor shall broom-clean interior spaces prior to the start of completing painting and continue cleaning on an as-needed basis until painting is finished.
- B. Schedule operations so that dust and other contaminants resulting from the cleaning process will not fall on wet or newly-coated surfaces.

3.03

FINAL CLEANING

- A. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials.
- B. Contractor shall broom-clean paved surface; rake-clean other surfaces of the grounds.
- C. Prior to final completion, Contractor shall conduct an inspection of all work areas to verify that the entire work area is clean.

END OF SECTION

**SECTION 01740
WARRANTIES AND BONDS**

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Compile specified warranties and bonds.
- B. Compile specified service and maintenance contracts.
- C. Co-execute submittal when so specified.
- D. Review submittals to verify compliance with Contract Documents
- E. Submit to Engineer for review and transmittal to Owner

1.02 RELATED REQUIREMENTS

- A. In other parts of the Contract Documents:
 - 1. Instructional to Bidders: Bid or Proposal Bonds
 - 2. General Conditions of Contract:
 - a. Public Construction Bond
 - b. General Warranty of Construction.
- B. Specified in other sections:
 - 1. Section 01700: Contract Closeout
 - 2. Each respective section of Specifications shall have Warranties and Bonds required for specific products.
 - 3. Provisions of Warranties and Bonds, Duration: The respective section of specification which specifies the product.

1.03 SUBMITTAL REQUIREMENTS

- A. Assemble warranties, bonds and service and maintenance contracts, executed by each of the respective manufacturers, suppliers and subcontractors.
- B. Number of original signed copies requires: Two each.
- C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.
 - 1. Product or work item
 - 2. Firm, with name of principal, address, and telephone number.
 - 3. Scope.
 - 4. Date of beginning of warranty, bond or service and maintenance contract.

5. Duration of warranty, bond or service maintenance contract.
6. Provide information for Owner's personnel:
 - a. Proper procedure in case of failure
 - b. Instances which might affect the validity of warranty bonds.
7. Contractor, name of responsible principal, address and telephone number.

1.04 FORM OF SUBMITTALS

- A. Prepare in duplicate packets.
- B. Format:
 1. Size 8-1/2" X 11" punched sheets for 3-ring binder
 - a. Fold larger sheets to fit into binders
 2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS." List:
 - a. Title of project
 - b. Name of Contractor
- C. Binders: Commercial quality, three-ring, with durable and cleanable plastic cover.

1.05 TIME OF SUBMITTALS

- A. Make submittals within ten days after Date of Substantial Completion, prior to final request for payment.
- B. For items of work, where acceptance is delayed materially beyond the Date of Substantial Completion, provide updated submittal within ten days after acceptance, listing the date of acceptance as the start of the warranty period.

1.06 SUBMITTALS REQUIRED

- A. Submit warranties, bonds, and service and maintenance contracts as specified in the respective sections of Specifications, as appropriate.

PART 2 -- PRODUCTS

Not applicable

PART 3 -- EXECUTIVE

Not applicable

**** END OF SECTION ****

APPENDIX A
PERMITS, GEOTECHNICAL REPORT



KELLER, SCHLEICHER & MacWILLIAM ENGINEERING AND TESTING, INC.
MARTIN (772) 337-7755 P.O. BOX 78-1377, SEBASTIAN, FL 32978-1377 SEBASTIAN (772) 589-0712
PALM BEACH (561) 845-7445 www.ksmengineering.net MELBOURNE (321) 768-8488
FAX (561) 845-8876 E-Mail: KSM@KSMENGINEERING.NET ST. LUCIE (772) 229-9093
C.A.: 5693 FAX (772) 589-6469

July 26, 2016

Indian River County Utilities
Attn: Gordon Sparks
1801 27th Street
Vero Beach, Florida 32960

Re: West Wabasso Utilities Project
64th Ave., 63rd Ct., 63rd Ave., and 62nd Ave.
Indian River County, Florida
IRC P.O.: #74769-00
KSM Project #: 161948-b

Dear Mr. Sparks:

A visit was made to the above referenced site to determine the subsurface soil conditions in the proposed sanitary sewer lift station location.

A. The scope of our study consisted of the following:

1. Performed a Standard penetration test boring in the proposed construction area to estimate the subsoil relative density and determine the subsurface material.
2. Measured the groundwater level.
3. Evaluated the existing soil conditions with respect to the proposed construction.
4. Prepared this report to document our findings.

B. Site Investigation:

The site investigation program consisted of performing ten (10) Standard Penetration Test Borings (SPT) in the proposed construction area. The borings were terminated at a depth of 15 feet below grade. The locations of the borings are indicated on the attached Location Plan.



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C.A.: 5693 FAX (772) 589-6469

W. Wabasso Sewer Project
Indian River County, FL

-2-

July 26, 2016

The SPT borings were completed in accordance with procedures described in ASTM D-1586. A standard 1.5 inch I.D., 2 inch O.D. split-spoon sampler is driven into the soil by successive blows of a 140 pound hammer freely falling 30 inches. The number of blows required to drive the sampler 1 foot, after seating 6 in., is designated the Penetration Resistance, or "N" value. At regular intervals the sampler is extracted from the ground and opened to allow visual examination and classification of the retained soil sample. Also, the groundwater table was allowed to stabilize and the depth of the groundwater elevation recorded from existing grade.

The records of the soils encountered, the penetration resistances and groundwater level are shown on the attached logs.

C. Engineering Evaluation and Conclusions:

Based on the information obtained from this site investigation we are pleased to offer the following evaluation:

The boring logs indicate the subsurface soils consist of fine-grained sand and fine-grained sands that are slightly silty or clayed. No "muck" or other unsuitable soils were found in the test boring except for a soft layer of dark gray sandy silt with traces of organics that was found in test boring B-2 at a depth of 3.5 feet to 6.5 feet. "N" values recorded during the boring operation indicate the existing soil density is generally firm to medium dense except for the soft layer found in test boring B-2. Therefore, it is our professional opinion that the subsurface soils are generally suitable for the proposed project except for the soft layer of sandy silt with traces of organics found in test boring B-2. Please refer to the soil boring log for more specific information relative to the soil description.

The existing asphalt thickness in the pavement in the borings varied from 1½ inches to 3¾ inches thick. The base generally consists of soil cement that is 3 inches to 7 inches thick, except in 62nd Avenue, the base consists of 5½ inches to 8 inches of cemented coquina rock.

D. Water Table:

The groundwater table was found at a depth of 4 feet to 5 feet below existing grade.

KSM

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C.A.: 5693 FAX (772) 589-6469

W. Wabasso Sewer Project
Indian River County, FL

-3-

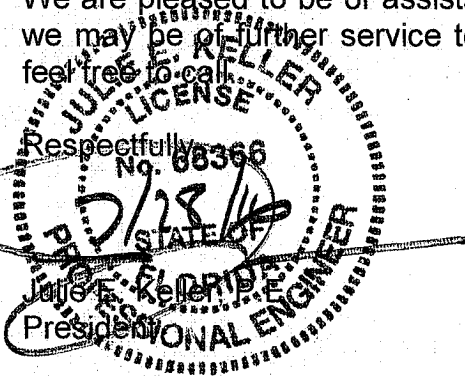
July 26, 2016

E. Closure:

This report has been prepared in accordance with generally accepted soil and engineering practices based on the results of the test boring.

We are pleased to be of assistance to you on this phase of your project. When we may be of further service to you or should you have any questions, please feel free to call.

Respectfully,



JEK:jt

E-mail to: gsparks@ircgov.com

KSM

KSM Engineering & Testing
P.O. Box 78-1377
Sebastian, FL 32978
Tel: (772)-589-0712
Fax: (772)-589-6469

BORING NUMBER B-1

PAGE 1 OF 1

CLIENT Indian River County Utilities DepartmentPROJECT NAME 64th Ave., 63rd Court, 63rd Ave., and 62nd Ave.PROJECT NUMBER 161948-bPROJECT LOCATION P.O. #74769-00, Indian River County, FloridaDATE STARTED 7/20/16 COMPLETED 7/20/16GROUND ELEVATION _____ HOLE SIZE inches

DRILLING CONTRACTOR _____

GROUND WATER LEVELS:

DRILLING METHOD Split Spoon Sample▽ AT TIME OF DRILLING 4.17 ftLOGGED BY MS/JM CHECKED BY JEKAT END OF DRILLING ---NOTES See Attached Location PlanAFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
								20	40	60	80
0								PL	MC	LL	
								20	40	60	80
								□ FINES CONTENT (%) □			
								20	40	60	80
0		Brown Sand with Some Clay and Shell									
		Dark Gray Sand	X SS		10-10-10 (20)						
		Gray Sand	X SS		12-12-13 (25)						
5		Dark Brown Sand, Slightly Silty	X SS		8-9-8 (17)						
		Gray Clayed Sand	X SS		8-10-10 (20)						
		Light Grayish Brown Sand, Slightly Silty	X SS		5-6-6 (12)						
10		Brown Sand	X SS		8-8-9 (17)						
			X SS		6-5-4 (9)						
15		Bottom of borehole at 15.0 feet.	X SS		5						



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BORING NUMBER B-2

PAGE 1 OF 1

CLIENT Indian River County Utilities Department

PROJECT NAME 64th Ave., 63rd Court, 63rd Ave., and 62nd Ave.

PROJECT NUMBER 161948-b

PROJECT LOCATION P.O. #74769-00, Indian River County, Florida

DATE STARTED 7/20/16 COMPLETED 7/20/16

GROUND ELEVATION HOLE SIZE inches

DRILLING CONTRACTOR

GROUND WATER LEVELS:

DRILLING METHOD Split Spoon Sample

▽ AT TIME OF DRILLING 4.00 ft

LOGGED BY MS/JM CHECKED BY JEK

AT END OF DRILLING ---

NOTES See Attached Location Plan

AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
								20	40	60	80
								PL	MC	LL	
0		3 3/8" Asphalt and 6" Soil Cement						20	40	60	80
		10" Gray Sand with Some Clay and Shell	X SS		13-10-10 (20)						
		Brown Sand									
		▽ Dark Gray Sandy Silt with Traces of Organics (Soft)	X SS		6-2-1 (3)						
5		Brown Sand	X SS		1-1-2 (3)						
		Light Grayish Brown Sand, Slightly Silty	X SS		3-4-5 (9)						
10		Brown Sand	X SS		6-6-6 (12)						
			X SS		7-6-6 (12)						
			X SS		6-5-4 (9)						
15		Bottom of borehole at 15.0 feet.	X SS		4						



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BORING NUMBER B-3

PAGE 1 OF 1

CLIENT Indian River County Utilities Department

PROJECT NAME 64th Ave., 63rd Court, 63rd Ave., and 62nd Ave.

PROJECT NUMBER 161948-b

PROJECT LOCATION P.O. #74769-00, Indian River County, Florida

DATE STARTED 7/20/16 COMPLETED 7/20/16

GROUND ELEVATION HOLE SIZE inches

DRILLING CONTRACTOR

GROUND WATER LEVELS:

DRILLING METHOD Split Spoon Sample

AT TIME OF DRILLING 4.33 ft

LOGGED BY MS/JM CHECKED BY JEK

AT END OF DRILLING ---

NOTES See Attached Location Plan

AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
								20	40	60	80
0								PL	MC	LL	
								20	40	60	80
								□ FINES CONTENT (%) □			
								20	40	60	80
0		Gray Sand with Traces of Roots	X SS		1-2-2 (4)						
		Dark Brown Sand, Slightly Silty	X SS		3-4-7 (11)						
5		Gray Sand	X SS		6-5-7 (12)						
		Light Brown Sand	X SS		4-4-5 (9)						
		Dark Gray Sand with Traces of Hardpan	X SS		4-4-5 (9)						
		Gray Clayed Sand	X SS		5-5-5 (10)						
10		Light Grayish Brown Sand, Slightly Silty	X SS		4-4-6 (10)						
			X SS		5						
15		Bottom of borehole at 15.0 feet.	X SS								

KSM

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BORING NUMBER B-4

PAGE 1 OF 1

CLIENT Indian River County Utilities DepartmentPROJECT NAME 64th Ave., 63rd Court, 63rd Ave., and 62nd Ave.PROJECT NUMBER 161948-bPROJECT LOCATION P.O. #74769-00, Indian River County, FloridaDATE STARTED 7/20/16COMPLETED 7/20/16

GROUND ELEVATION _____ HOLE SIZE _____ inches

DRILLING CONTRACTOR _____

GROUND WATER LEVELS:

DRILLING METHOD Split Spoon Sample▽ AT TIME OF DRILLING 4.42 ftLOGGED BY MS/JMCHECKED BY JEKAT END OF DRILLING ---NOTES See Attached Location PlanAFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
								20	40	60	80
0		3 1/4" Asphalt						PL	MC	LL	
		6" Soil Cement						20	40	60	80
		Gray Sand	SS		11-10-10 (20)						
		Light Brown Sand	SS		10-10-8 (18)						
5	▽	Gray Clayed Sand	SS		6-6-7 (13)						
		Gray Sand, Slightly Silty	SS		5-6-5 (11)						
10		Brown Sand	SS		6-6-8 (14)						
			SS		7-5-4 (9)						
			SS		6-6-7 (13)						
15		Bottom of borehole at 15.0 feet.	SS		6						

KSM

KSM Engineering & Testing
P.O. Box 78-1377
Sebastian, FL 32978
Tel: (772)-589-0712
Fax: (772)-589-6469

BORING NUMBER B-5

PAGE 1 OF 1

CLIENT Indian River County Utilities DepartmentPROJECT NAME 64th Ave., 63rd Court, 63rd Ave., and 62nd Ave.PROJECT NUMBER 161948-bPROJECT LOCATION P.O. #74769-00, Indian River County, FloridaDATE STARTED 7/20/16 COMPLETED 7/20/16GROUND ELEVATION _____ HOLE SIZE inches

DRILLING CONTRACTOR _____

GROUND WATER LEVELS:

DRILLING METHOD Split Spoon Sample▽ AT TIME OF DRILLING 4.50 ftLOGGED BY MS/JM CHECKED BY JEKAT END OF DRILLING ---NOTES See Attached Location PlanAFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
								20	40	60	80
0								PL MC LL			
								20	40	60	80
								□ FINES CONTENT (%) □			
								20	40	60	80
		2 3/4" Asphalt									
		6" Soil Cement									
		Dark Gray Sand	X SS		11-9-8 (17)						
		Dark Brown Sand, Slightly Silty	X SS		8-7-8 (15)						
5		▽ Gray Clayed Sand	X SS		6-8-10 (18)						
		Light Grayish Brown Sand, Slightly Silty	X SS		7-7-6 (13)						
10			X SS		6-5-6 (11)						
		Brown Sand	X SS		6-7-8 (15)						
			X SS		7-6-5 (11)						
15		Bottom of borehole at 15.0 feet.	X SS		5						



KSM

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Tel: (772)-589-0712
Fax: (772)-589-6469

BORING NUMBER B-6

PAGE 1 OF 1

CLIENT Indian River County Utilities DepartmentPROJECT NAME 64th Ave., 63rd Court, 63rd Ave., and 62nd Ave.PROJECT NUMBER 161948-bPROJECT LOCATION P.O. #74769-00, Indian River County, FloridaDATE STARTED 7/20/16 COMPLETED 7/20/16GROUND ELEVATION _____ HOLE SIZE inches

DRILLING CONTRACTOR _____

GROUND WATER LEVELS:

DRILLING METHOD Split Spoon Sample▽ AT TIME OF DRILLING 4.83 ftLOGGED BY MS/JM CHECKED BY JEKAT END OF DRILLING ---NOTES See Attached Location PlanAFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
								20	40	60	80
								PL	MC	LL	
								20	40	60	80
0		2 1/2" Asphalt									
		7" Soil Cement									
		10" Brown Sand with Traces of Clay	X SS		13-10-8 (18)						
		Dark Gray Sand									
		Light Brown Sand	X SS		6-6-7 (13)						
5	▽										
		Gray Sand, Slightly Clayed	X SS		5-6-8 (14)						
			X SS		7-7-7 (14)						
		Gray Sand, Slightly Silty									
10			X SS		8-9-10 (19)						
			X SS		9-8-5 (13)						
		Grayish Brown Sand									
			X SS		5-5-6 (11)						
15			X SS		5						
Bottom of borehole at 15.0 feet.											



KSM Engineering & Testing
P.O. Box 78-1377
Sebastian, FL 32978
Tel: (772)-589-0712
Fax: (772)-589-6469

BORING NUMBER B-7

PAGE 1 OF 1

CLIENT Indian River County Utilities Department

PROJECT NAME 64th Ave., 63rd Court, 63rd Ave., and 62nd Ave.

PROJECT NUMBER 161948-b

PROJECT LOCATION P.O. #74769-00, Indian River County, Florida

DATE STARTED 7/20/16 COMPLETED 7/20/16

GROUND ELEVATION HOLE SIZE inches

DRILLING CONTRACTOR

GROUND WATER LEVELS:

DRILLING METHOD Split Spoon Sample

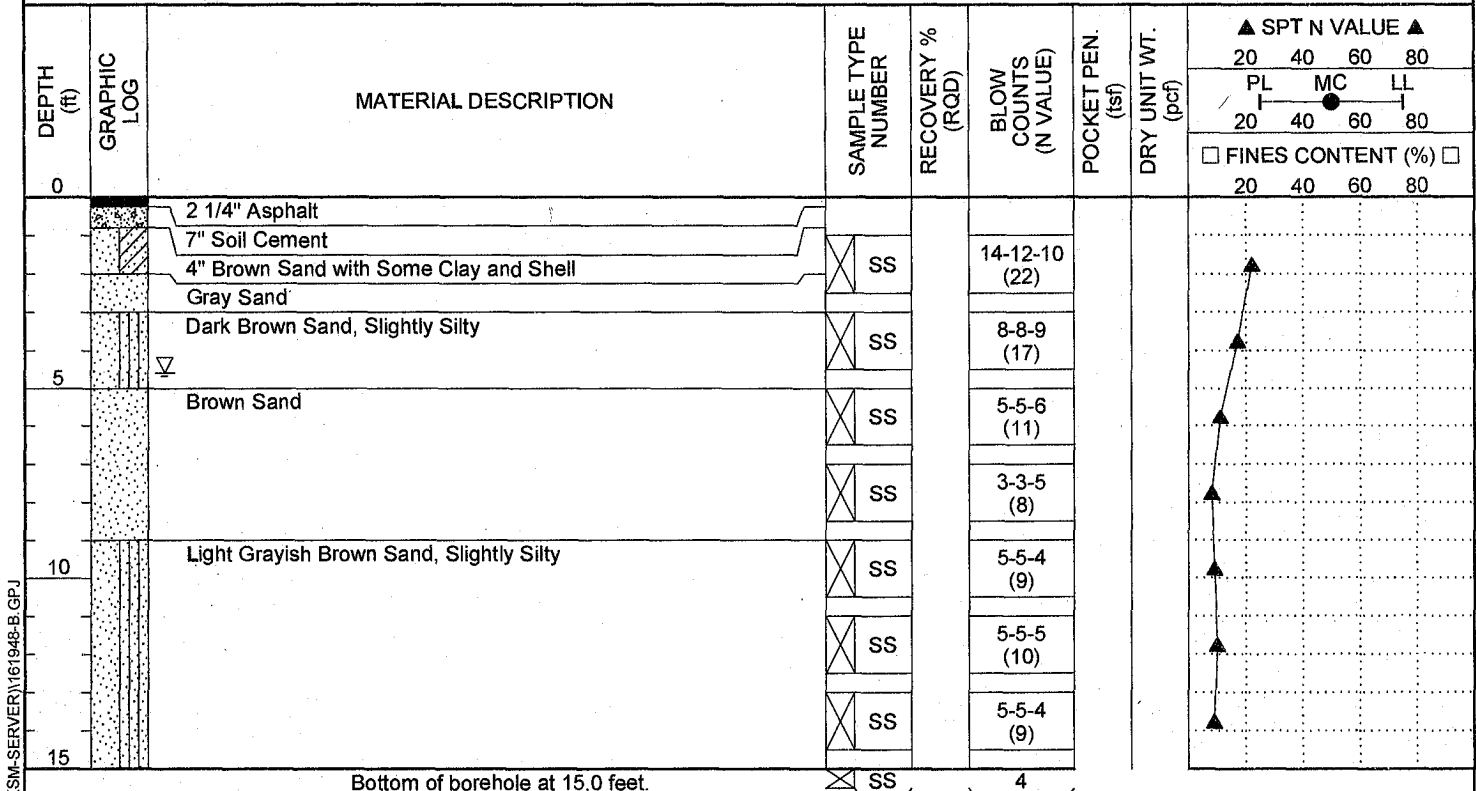
▽ AT TIME OF DRILLING 4.58 ft

LOGGED BY MS/JM CHECKED BY JEK

AT END OF DRILLING ---

NOTES See Attached Location Plan

AFTER DRILLING ---





KSM Engineering & Testing
P.O. Box 78-1377
Sebastian, FL 32978
Tel: (772)-589-0712
Fax: (772)-589-6469

BORING NUMBER B-8

PAGE 1 OF 1

CLIENT Indian River County Utilities Department

PROJECT NAME 64th Ave., 63rd Court, 63rd Ave., and 62nd Ave.

PROJECT NUMBER 161948-b

PROJECT LOCATION P.O. #74769-00, Indian River County, Florida

DATE STARTED 7/21/16

COMPLETED 7/21/16

GROUND ELEVATION

HOLE SIZE inches

DRILLING CONTRACTOR

GROUND WATER LEVELS:

DRILLING METHOD Split Spoon Sample

▽ AT TIME OF DRILLING 4.83 ft

LOGGED BY MS/JM

CHECKED BY JEK

AT END OF DRILLING ---

NOTES See Attached Location Plan

AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
								20	40	60	80
0								PL MC LL			
								20	40	60	80
								□ FINES CONTENT (%) □			
								20	40	60	80
		1 1/4" Asphalt									
		6" Cemented Coquina Rock									
		8" Dark Brown Sand with Traces of Clay	SS		12-11-12 (23)						
		Dark Gray Sand									
		Dark Brown Sand, Slightly Silty	SS		9-8-8 (16)						
5											
		Brown Sand	SS		7-6-5 (11)						
			SS		5-4-4 (8)						
10		Light Grayish Brown Sand, Slightly Silty	SS		4-5-4 (9)						
			SS		4-6-7 (13)						
			SS		7-7-8 (15)						
15											
		Bottom of borehole at 15.0 feet.	SS		6						



KSM Engineering & Testing
P.O. Box 78-1377
Sebastian, FL 32978
Tel: (772)-589-0712
Fax: (772)-589-6469

BORING NUMBER B-9

PAGE 1 OF 1

CLIENT Indian River County Utilities Department

PROJECT NAME 64th Ave., 63rd Court, 63rd Ave., and 62nd Ave.

PROJECT NUMBER 161948-b

PROJECT LOCATION P.O. #74769-00, Indian River County, Florida

DATE STARTED 7/21/16 COMPLETED 7/21/16

GROUND ELEVATION HOLE SIZE inches

DRILLING CONTRACTOR

GROUND WATER LEVELS:

DRILLING METHOD Split Spoon Sample

▽ AT TIME OF DRILLING 4.17 ft

LOGGED BY MS/JM CHECKED BY JEK

AT END OF DRILLING

NOTES See Attached Location Plan

AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
								20	40	60	80
								PL	MC	LL	
								20	40	60	80
0		1 3/4" Asphalt									
		5 1/2" Cemented Coquina Rock									
		8" Brown Sand	SS		13-10-10 (20)						
		Light Brown Sand with Traces of Shell Fragments									
		Dark Gray Sand	SS		7-6-3 (9)						
5		Gray Sand									
		Dark Brown Sand, Slightly Silty	SS		5-8-8 (16)						
		Brown Sand									
			SS		7-6-5 (11)						
		Light Grayish Brown Sand, Slightly Silty									
10			SS		4-4-4 (8)						
			SS		4-3-4 (7)						
			SS		3-5-6 (11)						
15		Bottom of borehole at 15.0 feet.	SS		5						



KSM Engineering & Testing
P.O. Box 78-1377
Sebastian, FL 32978
Tel: (772)-589-0712
Fax: (772)-589-6469

BORING NUMBER B-10

PAGE 1 OF 1

CLIENT Indian River County Utilities Department

PROJECT NAME 64th Ave., 63rd Court, 63rd Ave., and 62nd Ave.

PROJECT NUMBER 161948-b

PROJECT LOCATION P.O. #74769-00, Indian River County, Florida

DATE STARTED 7/21/16 COMPLETED 7/21/16

GROUND ELEVATION HOLE SIZE inches

DRILLING CONTRACTOR

GROUND WATER LEVELS:

DRILLING METHOD Split Spoon Sample

AT TIME OF DRILLING 5.00 ft

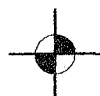
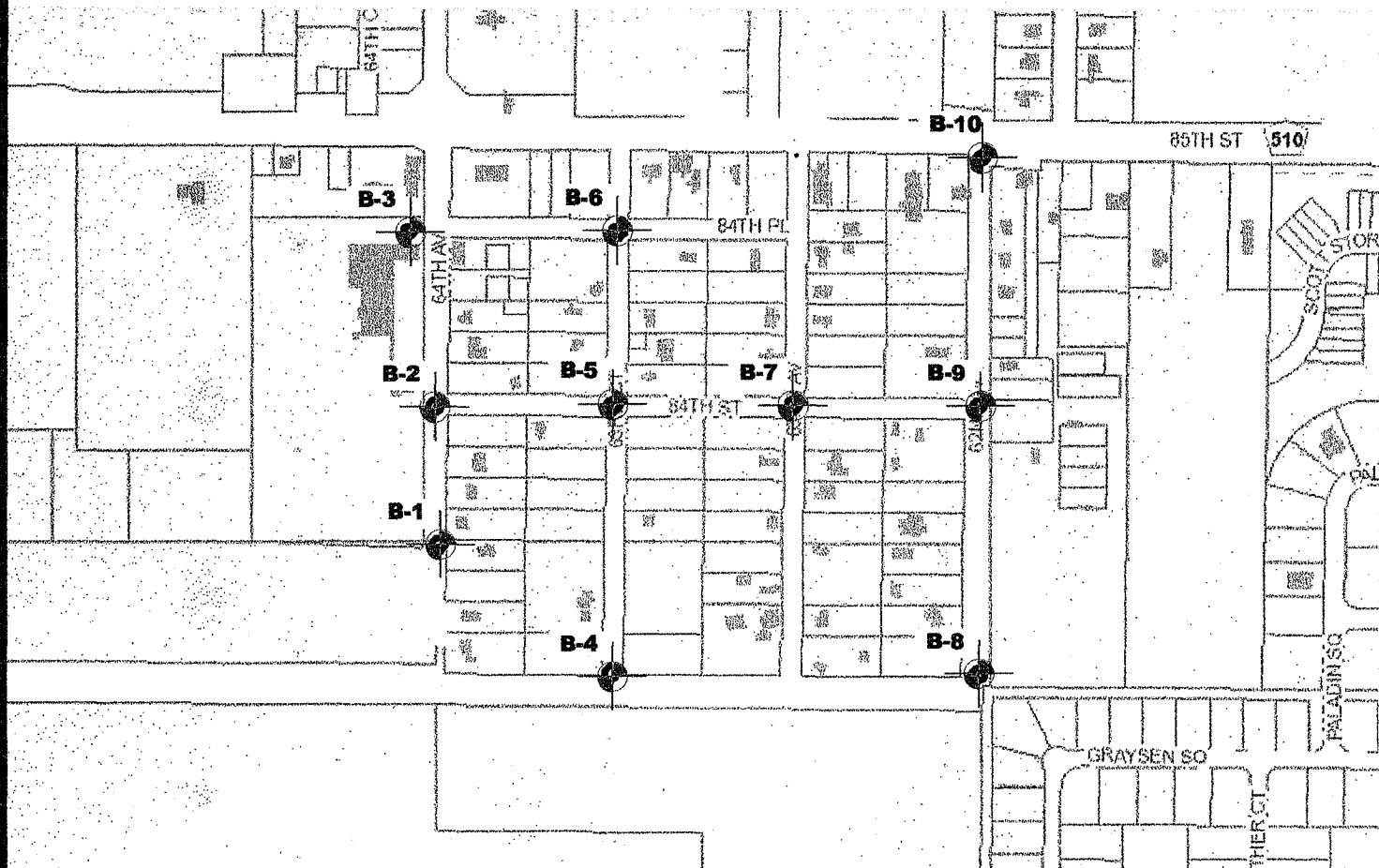
LOGGED BY MS/JM CHECKED BY JEK

AT END OF DRILLING

NOTES See Attached Location Plan

AFTER DRILLING

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲			
								20	40	60	80
								PL	MC	LL	
0		1 1/2" Asphalt						20	40	60	80
		8" Cemented Coquina Rock									
		6" Dark Brown Sand with Traces of Clay	X SS		13-13-12 (25)						
		Gray Sand	X SS		10-9-9 (18)						
5		Dark Brown Sand, Slightly Silty	X SS		8-7-8 (15)						
		Brown Sand	X SS		4-5-6 (11)						
10		Light Grayish Brown Sand, Slightly Silty	X SS		5-4-4 (8)						
			X SS		4-3-4 (7)						
			X SS		4-6-9 (15)						
15		Bottom of borehole at 15.0 feet.	X SS		7						



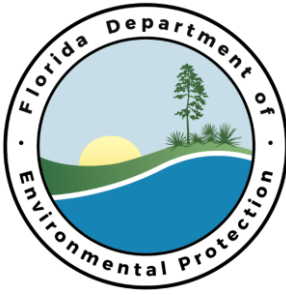
LOCATION OF TESTS

PROJECT: W. Wabasso Gravity Sewer Project, Phase II, 64th Avenue, 63rd Avenue & 62nd Avenue, Indian River County, Florida

SHEET 1 OF 1
 PERMIT #:
 PROJECT #: 161948-b

KSM ENGINEERING AND TESTING

DRAWN BY: J.L.
 DESIGNED BY: J.K.
 DATE: 20160726
 SCALE: NONE



Florida Department of Environmental Protection

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Interim Secretary

SOUTHEAST DISTRICT OFFICE
3301 GUN CLUB ROAD, MSC 7210-1
WEST PALM BEACH, FL 33406-3007
561-681-6600

June 19, 2015

NOTIFICATION OF ACCEPTANCE OF USE OF A GENERAL PERMIT

PERMITTEE:
Mr. Gordon Sparks, P.E.
Indian River County Utilities Department
1801 27th Street
Vero Beach, FL 32960
gsparks@ircgov.com

PERMIT NUMBER: 0039002-026-DWC/CG
COUNTY: Indian River County
PROJECT: West Wabasso Phase 2
CONNECTED TO: IRCUD Central WWTP
DATE GRANTED: June 19, 2015
EXPIRATION DATE: June 18, 2020

Dear Mr. Sparks:

Thank you for your Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System for the subject project. Our office received the Notice on June 9, 2015.

This is to advise you that the Department does not object to your use of such General Permit.

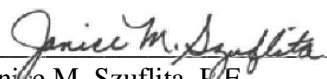
Proposed Project: 5,000 LF of 8" gravity sewer
500 LF of 4" PVC for main
16 manholes
85 services
One lift station, with a submersible pump manufactured by ABS (model Piranha M25/2M46/2D)

Please note, the attached requirements apply to your use of this General Permit for constructing the proposed domestic wastewater collection/transmission system.

You are further advised that the construction activity must conform to the description contained in your Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System and that any deviation will subject the permittee to enforcement action and possible penalties.

If you have any questions please contact Manuel P. Delosantos at telephone number (561) 681-6628 or by e-mail manuel.delosantos@dep.state.fl.us.

Sincerely,


Janice M. Szufliata, P.E.
Environmental Administrator

JMS/MD

ec: Diane Pupa, SED: diane.pupa@dep.state.fl.us
Jeff Christian, SED/FP: Jeff.christian@dep.state.fl.us
Manuel Delosantos, DEP: Manuel.delosantos@dep.state.fl.us
Jesse Roland, Indian River County Dept. of Utility Services, jroland@ircgov.com

REQUIREMENTS FOR USE OF THE GENERAL PERMIT FOR DOMESTIC WASTEWATER COLLECTION/TRANSMISSION SYSTEMS:

1. This general permit is subject to the general permit conditions of Rule 62-4.540, F.A.C., as applicable. This rule is available at the Department's Internet site at: <http://www.dep.state.fl.us/water/wastewater/rules.htm#domestic> [62-4.540].
2. This general permit does not relieve the permittee of the responsibility for obtaining a dredge and fill permit where it is required. [62-604.600(6)(b)1]
3. This general permit cannot be revised, except to transfer the permit. [62-604.600(6)(b)2]
4. Upon completion of construction of the collection/transmission system project, and before placing the facilities into operation for any purpose other than testing for leaks or testing equipment operation, the permittee shall submit to the Department's Southeast District Office Form 62-604.300(8)(b), Request for Approval to Place a Domestic Wastewater Collection/Transmission System into Operation. This form is available at the Department's Internet site at: <http://www.dep.state.fl.us/water/wastewater/forms.htm> [62-604.700(2)]
5. The new or modified collection/transmission facilities shall not be placed into service until the Department clears the project for use. [62-604.700(3)]
6. Abnormal events shall be reported to the Department's Southeast District Office in accordance with Rule 62-604.550, F.A.C. For unauthorized spills of wastewater in excess of 1000 gallons per incident, or where information indicates that public health or the environment may be endangered, oral reports shall be provided to the STATE WARNING POINT TOLL FREE NUMBER (800) 320-0519 as soon as practical, but no later than 24 hours from the time the permittee or other designee becomes aware of the circumstances. Unauthorized releases or spills less than 1000 gallons per incident are to be reported orally to Department's Southeast District Office within 24 hours from the time the permittee, or other designee becomes aware of the circumstances. [62-604.550]

INDIAN RIVER COUNTY ENGINEERING DIVISION

1801 27TH STREET
VERO BEACH, FL 32960-3365
772-226-1597

PERMIT

Confirm. #: 562

ROW UTILITIES

PERMIT #: 2015110805 PERMIT TYPE: ROWUTL ISSUED DATE: 09/21/2016 BY: PWSM

JOB DESCRIPTION: DOUGLAS SUB SOUTH OF CR510-64TH AVE / CDBG SEWER PROJECT

JOB ADDRESS 1801 27TH ST ROW PERMITS

BLOCK 0000 LOT: 00000.0 SUBDIVISION #: -

ADDR NBR: 111633 FOLIO NBR: 00-00-00-00000-0000-00000.0

WWP (2X fee): N

OWNER NAME: INDIAN RIVER COUNTY

JURISDICTION: VB

PROJECT

APPLICANT: IRC DEPARTMENT OF UTILITY SERVICES -

TYPE: OWNER

JOB PHONE:

DBA:

CERT NBR

JOB FAX:

FLOOD ZONE

FLOOD ELEV:

FLOOD MAP

OPEN CUT:

LANES:

BOND AMOUNT:

ADDITIONAL INFO:

PERMIT EXPIRES ON March 21, 2017

72 HOUR NOTIFICATION REQUIRED PRIOR TO BEGINNING WORK IN INDIAN RIVER COUNTY RIGHT-OF-WAY.
MAINTENANCE OF TRAFFIC PER ATTACHED PLAN. SPECIAL CONDITIONS AND ADDITIONAL ITEMS ATTACHED.

INSPECTION	CODE	DATE	INITIALS	APPR	DISAPPR	COMMENTS
(As Applicable)						
STAKE & GRADE	801	__/__/__	_____	_____	_____	_____
PRE-POUR DRIVE/SIDE	802	__/__/__	_____	_____	_____	_____
OTHER	803	__/__/__	_____	_____	_____	_____
ROW FINAL	899	__/__/__	_____	_____	_____	_____

DISPLAY ON JOB SITE

This permit is subject to attached conditions. For information regarding this permit, contact the Indian River County Engineering Division at (772) 226-1283.

Schedule Inspections Online at:

http://www.irccdd.com/Building_Division/Online_Permitting.htm

This permit is based upon information supplied on the application. Insufficient or erroneous information does not relieve the applicant of any future requirements that may be imposed to comply with Indian River County Ordinances. Engineering reserves the right to modify the original permitted conditions as needed at any time prior to final acceptance in order to comply with Indian River County Ordinances.

**INDIAN RIVER COUNTY
RIGHT-OF-WAY REVIEW/PERMIT APPLICATION**

DATE Nov. 25, 2015

R.O.W. PERMIT NO. 2015110805

APPLICANT IRC DEPT OF UTIL SERVICES

NAME 801 27th ST VERO BEACH, FL 32960 PHONE _____
ADDRESS _____

CONTRACTOR ART PFEFFER 226-1826
NAME EMERGENCY PHONE NO. (REQUIRED)

ADDRESS _____ OFFICE PHONE NO. _____

LOCATION OF WORK DOUGLAS SUB. SOUTH OF C.R. 510 - 64th AVE
STREET ADDRESS _____

LOT _____ BLOCK _____ SUBDIVISION _____ UNIT _____

DESCRIPTION OF WORK CDBG SEWER PROJECT

TYPE OF REVIEW/PERMIT: (CIRCLE ONE) **RESIDENTIAL** **COMMERCIAL**
LAND DEVELOPMENT **SITE PLAN**
UTILITY

RIGHT-OF-WAY JURISDICTION: (CIRCLE ONE) **PUBLIC** **PRIVATE**

TYPE C STORMWATER REVIEW: (CIRCLE ONE) **YES** **NO**

CONSTRUCTION TYPE:

<input type="checkbox"/> DRIVEWAY*	<input type="checkbox"/> CABLE TV	<input type="checkbox"/> UNDERGROUND
<input type="checkbox"/> STREET PAVING	<input type="checkbox"/> ELECTRICITY	<input type="checkbox"/> OVERHEAD
<input type="checkbox"/> SIDEWALKS/CURBS	<input type="checkbox"/> TELEPHONE	<input type="checkbox"/> STORM DRAINAGE
<input type="checkbox"/> RIGHT-OF-WAY	<input type="checkbox"/> WATER SYSTEMS	<input type="checkbox"/> CLEARING
<input type="checkbox"/> SANITARY SEWER	<input type="checkbox"/> OTHER _____	

- NOTE: 1. Detailed drawings shall be submitted with each application.
2. This permit is issued subject to all conditions on reverse side of this application.
3. A signature by the contractor shall be construed as making the contractor personally liable for all permit conditions unless contractor attached written proof of authorization to act on behalf of the applicant.
4. All work is subject to final inspection by Engineering Division. Call 770-5455, "AIRS" (automated inspection request system) to schedule inspections for any permit issued after January 1, 2003.

Art P
APPLICANT / CONTRACTOR SIGNATURE

ART PFEFFER
NAME (PLEASE PRINT)

OFFICE USE ONLY

NOTES:

PERMIT FEE \$ N/A

ISSUING OFFICER IRC ENG-20

DATE ISSUED 9/21/16

EXPIRATION DATE 3/21/17

RIGHT-OF-WAY CONDITIONS

1. Applicant shall not begin construction of any kind in the County right-of-way prior to application and issuance of a valid permit by the Department of Public works.
2. Any areas disturbed in the County right-of-way must be restored by applicant to a condition equal to or better than existing just prior to construction, including but not limited to compaction, grading, paving, seeding mulching and sodding, etc., as the case may be. The quality of construction, materials, and workmanship shall be in accordance with County standards.
3. *Applicant shall notify the Engineering Division at least 48 hours prior to the placement of concrete, paving of asphalt, installation of culverts, or backfilling of trenches, so that the County may inspect installations as necessary. Applicant shall further notify the County in writing of its request for final inspection and approval at the completion of the permitted activity.
4. This permit shall **EXPIRE WITH THE ASSOCIATED LAND DEVELOPMENT OR SITE PLAN PERMIT** unless otherwise stated in writing on the face of this permit by an authorized representative of the Engineering Division.
5. The applicant shall assume the responsibility for all maintenance, replacement or removal of any right-of-way improvement authorized by this permit; and applicant further agrees by acceptance of this permit to indemnify and save harmless the county, its officers, employees, or agents, from any damages, claims, causes of actions, or losses whether for personal injury, loss of life or property damage, arising from the actions or omissions of applicant, its officers, agents, or employees, associated with the placement, maintenance or removal of installations authorized by this permit. The applicant agrees to use all reasonable care under the given circumstances to assure that members of the traveling public are not unreasonably inconvenienced nor endangered by the activities conducted hereunder, including the use of reflectorized barriers, warning signals, flagmen or other prudent measures as described in the Manual on Uniform Traffic Control Devices, (MUTCD), 2000 Edition, published by US Department of Transportation, Federal Highway Administration.
6. The validity of this permit is contingent upon applicant obtaining necessary permits from any other agencies having jurisdiction. Issuance of this permit does not relieve applicant of liability for trespass to private property.
7. This permit shall be considered a license only, for the limited purpose of installation, placement and maintenance of the improvements specified on the face hereof, and does not convey any other right, title, or interest of the Count in the subject right-of-way property.
8. Applicant agrees to remove or alter such installations without objection or cost to the County as the County may direct, at any time and within a reasonable time after receipt of direction by the County Engineer or his authorized representative.
9. Applicant is cautioned that electrical, water and sewer, or other installations or utilities may be located within the construction area, and applicant shall use diligent efforts to first detect and locate all such installations, and shall coordinate construction with all lawful users of said fight-of-way. Applicant shall be liable in every manner for all damages proximately resulting from its interference with or interruption of services provided by other lawful right-of-way users.
10. *In cases where a concrete driveway is to extend to a paved road, that portion of the driveway from property line to edge of the road pavement shall be a minimum thickness of four inches for residential, local roads only, all others will be six inches, as specified in Chapter 312.19(2B) of the County Right-of-Way Ordinance. If road is unpaved concrete/asphalt driveway shall not extend beyond the property line.

INDIAN RIVER COUNTY RIGHT-OF-WAY INFORMATION & FEE SCHEDULE

<u>PERMIT/REVIEW TYPE</u>	<u>FEE</u>
STORMWATER TYPE C	\$100.00
SINGLE FAMILY ROW & DRAINAGE REVIEW (PRIVATE)	\$ 45.00
SINGLE FAMILY ROW & DRAINAGE REVIEW/PERMIT (PUBLIC)	\$ 75.00
UTILITY ROW PERMIT	\$350.00
LAND DEVELOPMENT ROW PERMIT	\$550.00
COMMERCIAL ROW PERMIT	\$300.00

ADDITIONAL FEES


RE-INSPECTION AFTER 2 SITE VISITS – (CHARGED @ AN HOURLY RATE)

PLAN REVIEW AFTER 3rd RESUBMITTAL – (CHARGED @ AN HOURLY RATE)



Inter-Office Memorandum
Indian River County-Public Works Department
Traffic Engineering Division

TO: Adam Heltemes, P.E., Senior Engineer

FROM: Jeanne Bresett, Traffic Analyst 

DATE: August 12, 2016

SUBJECT: **M.O.T. for Off-Site Improvements – Maintenance of Traffic Review Only**
Location: Douglas Subdivision
Job Type: CDBG – Phase 2 - Sewer Force Main
Applicant/Requestor: Gordon Sparks, P.E. ROW # 2015110805

Traffic Engineering staff reviewed plans for the subject project. Attached are Traffic Engineering's Special Conditions for Right-of-Way Permit, as well as the Regulations for the Maintenance of Traffic for above referenced project.

- 1) The contractor shall install stand mounted Advance Construction signing in accordance with **F.D.O.T. Standard Index 602** for any work or activities that encroaches the area between two (2) feet to fifteen (15) feet outside of the travel way.
- 2) Traffic shall be restricted to a single lane when any work or activities encroaches the area between the centerline and 2 feet outside of the travel way. One-lane closures shall be in accordance with **F.D.O.T. Standard Index 603. Traffic Engineering shall be notified 24 hours in advance of any lane closings.**
- 3) There shall be no excavations left open after dark.
- 4) All construction equipment and materials shall be stored a minimum of 15 feet from the edge of pavement and shall be protected by Type II Barricades with flashing yellow lights.
- 5) Construction fencing used in the work area to protect equipment or excavations shall not block sight distance near intersections or driveways.
- 6) Indian River County Traffic Engineering may have underground conduit for traffic signal interconnections and equipment in this area. It shall be the contractor's responsibility to contact Sunshine State One Call System at 1-800-432-4770 for locations of this equipment at least 72 hours prior to any construction.

If you have any questions, please contact me.

Cc: Harvey Payne, Traffic Technician

INDIAN RIVER COUNTY, FLORIDA

MEMORANDUM

mt 5
TO: Jeanne Bressett, Traffic Engineering
FROM: *(N)* Adam Heltemes, P.E., Senior Engineer
SUBJECT: Douglas Subdivision – CDBG Sewer – Phase 2
Right of Way Application No. 2015110805
DATE: September 19, 2016

RECEIVED

SEP 19 2016

TRAFFIC ENGINEERING

Attached please find 24x36 sets of plans for the aforementioned project. There has been no change to the plans since the concurrency sign-off. The 11x17 set is attached your use as needed. Please stamp the application and plans.

If you should have any questions, please let me know.

AH/sm

Attachments

Cc: File

*Restamped
plans
9/20/2016
JB*

RECEIVED

SEP 20 2016

INDIAN RIVER COUNTY
ENGINEERING DIVISION

INDIAN RIVER COUNTY, FLORIDA

MEMORANDUM

TO: Donte Taylor, Traffic Engineering

FROM: *FOR* Adam Heltemes, P.E., Senior Engineer *SM*

SUBJECT: Douglas Subdivision – CDBG Sewer – Phase 2
Right of Way Application No. 2015110805

DATE: July 21, 2016

RECEIVED

JUL 22 2016

TRAFFIC ENGINEERING

Attached is a set of plans signed and sealed for your review or comments on the above ROW application. Review of these plans and a response from your department is required by August 1, 2016. If you are in concurrence with these plans, please sign below and return this memo along with the set of plans.

Concurrence: (signature)

Date

AH/sm

Attachments

Cc: File

See M.O.T. memorandum dated 8/12/2016
J. Bresett
R.O.W. permit not included in package

RECEIVED

AUG 16 2016

INDIAN RIVER COUNTY
ENGINEERING DIVISION

Indian River County Department of Utility Services
1801 27th Street, Vero Beach, Florida 32960
Phone: 772-567-8000, Fax: 772-770-5143



Tuesday, June 28, 2016

ATT: Adam Heltemes, P.E.
Public Works-Engineering Division
1801 27th Street
Vero Beach, Florida 32960

RECEIVED
JUN 29 2016
INDIAN RIVER COUNTY
ENGINEERING DIVISION

RE: Review right of Way Application 2015110805
Douglas Subdivision – CDBG Sewer – Phase 2

Reference: UCP 4103- WIP No. 169000-14501

Mr. Heltemes,

To address comments for the plan review, letter dated February 10, 2016:

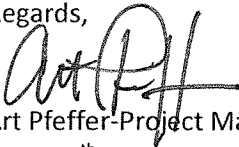
1. Match lines added to plan sheets.
2. Existing force main shown on sheet 8, profile view.
3. Location of lift station moved west 5 feet. The manhole 1 is no longer in conflict with the sidewalk. Add note, Sidewalk to be removed shall be saw cut and restored. See detail sheet 14.
4. Roadway to be milled. After sewer construction trench is compacted, the roadway will be paved. Note added, Minimum proposed road crown and edge of pavement elevations shall be at or higher than existing.
5. Driveways have been added to plans, along with notes. Paved driveways will be saw cut prior to milling. All driveways shall be restored in-kind.
6. IRCDUS requires contractor to video right of way, driveways, signage, mailboxes, etc. prior to start of construction.
7. Sheet 14
 - a. The word crown has been added to note regarding 64th Ave.
 - b. Note 10, Sod within three days of final grade, added.
 - c. Details modified to reflect use of LBR 100 and LBR 40.
 - d. Cross section for 64th Ave revised to reflect 60' R.O.W. width.
 - e. Cross section and notes revised to reflect materials.
 - f. Sidewalk to be 6" thick.
 - g. Note added, Contractor shall contact Public Works Division prior to commencement of work within right of way.
8. Sheet 15 revised to specify CDBG Sewer Phase 2.

Traffic Engineering

1. Added note 6.
2. Added note 7.
3. Added note 8.

We are resubmitting 4 sets of signed and sealed plans for approval. Please contact me at 226-1826 if you have questions.

Regards,


A handwritten signature in black ink, appearing to read 'Art Pfeffer', written over the printed name.

Art Pfeffer-Project Manager, IRCDUS
1801 27th Street
Vero Beach, Florida 32960



Inter-Office Memorandum
Indian River County-Public Works Department
Traffic Engineering Division

TO: Adam Heltemes, P.E., Senior Engineer

FROM: Jeanne Bresett, Traffic Analyst 

DATE: January 13, 2016

SUBJECT: **M.O.T. for Construction in the Right-of-Way**
Location: Douglas Subdivision – Wabasso
Job Type: CDBG Sewer Construction – West Wabasso Phase 2
Applicant: Mr. Art Pfeffer, IRC Department of Utility Services
ROW # 2015110805

Traffic Engineering staff reviewed and approved the plans submitted December 10, 2015 for the above referenced project. General notes shall be included on the plan as follows:

- 1) The applicant/contractor shall notify Traffic Engineering at (772) 226-1326, 72 hours prior to beginning construction. Traffic Engineering staff will notify all emergency agencies within Indian River County.
- 2) Access to property owners as well as emergency access shall be maintained at all times.
- 3) Indian River County Traffic Engineering has underground conduit for traffic signal interconnections in this area as well as other traffic signal equipment. It shall be the contractor's responsibility to contact Sunshine State One Call System at 1-800-432-4770 for locations of this equipment at least 72 hours prior to any construction.

If you have any questions, please contact me.

INDIAN RIVER COUNTY, FLORIDA

MEMORANDUM

TO: Jeanne Bresett, Traffic Engineering

FROM: *FOR* Adam Heltemes, P.E., Senior Engineer *sm*

SUBJECT: CDBG Sewer Project
ROW Application No. 2015110805

REFERENCE: IRC Department of Utility Services

DATE: December 10, 2015

Attached is a set of plans signed and sealed for your review or comments on the above ROW application. Review of these plans and a response from your department is required by December 18, 2015. If you are in concurrence with these plans, please sign below and return this memo along with the set of plans.

NO - see interoffice memorandum dated 1/13/2016

→ Concurrence: (signature) _____ Date _____

AH/sm

Attachments

Cc: File

RECEIVED

DEC 10 2015

TRAFFIC ENGINEERING

DIVISION II

TECHNICAL PROVISIONS

SECTION 02000

WATER, REUSE, AND WASTEWATER UTILITY STANDARDS

GENERAL

Requirements Included

Obtain a copy of utility standards and keep at job site, bearing the title "Department of Utility Services, Water, Wastewater & Reclaimed Water Utility Construction Standards, March 13, 2018" or latest version – herein after called "Reference Specifications"

The Approved Manufacturer's Product List may be found in the Reference Specifications, which may be purchased at the Indian River County Utilities Department at 1801 27th Street, Vero Beach, Florida 32960 or may downloaded as a .PDF from their website <http://www.ircutilities.com/Standards.htm> in III. SPECIFICATIONS; SECTION 18. Approved Manufacturer's Projects List.

Installation of all water and wastewater utility facilities/infrastructure shall be in accordance with the reference standards, drawings and other specifications in "Division 2 – Technical Specifications."

Related Requirements

In other parts of the contract documents; contractor is required to obtain a copy of the reference specifications, and during construction, comply with the reference specifications.

Section 00020	Advertisement for Bids
Section 00100	Instruction to Bidders
Section 00300	Bid Form

Specified in other sections:

Section 00530 EJCDC – Agreement between owner and contractor; Article 8. Contract documents; Paragraph 8.6

Section 00800 – Supplementary conditions; Paragraph SC – 3.03.B.2 Coordination of Plans, Specifications, and Special Provisions.

PRODUCTS

Materials

All materials, equipment (products) used in the installation of the work shall be in accordance with the reference specifications, and in accordance with specifications found in other parts of the contract documents, including:

Drawings bearing the title "**West Wabasso Community Gravity Sewer System Phase 2**".

All sections of these Specifications

EXECUTION

Installation

All installation methods & handling of material (the execution of the work) shall be in accordance with the reference specifications, and in accordance with specifications found in the other parts of the contract documents, including:

Documents:

- A. Drawings
- B. All sections of Division 2 – Technical Specifications

Protection of Existing Mains and Conduits

It is acknowledged that there are areas where proposed mains and conduits will be constructed in close proximity to existing mains that must remain in service. Attention is directed to the fact that the proposed mains may be not only in close proximity horizontally, but the new mains may also at some locations need to be constructed at a greater depth than the existing mains. It shall be the Contractor's responsibility to take measures to provide support and/or restraints to maintain existing mains as necessary during the construction process utilizing sheet piling, restrained joints and/or other methods. Any necessary sheet pilings, restraints and/or other methods used to protect any existing mains and conduits and/or other utilities shall be included in the unit price of the proposed mains.

END OF SECTION

SECTION 02010

MOBILIZATION

GENERAL

The work specified in this item shall conform to Section 101 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction (2017 Edition), except as modified herein.

Description: Mobilization shall consist of handling the Contract, and may include such portions of the following as are required at the beginning of the Project.

Scope of Work: Setting up the Contractor's general plant, offices, shops, storage areas, sanitary and other facilities as required by the specifications, by Local or State Law, or by regulation; providing access to the project site; obtaining necessary permits and licenses and payment of fees; protecting existing utilities; lighting work areas; photographs of existing conditions; providing working drawings; sampling and testing of materials and providing required insurance and bonds.

Materials: Such materials as are required that are not to be part of the completed contract shall be determined by the Contractor.

Methods of Construction: All work done in providing the facilities and services under this item shall be performed in accordance with the construction plans, specifications, and in a safe and workmanlike manner.

Measurement of payment shall be on a lump sum basis, and shall be limited to the amounts listed in Section 01025.

END OF SECTION

SECTION 02020

MAINTENANCE OF TRAFFIC

GENERAL

The work specified in this item shall conform to Section 102 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction (2017 Edition or latest), except as modified herein.

General Provisions-Description

The work specified in this Section consists of maintaining traffic within the limits of the project for the duration of the construction period, including any temporary suspensions of the work. It shall include the construction and maintenance of any necessary detour facilities; the providing of necessary facilities for access to residences, businesses, etc., along the project; the furnishing, installing and maintaining of traffic control and safety devices during construction, the control of dust through the use of calcium chloride if necessary, and any other special requirements for safe and expeditious movement of traffic as may be called for on the plans. The term, Maintenance of Traffic, as used herein, shall include all of such facilities, devices and operations as are required for the safety and convenience of the public as well as for minimizing public nuisance.

Beginning Date of Contractor's Responsibility

The Contractor shall present his/her Maintenance of Traffic Plan at the pre-construction conference. The Maintenance of Traffic Plan shall indicate the type and location of all signs, lights, barricades, striping and barriers to be used for the safe passage of pedestrians and vehicular traffic through the project and for the protection of the workmen. The plan will indicate conditions and setups for each phase of the Contractor's activities.

When the project plans include or specify a specific Maintenance of Traffic Plan, alternate proposals will be considered when they are found to be equal to or better than the plan specified.

In no case may the Contractor begin work until the Maintenance of Traffic Plan has been approved in writing by the Indian River County Traffic Division. Modifications to the Maintenance of Traffic Plan that become necessary shall also be approved in writing. Except in an emergency, no changes to the approved plan will be allowed until approval to change such plan has been received.

The cost of all work included in the Maintenance of Traffic Plan shall be included in the pay item for Maintenance of Traffic.

The Contractor shall be responsible for performing daily inspections, including weekends and holidays, with some inspections at nighttime, of the installations on the project and replace all equipment and devices not conforming with the approved standards during that inspection. The project personnel will be advised of the schedule of these inspections and be given the opportunity to join in the inspection as is deemed necessary.

Traffic Control - Standards

The FDOT Design Standards For Design, Construction, Maintenance and Utility Operations On The State Highway System, Edition as dated on the plans set forth the basic principles and prescribes minimum standards to be followed in the design, application, installation, maintenance and removal of all traffic control devices and all warning devices and barriers which are necessary to protect the public and workmen from hazards within the project limits. The standards established in the aforementioned manual constitute the minimum requirements for normal conditions, and additional

traffic control devices warning devices, barriers or other safety devices will be required where unusual, complex or particularly hazardous conditions exist.

The above referenced standards were developed using F.H.W.A., U.S.D.O.T. Manual on Uniform Traffic Control Devices (MUTCD).

Traffic Control Devices, Warning Devices and Barriers - Installation:

The responsibility for installation and maintenance of adequate traffic control devices, warning devices and barriers, for the protection of the travel in public and workmen, as well as to safeguard the work area in general shall rest with the Contractor. Consideration shall be given to recommendations of the Engineer. The required traffic control devices, warning devices and barriers shall be erected by the Contractor prior to creation of any hazardous condition and in conjunction with any necessary re-routing of traffic. The Contractor shall immediately remove, turn or cover any devices or barriers which do not apply to existing conditions. All traffic control devices shall conform to MUTCD standards and shall be clean and relatively undamaged. Damaged devices diminishing legibility and recognition, during either night or day conditions, are not acceptable for use.

No Waiver Of Liability

The Contractor shall conduct his operations in such a manner that no undue hazard will result due to the requirements of this article, and the procedures and policies described therein shall in no way act as a waiver of any of the terms of the liability of the Contractor or his surety.

Item of Payment

Payment for the work specified in this item shall be made under: Bid Item No. 29 - Mobilization, Demobilization, MOT (See Section 01025)- Lump Sum

END OF SECTION

SECTION 02030

PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION

GENERAL

The work specified in this item shall conform to Section 104 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction (2017 Edition), except as modified herein.

Scope

This Section covers erosion control and the treatment of dewatering water and stormwater runoff from the construction site and work area. The pollution control measures shall prevent turbid or otherwise polluted waters from being discharged from the construction site or work area, to undeveloped portions of the site or off-site.

The OWNER considers pollution from dewatering water and stormwater runoff from a construction site or work area to be a very serious offense. The CONTRACTOR is solely responsible for preventing pollution caused by dewatering water and stormwater runoff from the construction site or work area.

The pollution control measures specified herein represent minimum standards to be adhered to by the CONTRACTOR throughout the Project's construction. The OWNER reserves the right to require the CONTRACTOR to employ additional pollution control measures, when in the sole opinion of the OWNER, they are warranted. If site specific conditions require additional erosion and stormwater pollution control measures during any phase of construction or operation to prevent erosion or to control sediment or other pollution, beyond those specified in the Drawings or herein, implement additional best management practices as necessary, in accordance with Chapter 4, "Best Management Practices for Erosion and Sedimentation Control" of the Florida Erosion and Sediment Control Inspector's Manual, and other references as may be required by regulatory permits.
(<http://www.dep.state.fl.us/water/nonpoint/docs/erosion/erosion-inspectors-manual.pdf>)

The OWNER may terminate this Contract if the CONTRACTOR fails to comply with this Section. Alternatively, the OWNER may halt the CONTRACTOR's operations until the CONTRACTOR is in full compliance with this Section. If the OWNER halts the CONTRACTOR's work as a result of its failure to comply with this Section, the Construction Contract time clock will continue to run.

In addition to these Specifications, comply with Chapter 4 - "Best Management Practices for Erosion and Sedimentation Control" and Chapter 5 - "Best Management Practices for Dewatering" of the Florida Erosion and Sediment Control Inspector's Manual. In the event of a conflict between the referenced Chapters and these Specifications, the more stringent requirement shall prevail.

Some Permits to Be Obtained By the Contractor

The OWNER has obtained certain permits for this project and they are listed in paragraph SC-6.08 of the Supplementary Conditions. Per paragraph SC-6.08.A.2 of the Supplementary Conditions, the CONTRACTOR shall apply for, obtain, and pay for all other required permits, licenses, sampling, and tests. Permits the CONTRACTOR may need to secure may include but not be limited to:

1. Long-term and/or short-term dewatering permit as required by the St. Johns River Water Management District (SJRWMD). Generally, only the short-term permit is required. Contact SJRWMD at (321) 984-4940 to determine which permit is required and the associated statutory requirements;

2. SJRWMD RDS-50 Permit (required);
3. The State of Florida Generic Permit for Stormwater Discharge From Large and Small Construction Activities (required). Contact the Florida Department of Environmental Protection (FDEP) at (866) 336-6312 (toll free) or (850) 245-7522 or www.dep.state.fl.us/water/stormwater/npdes/
4. FDEP's Uncontaminated Groundwater Release Permit (required if dewatering occurs). This permit requires water quality testing by a State certified laboratory.

Provide copies of all permits to the OWNER and ENGINEER and comply with all conditions contained in all permits at no extra cost to the OWNER. If there is a conflict between any permit requirement and these Specifications, the more stringent specification or requirement shall govern.

In addition to paying for all permit fees, CONTRACTOR shall also pay for all water quality sampling and laboratory tests required by any permit.

General

Do not begin any other construction work until the pollution control and treatment system has been constructed in accordance with approved plans and permits and approved for use by the OWNER and applicable permitting authorities.

From time to time, the OWNER or ENGINEER will inspect the pollution control and treatment system and may take effluent samples for analysis by a testing laboratory selected and paid for by the OWNER. If at any time, the OWNER or ENGINEER determines that the pollution control and treatment system is not in compliance with the approved system, the OWNER or ENGINEER will shut the portion of the project down that is not in compliance, and it shall remain shut-down until the pollution control and treatment system is properly constructed or repaired, and complies with the approved pollution control and treatment system plans and specifications.

Schedule construction to minimize erosion and stormwater runoff from the construction site. Implement erosion control measures on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than seven (7) days after the construction activity in that portion of the site has temporarily or permanently ceased. In addition to other temporary erosion control measures that may be implemented, application of polyacrylamide is required on all such disturbed areas within seven (7) days after the construction activity in that portion of the site has temporarily or permanently ceased, unless final landscaping has been installed. Polyacrylamide application shall be as specified herein.

Inspect each pollution control system at least once per day and after each rainfall event. Clean and maintain each pollution control system as required by its manufacturer or the OWNER, until the system is no longer needed. If a water quality violation occurs, immediately cease all work contributing to the water quality violation and correct the problem.

Discharge shall not violate State or local water quality standards in the receiving waters, nor cause injury to the public health or to public or private property, nor to the Work completed or in progress. The receiving point for water from construction operations shall be approved by the applicable owner, regulatory agency, and the ENGINEER.

Promptly repair all damage at no cost to the OWNER.

Submittals

Shop Drawings: Submit shop drawings of the proposed pollution control and treatment systems in accordance with Section 1340.

Stormwater Pollution Prevention Plan.

State Certified Erosion Control Specialty Subcontractor Is Required For Installation, And Maintenance

State Certified Erosion Control Specialty Subcontractor is Required for Installation and Maintenance: Installation and maintenance of all erosion and stormwater pollution control devices, shall be by a State Certified erosion control subcontractor who specializes in the installation and maintenance of such devices. After installation, this specialty subcontractor shall maintain the erosion and stormwater pollution control devices until in the ENGINEER's sole opinion, the devices are no longer necessary (such time not to extend past the date the OWNER formally accepts the project as complete). Before beginning construction, submit to Indian River County for review and approval, a Stormwater Pollution Prevention Plan (SWPPP), prepared by the certified erosion control subcontractor. Construction shall not begin until the SWPPP has been approved by Indian River County. Submit the approved SWPPP to the ENGINEER before beginning construction. Include in the SWPPP, the "Contractor's Affidavit Regarding Erosion Control and Treatment of Dewatering Water and Stormwater From the Construction Site" (located at the end of this Section).

"Pollution" And Certain Uncontestable Pollution Events Defined

With respect to this Section and as may be further defined in the following paragraphs, "pollution" is the presence in off-site waters of any substances, contaminants, or manmade or human-induced impairment of off-site waters or alteration of the chemical, physical, biological, or radiological integrity of off-site water in quantities or at levels which are or may be potentially harmful or injurious to human health or welfare, animal or plant life, or property. Pollutants to be removed include but are not limited to, sediment and suspended solids, solid and sanitary wastes, phosphorus, nitrogen, pesticides, oil and grease, concrete truck washout, stucco mixer washout, curb machine washout, washout from other construction equipment, construction chemicals, and construction debris.

When the Discharge is Directly Into an Existing Water Body, Pollution Occurs When . . . An existing water body (including ditches and canals) is defined to be polluted by the CONTRACTOR's operations when at any time, the turbidity of the water immediately downstream of the CONTRACTOR's discharge point(s) is at least 29 nephelometric turbidity units (NTUs) higher than the turbidity of the background water upstream of the discharge point(s). [See Fla. Administrative Code 62-302.530] Exception: When the discharge is directly into or through an outfall discharging into "Outstanding Florida Waters," designated by Florida Statute 403.061(27), the turbidity of the discharged water cannot exceed the turbidity of the immediate receiving water. The ENGINEER or OWNER shall determine the locations where the turbidity is measured.

When the Discharge is not Directly Into an Existing Water Body, Pollution Occurs When . . . In some instances, dewatering water or stormwater runoff from the construction site or work area may reach a water body indirectly, such as after traveling through pipes or by overland flow. Before construction commences, the Contractor will measure background levels of total suspended solids (TSS) and turbidity, in the immediate vicinity of the discharge water's ultimate discharge point into the receiving water body. If the discharge water's TSS and turbidity measurements exceed these pre-construction background values by 20 percent for TSS and 29 NTUs for turbidity, then the discharge from the CONTRACTOR's operations is defined to be polluted.

Pollution Always Occurs When . . . The discharge from a construction site or work area is defined to be polluted whenever the pH of the discharge is less than 6.5 or greater than 8.5, or whenever any of the following is present in the discharge water:

- (1) Hazardous waste or hazardous materials in any quantity,
- (2) Any petroleum product or by-product in any quantity,
- (3) Any chemical in any quantity, or
- (4) Concentrated pollutants.

Above paragraphs do not in any way, limit the types of conditions in which pollution may be determined to occur.

Penalties For Noncompliance With This Section

In addition to the OWNER's specific remedies, if erosion or pollution is caused by dewatering water or stormwater runoff from the construction site, the OWNER will immediately report the violations to the Indian River County Code Enforcement Board, SJRWMD, FDEP, Indian River Farms Water Control District (or other F. S. Chapter 298 Drainage District, as appropriate), and other pertinent regulatory or enforcement agencies.

PART 2 - MATERIALS AND INSTALLATION

General

Polyacrylamide: As required above, place polyacrylamide (PAM) on bare ground to reduce the potential for erosion. PAM may also be used in water bodies to remove turbidity. Use the anionic form of polyacrylamide that does not stick to fish gills. For PAM information and its proper application, contact Applied Polymer Systems, Inc., (678) 494-5998, www.siltstop.com.

Staked Silt Fences:

1. General: Use silt fences to control runoff from the construction site where the soil has been disturbed.
2. Installation: Install per the manufacture's recommendations and as specified herein. In general, install the silt fence in a manner that allows it to stop the water long enough for the sediment to settle while the water passes through the silt fence fabric. All supporting posts shall be on the down-slope side of the fencing. Place the bottom of the fabric 6-inches minimum, under compacted soil to prevent the flow of sediment underneath the fence. Place silt fences away from the toe of slopes. Otherwise, install in accordance with FDOT Index No. 102.
3. Product: All material shall be new and unused. Use FDOT Types II through IV silt fences where large sediment loads are anticipated, where slopes are 1:2 (vertical: horizontal) or steeper, or as directed by the ENGINEER; otherwise use FDOT Type III silt fence.
 - (a) For FDOT Type III Silt Fence - ACF Environmental, Catalog No. 360800000, Florida DOT Silt Fence. U.S. Sieve = 30, tensile strength = 120 pounds. The heavy-duty filter fabric shall be pre-attached to 48-inch long stakes on 6-foot centers. (1-800- 448-3636).
 - (b) For FDOT Type IV Silt Fence, modify the above Catalog No. 360800000 to comply with FDOT Index No. 102.
 - (c) Or equivalent.

Turbidity Barriers:

1. General: Use turbidity barriers to control sediment contamination of rivers, lakes, ponds, canals, etc.
2. Installation: Install per the manufacturer's recommendations and per FDOT Index No. 103 unless directed otherwise by the ENGINEER.
3. Product: All material shall be new and unused. The turbidity barrier shall be a pervious barrier and the fabric color shall be yellow.
 - a. Parker Systems, Inc.(1-866-472-7537),model Type II or Type I
 - b. Or equivalent.

Sedimentation Control From Dewatering or Pumping Operations Using Filter Bags:

1. Remove silt, sediment, and other particles from dewatering or pumping applications using a filter bag. The bag shall be manufactured using a polypropylene non-woven geotextile and sewn by a double-needle machine, using a high strength nylon thread. The bag shall have a fill spout large enough to accommodate a 4-inch pump discharge hose. Straps shall be attached to the bag to secure the hose and prevent pumped water from escaping without being filtered.
2. Installation: Install in accordance with the manufacturer's specifications. Use as many filter bags as required, at no additional cost to the OWNER. Legally dispose of the bags offsite, at no cost to the OWNER. If the bags are placed on aggregate to facilitate filtration efficiency, do not use limerock aggregate.
3. Product: The filter bag shall be supplied with lifting straps.
 - a. "DIRTBAG 53 or 55 as applicable," supplied by ACF Environmental, Inc. (1-800-448-3636).
 - b. "DANDY DEWATERING BAG" supplied by Dandy Products, Inc. (1-800-591-2284).
 - c. Or equivalent.

Curb Inlet Protection:

1. Filter stormwater before it enters curb inlets.
2. Installation: Install in accordance with the manufacturer's specifications. Use as many of the specified filtration devices as required, at no additional cost to the OWNER.
3. Product: All materials shall be new and unused. The length of the curb inlet filtration device shall be at least 2-feet longer than the curb inlet opening.
 - a. "GUTTERBUDDY," supplied by ACF Environmental, Inc. (1-800-448-3636).
 - b. Or equivalent.

Catch Basin Protection:

1. Filter stormwater before it enters catch basins (drop inlets). The filter "sack" shall be manufactured from woven polypropylene geotextile and sewn by a doubleneedle machine, using a high strength nylon thread. The sack shall be manufactured to fit the opening of the catch basin or drop inlet and it shall have the following features: two dump straps attached at the bottom to facilitate emptying; lifting loops as an integral part of the system to be used

to lift the sack from the basin; and a colored restraint chord approximately halfway up the sack to keep the sides away from the catch basin walls. The colored restraint chord shall also serve as a visual means of indicating when the sack should be emptied.

2. Installation: Install in each catch basin in accordance with the manufacturer's specifications. Use as many of the specified filtration devices as required, at no additional cost to the OWNER.
3. Product: All materials shall be new and unused.
 - a. "SILTSACK" (regular flow), supplied by ACF Environmental, Inc. (1-800-448-3636).
 - b. "FloGuard+PLUS," supplied by Kristar Enterprises, Inc. (1-800-579-8819).
 - c. Or equivalent.

Construction Site Egress Driveways: Minimize the transport of sediment and soil from the construction site or work area by vehicle wheels. Construct a crushed rock driving surface at the vehicle exit point(s). Provide an area large enough to remove the sediment and soil from vehicle wheels before the vehicle leaves the construction site or work area. Provide wash-down stations as required to wash vehicle tires and retain all washwater on-site. Do not use limerock.

Rock and Stone for Erosion Control and Pollution Control and Treatment:

1. Crushed Limerock: Crushed limerock shall not be used under any circumstance.
2. Acceptable Material: FDOT #4 non-calcareous aggregate (usually granite), washed and meeting the requirements of FDOT Standard Specifications for Road and Bridge Construction, Section 901.

Hay Bales: Hay bales shall not be used.

PART 3 - EXECUTION

Design, construct, and maintain the pollution control and treatment system to minimize erosion and capture and remove pollutants from the construction site and from all other areas disturbed by construction activities.

Apply polyacrylamide only as directed by the polyacrylamide manufacturer/supplier.

Item of Payment

Payment for the work specified in this item shall be made under: Bid Item No. 27 – Erosion & Sediment Control - Lump Sum

[Remainder of this page was intentionally left blank]

CONTRACTOR'S AFFIDAVIT REGARDING POLLUTION

This sworn statement is submitted to Indian River County for

West Wabasso Community Sewer Phase 2 Project

STATE OF _____

COUNTY OF _____

Personally before me the undersigned authority, appeared _____, who upon oath duly administered, stated as follows:

1. This sworn statement is submitted by the CONTRACTOR

_____ whose
business address is _____

_____ and (if applicable) its Federal Identification No.(FEIN) is _____.

2. My name is _____ and my relationship to the entity
named above is _____.

(If signing as Owner's Agent, attach Letter of Authorization to Sign from Owner)

3. I understand and agrees that in addition to complying with the terms and conditions of the Stormwater Management System Permit issued by Indian River County, Contractor is responsible for complying with the terms and conditions of the following as applicable to the site:

- (a) State of Florida Generic Permit for Stormwater Discharge From Large and Small Construction Activities (for projects one acre or larger),
- (b) Stormwater Pollution Prevention Plan (regardless of project size),
- (c) St. Johns River Water Management District permit(s) (regardless of project size),
- (d) Florida Department of Environmental Protection permit(s) (regardless of project size),
- (e) All other permits required for this project not specifically listed herein, and
- (f) All Codes and Ordinances of Indian River County.

4. I understand and agrees that "pollution" as defined by Florida Statutes Chapter 403.031(7) includes: ". . . the presence in the outdoor atmosphere or waters of the state of any substances, contaminants, noise, or manmade or human-induced impairment of air or waters or alteration of the chemical, physical, biological, or radiological integrity of air or water in quantities or at levels which are or may be potentially harmful or injurious to human health or welfare, animal or plant life, or property or which unreasonably interfere with the enjoyment of life or property, including outdoor recreation unless authorized by applicable law."

5. I understand and agrees that in addition to the definition set forth in Item 4 above, "pollution" is also defined by Florida Administrative Code 62-302.530 and as may be further defined in the Indian River County permit(s).

6. I understand that Indian River County requires the design, installation, and maintenance of proper erosion control measures at all times during construction until complete stabilization is

achieved at the project site. Contractor understands that this requirement is for this project regardless of the project size.

7. I understand that there are civil and criminal penalties for pollution listed in Florida Statutes Ch. 403.141 and Ch. 403.161 and that there are other penalties listed in Indian River County's permits, including but not limited to, Indian River County issuing a Cease and Desist Order for the project. Contractor understands that it may be liable for these and other penalties if offsite pollution occurs as a result of activities associated with the Project.
8. Transfer of Ownership or County Issued Permits:
- (a) Transfer of Interest in Real Property: Within twenty-one (21) days of any transfer of ownership or control of the real property at which the permitted activity, facility, or system is located or authorized, the Contractor shall notify in writing, both the Indian River County Engineering Division and the Indian River County Stormwater Division of the transfer. Contractor shall provide the name, mailing address, and telephone number of the transferee and a copy of the instrument effectuating the transfer. Said notification is in addition to notifying the County Attorney's Office as required by County Code.
 - (b) Transfer of a County Permit. To transfer a County issued permit, Contractor must provide (1) the information required in Item 8(a); (2) a written statement from the proposed transferee that it will be bound by all terms and conditions of the permit; and (3) a new "Contractor's Affidavit" form properly executed by the transferee. Upon proper receipt of these items the County shall transfer the permit to the transferee.
 - (c) Contractor is encouraged to request a permit transfer prior to the sale or legal transfer of the real property at which a permitted facility, system, or activity is located or authorized. However, the transfer shall not be effective prior to the sale or legal transfer.
 - (d) An "Illicit Discharge Sign" must be present at the site at the time of transfer. Replacement or additional signs may be obtained from the Indian River County Public Works Department at a cost of \$30.00 per sign.

Under penalty of perjury, Contractor declares that it has read the foregoing affidavit and the facts stated in it are true.

FURTHER AFFIANT SAYETH NAUGHT

Contractor: _____

Authorized Signature: _____
(If signing as Owner's Agent, attach Letter of Authorization to Sign from Owner)

Printed Name: _____

Date: _____

The foregoing instrument was subscribed and sworn to before me this ____ day of _____, 20 by _____, who is personally known to me or has produced _____ as identification and who did take oath.

Notary Public State of Florida at Large
My Commission expires: _____

END OF SECTION

SECTION 02040

RECORD DRAWINGS / AS-BUILT DRAWINGS

GENERAL

The work specified in this item shall conform to Section 108 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction (2017 Edition), except as modified herein.

Maintain, prepare and provide the ENGINEER with record documents as specified below, except where otherwise specified or modified within the scope of work provided in the specific project contract documents. The Contractor and/or Developer shall be responsible for, and required to provide, Record Drawings as outlined in this section.

Maintenance of Record Documents:

1. Maintain in CONTRACTOR's field office in clean, dry, legible condition complete sets of the following project documents: Drawings, Specifications, Addenda, approved Shop Drawings, samples, photographs, Change Orders, other modifications of Contract Documents, test records, survey data, Field Orders, and all other documents pertinent to CONTRACTOR'S Work.
2. Provide files and racks for proper storage and easy access.
3. Make documents available at all times for inspection by ENGINEER and OWNER.
4. Do not use record documents for any other purpose and do not remove them from the field office.
5. Label each document "RECORD DRAWING" in 2-inch high printed letters.
6. Keep record documents current at all times.
7. No work shall be permanently concealed until the required record data has been obtained.

Record / As-Built Drawings

During the construction operation, the CONTRACTOR shall maintain records of all deviations from the approved Project Plans and Specifications and shall prepare therefrom "RECORD" drawings showing correctly and accurately all changes and deviations from the work made during construction to reflect the work as it was actually constructed.

The Record/As-Built survey shall be performed and subsequent plans prepared by a Professional Surveyor and Mapper, registered in the state of Florida and certified to the standards set forth in Chapter 472, Florida Statutes and Chapter 5J-17.050 Florida Administrative Code (Florida Minimum Technical Standards).

Field measurements of vertical or horizontal dimensions of constructed improvements shall be obtained so that the constructed facility can be delineated in such a way that the location of the construction may be compared with the construction plans. Clearly shown by symbols, notations, or delineations, those constructed improvements located by the survey.

All vertical information (elevations) provided on the Record Drawings shall be referenced to the North American Vertical Datum of 1988 (NAVD 88) unless otherwise specified by the Project Engineer.

The horizontal information provided on the Record Drawings shall be referenced to the State of Florida, State Plane Coordinate System, Florida East Zone as established by Global Positioning System (GPS) which meets or exceeds Third Order Class I Accuracy Standards according to current publication of the Federal Geodetic Control Committee (FGCC) procedures.

All Record/As-Built drawings shall be prepared in digital format (ACAD Ver.2009) and shall utilize the digital design drawings as prepared by the Project Engineer as a base for the Record/As-Built drawings. It is the responsibility of the Surveyor to request these files from the Contractor or Project Owner in order to produce the Record/As-Built drawing set.

ALL improvements proposed to be constructed as shown on the approved construction plans shall be field measured upon completion and shown on the Record/As-Built survey. Any improvements that appear in both plan and profile views shall show the Record/As- Built information in both views.

The following items are required to be shown on all Indian River County project Record/As- Built drawings submitted to the County:

A. ROADWAY:

1. Stations and offsets related to controlling baseline and elevations of all structures, side street and major driveway radius returns (edge of pavement), bends and/or change in direction of roadway alignment, minimum of 1000' intervals along roadway alignment.
2. Elevations along Profile Grade Line (PGL), of all edge of pavements on each side of Profile Grade Line (PGL), at medians at the high/low and PVI points along Profile Grade Line (PGL).
3. All final Elevations to be plotted on PGL AND Plan & Profile sheets as applicable.
4. Elevations of edge of pavement and flow line at curb inlets and on the adjacent edge of pavement at curb inlets.

B. WATER MAINS AND FORCE MAINS:

1. Show size and type of material used to construct mains.
2. Show horizontal location and elevation of all tees, crosses, bends, terminal ends, valves, fire hydrants, air release valves, and sampling points, etc., by distances from known reference points.
3. Show location, size and type of material of all sleeves and casing pipes.
4. Elevation and horizontal location of all storm sewers, gravity sewers including laterals, force mains, water mains, etc. which are crossed; including clearance dimension at all conflicts or crossings.
5. Top of pipe elevation and horizontal location of all water and force main stub-outs.
6. Horizontal location of all services at the property lines.
7. Horizontal and vertical location of pipe including size of all mains and ground elevation shall be obtained at one-hundred (100) foot intervals. Contractor shall place temporary PVC stand pipes (tell-tales) at each of the one-hundred (100) foot intervals and at all fittings and conflicts/crossings to facilitate the record drawing survey. The tell-tale pipes shall be constructed of 2-inch PVC pipe, shall be placed on the top of the pipes to be surveyed, and shall be removed by the Contractor after completion of the field survey by the "As-Built" Professional Surveyor.

8. Location of fire lines.
9. Dedicated easement locations, identified by O.R. Book and Page Number.

C. GRAVITY SEWER:

1. Manholes: Elevation of top rim, bottom elevation and invert of each influent and effluent line.
2. Show distance between manholes center-to-center and horizontal location by baseline station and offset.
3. Show material size and type used to construct sewer mains.
4. Show length (center of manhole to end of stub) distances from known reference points or baseline offsets, and elevation of stub-outs.
5. Show which services have twenty (20) foot length of DIP at water main crossings.
6. Show station and offset location of sanitary services' at property line. Particular care in dimensioning needed in special situations, i.e., cul-de-sacs and locations where services are not perpendicular to wye.
7. Show invert elevation of sanitary service at property line.
8. Any and all necessary dedicated easement locations, identified by O.R. Book and Page Number.

D. PUMP / LIFT STATION:

Record Drawings shall show elevations for the top and bottom and diameter of wet well along with invert of effluent line. Record Drawings should also indicate the make, model number, horsepower, impeller and condition point of pumps selected and installed, shape of wet well, location of control panel, location of pump out connection, float level settings, any deviation from the plans, and serial number(s) of the pump(s).

Survey Control

Install/re-establish: It shall be the contractor's responsibility to hire a Professional Surveyor and Mapper as defined per Chapter 472, Florida Statutes, to replace any horizontal and vertical control shown on the engineering plans that was destroyed during construction.

New roadway alignment control points (survey baseline or controlling line and all points as indicated on the plans or control sheet) upon final roadway completion. Include all intersections and side streets. State plane coordinates and elevations for all control points.

If shown on plans or not: Any Public Land Corner or Governmental Survey Control point(s), vertical control (bench marks), property corners destroyed and/or disturbed during the scope of the project shall be properly re-established as per standards as set forth within Florida Statutes, Administrative code and Minimum Technical Standards for that type of survey. All said surveying mentioned above shall be performed under the direct supervision of a registered Professional Surveyor and Mapper in the state of Florida and certified accordingly. Said Governmental agency(s) shall be notified in writing of disturbance and re-establishments.

Record/As-Builts Drawings Format - Submittal

ENGINEER will supply the CONTRACTOR with the electronic file of the approved construction plans for the input of the As-Built (record) information.

CONTRACTOR shall deliver seven (7) certified sets of Record/As-Builts with Electronic Drawing files prepared in AutoCAD 2009 AND PDF format or in current version as agreed by the ENGINEER.

CONTRACTOR's surveyor shall review, sign and seal As-Builts or Record drawing(s). Said drawing(s) shall clearly state type of survey, positional tolerances, adhere and be certified to by a registered Professional Surveyor and Mapper in the state of Florida, any standards set forth by Florida Statutes, Administrative code and Minimum Technical Standards for As-Built/Record surveys.

All Record/As-Built drawings are subject to review and approval by County Surveyor.

Accuracy

The CONTRACTOR will be held responsible for the accuracy and completeness of Record Drawings and Electronic As-Builts and shall bear any costs incurred in finding utilities as a result of incorrect data furnished by the CONTRACTOR.

Completion of Work

Upon Substantial Completion of the Work, deliver Record Drawings/As-Built Drawings to ENGINEER. Final payment will not be made until satisfactory record documents are received and approved by ENGINEER.

Item of Payment

Payment for the work specified in this item shall be made under: Bid Item No. 24 – As-Built Survey - Lump Sum

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BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS

Record As-Built Survey Checklist

Lic. Name _____ Date: _____

Project Name: **North County Commercial Sewer & Water**

Project No.: **UCP No. 4119**

Chapter 61G17-6 Minimum Technical Standards F.A.C.

61G17-6.003 General Survey, Map, and Report Content Requirements

(1) **REGULATORY OBJECTIVE:** The public must be able to rely on the accuracy of measurements and maps produced by a surveyor and mapper. In meeting this objective, surveyors and mappers must achieve the following minimum standards of accuracy, completeness, and quality:

- ☐ (a) Accuracy of survey measurements based on the type of survey and expected use.
- ☐ (b) Measurements made in accordance with the United States standard, feet or meters.
- ☐ (c) Records of measurements maintained for each survey (check field notes.)
- ☐ (d) Measurement and computation records dated.
- ☐ (e) Measurement and computation records substantiate the survey map.
- ☐ (f) Measurement and computation records support accuracy statement (closure calculations or redundant measurements, if applicable.)

(2) Other More Stringent Requirements:

- ☐ (a) Met more stringent requirements set by federal, state, or local governmental agencies.

(3) Other Standards and/or Requirements that Apply to All Surveys, Maps, and/or Survey Products:

- ☐ (a) **REGULATORY OBJECTIVE:** In order to avoid misuse of a survey and map, the surveyor and mapper must adequately communicate the survey results to the public through a map, report, or report with an attached map.
- ☐ (b) Survey map or report identified the responsible surveyor and mapper and contain standard content. In meeting this objective, surveyors and mappers must meet the following minimum standards of accuracy, completeness, and quality:

- ☐ (c) Type survey stated on map and report:

As-Built Survey	Mean High Water Line Survey
Boundary Survey	Quantity Survey
Condominium Survey	Record Survey
Construction Layout Survey	Specific or Special Purpose Survey
Control Survey	Topographic Survey
Hydrographic Survey	

- ☐ (d) Name, certificate of authorization number, and street and mailing address of the business entity on the map and report.
- ☐ (e) Name and license number of the surveyor and mapper in responsible charge.

- ☐ (f) Name, license number, and street and mailing address of a surveyor and mapper practicing independent of any business entity on the map and report.
- ☐ (g) Survey date (date of data acquisition.)
- ☐ (h) Revision date for any graphic revisions (when survey date does not change.)
- ☐ (i) Map and report statement "Survey map and report or the copies thereof are not valid without the signature and the original raised seal of a Florida licensed surveyor and Mapper."
- ☐ (j) Insurance statement in ¼" high letters "The survey depicted here is not covered by professional liability insurance" if there is no professional liability insurance.
- ☐ (k) Additions or deletions to survey maps or reports by other than the signing party or parties is prohibited without written consent of the signing party or parties.
- ☐ (l) All computed data or plotted features shown on survey maps supported by accurate survey measurements unless clearly stated otherwise.
- ☐ (m) Bearings, distances, coordinates, and elevations shown on a survey map shall be substantiated by survey measurements unless clearly stated otherwise.
- ☐ (n) Bearing reference (well established and monumented line)
- ☐ (o) A designated "north arrow"
- ☐ (p) Stated scale or graphic scale
- ☐ (q) Abbreviations in legend or notes.
- ☐ (r) Special conditions and any necessary deviation from the standards noted upon the map or report.
- ☐ (s) Responsibility for all mapped features stated on the map or report
- ☐ (t) Map or report clearly states the individual primarily responsible for the map or report when mapped features have been integrated with others.
- ☐ (u) Map Accuracy.

(1) Vertical Feature Accuracy:

- ☐ (a) Vertical Control: Field-measured control for elevation information shown upon survey maps or reports shall be based on a level loop or closure to a second benchmark.
- ☐ (b) Closure in feet must be accurate to a standard of plus or minus .05 ft. times the square root of the distance in miles.
- ☐ (c) All surveys and maps or reports with elevation data shall indicate the datum and a description of the benchmark(s) upon which the survey is based.
- ☐ (d) Minor elevation data may be obtained on an assumed datum provided the base elevation of the datum is obviously different than the established datum.

(2) Horizontal Feature Accuracy:

- ☐ (a) Horizontal Control: All surveys and maps or reports expressing or displaying features in a publicly published coordinate system shall indicate the coordinate datum and a description of the control points upon which the survey is based.
- ☐ (b) Minor coordinate data may be obtained and used on an assumed datum provided the numerical basis of the datum is obviously different than a publicly published datum.

- ☐ (c) The accuracy of control survey data shall be verified by redundant measurements or traverse closures. All control measurements shall achieve the following closures:
Commercial/High Risk Linear: 1 foot in 10,000 feet;
Suburban: Linear: 1 foot in 7,500 feet;
Rural: Linear: 1 foot in 5,000 feet;
- ☐ (d) When statistical procedures are used to calculate survey accuracies, the maximum acceptable positional tolerance, based on the 95% confidence level, should meet the same equivalent relative distance standards as set forth in 61G17-6.003(3)(p)(2.)(c) F.A.C.
- ☐ (e) Intended Display Scale: All maps or reports of surveys produced and delivered with digital coordinate files must contain a statement to the effect of: "This map is intended to be displayed at a scale of 1/___ or smaller".

61G17-6.004 Specific Survey, Map, and Report Requirements

(1) As-Built/Record Survey:

- ☐ (a) Obtained field measurements of vertical or horizontal dimensions of constructed improvements so that the constructed facility can be delineated in such a way that the location of the construction may be compared with the construction plans.
- ☐ (b) Clearly shows by symbols, notations, or delineations, those constructed improvements located by the survey.
- ☐ (c) All maps prepared shall meet applicable minimum technical standards.
- ☐ (d) Vertical and horizontal accuracy of the measurements made shall be such that it may be determined whether the improvements were constructed consistent with planned locations.

END OF SECTION

SECTION 02050

CLEARING & GRUBBING

GENERAL

The work specified in this item shall conform to Section 110 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction (2017 Edition), except as modified herein.

Prior to any clearing and grubbing, the contractor will stake the right-of-way. Unimproved areas shall be cleared of trees, logs, stumps, brush, vegetation, rubbish and other perishable or objectionable matter within limits shown on the plans excepting for certain trees and shrubs shown on the plans or as directed by the Engineer which are to remain undisturbed and protected. Stumps and roots between slope stakes in cuts and in embankments 3 feet or less in depth shall be removed to a depth of 18 inches below subgrade. No stumps, roots, or perishable matter of any description shall remain under concrete slabs or footing, including pavement and sidewalks.

No trees shall be removed or relocated until the Engineer or his representative has marked all trees to be saved, after a review of the project site with the Contractor's representative.

Where the final pavement or structural work will be close to existing trees, the Contractor shall exercise care in the vicinity of the trees. Further, the Contractor shall saw cut along the edge of the outside limits of the stabilization, structure subgrade or sidewalk to a minimum depth of 4 feet below the finish grade and paint with a commercial grade pruning paint the ends of all sawn roots. If directed by the Engineer or where shown on the drawings, work shall be done by hand in order to protect the trees.

The Contractor shall exercise care when working in the vicinity of all trees to remain so as to not damage or remove major root structures. The Contractor shall not pull hair or major root structures. All severed roots shall be sawn clean and paint with pruning paint. Stumps, roots, etc., shall be completely removed and disposed of by the Contractor. Undesirable, dead, and/or damaged trees (as so designated by the Engineer) shall be removed.

All trees to be removed shall be disposed off site; burning will be strictly prohibited.

All trees or shrubs which are to remain shall be preserved and protected by the Contractor. Where the removal of valuable trees or shrubs specifically for transplanting is required, this work shall be done in cooperation with the Owner and at no additional expense to the Owner.

All items to be removed shall be excavated to their full depth. All culverts removed from residential driveway entrances within the right-of-way shall become the property of the respective homeowner. Those homeowners not desiring the culverts may donate them to the County free of charge. (See Paragraph C, Special Provisions) The Contractor shall transport the culverts to the County's storage yard. All metal castings for catch basins, manholes, or other structures shall be carefully removed and stored in the County's Storage Yard if they are deemed salvageable by the Engineer. The excavated materials shall be removed from the job site and disposed in a location designated or approved by the Owner. Any culverts, structures or any material excavated or removed from the project site under clearing and grubbing deemed unsalvageable by the Engineer shall be disposed of in a legal manner by the Contractor. Where required, suitable material as approved by the Engineer shall then be backfilled and compacted to restore the original contour of the ground. The fill material shall be backfilled and compacted in accordance with Section 120 of these specifications.

No additional payment will be made, nor will additional work, or change orders be authorized for work needed to remove, relocate, protect, or otherwise account for in the construction of the work depicted in the plans, for any feature, or item that would be apparent from a careful inspection of the site and review of the plans, even though such feature or item is not specifically called out in the plans. It is therefore essential the contractor make such inspection and review.

The unit price bid for this item shall include the cost of all labor, tools, and equipment necessary to excavate, remove, and dispose of those items as directed by the Engineer and where designated on the Drawings. The cost of restoration and backfill and compaction for the specific area of removal shall also be included under this item.

Item of Payment

The unit price bid for furnishing and installation of the sewer mains and appurtenances shall include Clearing & Grubbing. A separate payment for the work specified within 84th Place shall be made under: Bid Item No. 26 – Clearing & Grubbing 84th Place - Lump Sum

END OF SECTION

SECTION 02075

EXCAVATION FOR STRUCTURES & PIPE

GENERAL

The work specified in this item shall conform to Section 125 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction (2017 Edition), except as modified herein.

Item of Payment

The unit price bid for furnishing and installation of the sewer mains and appurtenances shall include Excavation for Structures and Pipe.

END OF SECTION

SECTION 02115

TREE PROTECTION AND TRIMMING

GENERAL

Description of Work

Only those trees which are in the direct path of construction are to be removed. Contractor shall make every possible effort to save any tree of four-inch diameter or larger, including minor adjustment to the pipe routing. Changes to the pipe routing must be approved by the Engineer. Any tree which is not designated for removal but which will significantly interfere with construction shall be trimmed by a qualified tree surgeon. Contractor shall minimize tree removal and tree trimming operations to as great an extent as possible.

Quality Assurance

Engage a qualified tree surgeon to perform the following work:

1. Carefully remove branches from trees as required for new construction; all wounded trees shall be immediately treated.
2. Recommend procedures to compensate for loss of roots and perform initial pruning of branches and stimulation of root growth where removed to accommodate new construction.
3. Perform tree repair work for damages incurred by new construction.

Job Conditions

Provide temporary fencing, barricades, or guards to protect trees and other plants which are to remain from damage.

PRODUCTS

Materials

Tree Pruning Compound: Waterproof, antiseptic, elastic, and free of kerosene, coal tar, Creosote, and other substances harmful to plants. Pruned or damaged trees shall be treated with the following:

1. Pine trees (all species): A mixture of twelve percent (12%) Benzene Hexachloride (BHC) emulsifiable concentrate shall be mixed at the rate of one (1) pint BHC per gallon of #2 fuel oil. Spray damaged area liberally. Spray the rest of the tree from ground level to a height of six feet (6'). Spraying of damaged trees shall be completed within five (5) days after injury occurs.
2. Hardwood (all species except pine): An application of asphalt-type tree pruning paint shall be applied to the damaged area. The paint shall be applied in sufficient quantity so as to form an airtight seal. Spraying or painting of the damaged trees shall be performed within twenty-four (24) hours after the injury occurs. In case of damage to "specimen" hardwoods, the inspecting Engineer may require the Contractor to retain a skilled and licensed tree surgeon to properly treat the damaged tree. No compensation shall be made to the Contractor for treating damaged trees.

EXECUTION

General

Protect tree root system from damage due to noxious materials in solution caused by run-off or spoilage during mixing and placement of construction materials, or drainage from stored materials. Protect root systems from flooding, erosion, or excessive wetting resulting from dewatering operations.

Repair And Replacement Of Trees

- A. Repair trees damaged by construction operations, in a manner acceptable to the Engineer. Make repairs promptly after damage occurs to prevent progressive deterioration of damaged trees.
- B. Remove and replace dead and damaged trees which are determined by the tree surgeon to be incapable of restoration to normal growth pattern.
- C. If trees over six inches in caliper measurement (taken 12 inches above grade) are required to be replaced, provide new trees of six inches caliper size, and of the species selected by the Engineer.

Disposal

Removal from Owner's property: Remove excess excavation, displaced trees, and trimmings, and dispose of off the Owner's property in a manner approved by local agencies.

Item of Payment

Payment for the work specified in this item shall be included in the price of the pipe.

END OF SECTION

SECTION 02310

STABILIZATION

GENERAL

The work specified in this item shall conform to Section 160 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction (2017 Edition), except as modified herein.

Section 160 is modified by the addition of the following:

"The stabilization thickness indicated on plans shall be considered a minimum thickness. Thickness will vary to conform to the lines, and grades shown in the plans." Minimum L.B.R. = 40 - No under-tolerance.

Item of Payment

Payment for the work specified in this item shall be made under: Bid Item No. 11 - Type B Stabilized Subgrade (12")- Per FDOT Spec 160-4 (LBR 40) – Per Square Yard.

END OF SECTION

SECTION 02320

TRENCHLESS INSTALLATION OF PRESSURE MAINS BY DIRECTIONAL BORING

GENERAL

Section Description

Portions of the pressure mains can be installed by the directional boring method within the limits indicated on the contract plans and as specified herein. Generally, as a minimum, the pressure main is to be located within the road right-of-way and shall be installed by directional boring.

This section includes materials, performance and installation standards, and Contractor responsibilities associated with the furnishing of all labor, materials, equipment and incidentals required to install, complete, required trenchless installation of pressure mains, as shown on the Drawings and as specified herein.

Experience

The Contractor must demonstrate expertise in trenchless methods by providing a list of ten (10) utility references for which similar work has been performed in the last two years. The references should include a name and telephone number where contact can be made to verify the contractor's capability. The Contractor must provide documentation showing successful completion of the projects used for reference. Conventional trenching experience will not be considered applicable.

All supervisory personnel must be adequately trained and shall have at least four (4) years experience in directional boring. The Contractor shall submit the names and resumes of all supervisory field personnel prior to construction.

Because of time constraints, the Contractor may wish to provide multiple experienced directional boring crews.

The directional boring equipment shall be capable of installing the minimum pipe diameter noted on the plans.

Submittals

Submit technical data for equipment including clay slurry material, method of installation with working drawings, and proposed sequence of construction for approval by the Engineer.

Prior to approval for directional boring, the Contractor must submit the names of supervisory field personnel and historical information of directional boring experience. In addition, the Contractor must submit for approval nameplate, data for the drilling equipment, mobile spoils removal unit, and MSDS (Material Safety Data Sheets) information for the drilling slurry compounds.

The Contractor is required to bring to the attention of the Engineer any known design discrepancies with actual tunneling methods that the Contractor will be performing. This shall be stated in writing to the Engineer no later than the pre-construction meeting.

Provide shop drawing submittal and sample of pipe, fused joint, and trace wire.

EXECUTION

Installation

Installation shall be in a trenchless manner producing continuous bores.

The tunneling system shall be remotely steerable and permit electronic monitoring of tunnel depth and location. Accurate placement of pipe within a ± 2 -inch window is required both horizontally and vertically. Turning capability of a 90-degree radius in 40 feet is required. Continuous monitoring of the boring head is required, including across open water if necessary.

The directional boring Contractor shall submit certification, by a Professional Engineer or Professional Land Surveyor licensed in the State of Florida, that the directional boring has been performed in accordance to the construction drawings, and shall provide signed and sealed record drawings. Record Drawings (As-built) shall be provided both in electronic format and hard paper copy.

Tunneling shall be performed by a fluid-cutting process (high pressure-low volume) utilizing liquid clay, i.e. bentonite. The clay lining will maintain tunnel stability and provide lubrication in order to reduce frictional drag while the pipe is being installed. In addition, the clay fluid must be totally inert and contain no environmental risk. The Contractor must also have a mobile vacuum spoils recovery vehicle on-site to remove the drilling spoils from the access pits. The spoils must then be transported from the job site and be properly disposed of off the site. Under no circumstances shall the drilling spoil be permitted to be disposed of into sanitary, storm, or other public or private drainage systems. Spoils may be transported to the County's Solid Waste Facility and the cost of disposal shall be borne by the County.

Liquid clay type colloidal drilling fluid shall consist of at least 10 percent of high-grade carefully processed bentonite to consolidate cuttings of the soil, to seal the walls of the hole, and to furnish lubrication for subsequent removal of cuttings. The slurry, which is heavier than the surrounding material, is high in colloids of the bentonite type and it will deposit a thin filter cake of low permeability material on the walls of the bore. This will allow only a small amount of the fluid to pass into the surrounding soil and will also stabilize the bore. The colloidal content of the fluid imparts excellent lubricating qualities to the slurry, which is a distinct aid to the removal of the soil cuttings.

Pneumatic or water-jetting methods will be considered unacceptable due to the possibility of surface subsidence.

After an initial bore has been completed, a reamer will be installed at the termination pit and the pipe shall be pulled back to the starting pit. The reamer shall be capable of discharging liquid clay to facilitate the installation of the pipe into a stabilized and lubricated tunnel.

A minimum of one (1) insulated #6 trace wires shall be installed along with the HDPE. The trace wire shall be tested for continuity upon completed installation.

Upon completion of boring and pipe installation, the Contractor shall remove all spoils from the starting and termination pits. All pits shall be restored to their original condition.

Restoration Of Paved, Improved And Unimproved Areas

The shoulders, ditches, banks and slopes of roads and railroads crossed and paralleled shall be restored to their former condition and properly sodded so that they shall not wash out before becoming consolidated. Restoration shall be as required by the jurisdictional authority and as specified within the Contract Document. Road and railroad crossings and parallel installations are to be continuously maintained until the completion of the work. No direct compensation shall be paid for Contractor's repair or maintenance of crossings and parallel installations.

Item of Payment

Payment for the work specified in this item shall be made under:
Bid Item No. 5a – 4" Ø Force Main Directional Bore – Per Linear Foot

*** END OF SECTION ***

SECTION 02401

DEWATERING

GENERAL

Description Of Work

The work to be performed under this section shall include furnishing all equipment and labor necessary to remove storm or subsurface waters from excavation areas in accordance with the requirements set forth and as shown on the drawings.

Applicable Codes, Standards, And Specifications

The dewatering of any excavation areas and the disposal of the water shall be in strict accordance with the latest revision of all local and state government rules and regulations. The Contractor shall obtain any required dewatering permit from the appropriate agencies prior to commencing dewatering operations.

EXECUTION

Dewatering

The Contractor shall provide adequate equipment for the removal of storm or subsurface waters which may accumulate in the excavation. If subsurface water is encountered, the Contractor shall utilize suitable equipment to adequately dewater the excavation so that it will be dry for work and pipe laying. A wellpoint system or other Engineer-approved dewatering method shall be utilized if necessary to maintain the excavation in a dry condition for preparation of the trench bottom and for pipe laying. Wellpoint holes shall be plugged with concrete grout. Dewatering by trench pumping will not be permitted if migration of fine grained natural material from bottom, side walls, or bedding material will occur. In the event that satisfactory dewatering cannot be accomplished due to subsurface conditions or where dewatering could damage existing structures, the Contractor shall obtain the Engineer's approval of wet trench construction procedure before commencing construction. Dewatering shall cease in a manner to allow the subsurface water to slowly return to normal levels.

Disposal

Water pumped from the trench or other excavation shall be disposed of in storm sewers having adequate capacity, canals, or suitable disposal pits. Contractor is responsible for acquiring all permits required to discharge the water and shall protect waterways from turbidity during the dewatering operation. In areas where adequate disposal sites are not available, partially backfilled trenches may be used for water disposal only when the Contractor's plan for trench disposal is approved in writing by the Engineer. The Contractor's plan shall include temporary culverts, barricades, and other protective measures to prevent damage to property or injury to any person or persons. No flooding of streets, roadways, driveways, or private property will be permitted. Engines driving dewatering pumps shall be equipped with residential type mufflers.

Item of Payment

Payment for the work specified in this item shall be included in the price of the pipe.

*** END OF SECTION ***

SECTION 02576

PAVEMENT, SIDEWALK, AND DRIVEWAY REPLACEMENT

GENERAL

References

Section numbers and Article numbers specified are those contained in the latest edition of the "Florida Department of Transportation Standard Specifications for Road and Bridge Construction."

All pavement, sidewalks and/or driveway restoration shall be completed in conformance with FDOT Standards. Where pavement, sidewalk and/or driveways are disturbed during the execution of this contract work, the thickness of the restored work shall be either equal to existing (i.e. in kind) or the minimum thickness required by the FDOT, whichever is greatest.

Portions of the project work are in the limits of the rights-of-way owned by Indian River County (IRC), City of Sebastian (COS), and FDOT. Work in the right-of-way shall conform to the applicable Standards.

Indian River County Code Chapter 312, Section 08 C. Utility Construction in Right-of-Way shall control where applicable. It is intended that the other specifications contained herein are to be applied as more specific. In the event of a conflict between a provision of Code Section 312.08 C and any other provision of these specifications the more restrictive provision shall apply.

312.08 C. Utility construction within the right-of-way. Right-of-Way Construction Permit(s) has been/ will be secured for this project and all requirements of the permit(s) must be followed. However, the Contractor can anticipate that the permit(s) will include the following:

- A. One (1) lane of traffic in each direction should be maintained, using proper traffic control procedures as outlined in the reference material cited in section 312.08.1 (b) and (c).8u
- B. Pavement cut and restoration, where approved, shall be as follows:
 - 1) Pipe bedding, backfill and compaction shall conform to standards specified in section 312.08.1 (a) and (c). Open cut restoration shall meet specifications detailed in drawing No. 6 section 312.19. Density testing shall be performed by an approved independent testing laboratory and reports submitted to the Public Works Director prior to permanent patch. A temporary asphalt patch shall be applied within twenty-four (24) hours after backfill and compaction. The finish surface of the temporary asphalt patch shall be within one-quarter (1/4) inch of the elevation of the existing roadway surface.
 - 2) Seventy-two (72) hours prior to the time of pavement cut, the Public Works Director shall be notified of the date and time of the cut. An emergency phone number of the Contractor shall be provided.
 - 3) Work site traffic control shall be provided in conformance with "Florida Department of Transportation Roadway and Traffic Design Standards."
 - 4) Asphalt restoration will be required within fifteen (15) days after temporary patch is installed. The final finish shall be smooth and uniform within a one-quarter (1/4) inch tolerance of the required surface.
 - 5) Shoulder, right-of-way sodding, and other restoration shall be performed as required by the Public Works Director in accordance with Florida Department of Transportation Standards.
 - 6) Traffic control devices (e.g. signs, street name signs, traffic signals and pavement markings) shall be restored to their original condition or better.
 - 7) Prior to final release of the performance bond, which shall occur no sooner than ninety (90) days after final pavement restoration, the Engineer-of-record or utility company

shall request a final inspection, shall certify that the utility has been installed in accordance with standards specified in the publications listed in section 312.08, shall submit two (2) copies of as-built drawings, and shall submit release of lien by Contractors.

- 8) All utility structures will be required to have an identification tag designating proper ownership.

Restoration

All surfaces, as described, shall be completed as soon as is reasonable. In no case shall the pavement or driveway replacement operation be unfinished for more than 10 days after backfilling unless otherwise directed by the Engineer. Replace all damaged or cut pavement due to Contractor's operations; restore all pavement outside of trench area that is damaged by the Contract at no expense to Owner.

Guarantee

All restored areas within the public right-of-way shall be guaranteed for one year. In the event of settlement of paved areas more than one-quarter inch below the undisturbed adjacent permanent pavement, the Contractor shall make the necessary repairs to restore the pavement level within ten calendar days after notification by the Owner. The cost of such repairs shall be paid by the Contractor.

Restoration Details

See Construction Plans Sheet 20 of 21 for construction details and notes.

PRODUCTS

Baserock

Limerock, shellrock, and local rock shall conform to FDOT specifications, Section 911.

Asphaltic Concrete

Plant Mix Wearing Surface: A plant mix wearing surface course shall be constructed on the prepared limerock base. Materials and construction shall conform with the requirements of FDOT Standard Specifications Section 331, and Articles 331-1 through 331-4. The finished pavement replacement shall be smooth and even with, or slightly above, the existing abutting pavement, but shall not have any appreciable bump due to this slight elevation.

Rock, Gravel, or Marl Replacement: Roads, streets, or driveways constructed of rock, gravel, or marl shall be restored to a condition equal to or better than prior to construction using the same material unless directed otherwise.

Temporary Cold Patch: Temporary cold patch for temporary surface as required by Code Section 312.08 (c) (d) 1, shall be a commercially available mix approved by the Engineer.

Concrete Mix, Design, And Testing

Comply with requirements of applicable FDOT Section 345 for concrete mix design, sampling and testing, and quality control, and as herein specified.

Design the mix to produce standard weight concrete consisting of Portland cement, aggregate, air-

entraining admixture and water to produce the following properties.

1. Compressive Strength - Class I, 3,000 psi.
2. Air Content: 3% to 6%

Concrete placement slump shall not exceed plus or minus one inch from approved design slump.

EXECUTION

Pavement Replacement

Replace pavement in accordance with the details shown on drawings. The baserock shall be placed and compacted in accordance with FDOT Specifications, Section 200.

Application of the tack coat shall follow the application of the prime coat immediately prior to the placing of the wearing surface course.

Edge Trim

Trim edges of the existing pavement with a concrete saw or other approved method to provide a clean, straight edge.

Pavement Markings

Repaint, stripe, or otherwise mark pavement to match pre-existing conditions, using FDOT-approved materials and procedures.

Temporary Pavement

Temporary pavement shall be installed as follows:

Residential Streets: In residential streets, the Contractor shall, after completion and acceptance of the backfill, construct a base course in accordance with the typical section meeting the requirements of the FDOT Specifications, Section 200, Articles 200-1 through 200-10. The top of the base course shall be constructed flush with the adjacent asphalt surface. Upon completion of the base construction, it shall be primed and sanded in accordance with FDOT Specifications, Section 300. Prime shall be applied at the rate of 0.50 gallon per square yard, or as directed by the Engineer.

Arterial Streets: In arterial streets, the Contractor shall, after completion and acceptance of the backfill, construct a base course in accordance with the typical section. Upon completion of the base course, the Contractor shall construct an asphaltic concrete surface course, Type II, in accordance with FDOT Specifications, Section 337. The top of the surface course shall be constructed flush with the adjacent asphalt surface. Thickness of the replaced course shall match the thickness of the existing surface course.

Emergency Repairs And Procedures

The Contractor shall provide the name and telephone number of at least two (2) persons designated by the Contractor to receive notification of the need for emergency repairs. These persons shall be available for emergency notification on a 24 hour basis. The County will provide the name, or names, of its designee who will be charged with giving notice to the Contractor when the need for emergency repairs, or other actions, is necessary on work that has been performed by the Contractor. When so notified by the person so designated by the County that emergency repairs, or other actions, are

necessary the Contractor will be given a reasonable time to respond to the situation. At the time of notification the Contractor will give the time that he will be able to take action to rectify the emergency conditions. If this time is not satisfactory to the County, the County reserves the right to have the Road & Bridge Division make necessary repairs, or take other emergency actions as required to restore the pavement, or take other actions necessary. The County will invoice the Contractor for the actual time and materials used in executing the emergency repairs or actions. This amount will be based upon hourly rates and actual materials cost to the County. The labor rates will be supplied to the Contractor prior to beginning work under this Contract. If the Contractor does not pay the invoice as presented by the County, the County reserves the right to withhold that amount from the Contractor on the Final Pay for this Contract.

Repairs And Protection:

1. Repair or replace broken or defective concrete, as directed by Engineer.
2. Drill test cores where directed by Engineer, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with Portland cement concrete bonded to pavement with epoxy resin grout.
3. Protect concrete from damage until acceptance of work. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
4. Sweep concrete pavement and wash free of stains and discoloration, dirt, and other foreign material just prior to final inspection.

Item of Payment

Payment for the work specified in this item shall be made under:

Bid Item No. 12 – Type SP 9.5 (Traffic C) (1" Thick)- Per FDOT Spec 334-7 – Per Square Yard
Bid Item No. 13 – Type SP 12.5 (Traffic C) (1.5" Thick)- Per FDOT Spec 334-7– Per Square Yard
Sidewalk, driveway replacement shall be paid under unit price bid for furnishing and installation of the sewer mains and appurtenances.

*** END OF SECTION ***

SECTION 02578

NON-PAVED DRIVEWAY RESTORATION

GENERAL

Description of Work

This item of work shall include all furnishing of materials, equipment, testing, labor, and all else necessary to restore all non-paved driveways, including sub-base course materials, for all dirt, marl, or shell driveways. All non-paved driveways shall be reconstructed to a minimum thickness of six (6") inches or in-kind, whichever is greater.

Materials and Methods of Construction

Materials and Methods of Construction shall conform to the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2017, and Indian River County Standards as applicable.

END OF SECTION

SECTION 02610

RESTRAINED JOINTS, EARTHWORK AND BACKFILL

RESTRAINED JOINTS

Restrained joints shall be used on lines per the Table of the IRC DUS Standards Drawing M-3. Section of piping having restrained joints or those requiring restrained joints shall be constructed using pipe and fittings with restrained "Locked-type" joints and the joints shall be capable of holding against withdrawal for line pressures up to 150 pounds per square inch (psi). The pipe fittings shall be as shown for restrained push-on joints or restrained mechanical joints on Page 416 in Section VI, in the Hand book of Cast Iron Pipe, 4th Edition. In all cases, restrained joints must be used per formula below, with thrust blocks, per contract drawings.

Restrained pipe joints that achieve restraint by incorporating cutout sections installed in the bell of the pipe shall have a minimum wall thickness at the point of cutout that corresponds with the minimum specified wall thickness for the rest of the pipe.

The minimum number of restrained joints required for resisting forces at fittings and changes in direction of pipe shall be determined from the length of restrained pipe on each side of fittings and changes in direction necessary to develop adequate resisting friction with the soil. Drawing and formula below are provided for the Contractor as a guideline.

Where:

$$L = \frac{1.5PA (1-\cos X)}{Fw}$$

L = Length of pipe on each side of fittings or change in direction

P = 150 psi, unless otherwise noted

A = Cross-sectional area in square inches based on outside diameter (O.D.) of pipe

X = Angle of bend or change in direction in degrees

f = Coefficient of friction = 0.4 (maximum)

W = W (earth) + W (pipe) + W (water in pipe) W (earth)
= (density of soil*) (depth of cover in feet) (O.D. in feet)

* Maximum 12-lbs/cubic ft above maximum water table elevation and 60-lbs/cubic ft below maximum water table elevation.

Bolts and nuts for restrained joints shall be 304 stainless steel.

The Contractor shall also provide restrained joints in accordance with the above criteria wherever below ground fittings are on lines 12-inches in diameter or less.

EARTHWORK AND BACKFILL

Excavation for all utilities and/or house connections shall be adequately guarded with barricades and lights, so as to protect the public from hazard. Streets, sidewalks, driveways, curbs, parkways and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the IRC DUS and/or Public Works.

Foundation material used for pipe bedding, from a minimum 6-inch distance below the pipe invert to the bottom 12-inches above the top of the pipe, shall be bank run sand and gravel.

All gravity sewer installation procedures must be in accordance with pipe manufacturer's recommendations. All mains shall be installed to have a minimum depth of 36-inches. Installation of gravity sewers shall be controlled by use of a laser to maintain proper grade. A maximum tolerance of W' dip will be accepted in gravity sewer construction.

1. Trench - Trench width shall be kept to a minimum necessary for installation of the pipe and shall comply with current OSHA requirements. The trench bottom shall be graded uniformly to match the slope of the pipe.
2. Backfill - Only good quality backfill, free of stones, hardpan materials, roots, rocks, broken cement or other debris that might be damaging to the pipe shall be used. Backfill shall be placed in the trench in uniform lifts of 12-inches.
3. Compaction - All fill must be compacted by hand tamping from under the pipe up to the center line. Backfill shall be compacted in lifts up to the surface to achieve a minimum compaction of 98% of maximum density in roadways and shoulders. Easements shall be 95% density, in accordance with AASHTO Specifications T-180 and ASTM 0-2167.
4. Dewatering - Construction shall be accomplished in a dry trench. Well pointing may be required as necessary. All water entering excavations or other parts of the work shall be contained, collected and pumped to suitable places for disposal, as permitted by local and state regulation.
5. Sheet piling - Sheet piling and shoring shall be installed as may be necessary for the protection of the work, preservation of adjacent property and structures and the safety of employees. Sheet piling and bracing shall be uniform to OSHA requirements.

Installation of force mains (sewer or reused water) shall be in accordance with latest AWWA Standard Specifications C- 600 and the installation specifications for water lines in the Water Distribution Section, irrespective of the type of pipe selected. A 2-inch wide magnetic 1.0. tape and tracer wire shall be placed continuously in the trench over all pipes per Detail M-13, 12-inches below grade.

1. Trench - Trench width shall be kept to a minimum necessary for pipe installation and shall comply with current OSHA requirements. The trench bottom shall be graded and alignment shall be parallel with roadway, where possible.
2. Backfill - Only good quality backfill, free of stones, roots, rocks, broken cement or other material that might be damaging to the pipe shall be used. Backfill must be put in the trench in lifts.
3. Compaction - All pipe must be compacted by hand tamping to the centerline, under the pipe. Backfill shall be compacted in lifts up to the surface to achieve a minimum compaction of 98% of maximum density in roadways, shoulders, and easements in accordance with AASHTO Specifications T-180 and ASTM 0-2167.
4. Dewatering - Construction shall be accomplished in a dry trench. Well pointing may be required, as necessary. All water entering excavations or other parts of the work shall be contained, collected and pumped to suitable places for disposal as permitted by the Local, State or Water Management District.
5. Sheet piling - Sheet piling and shoring shall be installed as may be necessary for the protection of the work, preservation of adjacent property and structures and the safety of employees. Sheet piling and bracing shall be uniform to OSHA requirements.

Specifications C-600 Series, irrespective of the type of pipe selected. All installation procedures must also be in conformance with pipe manufacturer's recommendations. Minimum depth of cover shall be 36-inches. A 2-inch wide magnetic 1.0. tape shall be placed continuously in the trench over all pipes, 12-inches below grade. Trace wire shall be wrapped on all pipes, per Detail M-13, valves, fittings, and all appurtenances. Allowable deflection of the pipe joints and curvature of PVC pipe shall not exceed the manufacturer's specifications.

1. Trench - Trench width shall be kept to a minimum necessary for pipe installation and shall comply with current OSHA requirements. The trench bottom shall be graded and alignment shall be parallel with roadway, where possible.
2. Backfill - Only good quality backfill, free of stones, roots, rocks, broken cement or other material that might be damaging to the pipe shall be used. Backfill must be put in the trench in lifts.
3. Compaction - All pipe must be compacted by hand tamping to the centerline, under the pipe. Backfill shall be compacted in lifts up to the surface to achieve a minimum compaction of 98% of maximum density in roadways, shoulders, and easements in accordance with AASHTO Specifications T-180 and ASTM 0-2167.
4. Dewatering - Construction shall be accomplished in a dry trench. Well pointing may be required, as necessary. All water entering excavations or other parts of the work shall be contained, collected and pumped to suitable places for disposal as permitted by the Local, State or Water Management District.
5. Sheet piling - Sheet piling and shoring shall be installed as may be necessary for the protection of the work, preservation of adjacent property and structures and the safety of employees. Sheet piling and bracing shall be uniform to OSHA requirements.

*** END OF SECTION ***

SECTION 02624

GRAVITY SEWER SYSTEMS

GENERAL

Scope

These Specifications shall govern the design, materials and installation requirements of the County for gravity sanitary sewer systems constructed in its service area when using Poly (Vinyl Chloride)(PVC) pipe and fittings, Vitrified Clay (V.C.) pipe and fittings or Ductile Iron pipe and fittings. "PVC" shall mean Poly (Vinyl Chloride) as it relates to pipe and fittings.

This Specification does not purport to cover all material or installation procedures which may be required, whether by the nature of the proposed work, or by the County, or by other regulatory agencies.

It is intent of the County to obtain a complete and working installation under this project, and any items of labor, equipment or materials which may reasonably be assumed as necessary to accomplish this end shall be supplied whether or not they are specifically shown on the Plans or stated herein.

Quality Assurance

All material and installation shall be in accordance with the County's Design and Construction Standard Specifications and Details.

The material and installation for this project shall be in full compliance with all applicable standards listed in Section 02000, "Reference Specifications".

Project Approval

The approval of the County shall be secured prior to any construction related activity.

Permits, Inspections & Fees

The Contractor shall obtain and pay for all permits, official inspections and all other fees as required for project construction. ALL PERMIT, IMPACT, OR INSPECTION FEES PAYABLE TO INDIAN RIVER COUNTY IN CONNECTION WITH THE WORK ON THIS COUNTY PROJECT WILL BE PAID BY INDIAN RIVER COUNTY, WITH THE EXCEPTION OF RE-INSPECTION FEES AS SET FORTH IN THE CONTRACT.

Inspection by County personnel is required in addition to, not in lieu of, municipal and Engineering Consultant inspections.

No installation will be accepted until it has passed all inspections, including pavement installation or replacement.

Preconstruction Conference

Prior to commencement of the work, the Contractor shall attend a "Preconstruction Conference.

Submittals

The Contractor shall furnish and submit "As-Builts", Project Record Documents, and operating and maintenance instructions and all other submittals to the Consulting Engineer and the County.

Where the Specifications require test certification or certification that certain products or material furnished are as specified, the Contractor shall deliver such certification to the Consulting Engineer. No material or equipment shall be approved for use in the work until individual certification has been received.

Safety Requirements

The Contractor shall be in compliance with all applicable provisions of the Occupational Safety and Health Act of 1970, in general, and any subsequent amendments and revisions thereto and specifically to the provisions concerning confined space entry.

The Contractor's personnel will be in the vicinity of raw sewage. For his own protection, as well as for his employees, he shall check with Indian River County Health Department, and based upon their recommendation, shall have his personnel properly immunized against disease.

Under this project, personnel may be required to enter the existing manholes/sewers to perform certain items of work. Before entering, the Contractor shall be in compliance with all related rules and/or ordinances (which mandates, in part, that above-ground safety personnel shall be on duty at all times when someone enters or works in a manhole/sewer and the air within a manhole / sewer shall be tested with a combination oxygen deficiency meter-explosion meter to determine oxygen content and explosion potential). A test for the presence of hydrogen sulfide shall also be performed. The work area must be ventilated mechanically by the use of an air blower, before entry and during occupancy, to insure that an adequate quantity of oxygen is supplied to the work area.

The Contractor shall conduct his operations in such a manner, utilizing warning devices such as traffic cones, barricades and warning lights, and personnel such as flagmen and uniformed police officers, that the public is given adequate warning of hazards of the work site as may be deemed necessary by the authority having jurisdiction and/or the County. Construction shall comply with the approved maintenance of traffic plan and FDOT permit requirements.

In the instance of men working within the manholes, the Contractor shall provide safety provisions to cover any possible consequences of structural failure and/or flooding. Such provisions might take the form of, but not be limited to, ladders in position to permit rapid egress; safety harnesses; stand-by pumping equipment; extra air supplies; and such other measures as the situation and good construction practices might indicate.

Certain products specified in these Specifications contain warnings by the manufacturers that under certain conditions, if instructions for use of the product are not followed, a hazardous condition may exist. It is the Contractor's responsibility to instruct his workmen in the safe use of the product, or any product substitution.

PRODUCTS

General

All material for use in the Project shall be new and of recent domestic manufacture and shall be the products of reliable manufacturers or suppliers who, unless otherwise specified, have been regularly engaged in the manufacture of such materials and equipment for at least five (5) years.

All fittings and components shall, wherever possible, be standard stock articles of well-known manufacturers.

Where the Specifications designate the products of a particular manufacturer, the product specified has been found suitable for the intended use, but, unless otherwise provided, articles or products of similar characteristics may be offered for the approval of the County, upon approval by the Engineer of Record.

Copies of complete descriptive data shall be furnished regarding all material, consisting of dimension drawings, catalog references and other information necessary to clearly identify each article.

When substitutions are permitted, the Contractor shall make all necessary changes in adjacent or connected structures and equipment, at his expense

Unless otherwise specified, all steel bolts, nuts, washers and all other miscellaneous ferrous metal items (except cast iron) furnished by the Contractor shall be hot-dip galvanized in accordance with ASTM A386, "Zinc Coating (Hot-Dip) on Assembled Steel Products" and ASTM A385, Providing High-Quality Zinc Coatings (Hot-Dip)". Where the word "galvanized" or its abbreviation is used on the Plans or in the Specifications, it shall mean hot-dip galvanized. Fabricated items shall be hot-dip galvanized after fabrication. Internal threads shall be tapped or re-tapped after galvanizing.

EXECUTION

Pipe Installation, General

Proper and suitable tools and appliances for the safe convenient handling and laying of pipe shall be used and, in general, conform with manufacturer's recommendations. At the time of laying, the pipe shall be examined carefully for defects, and should any pipe be discovered to be defective after being laid, it shall be removed and replaced with sound pipe by the Contractor at his expense.

Pipe and fittings shall, at all times, be handled with great care to avoid damage. In loading and unloading, they shall be lifted with cranes or hoists or slid or rolled on skidways in such manner as to avoid shock. Under no circumstances shall this material be dropped or allowed to roll or slide against obstructions. Pipe and other material shall be distributed along the right-of-way in advance of installation only to the extent approved by the County. Such materials shall be so placed as to keep obstruction to traffic minimum.

Upon satisfactory completion of the pipe bedding, a continuous trough for the pipe barrel and recesses for the pipe bells, or couplings, shall be excavated by hand digging. When the pipe is laid in the prepared trench, true to line and grade, the pipe barrel shall receive continuous, uniform support with no pressure being exerted on the pipe joints from the trench bottom.

Pipe shall be installed in accordance with the manufacturer's recommendation. Before being lowered into the trench, the pipes and accessories shall be carefully examined and the interior of the pipes shall be thoroughly cleaned of all foreign matter and other deleterious materials by methods acceptable to the County. During suspension of work, for any reason, at any time, a suitable stopper shall be placed in the end of the pipe last laid to prevent mud, dirt, groundwater or other foreign material from entering the pipe. Any pipe which is disturbed or found defective shall be immediately removed and replaced with sound pipe.

Gaskets shall be thoroughly checked for breaks, cuts or other damage, and shall be free of oil, grease, dirt or other foreign matter. Pipe joints shall be assembled with care. Lubricant, if required shall be as recommended by the manufacturer of the pipe, and shall have no deteriorating effects

on the gasket and pipe materials. If assembly is under water, lubricant recommended by the manufacturer for underwater use is required.

Good alignment of the pipe is required for assembly. Align the spigot to the bell of the previously laid pipe and insert the spigot into the bell until it uniformly contacts the gasket. Apply steady pressure until the spigot easily slips through the gasket. Do not push or swing the spigot into the bell. Smaller diameter pipe and fitting may be assembled manually. Mechanical means such as bars and blocks, ratchets or jacks shall be used for joining larger pipe and fittings. Power equipment such as a backhoe bucket, shall not be used to assemble pipe and fittings, since excessive force may damage the gasket or bell.

Cutting the pipe in the field shall be done by the Contractor in a neat and workmanlike manner using manual or power saws. The pipe shall be marked around its entire circumference before cutting to assure a square cut. After cutting, the end shall be beveled with a beveling tool, rasp, or other approved equipment, to the proper taper. Mark the proper insertion depth on the cut and beveled end before installing the cut pipe into the pipeline. Pipe laying shall proceed up-grade from the lowest point of the proposed system, with spigot ends pointing in the direction of flow.

All pipe shall be laid straight, true to the lines and grades shown on the Plans, or matching existing grade, in each section between manholes. The pipe shall be laid so that the identification markings are located on the top of the installed pipelines.

Each individual length of pipe shall be solidly and evenly bedded and haunched throughout its length on a prepared bed on the floor of the trench and not supported in position on blocks or wedges. Pipe shall only be laid when the two preceding lengths have been thoroughly embedded in place to prevent any movement or disturbance of the finished joint. Any pipe which is disturbed or found to be defective after laying shall be taken up and re-laid or replaced.

Any work within the pipe and fittings shall be performed with care to prevent damage to the interior wall of the pipe. Damaged interior walls shall be repaired or the pipe section or fitting replaced as required by the County. No cables, lifting arms, hooks or other devices shall be inserted into the pipe or fitting. All lifting, pulling or pushing mechanisms shall be applied to the exterior of the pipe or fitting.

After pipe has been laid, reviewed and found satisfactory, sufficient backfill shall be placed along the pipe barrel to hold the pipe securely in place during the conduction of the required tests.

*** END OF SECTION ***

SECTION 02626

GRAVITY SANITARY SEWERS POLYVINYL CHLORIDE (PVC) PIPE

Scope

This section covers polyvinyl chloride pipe and fittings for gravity sanitary sewers.

General

Polyvinyl chloride (PVC) pipe shall be allowed for use as gravity sewer pipe where compatible with the specific conditions of the project. Indian River County Department of Utility Services (IRCDUS) may require the use of material other than polyvinyl chloride during construction permit review or by IRCDUS field personnel during construction if it is determined that polyvinyl chloride pipe is unsuitable for the particular application.

Polyvinyl chloride (PVC) gravity sewer pipe can be used up to a depth of sixteen feet as specified herein. All pipe used for depths greater than 16 feet, shall be approved by IRCDUS's Engineer.

Gravity Sewer Pipe & Fittings

Gravity sewers lines and laterals shall be extra strength polyvinyl chloride pipe and shall conform to the latest ASTM Designation D3034-SDR26. Fittings installed in polyvinyl chloride pipe shall conform to the same specifications as the pipe in which they are installed.

In addition to the requirements of ASTM specifications, the pipe shall not be out-of-round or crooked in alignment as determined by the Engineer. Any length of pipe 6 inches or greater in diameter whose inside diameters measured at right angles to each other vary more than $\frac{1}{8}$ inch may be rejected.

Polyvinyl chloride pipe shall be a maximum of 20 feet in length and shall be in accordance with IRCDUS Approved Manufacturer's Product List.

Material shall meet or exceed the requirements of ASTM Designation 1784, Type 1, Grade 1 (12454-B). All P.V.C. materials shall be stored in accordance with the manufacturer's specifications (not in direct sunlight). PVC pipe and fittings, which show signs of ultraviolet degradation, are considered substandard and unfit for use, and will be rejected by the IRCDUS's Engineer.

All wyes, fittings, laterals, and manhole couplings shall be manufactured by same manufacturing company as the pipe or approved equal, see Approved Manufacturer's Product List. Adapters shall be compatible to the approved pipe and appurtenances. All joints shall be rubber gasketed.

The pipe shall be green in color.

Pipe Joint Seals

Joint seals in polyvinyl chloride pipe and fittings shall comply with ASTM Designation D3212.

The joint shall remain sealed by its own compression. Adhesives shall not be necessary to weld or fuse the gaskets together.

The compressive stress which is developed in the gasket material shall be as high as is permitted by the strength of the bell in ring tension, with due regard to factor of safety, and this stress shall be at its maximum value when the joint is completely assembled.

Retrofitting Sewer Laterals

Gravity sewer systems shall be designed such that laterals are provided to serve all units and lots. In cases where sewer laterals must be added to a gravity sewer main, connections shall be made by installing a sewer service wye branch and a sleeve-type adapter, whichever is specified by IRCDUS for the particular application.

Submittals

Before starting fabrication of the PVC pipe and fittings, the Contractor shall submit complete detailed working drawings for approval by the Engineer or IRCDUS. Such drawings shall show the piping layouts and contain schedules of all pipe, fittings, valves, expansion joints, hangers and supports, and other appurtenances. Where special fittings are required, they shall be shown in large detail with all necessary dimensions.

Marking

A 2" wide magnetic I.D. location tape is required over all laterals. Tape is to be installed 12" below proposed finished grade.

Installation

Unless otherwise noted on the drawings or in other sections of this specification, the pipe shall be handled and installed in strict accordance with the manufacturer's instructions. The Contractor shall use every precaution during construction to protect the pipe against the entry of non-potable water, dirt, wood, small animals, and any other foreign material that would hinder the operation of the pipeline. Where the groundwater elevation is above the bottom of the trench, the Contractor shall provide suitable dewatering equipment at no additional cost to the Owner. All piping shall be placed in a dry trench, unless the Engineer or IRCDUS approves wet trench installation.

Depth of Cover and Pipe Elevation: Unless otherwise shown on the drawings, or otherwise authorized by the Engineer, all pipe shall have a minimum cover of 36 inches. Contractor shall determine top of pipe elevation and top of ground elevation for every two joints of pipe installed using a level. Pipe must have the minimum cover described above and must be within +/- 0.2 feet of the top of pipe elevation indicated on the drawings. Installed pipe, which does not meet these requirements, shall be reinstalled until it meets these requirements. Contractor shall record top of pipe and top of ground elevations and the locations of where these elevations were determined and submit this information to Engineer. Engineer reserves the right to have Contractor excavate and check top of pipe and top of ground elevations to see if they conform to the aforementioned requirements, at no additional cost to the Owner.

*** END OF SECTION ***

SECTION 02632

SUBMERSIBLE WASTEWATER PUMPING STATION

GENERAL

The station shall be complete with pumps, motors, piping, valves, electrical work (including motor controls), structure, connections and all other needed appurtenances, tested and ready for service prior to the sign-off or acceptance by IRCDUS.

These specifications are intended to give a general description of what is required, but do not cover all details, which will vary in accordance with the requirements of the equipment as offered. It is, however, intended to cover the furnishing, the shop testing, the delivery and complete installation and field testing of all materials, equipment and appurtenances for the complete pumping units as herein specified, whether specifically mentioned in these specifications or not.

For all units there shall be furnished and installed all necessary and desirable accessory equipment and auxiliaries, whether specifically mentioned in these specifications or not, and as required for an installation incorporating the highest standard for the type of service, including field testing of the entire installation and instructing the IRCDUS's regular operating personnel in the care, operation and maintenance of all equipment. All operating manuals shall be supplied to IRCDUS.

All private lift stations must provide a repair company name and emergency telephone number on the electrical panel in case of a malfunction to the station. If a name and number is not provided, the IRCDUS reserves the right to call a company of it's choosing to make a service call and repair the malfunctioning station. All charges to repair said station shall be charged to the owner of the station.

A manhole shall be constructed within 20' upstream of a lift station. There shall be only one pipe connection from this manhole to the lift station. The pipe between the lift station and manhole shall be C-900, DR-18 PVC pipe.

Description of Systems

The pump station shall be comprised of a concrete wet well, concrete valve pit, RTU, at least two (2) submersible wastewater pumps and controls, discharge piping and all appurtenances as specified herein or needed. The pump station will pump raw, unscreened, domestic wastewater into a force main.

Qualification

To assure unity of responsibility, the motors and control system shall be furnished and coordinated by the pump manufacturer. The Engineer of Record shall assume responsibility for the satisfactory installation and operation of the entire pumping system, including pumps, motors, and controls as specified.

The pumps covered by these specifications are intended to be standard pumping equipment of proven ability as manufactured by a reputable manufacturer having extensive experience in the production of such pumps. The pumps furnished shall be designed, constructed and installed in accordance with the best practice and methods, and shall operate satisfactorily when installed. Pumps shall be manufactured in accordance with the Hydraulic Institute Standards.

The control system shall have an established record of successful performance for similar service and be approved by the IRCDUS.

All equipment furnished under this specification shall be new, and shall be the standard product of manufacturers having a successful record of manufacturing and servicing the equipment and systems specified herein for a minimum of five (5) years.

The pumps shall be furnished complete with controls and accessories required, and shall be as on the Approved Manufacturer's Product List. Grinders pumps shall be permitted for pumps 5.0 HP or less, unless otherwise approved by IRCDUS's Engineer. Three phase electrical power will be required for all pumping stations. 120/240 volt service will be required for pump stations up to 20hp. 277/480 volt service will be required for pump stations larger than 20hp.

Operating Instructions

Operating and maintenance manuals shall be furnished. The manuals shall be prepared specifically for this installation and shall include all required cuts, drawings, equipment lists, descriptions, etc., that are required to instruct operating and maintenance personnel unfamiliar with such equipment. The number and special requirements shall be as specified by the County.

A factory representative of all major component manufacturers, who has complete knowledge of proper operation and maintenance, shall be provided for one (1) full day to instruct representatives of the Owner and the Engineer on proper operation and maintenance. If there are difficulties in operation of the equipment due to the manufacturer's design or fabrication, additional service shall be provided at no cost to the Owner.

Tools & Spare Parts

Any special tools required shall be provided.

The manufacturer shall furnish a complete set of recommended spare parts necessary for the first three (3) years of operation of the pumping system, which shall include at least the following:

- 1) 1 - set of upper bearings
- 2) 1 - set of lower bearings
- 3) 1 - set of upper and lower shaft seals
- 4) 1 -relay and phase monitor for each type supplied with the pump control panel for each station
- 5) Gringer Pump Station (2 Complete Sets) Impeller and Bottom Plate is one set
- 6) Solid Handling Pumps (1 Impeller)
- 7) 1 -TCU001 Programmed to the corresponding Frequency

Spare parts shall be properly bound and labeled for easy identification without opening the packaging, and suitably protected for long-term storage.

Warranty

The Contractor and the equipment manufacturers shall warrant all equipment supplied under this section for a period of five (5) year. Warranty period shall commence on final date when the IRCDUS accepts the project.

The equipment shall be warranted to be free from defects in workmanship, design and materials. If any part of the equipment should fail during the warranty period, it shall be replaced in the machine(s) and the unit(s) restored to service at no expense to the IRCDUS.

The manufacturer's warranty period shall run concurrently with the Contractor's warranty period. No exception to the provision shall be allowed.

Submittals

Copies of all materials required to establish compliance with these specifications shall be submitted for review. Submittals shall include at least the following:

1. Certified general arrangement drawings showing all important details and materials of construction dimensions.
2. Voltages and horsepower ratings.
3. Pertinent catalog information and pump and motor performance curves.
4. Written performance guarantee.

Materials & Equipment

The pumping units required under this section shall be complete, including pumps and motors with proper alignment and balancing of the individual units. All parts shall be so designed and proportioned as to have liberal strength, stability, and stiffness, and to be especially adapted for the work to be done. Ample room shall be provided for inspection, repairs, and adjustments.

Each foundation plate for each pump shall be rigidly and accurately anchored into position. The same pump manufacturer shall furnish all necessary foundation bolts, plates, nuts, and washers for installation by the Contractor. Each foundation plate shall be "W" thick Type 304 stainless steel. Foundation bolts, nuts, washers, and spare parts shall be Type 304 stainless steel.

Stainless steel nameplates giving the name of the manufacturer, head, speed, and all other pertinent data shall be attached to each pump and motor.

PUMPS

General

The pumps shall be totally submersible centrifugal pumps with close-coupled motors designed to pump sewage. The design shall be such that the pumping units shall be automatically connected to the discharge piping when lowered into place on the discharge connection. The pumps shall be easily removable for inspection or service, requiring no bolts, nuts or other fastenings to be removed for this purpose, or need for personnel to enter the pump well. Each pump shall be fitted with a 304 stainless steel lifting cable of adequate strength, and shall be five (5) feet longer than wet well depth to control panel to permit raising the pump for inspection and removal.

The impeller shall be constructed of nodular iron SP. The hydraulic design shall incorporate a single vane centrifugal impeller. The design shall permit low liquid velocities and gradual acceleration and change of flow direction of the pumped media. The impeller/casing design shall result in a passage free of surfaces to which solid or fibrous materials can adhere. The overall pump design shall combine high efficiency, low required NPSH, large ball passage and the ability to handle high solids concentrations efficiently. All other parts shall be of close grain gray iron construction, with all parts coming into contact with sewage protected by a coat of rubber-asphalt paint. All external bolts and nuts shall be of stainless steel. The impeller shall be of a centrifugal

type, capable of passing 3-inch minimum diameter solids, fibrous material, and heavy sludge. If riser pipes are less than 3" in the wet well then the pumps must be grinder pumps.

Each pump shall be provided with a tandem double mechanical seal running in an oil reservoir, composed of two (2) separate lapped face seals, each consisting of one (1) stationary and one (1) rotating tungsten-carbide or silicon carbide ring with each pair held in contact by a separate spring, so that the outside pressure assists spring compression in preventing the seal faces from opening. The compression spring shall be protected against exposure to the pumped liquid. The pumped liquid shall be sealed from the oil reservoir by one face seal and sealed from the oil reservoir from the motor chamber by the other. The seals shall require neither maintenance nor adjustment, and shall be easily replaced. Conventional double mechanical seals with a single spring between the rotating faces, requiring constant differential pressure to effect sealing and subject to opening and penetration by pumping forces, shall not be considered equal to tandem seal specified and required.

A sliding guide bracket shall be an integral part of the pumping unit, and the pump casing shall have a machined connecting flange to connect with the cast iron discharge connection, which shall be bolted to the floor of the sump with stainless steel anchor bolts and so designed as to receive the pump connection without the need of any bolts or nuts. Sealing of the pumping units to the discharge connection shall be accomplished by a simple linear downward motion of the pump, with the entire weight of the pumping unit guided by 304 stainless steel guides which will press it tightly against the discharge connection. No portion of the pump shall bear directly on the floor of the sump, and no rotary motion of the pump shall be required for sealing.

Pump motors shall be housed in an air-filled, watertight casing. Motors shall be a NEMA Design B with a 1.15 service factor. Insulation shall be moisture-resistant NEMA Class F with a maximum temperature rise of 90° Celsius above ambient temperature (4° Celsius). Motor characteristics are noted on the Drawings. Pump motors shall have cooling characteristics suitable to permit continuous operation, in a totally, partially or nonsubmerged condition. Each motor shall incorporate an ambient temperature compensated overheat sensing device and a moisture sending device wired in series. The protective devices shall be wired into the pump controls in such a way that if either device operates, the pump will shut down. The devices shall be self-resetting. The cable shall be fixed to the pump using a watertight trumpet assembly. The pump shall be capable of running continuously in a totally dry condition under full load, without damage, for extended periods. Before final acceptance, a field running test demonstrating this ability, with four (4) hours of continuous operation (water supplied by the contractor) under the above conditions, shall be performed for all pumps being supplied, if required by the IRCDUS. Pump motor cables shall be suitable for submersible pump applications and shall be properly sealed.

Motor windings shall be treated with a mildew preventative.

Each pumping unit and its driving equipment shall be designed and constructed to withstand the maximum turbine runaway speed of the unit due to backflow through the pump.

Performance Requirements

For Performance Requirements, refer to IRCDUS Standards, Pumping Station Data Table on Drawing No. S-15.

ACCESS FRAMES & GUIDES

The pumping station shall be furnished with the necessary aluminum access frames, complete with hinged and hasp-equipped covers, stainless steel upper guide holder, power cable holder and level sensor cable holder. The frames shall be securely mounted above the pumps. Doors

shall have safety locking handles in open position. Doors shall be of aluminum-checkered plate with stainless steel hinges and hardware. The access cover and frame shall be as sized on the Drawings.

Lower guide holders shall be integral with the discharge connection. Guide bars shall be of Schedule 40, 2" Welded 304 stainless steel pipe of the size indicated on the Drawings and of the length required by the pump manufacturer.

A safety grate with stainless steel hardware is required for all wetwells and shall be in accordance with IRCDUS Approved Manufacturer's Product List.

PUMP CONTROL SYSTEM MANUAL SYSTEM (NON-REMOTE TRANSMITTER UNIT) (SEE IRCDUS UTILITY CONSTRUCTION STANDARDS DETAIL DRAWINGS S-18)

General

A pump controller shall be provided for the wastewater pumping station. The controller shall respond to the liquid level sensor to automatically start and stop pumps to pace pump station influent flow, and shall be approved by IRCDUS.

The pump controller shall be the standard system of the manufacturer as modified for this application. The wet well levels to be used in operation are as shown on Detail Drawings S-14 and S-15 of the IRCDUS Standards.

Operation Requirements

The control panels shall consist of a main circuit breaker and generator breaker with mechanical interlock, an emergency power receptacle, a motor circuit protector (MCP) and magnetic starter for each pump motor, and 20 ampere, 120 volt circuit breakers as required. MCP motor control panel shall meet all requirements of service entrance by properly bonding neutral or shall be UL service entrance rated. A low and high level alarm and pump shutoff shall be accomplished by float type, liquid level control system, with all components mounted in one common enclosure. Control switches shall provide means to operate each pump manually or automatically. When operated in the automatic mode, the control assembly shall provide means to manually select or automatically alternate the position of the "lead" and "lag" pumps after each pumping cycle. A three position alternate switch labeled "test-off-auto" shall be provided to manually select which pump shall be the lead pump, when necessary, and also be able to test the alternator to see if it is still operational.

A float type liquid level control system shall continuously monitor wet well liquid level and control operation of the low-level cutoff for the pumps, and shall operate on a 24-volt circuit.

A non-fused safety switch shall be installed between the meter and panel. This switch shall be in a NEMA 4X, UL rated, stainless steel waterproof enclosure, in accordance with IRCDUS Approved Manufacturer's Product List. Amperage shall be at least equal to that of the main breaker.

Construction

The electrical control equipment shall be mounted within a modified NEMA 4X, UL rated, white powder coated stainless steel, dead front enclosure. The enclosure shall be equipped with a door and may incorporate a removable back panel on which control components shall be mounted. Back panel shall be secured to enclosure with collar studs. All lines entering the enclosure shall be protected by conduit seal bushings (supplied by pump manufacturer) at the source and shall be behind the dead front enclosure, entering from the side or bottom only. The seals shall prevent

moisture and gas from entering the enclosure. Two cable connectors (shall be in accordance with IRCDUS Approved Manufacturer's Product List) shall be provided to terminate the motor cables in the control panel. The connectors shall be suitable for a 2" conduit with a seal bushing suitable for the motor cables.

Components

All motor branch circuit breakers, motor starters, and control relays shall be of highest industrial quality, securely fastened to the removable back panels with screws and lock washers. Back panels shall be tapped to accept all mounting screws. Self-tapping screws shall not be used to mount any component. A non-corrosive material shall be utilized for wire connection locations within the box.

A thermal-magnetic air circuit breaker, per Approved Manufacturer's Product List, shall be furnished for the main breaker. The manufacturer shall seal all circuit breakers after calibration to prevent tampering. An Motor Control Panel (MCP) shall be provided for each motor starter. Each MCP shall be adequately sized to meet the pump motor and station operating conditions.

An open frame, across-the-line, NEMA rated, magnetic motor starter, Class 8536, in accordance with IRCDUS Approved Manufacturer's Product List, shall be furnished for each pump motor. Reduced voltage motor starters, Class 8606, per Approved Manufacturer's Product List, are required for all 30 HP and larger motors. All motor starters shall be equipped to provide under-voltage release and overload protection on all three phases. Motor starter contacts shall be easily replaceable without removing the motor starter from its mounted position. Overload reset push buttons shall be located on the inside of the control compartment door.

An emergency power receptacle shall be installed in the side of the control panel and connected to the line side of the generator breaker. The receptacle; shall be in accordance with IRCDUS Approved Manufacturer's Product List.

A ground fault indicator duplex utility receptacle providing 120 volt, 20 amp, 60 hertz, single phase current shall be mounted on the internal door.

The control panel shall include an adjustable time delay relay to prevent both pumps from starting simultaneously. Time delay relays shall be electronic type.

Operating Controls & Instruments

All operating controls and instruments shall be securely mounted on the control compartment door. All controls and instruments shall be clearly labeled to indicate function.

Pump mode selector switches shall be Hand-Off-Auto type to permit override of automatic level control and manual actuation of shutdown of either pump motor. Operation of pumps in manual mode shall bypass all safety shutdown circuits except pump motor overload shutdown. Switches shall be oil-tight, in accordance with IRCDUS Approved Manufacturer's Product List, providing three (3) switch positions, each of which shall be clearly labeled according to function. Separate indicator lamps, which shall operate at 115 volts input, shall be provided mounted above H.O.A. selector switches. Lamps shall be easily replaceable from the front of control compartment door without removing switch modules from their mounted positions.

Indicator lamps shall be mounted in oil-tight modules, in accordance with IRCDUS Approved Manufacturer's Product List. Lamp modules shall be equipped to operate at 115-volt input. Lamps shall be easily replaceable from the front of the control compartment door without removing lamp module from its mounted position.

A six (6) digit, non-reset elapsed time meter shall be connected to each motor starter to indicate the total running time of each pump in "hours" and "tenth of hours." The elapsed time meters shall be in accordance with IRCDUS Approved Manufacturer's Product List.

PUMP CONTROL SYSTEM (REMOTE TRANSMITTER UNIT)

A Remote Telemetry Unit (RTU) shall be supplied with the pump control system. The RTU shall be capable of acquiring analog and discrete data for transmission to the Central Telemetry Unit (CTU); The RTU shall also be capable of receiving instructions from the CTU for the operation of the pumps. See IRCDUS Approved Manufacturer's Product List for the separate components. (See IRCDUS Standards, Detail Drawings S-18.)

SHOP PAINTING

Before exposure to weather and prior to shop painting, all surfaces shall be thoroughly cleaned, dry and free from all millscale, rust, grease, dirt and other foreign matter.

All pumps and motors shall be shop primed, with primer compatible with the field painting.

All nameplates shall be properly protected during painting.

Gears, bearing surfaces, and other similar surfaces obviously not to be painted shall be given a heavy shop coat of grease or other suitable rust-resistant coating. This coating shall be maintained as necessary to prevent corrosion during periods of storage and erection, and shall be satisfactory to the Engineer up to the time of final acceptance test.

Control Panels shall be made of stainless steel.

FIELD PAINTING

The primer and paint used in the shop shall be products of the same manufacturer as the field paint to assure compatibility.

All nameplates shall be properly protected during painting.

LIFT STATION - GENERAL

The Lift Stations Wet Well shall conform to the following size:

DEPTH (ft)	DIAMETER (ft)
0-10	6
11-15	8
16-20	10
21-25	12

Or as approved by IRCDUS's Engineer.

LIFT STATION LINERS - GENERAL

A protective liner for the concrete shall be installed in the lift station/wet wells, repump lift stations, receiving manholes, drop manholes, and manholes as required by IRCDUS's Engineer.

After the lift station lining operation has been completed, the Contractor in the presence of the IRCDUS's representative shall visually inspect the lift station. In addition, at the IRCDUS's

request, the Contractor shall be required within one (1) year to visually inspect the lift stations that were lined. The Contractor shall redo any work that has become defective.

LIFT STATION LINERS MATERIAL HDPE

The Lift Station Liner shall be HDPE (high density polyethylene) with a minimum thickness of 2 mm. All HDPE liner sheets shall be extruded with a large number of anchoring studs, a minimum of 39/ft², manufactured during the extrusion process in one (1) piece with the sheet so there is no welding and no mechanical finishing work to attach the studs to the sheet. The liner shall have a pull out of 112.5 lbs./anchoring stud.

Flat liner sheet, non-anchored, used for overlapping joints, shall have a minimum thickness of 3mm. All joints shall be sealed by means of thermal welding performed certified welders.

The lining shall have good impact resistance, shall be flexible, and shall have an elongation sufficient to bridge up to a ¼-inch settling crack, without damage to the lining. The liner shall be able to bridge any expansion cracks that may occur.

Lining shall be repairable at any time during the life of the structure.

A certified fabricator shall custom fit the liner to the form work in order to protect the concrete surfaces from sewer gases. The interior surfaces to be protected shall include the walls, ceiling, and pipe entries.

For all lined manholes the use of HOPE Grade rings shall be used in lieu of brick or precast grade rings. Grade rings shall meet HS-25 load rating. Butyl sealant shall be used between each ring to make a watertight joint. The first grade ring shall be welded to the liner to provide a gas tight seal.

Upon request, the manufacturer shall provide written certification that the liner used meets or exceeds the requirement of this specification.

Provide a five (5) year unlimited warranty on all workmanship and products. The work includes the surface preparation and application of the liner system, shall protect the structure for at least five (5) years from all leaks, and from failure due to corrosion from exposure to corrosive gases such as hydrogen sulfide.

LIFT STATION LINERS – MATERIAL FIBER GLASS

The lift station liner shall meet all requirements of ASTM Specifications D-3753 for glass fiber reinforced polyester manholes or lift stations. See IRCDUS Approved Manufacturer's Product List.

Fiberglass liners shall have a three (3) year warranty period.

OPERATION AND MAINTENANCE MANUAL

The Contractor shall furnish six (6) complete sets of the Operation and Maintenance (O&M) Manual to be delivered directly to the office of the Engineer-of-Record, Masteller & Moler, Inc., 1655 27th Street, Suite 2, Vero Beach, Florida 32960. Two (2) sets of originals must be part of the required six (6) sets of O&M Manuals, including original manuals covering components manufactured by others.

The O&M Manual shall include As-built Plans of the pumping station, piping, and electrical system, as applicable. The Manual shall comply with Section 01730 and shall include the following:

- Shop drawings showing important details of construction and dimensions.
- Descriptive literature, bulletins, and/or catalogs of the equipment.
- A detailed description of the submersible wastewater pumping station operation.
- Electrical information, including control schematic and panel layout.
- Manufacturer's Operation and Maintenance Manuals with parts cross-sections, as applicable.
- Recommended spare parts.
- Contact phone numbers for troubleshooting and service.
- The Recommended Maintenance Schedule for All Equipment.
- Maintenance Instructions.

START-UP

The plant manufacturer shall provide the services of a factory-trained representative to inspect the installation after the submersible wastewater pumping station has been installed with all the necessary electrical connections and all piping connections completed. Upon completion of this inspection, the representative shall instruct the purchaser, or their representative, as to the necessary adjustments that may be required of them. The manufacturer's representative shall instruct the plant operator in the proper operation of the plant for a period not to exceed two (2) working days.

*** END OF SECTION ***

SECTION 02645

TESTING AND INSPECTION OF WATER MAINS, RECLAIMED WATER FORCE MAINS, WASTEWATER FORCE MAINS AND GRAVITY SEWERS

Pressure And Leakage Tests Of Underground Pressure Piping

No hydrostatic testing will be permitted until as-built drawings have been submitted and approved by the Engineer and IRCBUS.

At the beginning of the test period, thoroughly clean all new pipelines by whatever means necessary, including flushing, to remove all dirt, stones, pieces of wood, other material that may have entered the pipeline during the construction period, and all dirty and/or discolored water from the pipelines. If after this cleaning, any obstructions remain, they shall be removed. All debris cleaned from the pipelines shall be removed from the job site. Hydrostatic pressure and leakage tests shall conform to AWWA Standard Specifications C-605-94, or latest edition, for PVC pipe, with the exception that Specifications C-600-99, or latest revision, for D.I.P, and AWWA Standard Specifications. The Contractor shall furnish all gauges, meters, pressure pumps and other equipment needed to test the line. Engineer or designated representative shall be present during all testing, televising, and final inspections.

The pressure required for the field hydrostatic pressure test shall be 1.5 times the normal working pressure at the point of testing, and not less than 1.25 times the working pressure at the highest point along the test section, but not less than 150 psi for water mains, reclaimed water mains and for sewer force mains. The Contractor shall provide temporary plugs and blocking necessary to maintain the required test pressure. Corporation cocks at least 1 inch in diameter, pipe riser and angle globe valves shall be provided at each pipe dead-end in order to bleed air from the line. Duration of pressure test shall be at least 2 hours. The cost of these items shall be included as part of testing.

The leakage test may be conducted concurrently with the hydrostatic pressure test and shall be of not less than 2 hours duration. All leaks evident at the surface shall be repaired and leakage eliminated regardless of total leakage as shown by test. Lines that fail to meet tests shall be repaired and re-tested as necessary until satisfactory test requirements are complied with. Defective materials, pipes, valves and accessories shall be removed and replaced. The pipe-lines shall be tested in such sections as may be directed by the Engineer by shutting valves or installing temporary plugs as required. The line shall be filled with water and all air removed and the test pressure shall be maintained in the pipe for the entire test period by means of a force pump to be furnished by the Contractor. Accurate means shall be provided for measuring the water required to maintain this pressure. The amount of water required is a measure of the leakage. Testing shall be in accordance with the applicable provisions as set forth in Section 13 of AWWA Standard Specification C-600-99, or latest revision. The allowable rate of leakage shall be less than the number of gallons per hour determined by the following formula:

$$L = \frac{ND \times (P)^{1/2}}{7400}$$

L = allowable leakage in gallons per hour

N = number of joints in the section tested

D = nominal diameter of the pipe in inches

P = average test pressure maintained during the leakage test in pounds per square inch gauge

The Contractor must submit his plan for testing to the Engineer for review at least five (5) working days before starting the test. The Contractor shall remove and adequately dispose of all blocking material and equipment after completion and acceptance of the field hydrostatic test, unless otherwise directed by the Engineer. The Contractor shall repair any damage to the pipe coating. Lines shall be totally free and clean prior to final acceptance.

The Engineer or his representative must be present during testing.

If thrust blocks have been approved for use, thrust blocks shall not be backfilled until inspected by IRCDUS inspectors.

Additional Pressure Testing For Polyethylene (PE) Pipes

At the beginning of the testing period, thoroughly clean all new pipelines by whatever means necessary, including flushing, to remove all dirt, stones, pieces of wood, other material that may have entered during the construction period, and any dirty or discolored water from the lines. If, after this cleaning, any obstructions remain, they shall be removed. All debris cleaned from the lines shall be removed from the job site.

All PE water mains shall be field-tested. The Contractor shall supply all labor, equipment, material, gauges, pumps, meters and incidentals required for testing. The Contractor shall pressure test each water main upon completion of the pipe laying and backfilling operations, including placement of any required temporary roadway surfacing.

All water mains shall be tested to 150 percent of the operating design highest point along the test section by a recording type pressure gauge and a copy of the readout shall be submitted to the Engineer upon completion of the design pressure of the pipe that is 150 psi. The test pressure shall be measured at the test. All testing shall be conducted in the presence of the Engineer or a designated representative.

Testing shall be conducted after backfilling has been completed and before placement of permanent surface.

Allowable amount of makeup water for expansion during the pressure test of the pipe shall conform to Plastic Pipe Institute (PPI) Handbook of Polyethylene Pipe; Inspection, Tests, and Safety Considerations, unless otherwise approved by the Engineer. The Operating Safety Considerations, Post Installation, Hydrostatic Testing, Monitored Make-up Water Test, Table III, is on Pages 24 and 25 of the Handbook.

In any test of pipe laid disclosed leakage or significant pressure drop greater than the allowed, the Contractor shall, at its own expense, locate and repair the cause of leakage and retest the line. The amount of leakage that may be permitted shall be in accordance with AWWA Standard Specifications.

All visible leaks are to be repaired regardless of the amount of leakage.

The Contractor must submit his plan for testing to the Engineer-of-Record and Utility Inspector for review at least ten (10) days before starting the test.

Disinfecting Potable Water Pipelines

Before being placed in service, all potable water pipelines shall be disinfected in accordance with AWWA Standard Specifications C-651-99, or latest revision. The location of the chlorination and

sampling points will be as shown on the drawings. The Contractor shall uncover and backfill taps for chlorination and sampling, as required.

The general procedure for chlorination shall be first to flush all dirty or discolored water from the lines, and then introduce chlorine in approved dosages in accordance with Table 10-1 through a tap at one end, while water is being withdrawn at the other end of the line. The chlorine solutions shall remain in the pipeline for no less than 24 hours.

The use of chlorine tablets is strictly prohibited.

Following the chlorination period, all treated water shall be flushed from the lines at their extremities and replaced with water from the distribution system. The Contractor's lab shall then make bacteriological sampling and analysis of the replacement water in full accordance with AWWA Standard Specifications C-651, or latest revision. The Contractor will be required to re-chlorinate, if necessary. The line shall not be placed in service until all the requirements of the State and County Environmental Health Departments are met.

Special disinfecting procedures shall be used in connections to existing mains where the method outlined above is not practical.

The Contractor shall make all arrangements necessary with an independent commercial laboratory approved by the Department of Environmental Health for the collection and examination of samples of water from disinfected water mains. Note: The Contractor may not collect his own samples. These samples shall be examined for compliance with the Department of Environmental Health's and Florida Department of Environmental Protection's requirements. Sampling shall be made daily and continuously until two successive examinations are found satisfactory. Should one examination be found unsatisfactory, the line shall be flushed and disinfected again. Certified copies of all laboratory analyses shall be provided to the IRCDUS. The cost of all sampling, flushing and disinfecting shall be included in the contract price. IRCDUS personnel shall operate all valves and be present to determine and control the volume of water used for flushing.

TABLE 10-1

Chlorine Required to Produce a 25-mg/L Concentration in 100 ft of Pipe by Diameter

Pipe Diameter (inches)	100-percent Chlorine (pounds)	1-percent Chlorine Solution (gallons)
4	0.013	0.16
6	0.030	0.36
8	0.054	0.65
10	0.085	1.02
12	0.120	1.44
16	0.217	2.60

For Pipes larger than 16-inches in diameter see AWWA Standard Specifications C-651-99

Testing Of Gravity Sewers

Leakage test by exfiltration and infiltration, as described below, shall be made on all pipes.

Exfiltration tests shall be made on all pipes after backfilling. All sewers shall be tested such that water is filled to the rim of the lowest manhole being tested within each section being tested, as directed by the IRCDUS. Mechanical plugs shall be used on the gravity sewer system in such a manner that the air can be released from the sewer while it is being filled with water. The test shall

be continued for one hour and provisions shall be made for measuring the amount of water required to maintain the water at a constant level during this period. If test results are unsatisfactory, the Engineer and/or IRCDUS may direct that additional test be made on any section or the entire pipe.

If any joint shows an appreciable amount of leakage, the jointing material shall be removed and joint remade. If any pipe is defective, it shall be removed and replaced. If the quantity of water required to maintain a constant level in the sewer for one hour does not exceed 100 gallons per inch of diameter per day per mile of sewer and if all the leakage is not confined to a few joints, the workmanship shall be considered satisfactory. If the amount of leakage indicates defective joints or broken pipes, the Contractor shall correct them.

Pipe shall be tested for infiltration after the backfill has been placed. Infiltration tests shall be made under the supervision of the Engineer and IRCDUS. The length of line to be tested shall be as directed by the Engineer and/or IRCDUS. The allowable infiltration shall be 100 gallons per inch of diameter per day per mile of sewer.

Rate of infiltration shall be determined by means of V-notch weirs, pipe spigot or by plugs in the end of the pipe, to be provided and installed by the Contractor in an approved manner and at such times and locations as may be directed by the Engineer and/or IRCDUS.

In an inspection of the completed sewer or any part thereof shows any manholes, pipes or joints that allow the infiltration of water in a noticeable stream or jet, the defective work or material shall be replaced or repaired, as directed by the Engineer and/or IRCDUS.

Leakage between two adjacent manholes may be double the amount above stated, provided the average leakage for a total length of any size does not exceed the amount first stated and provided there are not gushing or spurting leaks.

All water used in testing and flushing shall be furnished at the Contractor's expense. The minimum amount of water to be used is two (2) times the volume of the pipe.

The Contractor may use an air test in lieu of the exfiltration test as described above. If he elects to do this, he shall submit his proposed method to the Engineer and/or IRCDUS for approval.

If the results of the air test are unsatisfactory, as determined by the County, the Contractor shall be required to perform the exfiltration test as outlined above.

At the conclusion of the work, the Contractor shall thoroughly clean the entire inside of the pipe by flushing with water or other means to remove all dirt, stones, and pieces of wood or other material that may have entered during the construction period. Debris cleaned from the lines shall be removed from the lowest outlet. If, after this outlet cleaning, obstructions remain, they shall be removed. After the pipe is cleaned and if the groundwater level is above the pipe, or following a heavy rain, the IRCDUS will examine the pipe for leaks. If defective pipes or joints are discovered at this time, the Contractor shall repair them at his expense.

Upon completion of the work, the sewer system or selected sections therein shall be subjected to a final test and inspection. All work in the system or sections therein being tested shall be complete, cleaned and ready for use. Tests shall be as specified herein and shall meet all requirements as to line, grade, clean lines, infiltration, exfiltration and workmanship.

Inspection of mains shall be by use of a self-contained television system and lamping upon satisfactory completion and acceptance of final road base material. The facilities shall be provided and operated by the Contractor as specified below:

The Contractor shall provide the IRCDUS with an electronic record, on CD format, of the interior of all main line gravity sewers and the interior of all sewer laterals. The CD shall be contained in a proper container to prevent damage to the CD. The electronic recording (video) shall be obtained by pulling a television camera through the line along the axis of the pipe. The television equipment shall consist of a self-contained camera and a monitoring unit connected by a coaxial cable. These videos shall be done during the inspection of the mains. Monitors shall be available to the Engineer and Owner during these inspections. Monitors shall also be provided with a stop action camera, so that as may be requested by the Engineer, photographs shall be made of a particular portion of the main being viewed. The video shall be properly exposed and the camera shall be in proper focus so that good, clear recordings showing detail are produced. The visual recordings shall be identified by audio recordings noting the manhole numbers, distances to service lateral connections, direction of lateral connection and any leaks, cracks or pipe defects. Each CD shall be clearly marked as to the contents and number, with an index of all CD's. The CD's of the completed mains shall be delivered to IRCDUS. The Contractor shall provide any assistance required by the IRCDUS or the Engineer of Record.

A maximum tolerance of ½" dip will be accepted in gravity sewer construction.

END OF SECTION

SECTION 02920

TURF MATERIAL & PERFORMANCE

GENERAL

The work specified in this item shall conform to Section 570 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction (2017 Edition), except as modified herein.

Description

Sod for the project shall be of the variety that is common to the area and of a variety approved by the Engineer. This work shall also include mowing, to be mowed at maximum 6" height with a mulching mower.

Scope of Work

The work specified in this section consists of the establishing of a stand of grass, within the project, right-of-way, easements, and other areas indicated on the Drawings, by furnishing and placing grass sod. Also included are fertilizing, watering and maintenance as required to assure a healthy stand of grass. Two (2) applications of fertilizer will be required with the initial application being fertilizer and the second application being "weed and feed".

Guarantee

All sodded areas shall be guaranteed for one year after date of final acceptance.

Replacement of Defective Sod: Any dead sod or sod showing (less than 95% of a square) indication of probable non survival or lack of health and vigor, or which do not exhibit the characteristics to meet specifications, shall be replaced within two weeks of notice from Owner or Engineer. All replacement sod shall be furnished/installed at no additional cost to the Owner and shall be guaranteed for three months. All replacement shall meet original specifications.

The Contractor shall notify the Owner and Engineer ten (10) days prior to the end of the guarantee period and such guarantee shall be extended until notification is received.

At the end of the guarantee period, all sod that is dead or in unsatisfactory growth shall be replaced within two (2) weeks.

Fertilizer

Commercial fertilizers shall comply with the Indian River County Fertilizer Ordinance 2013-012 and Supplement Ordinance 2013-014.

Water for Grassing

Contractor shall provide the water used in the sodding operations as necessary to meet the requirements of Article 570-3.6.

Preparation of Ground

The area over which the sod is to be placed shall be scarified or loosened to a depth and then raked smooth and free from debris. Where the soil is sufficiently loose and clean, the Owner, at his discretion, may authorize the elimination of ground preparation.

Application of Fertilizer

Before applying fertilizer, the soil pH shall be brought to a range of 6.0 - 7.0.

Contractor shall apply two (2) applications. The initial shall be fertilizer and the second application shall be "weed and feed".

The fertilizer shall be spread uniformly over the sodded area at the rate of 436 pounds per acre, or 10 pounds per 1,000 square feet, by a spreading device capable of uniformly distributing the material at the specified rate.

Contractor shall apply applications as per manufacturer's specification. All tickets from bags shall be handed over to the County Inspector.

On steep slopes, where the use of a machine for spreading or mixing is not practicable, the fertilizer shall be spread by hand and raked in and thoroughly mixed with the soil to a depth of approximately 2 inches.

Placing Sod

The sod shall be placed on the prepared surface, with edges in close contact and shall be firmly and smoothly embedded by light tamping with appropriate tools.

Where sodding is used in drainage ditches, the setting of the pieces shall be staggered so as to avoid a continuous seam along the line of flow. Along the edges of such staggered areas, the offsets of individual strips shall not exceed 6 inches. In order to prevent erosion caused by vertical edges at the outer limits, the outer pieces of sod shall be tamped so as to produce a featheredge effect.

Where sodding is placed abutting paved shoulder, the contractor is to ensure that the finished sod elevation is 1½" below paved shoulder.

On slopes greater than 3:1, the Contractor shall prevent the sod from sliding by means of wooden pegs driven through the sod blocks into firm earth, at suitable intervals.

Sodding shall not be performed when weather and soil conditions are, in the Engineer's opinion, unsuitable for proper results.

Sod shall be placed around all structures, equipment pads, etc.

Watering

The areas on which the sod is to be placed shall contain sufficient moisture, as determined by the Engineer, for optimum results. After being placed, the sod shall be kept in a moist condition to the full depth of the rooting zone for at least 2 weeks. Thereafter, the Contractor shall apply water as needed until the sod roots and starts to grow for a minimum of 60 days (or until final acceptance, whichever is latest).

Maintenance

The Contractor shall, at his expense, maintain the sodded areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include repairing of any damaged areas and replacing areas in which the establishment of the grass stand does not appear to be developing satisfactorily.

Replanting or repair necessary due to the Contractor's negligence, carelessness or failure to provide routine maintenance shall be at the Contractor's expense.

The Contractor shall maintain the sodded area up to the final acceptance date as directed by the Engineer. Grass height shall not exceed 6" without mowing. Clippings shall be removed from sidewalk.

Article 570-9

The first two paragraphs under this Article are deleted and the following is added:

The contract unit price for performance turf shall include the costs of sod, fertilizer (2 applications), sidewalk sweeping after mowing, mowing, pegging disposal of clippings, water, tools, equipment, labor and all other incidentals necessary.

Item of Payment

Payment for the work specified in this item shall be made under:

Bid Item No. 53 - Turf Material – Sod (Bahia) – Per Square Yard

Bid Item No. 54 - Turf Material – Sod (St. Augustine) – Per Square Yard

*** END OF SECTION ***