City of Groveland
Crittenden Street Reconstruction
Groveland, Florida

SPECIFICATIONS & CONTRACT DOCUMENTS

prepared for:

prepared by:

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BESH Contract No. 151014.0002
COG Bid No. 2015-07-01
June, 2015

BID SET

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CRITTENDEN STREET RECONSTRUCTION

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CITY OF GROVELAND
CRITTENDEN STREET RECONSTRUCTION
INVITATION TO BID

PROJECT NAME: CITY OF GROVELAND – CRITTENDEN STREET RECONSTRUCTION
BID NO: 151014.0002
OWNER/BID NO: CITY OF GROVELAND/2015-07-01

LOCATION OF PROJECT:

Crittenden Street between SR 19 and Main Avenue in the City of Groveland.

SCOPE OF WORK:
The project generally consists of the reconstruction of an existing roadway.

DESCRIPTION OF WORK:
The work generally includes the furnishing of all labor, materials, and equipment for the demolition and reconstruction of a new roadway.

MANDATORY PRE-BID CONFERENCE:
A mandatory pre-bid conference will be held at the City of Groveland, 1198 Sampey Road, Groveland, Florida 32736, on

FRIDAY, JULY 17, 2015 @ 10:00 a.m.

All bidders must be in attendance in order to submit a bid.

RECEIPT OF BIDS:
Sealed bids for the work described herein shall be received until

THURSDAY, JULY 30, 20153 @ 2:00 p.m.

at the City of Groveland, 1198 Sampey Road, Groveland, Florida 34736, at which time and place bids will be publicly opened and read aloud. ALL BIDS MUST BE CLEARLY MARKED "SEALED BIDS" AND WHETHER HAND DELIVERED OR MAILED MUST BE AT THE OFFICE OF PURCHASING DEPARTMENT, JAMES HUISH, CITY OF GROVELAND BEFORE THE ABOVE STATED DEADLINE TO BE CONSIDERED. **Please provide one (1) original and two (2) copes of bid.**

INFORMATION REGARDING BIDDING MATERIAL, ETC:
Complete plans and specifications may be reviewed at the office of Booth, Ern, Straughan & Hiott, Inc., 902 North Sinclair Avenue, Tavares, Florida, 32778, and obtained from said office for a non-refundable $100.00 fee, with three (3) days notice. **These plans and specifications will be available MONDAY, JULY 20, 2015 after 1:00 p.m.** For review at the City of Groveland, contact James Huish, Purchasing Manager, City of Groveland, 1198 Sampey Road, Groveland, Florida 34736, phone: (352) 429-0227; fax: (352) 429-8246; e-mail: james.huish@groveland-fl.gov. All request for further information should also be addressed to James Huish (contact info listed above).

END OF DOCUMENT

BIDDER CERTIFICATION

"I, the undersigned, certify that I have received all addenda. I understand that timely commencement/delivery may be considered in award of bid, and that cancellation of bid/award will be considered if commencement/delivery time is not met, and that untimely delivery may be cause for assessment of liquidated damages claims. I certify that the equipment or products meet or exceed the Specifications, and that the undersigned declares that I have carefully examined any and all plans, blueprints, specifications, terms and conditions as applicable for this bid, and that I am thoroughly familiar with all provisions, and the quality and type of coverage specified and bid herein. I certify that neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members or agents who are active in the management of the entity, nor an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. I further declare that I have not divulged, discussed or compared this bid with any other bidders and have not colluded with any other bidders or parties to a bid proposal whatsoever for any fraudulent purpose."

Signature _____ Date Signed_____

Printed Name_____ Title_____

Title_____ Telephone Number ( )_____

Company_____ Fax Number ( )_____

Address_____ City/State_____ Zip _____

DRUG FREE WORKPLACE CERTIFICATE

I, the undersigned, in accordance with Florida Statute 287.087, hereby certify that,

_____

(Print or Type Name of Firm)

- Publishes a written statement notifying that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the workplace named above, and specifying actions that will be taken against violations of such prohibition.
- Informs employees about the dangers of drug abuse in the work place, the firm's policy of maintaining a drug free working environment, and available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug use violations.
- Gives each employee engaged in providing commodities or contractual services that are under bid or proposal, a copy of the statement specified above.
- Notifies the employees that as a condition of working on the commodities or contractual services that are under bid or proposal, the employee will abide by the terms of the statement and will notify the employer of any conviction of, plea of guilty or nolo contendere to, any violation of Chapter 1893, or of any controlled substance law of the State of Florida or the United States, for a violation occurring in the work place, no later than five (5) days after such conviction, and requires employees to sign copies of such written (*) statement to acknowledge their receipt.
- Imposes a sanction on, or requires the satisfactory participation in, a drug abuse assistance or rehabilitation program, if such is available in the employee's community, by any employee who is so convicted.
- Makes a good faith effort to continue to maintain a drug free work place through the implementation of the drug free workplace program.

"As a person authorized to sign this statement, I certify that the above named business, firm or corporation complies fully with the requirements set forth herein."

_____

Authorized Signature

_____

Date Signed

State of: _____

County of: _____

Sworn to and subscribed before me this____day of_____, 20_____

Personally known____or Produced Identification_____

(Specify Type of Identification)

_____

Signature of Notary

My Commission Expires_____

END OF DOCUMENT

INSTRUCTIONS TO BIDDERS

1. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

1.1 The Bidder is required to examine carefully the sites of the work and the Plans and other Contract Documents for the work contemplated, and it will be assumed that the Bidder has investigated and is fully informed of the conditions and materials to be encountered, of the character, quality, and quantities of work to be performed and materials to be furnished, and of the requirements of the Plans and other Contract Documents.

1.2 Each Bidder must inform himself fully of the conditions related to construction and labor under which the work will be performed, and will have inspected the site of the work and will have read and be thoroughly familiar with the plans, specifications and other Contract Documents. Failure to do so will not relieve the successful Bidder of his obligations to furnish all labor, material, and equipment necessary to carry out the provisions of the Contract Documents and to complete the contemplated work for the consideration set forth in this bid. There is no expressed or implied agreement that the character of the materials have been correctly indicated and Bidders should take into account the possibility that conditions affecting the work to be done may differ from those indicated.

1.3 Any estimate or estimates of quantities of work or materials shown on the Plans or in the Specifications, or based on borings, test excavations, and other subsurface investigations or otherwise are in no way warranted to indicate the true quantities or distribution of quantities or character and quality of materials involved. The CONTRACTOR agrees that he will make no claims against the OWNER if the actual character, quality, quantity or quantities of such work or materials do not conform to the estimated character, quality, quantity or quantities.

1.4 It is understood by the Bidder that no additional compensation shall be allowed for extra work, unless requested by the owner, and that the quantities submitted by the contractor in the Schedule of Unit Prices are for purposes of bid comparison and establishing the lump sum cost of the project. Should said quantities increase or decrease from those established by the Schedule of Unit Prices schedule, as a result of changes to the contract, Contractor agrees to accept as compensation for said item the unit prices listed on the Schedule of Unit Prices.

1.5 CONTRACTOR understands that the quantities may be increased or diminished as provided in the General Conditions without in any way invalidating any of the unit or lump sum prices bid. OWNER reserves the right to submit Change Orders increasing or decreasing the bid quantities for any item without affecting the unit price for that item, by an amount not to exceed fifty percent (50%).

2. ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any Bidder orally. Every request for such interpretations should be in ***WRITING*** addressed to James Huish, City of Groveland, 1198 Sampey Road, Groveland, Florida 34736; fax: 352-429-8246 e-mail: james.huish@groveland-fl.gov with copy to Robert A. Ern, Jr., P.E., Principal, addressed 902 North Sinclair Avenue, Tavares, Florida 32778;email rern@besandh.com. Requests must be received **at least seven working days prior to the date fixed for the opening of bids.** Any and all such interpretations and any supplemental instruction will be in the form of written addenda to the specifications which, if issued, will be faxed or mailed by U.S. Mail to all prospective Bidders (at the respective fax numbers or addresses furnished for such purposes), **not later than two days prior to the date fixed for the opening of bids.** Any addenda or interpretation requested by the Bidder to be express mailed, will only be done at the Bidder's expense. Failure of any Bidder to receive any such addendum or interpretation shall not relieve such Bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

3. PREPARATION OF BIDS

3.1 Bids must be submitted on the attached Bid Form. All applicable blank spaces to the project being bid in the Proposal and Bid Form must be filled in legibly and correctly in ink. Per Paragraph 3.5 below, the Bidder shall specify the quantity and price per unit of measure and the extended total, or the lump sum bid price if such is called for, for each scheduled item of work as well as the Total Price for the entire work under the Contract. Each bid must be submitted in a sealed opaque envelope bearing on the outside the name of the Bidder, his address, and the name of the project for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified in the Schedule of Unit prices. Bids shall be on a lump sum basis. In addition to the lump sum amount the City will also consider the experience of the firms submitting bids in completing similar projects.

3.2 All Bidders who will be performing work will submit, with their bids, proof of adequate insurance coverage and copy of current license.

3.3 All prospective Bidders are advised that this project is subject to the Florida Sales Tax. Bidders shall include in their bids any sales or use taxes which they are required by law to pay.

3.4 The Bidder shall include with his bid, a list of similar, successfully completed projects which include, at the minimum, the following information: (a) Name of Job, (b) Brief Description of Work, (c) Total Dollar Amount of Work, (d) Owner's Information (including contact name, title, address and phone number), (e) Design Engineer's Information (including contact name, title, address and phone number).

4. BID SECURITY

4.1 Unless otherwise specified, each bid must be accompanied by a deposit of not less than five percent of the Bidder's maximum bid price. The deposit shall consist of a certified check, cashier's check or bid bond payable to the OWNER. Bid bond must be with a surety company listed by the U.S. Treasury Department as approved for writing bonds in an amount not less than the bid bond submitted and authorized to transact business in Florida. Within ten (10) calendar days after the formal opening of bids, checks or bid bonds will be returned except those deposited by the lowest formal Bidder. The bid security of the successful Bidder will be returned to him without interest when the Contract has been approved and executed.

4.2 Should the successful Bidder fail or refuse to execute the bond and the Contract required, within ten (10) calendar days after he has received notice of award of his bid, he shall forfeit to the OWNER, as liquidated damages for such failure or refusal, the security deposited with his bid.

5. RECEIPT AND OPENING OF BIDS

5.1 The OWNER may waive any informalities or reject any and all bids.

5.2 Attention is called to the fact that Bidders not only offer to assume the obligations and liabilities imposed upon the Contract in the form of Contract, but expressly make certain of the representations and warranties made therein. No effort is made to emphasize any particular provision of the Contract, but Bidders must familiarize themselves with every provision and its effect.

5.3 Bids will be considered irregular and may be rejected if they show omissions, alterations of form, additions not called for, conditions, limitations, unauthorized alternate bids or other irregularities of any kind.

5.4 The OWNER reserves the right to waive any informalities or irregularities of bids, or to reject any or all bids.

5.5 Any of the following causes may be considered as sufficient for the disqualification of a Bidder and the rejection of his bid:

(a) Submission of more than one bid for the same work by an individual, partnership, or corporation under the same or different names;

(b) Evidence of collusion among Bidders;

© Submission of an unbalanced bid in which the prices bid for some items are out of proportion to the prices bid for other items;

(d) Lack of competency of Bidder (the Contract will be awarded only to a Bidder rated by the ENGINEER as capable of performing the work as specified; the ENGINEER may declare any Bidder ineligible at any time during the process of receiving proposals or awarding the Contract where developments arise which, in the opinion of the ENGINEER, adversely affect the Bidder's responsibility; however, the Bidder will be given an opportunity by the ENGINEER to present additional evidence before final action is taken);

(e) Lack of responsibility as shown by past work judged from the standpoints of workmanship, progress, compliance with requirements of Contract Documents or other appropriate concern.

5.6 Following the bid opening, the low bidder shall be required to submit to the City six (6) copies of a complete Schedule of Unit Prices for the entire project, to be reviewed and approved by the City. Failure to submit the required Schedule of Unit Prices within 48-hours shall be cause for rejection of the bid.

6. ACCEPTANCE OF BID AND AWARD OF CONTRACT

6.1 The correct summation of the correct products, obtained by multiplying the quantities submitted by the Contractor on the Schedule of Unit prices by the unit bid prices entered therein, together with lump sum prices if any, will be considered as the Total Bid Price. In the event of a discrepancy between a unit bid price and an extension, the unit bid price will govern.

6.2 If the lowest base bid submitted by a responsible Bidder does not exceed the amount of funds then estimated by the OWNER as available to finance the contract, the contract will be awarded on the base bid only. If such bid exceeds such amount, the OWNER may reject all bids or may negotiate the contract with the Bidder with the lowest bid so as to produce a net amount which is within the available funds.

6.3 An award of the contract will not be made until the necessary investigations of the responsibility of the low Bidders has been made. Unless all bids are rejected, the Contract will be awarded to the lowest and best responsible qualified Bidder whose bid appears to be in the best interest of the OWNER. Such award will be made, or all bids rejected, within one hundred twenty (120) calendar days after the opening of bids.

6.4 When the Contract has been executed on the part of the OWNER, it shall be forwarded to the CONTRACTOR together with a notice from the ENGINEER to commence work. The notice to proceed will include the time for completion.

6.5 Contractor agrees to begin work within thirty (30) calendar days from date of written Notice to Proceed.

7. SECURITY FOR FAITHFUL PERFORMANCE AND PAYMENT

7.1 Simultaneously with his delivery of the executed Contract, the successful Bidder will be required to deliver to the OWNER, an executed performance and payment bond in the amount of 110% of the accepted bid as security for faithful performance of his Contract and for payment of all persons performing labor or furnishing materials in connection therewith, prepared on standard forms, and having as surety a company authorized to do business in Florida, and which is listed by the U.S. Treasury Department as approved for writing bonds in the amount not less than 110% of the contract price.

8. LAWS AND REGULATIONS

The Bidder's attention is directed to the fact that all applicable State laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they will be deemed to be included in the Contract the same as though herein written out in full.

9. WARRANTY

The Contractor warrants the subject premises for a period of one year subsequent to acceptance of the improvements. The Contractor will provide the Owner with all warranties pursuant to the terms of the general conditions. In the event that the Contractor must return to perform warranty work, the Contractor must thereafter provide for an extended warranty period of at least six (6) months for parts, materials or workmanship replaced or the equivalent of a new replacement part warranty, which ever is greater. Prior to issuance of final payment, the Contractor shall submit to the Owner a Maintenance Bond for one (1) year valued at 10% of the contract total.

10. APPLICATION FOR PROGRESS PAYMENT

Applications for Payment shall be as outlined in the Contract Documents submitted less ten (10%) percent retainage.

11. TIME OF COMPLETION

The work shall be completed as outlined in the Agreement.

12. FLORIDA TRENCH SAFETY ACT

The Bidder's attention is directed to the enactment of the Florida Trench Safety Act which incorporates OSHA Standards 29CFR s 1926.650 Subpart P, as the state's trench excavation safety standards. The Bidder shall list separately in the Proposal the cost of compliance with these standards on a lineal footage basis and the method of compliance. The Bidder shall determine if special shoring requirements are needed. Special shoring shall be identified and priced on a square footage basis in the proposal. The successful Bidder is fully responsible for the design of the trench safety system and the compliance with the applicable standards for the project.

END OF DOCUMENT

SECTION 00200
INFORMATION AVAILABLE TO BIDDERS

1. Existing utilities have been shown on the Drawings insofar as information is reasonably available. However, it will be the Contractor's responsibility to preserve all existing utilities whether shown on the Drawings or not. Damage to any utilities which, in the opinion of the Owner and Engineer, is caused by carelessness on the part of the Contractor shall be repaired at the Contractor's expense. Any delay ensuing from this damage will be considered an inexcusable delay.

END OF SECTION

SECTION 00300
BID FORM

DATE SUBMITTED: _____

PROJECT IDENTIFICATION: **CITY OF GROVELAND**
CRITTENDEN STREET RECONSTRUCTION
CITY OF GROVELAND BID NO. 2015-07-01

NAME OF BIDDER: _____

BUSINESS ADDRESS: _____

_____

Telephone Number: _____

CONTRACTOR'S FLORIDA LICENSE NO.: _____

THIS BID IS SUBMITTED TO: **Teresa Begley**
City Clerk
CITY OF GROVELAND
156 S. Lake Avenue
GROVELAND, FL 34736

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 Bid Price and within the Bid Times indicated in this Bid and in accordance with the other terms and conditions of the Contract Documents.

2. Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for ninety (90) days after the day of Bid opening. Bidder will sign and deliver the required number of counterparts of the Agreement with the Bonds and other documents required by the Bidding Requirements within ten (10) days after the date of Owner's Notice of Award.

3. In submitting this Bid, Bidder makes all representations required by the Instructions to Bidders and further warrants and represents that:

   (a) Bidder has examined and carefully studied the Bidding Documents and the following Addenda receipt of which is hereby acknowledged:

No._____	Dated_____	No._____	Dated_____
No._____	Dated_____	No._____	Dated_____
No._____	Dated_____	No._____	Dated_____
No._____	Dated_____	No._____	Dated_____
No._____	Dated_____	No._____	Dated_____
No._____	Dated_____	No._____	Dated_____

(b) Bidder has visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance and furnishing of the Work;

(c) Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.

(d) Bidder has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in the General Conditions. Bidder accepts the determinations set forth in the Supplementary Conditions of the extent of the "technical data" contained in such reports and drawings upon which Bidder is entitled to rely as provided in the General Conditions. Bidder acknowledges that such reports and drawings are not Contract Documents and may not be complete for Bidder's purposes. Bidder acknowledges that Owner and Engineer do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bidding Documents with respect to Underground Facilities at or contiguous to the site. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all such additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost progress, performance of furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by Bidder and safety precautions and programs incident thereto. Bidder does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the determination of this Bid for performance and furnishing of the Work in accordance with the times, price and other terms and conditions of the Contract Documents.

(e) Bidder is aware of the general nature of Work to be performed by Owner and others at the site that relates to Work for which this Bid is submitted as indicated in the Contract Documents.

(f) Bidder has correlated the information known to Bidder, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.

(g) Bidder has given City Clerk written notice of all conflicts, errors, ambiguities or discrepancies that Bidder has discovered in the Contract Documents and the written resolution thereof by Engineer is acceptable to Bidder, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.

(h) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any person, firm or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

SCHEDULE OF UNIT PRICES

CITY OF GROVELAND

CRITTENDEN STREET RECONSTRUCTION

1. It shall be the responsibility of the BIDDER to perform whatever tests and/or calculations as are necessary to determine quantities required for the performance of the work described herein.

2. Should certain additional work be required, or should the quantities submitted by the Contractor of certain classes of work be increased or decreased from those required by the Contract Documents, by authorization of the Owner, the unit prices contained in the following Schedule of Unit Prices shall, at the option of the Owner, be the basis of payment to the Contractor credit to the Owner, for such increase or decrease in the work.

The Unit Prices shall represent the exact net amount per unit to be paid by the Contractor (in the case of additions or increases) or to be refunded by the Owner (in the case of decrease). No additional adjustments will be allowed for overhead, profit, insurance, or to other direct or indirect expenses of the Contractor or Subcontractors, and no additional adjustments will be allowed.

SITE WORK

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
1	MOBILIZATION		LS		
2	DEMOLITION		LS		
3	MILL 1" ASPHALT		SY		
4	12" STABLIZED SUBGRADE		SY		
5	10" CIMEROCK BASE, PRIMED		SY		
6	1.5" SP 12.5 ASPHALT		SY		
7	CONCRETE HEADER CURB		LF		
8	SITE RESTORATION		LS		
9	TESTING		LS		
10	MAINTENANCE OF TRAFFIC		LS		
				TOTAL	

BID TOTAL $ _____

PAYMENT & PERFORMANCE BOND **(110 %)** $ _____

GRAND TOTAL $ _____

All Bid items shall include all materials, equipment, labor, permit fees, taxes, tests, miscellaneous costs of all types, overhead, and profit for the item to be complete, in place, and ready for operation in the manner contemplated by the Contract Documents.

Unit Prices have been computed in accordance with Article 11 of the General Conditions. Bidder acknowledges that quantities are not guaranteed and final payment will be based on actual quantities determined as provided in the Contract Documents.

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

   (a) Bid Security (surety bond or cashier's check).
   (b) Power of Attorney (for surety bond only).
   (c) Questionnaire (Bidding Documents, Section 00301).
   (d) Subcontractor Listing (Bidding Documents, Section 00301-A).
   (e) Corporate authority to execute Bid (any corporate employee other than president or vice president, Section 00420).
   (f) Noncollusion Affidavit (Bidding Documents, Section 00480).
   (g) Trench Safety Affidavit (Bidding Documents, Section 00490).
   (h) A separate sheet or sheets, clearly identified and numbered, of exceptions or deviations from the Specifications.
   (i) Bidder Certification (Bidding Documents, Section 00020)
   (j) Drug Free Work Place Certificate (Bidding Documents, Section 00020)
   (k) Certificate of Insurability

6. The terms used in this Bid, which are defined in Article 1 of the General Conditions shall have the meanings assigned to them in the General Conditions as amended by the Supplementary Conditions.

7. Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified in the Agreement.

The Work shall be performed under a Florida Contractor's License. Contract shall not be awarded unless proof of valid license(s) is provided.

NAME OF BIDDER: _____

If Bidder is: (ALL SIGNATORIES MUST HAVE THEIR NAME PRINTED OR TYPED BELOW THEIR SIGNATURE)

SOLE PROPRIETORSHIP

_____ (SEAL)
(Individual's Signature)

_____ (SEAL)
(Individual's Name)

Doing Business as: _____

Business Address: _____

_____

Telephone No.: _____

Florida License No.: _____

NAME OF BIDDER: _____

A PARTNERSHIP

_____ (SEAL)
(Partnership Name)

_____
(General Partner's Signature)

_____
(General Partner's Name)

Doing Business as: _____

Business Address: _____

_____

Telephone No.: _____

Florida License No.: _____

NAME OF BIDDER: _____

A CORPORATION

_____ (SEAL)
(Corporation Name)

_____
(State of Incorporation)

BY _____
(Name of Person Authorized to Sign)

_____
(Title)

_____
(Authorized Signature)

(CORPORATE SEAL)

ATTEST_____
(Secretary)

Doing Business as:_____

Business Address:_____

_____

Telephone No.:_____

Corporation President_____

Florida License No.:_____

NAME OF BIDDER: _____

A JOINT VENTURE

By_____ (SEAL)
(Name)

By_____
(Address)

By_____ (SEAL)
(Name)

By_____
(Address)

Doing Business as:_____

Business Address:_____

_____

Telephone No.:_____

Florida License No.:_____

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above).

7. List the following in connection with the Surety which is providing the Bid Bond. Surety's Name: Surety's Address:

Surety's Name:_____

Surety's Address: _____

_____

_____

Name and address of Surety's resident agent for service of process in Florida:

_____

_____

END OF SECTION

SECTION 00301
QUESTIONNAIRE

DATE _____

PROJECT IDENTIFICATION:
CRITTENDEN STREET RECONSTRUCTION

NAME OF BIDDER: _____

BUSINESS ADDRESS: _____

TELEPHONE NO.: _____

CONTRACTOR'S FLORIDA LICENSE NO.: _____

The undersigned warrants the truth and accuracy of all statements and answers herein contained. Include additional sheets if necessary.

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. Name three (3) municipalities for which you have performed work and to which you refer:

   _____

   _____

   _____

5. Have you personally inspected the site of the proposed Work? 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. What equipment do you own that is available for the Work?

_____

_____

_____

_____

8. What equipment will you purchase for the Work?

_____

_____

9. What equipment will you rent for the Work?

_____

_____

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

_____

_____

_____

_____

_____

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

_____

END OF SECTION

SECTION 00301-A
SUBCONTRACTOR LISTING

List all proposed Subcontractors to be used for this Project.

Firm Name: _____
Address: _____
Telephone No: ( ) -
Trade: _____ **Estimated Dollar Amount:** $ _____

Firm Name: _____
Address: _____
Telephone No: ( ) -
Trade: _____ **Estimated Dollar Amount:** $ _____

Firm Name: _____
Address: _____
Telephone No: ( ) -
Trade: _____ **Estimated Dollar Amount:** $ _____

Firm Name: _____
Address: _____
Telephone No: ( ) -
Trade: _____ **Estimated Dollar Amount:** $ _____

Firm Name: _____
Address: _____
Telephone No: ( ) -
Trade: _____ **Estimated Dollar Amount:** $ _____

Firm Name: _____
Address: _____
Telephone No: ( ) -
Trade: _____ **Estimated Dollar Amount:** $ _____

Firm Name: _____
Address: _____
Telephone No: ( ) -
Trade: _____ **Estimated Dollar Amount:** $ _____

END OF SECTION

SECTION 00410
BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____ as Principal, and _____ as Surety, are hereby held and firmly bound unto the CITY OF GROVELAND, as Owner in the penal sum of, (five percent (5%) of the Contract Bid)_____ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns to pay Owner upon default of Bidder the penal sum set forth on the face of this Bond.

Signed, this _____ day of _____, 20___.

The condition of the above obligation is such that whereas the Principal has submitted to CITY OF GROVELAND, a certain Bid, attached hereto and hereby made a part hereof, to enter into a contract in writing, for the CRITTENDEN STREET RECONSTRUCTION .

NOW THEREFORE,

1. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents and Contract Documents.

2. This obligation shall be null and void if:

   2.1 Owner accepts Bidder's bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents and Contract Documents, or

   2.2 All bids are rejected by Owner, or

   2.3 Owner fails to issue a notice of award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by paragraph 5 hereof).

3. Payment under this Bond will be due and payable upon default of Bidder and within thirty (30) calendar days after receipt of Bidder and Surety of written notice of default from Owner which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

4. Surety waives notice of any and all defenses based on or arising out of any time extension to issue notice of award agreed to in writing by Owner and Bidder, provided that the time for issuing notice of award including extensions shall not in the aggregate exceed one hundred twenty (120) days from Bid Due without Surety's written consent.

5. No suit or action shall be commenced under this Bond prior to thirty (30) calendar days after the notice of default required in paragraph 3 above is received by Bidder and Surety, and in no case later than one year after Bid Due Date.

6. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

7. Notice required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the part concerned.

8. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent or representative who executed this Bond on behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.

9. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of the Bond conflicts with any applicable provision of any applicable statute, then the provision of said statute shall govern and the remainder of the Bond that is not in conflict therewith shall continue in full force and effect.

10. The term 'bid" as used herein includes a bid, offer or proposal as applicable.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Principal (Print Full Name):	Surety (Print Full Name):
_____	_____(Seal) Surety's Name and Corporate Seal
By:_____(L.S.)	By:_____ Signature (attach power of attorney)
Title:_____	Title:_____
Attest:_____ Signature and Title	Attest:_____ Signature and Title

IMPORTANT - Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Florida. See Article 5 of the General Conditions as amended by Supplementary Conditions.

END OF SECTION

SECTION 00420
CORPORATE RESOLUTION

I, _____, Secretary of _____, a corporation organized and existing under the laws of the State of _____, hereby certify that at a meeting of the Board of Directors of the Corporation duly called and held on _____, 20__ at which a quorum was present and acting throughout, the following resolutions were adopted and are now in full force and effect:

RESOLVED that the following individuals of this corporation are authorized to execute on behalf of this corporation a Bid and Agreement to _____ for the construction of _____.

I further certify that the names of the officers of this corporation and any other persons authorized to act under this resolution and their official signatures are as follows:

NAME	OFFICE	OFFICIAL SIGNATURE
_____,	_____,	_____
_____,	_____,	_____
_____,	_____,	_____
_____,	_____,	_____

IN WITNESS WHEREOF, I have hereunto subscribed my name as Secretary and affixed the seal of the corporation this _____ day of _____, 20__.

END OF SECTION

SECTION 00480
NONCOLLUSION AFFIDAVIT

STATE OF _____

COUNTY OF _____

_____, being first duly sworn deposes and says that:

1. He is the_____, of _____, the Bidder that has submitted the attached Bid;

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

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

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

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

By _____

Sworn and subscribed to before me this _____ day of _____, 20___, in the State of

_____, County of _____.

_____ Notary Public

My Commission Expires: _____

END OF SECTION

SECTION 00490
TRENCH SAFETY AFFIDAVIT

Trench excavations on this Project are expected to be in excess of 5 feet deep. The Occupational Safety and Health Administration excavation safety standards, 29 CFR 1926.650 Subpart P trench safety standards will be in effect during the period of construction of the Project.

Bidder acknowledges that included in the Bid Price are costs for complying with the Florida Trench Safety Act (90-096, Laws of FL) effective October 1, 1990, and hereby gives assurance that, if awarded the Contract, the Contractor or Subcontractor performing trench excavation work on the Project will comply with the applicable trench safety standards. The Bidder further identifies the costs as follows:

Trench Safety Item (Description) Cost

CRITTENDEN STREET RECONSTRUCTION

A. _____

_____
(Cost in Words)

TOTAL $ _____

FAILURE TO COMPLETE THE ABOVE MAY RESULT IN THE BID BEING DECLARED NON-RESPONSIVE

COMPANY NAME: _____ DATE: _____

BY: _____

END OF SECTION

EJCDC
STANDARD FORM OF AGREEMENT
BETWEEN OWNER AND CONTRACTOR
ON THE BASIS OF A STIPULATED PRICE

THIS AGREEMENT is dated as of the _____ day of _____in the year _____ by and between **The City of Groveland** (hereinafter called OWNER) and _____(hereinafter called CONTRACTOR).

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

Article 1. WORK.

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

Crittenden Street Reconstruction
The project generally consists of the reconstruction of an existing roadway.

Article 2. ENGINEER.

Engineer: **BOOTH, ERN, STRAUGHAN & HIOTT, INC.**
902 North Sinclair Avenue
Tavares, Florida 32778

ENGINEER 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 TIMES.

3.1 The Work will be substantially completed and finally completed and ready for final payment in accordance with paragraph 14.13 of the General Conditions on or before the following dates:

Substantial Completion - 30 calendar days after the issuance of the Notice to Proceed.

Final Completion - 15 calendar days after the substantial completion date for a total contract time of 45 days.

3.2 *Liquidated Damages.* OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 3.1 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense and difficulties involved in proving 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 **Two Hundred Fifty** dollars (**$250.00**) for each day that expires after the time specified in paragraph 3.1 for Substantial Completion until the Work is substantially complete. After Substantial Completion, if CONTRACTOR shall neglect, refuse or fail to complete the remaining Work within the time specified in paragraph 3.1 for completion and readiness for final payment or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER **Two Hundred Fifty** dollars (**$250.00**) for each day that expires after the time specified in paragraph 3.1 for completion and readiness for final payment.

Article 4. CONTRACT PRICE.

OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of the item as indicated on the Bid Form.

TOTAL OF ALL UNIT PRICES:

_____ (use words)

$_____ (dollars).

As provided in paragraph 11.9 of the General Conditions estimated quantities are not guaranteed, and determinations of actual quantities and classification are to be made by ENGINEER as provided in paragraph 9.10 of the General Conditions. Unit prices have been computed as provided in paragraph 11.9.2 of the General Conditions.

Article 5. PAYMENT PROCEDURES.

CONTRACTOR shall submit Applications for Payment in accordance with Article 8 of the Supplementary General Conditions. Applications for Payment will be processed by ENGINEER as provided in the Supplementary General Conditions. Payment will be processed as per Florida Statue 218.735 covering timely payment for purchases of constructions services.

5.1 Progress Payments; Retainage. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment as recommended by ENGINEER, on or about the **30th** day of each month during construction as provided in paragraphs 5.1.1 and 5.1.2. below. All such payments will be measured by the schedule of values established in paragraph 2.9 of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.

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

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

5.1.2. Upon Substantial Completion, in an amount sufficient to increase total payments to CONTRACTOR to **90** % of the Contract Price (with the balance being retainage), less such amounts as ENGINEER shall determine, or OWNER may withhold, in accordance with paragraph 14.7 of the General Conditions.

5.2 Final Payment. Upon final completion and acceptance of the Work in accordance with paragraph 14.13 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said paragraph 14.13

Article 6. INTEREST.

All money not paid when due as provided in Article 14 of the General Conditions shall bear interest at the maximum rate allowed by law at the place of the Project.

Article 7. CONTRACTOR'S REPRESENTATIONS.

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

7.1 CONTRACTOR has examined and carefully studied the Contract Documents (including the Addenda listed in paragraph 8) and the other related data identified in the bidding Documents including "technical data."

7.2 CONTRACTOR has visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance or furnishing of the Work.

7.3 CONTRACTOR is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.

7.4 CONTRACTOR has carefully studied all reports of explorations and tests of subsurface conditions at/or contiguous to the site and all drawings of physical conditions in/or relating to existing surface or subsurface structures at/or contiguous to the site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in Paragraph 4.2.1 of the General Conditions. CONTRACTOR accepts the determination of the extent of the "technical data" contained in such reports and drawing upon which CONTRACTOR is entitled to rely as provided in paragraph 4.2 of the General Conditions. CONTRACTOR acknowledges that such reports and drawings are not Contract Documents and may not be complete for CONTRACTOR's purposes. CONTRACTOR acknowledges that OWNER and ENGINEER do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Contract Documents with respect to Underground Facilities at/or contiguous to the site. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all such additional supplementary examinations, investigations, explorations, tests, studies and data concerning 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 or which relate to any aspect of the means, methods, techniques and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto. CONTRACTOR does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the performance and furnishing of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents.

7.5 CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the site that relates to the Work as indicated in the Contract Documents.

7.6 CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examination, investigations, explorations, tests, studies and data with the Contract Documents.

7.7 CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that CONTRACTOR has discovered in the Contract Documents and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR, and the Contract Documents are generally sufficient of indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

Article 8. CONTRACT DOCUMENTS.

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

8.1 This Agreement (pages __1__ to __5__, inclusive).

8.2 Exhibits to this Agreement (pages __N/A_____ to _____, inclusive).

8.3 Performance, Payment, and other Bonds.

8.4 Notice to Proceed.

8.5 General Conditions (pages __1____ to __41_____, inclusive).

8.6 Supplementary Conditions (pages __1_____ to __15____, inclusive).

8.7 Specifications bearing the title __**City of Groveland Crittenden Street Reconstruction**__ and consisting of ___2___Divisions, as listed in table of contents thereof.

8.8 Drawings consisting of **3** sheets with each sheet bearing the following general title: **City of Groveland Crittenden Street Reconstruction.**

8.9 Addenda numbers _____ to _____, inclusive.

8.10 CONTRACTOR's Bid (pages **BID FORM 1 thru BID FORM 12**, inclusive)

8.11 Documentation submitted by CONTRACTOR prior to Notice of Award (pages **N/A** to ____, inclusive).

8.12 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 3.5 and 3.6 of the General Conditions.

The documents listed in paragraphs 8.2 et seq. above area attached to this Agreement (Except as expressly noted otherwise above.

There are no Contract Documents other than those listed above in this Article 13. The Contract Documents may only be amended, modified or supplemented as provided in paragraphs 3.5 and 3.6 of the General Conditions.

Article 9. MISCELLANEOUS.

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

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

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

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

9.5 OTHER PROVISIONS.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in quadruplicate One counterpart each has been delivered to OWNER, CONTRACTOR, OWNER's ENGINEER and OWNER's ATTORNEY. All portions of the Contract Documents have been signed, initialed or identified by OWNER and CONTRACTOR or identified by ENGINEER or their behalf.

This Agreement will be effective on _____, _____ (which is the Effective Date of the Agreement).

OWNER: City of Groveland

BY: _____
Title:

Attest: _____

Address for giving notices:

City of Groveland
1198 Sampey Road
Groveland, Florida 34736

CONTRACTOR

BY: _____
Title & Corporate Seal

Attest: _____

Address for giving notices:

_____
Contractor

_____
Address

_____

Performance Bond

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

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

CONTRACT
Date:
Amount:
Description (Name and Location):

BOND
Date (Not earlier than Contract Date):
Amount:
Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Performance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

CONTRACTOR AS PRINCIPAL
Company: (Corp. Seal)

Signature: _____
Name and Title:

SURETY
Company: (Corp. Seal)

Signature: _____
Name and Title:
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL
Company: (Corp. Seal)

Signature: _____
Name and Title:

SURETY
Company: (Corp. Seal)

Signature: _____
Name and Title:

EJCDC No. 1910-28-A (1996 Edition)
Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Contract, which is incorporated herein by reference.

2. If the CONTRACTOR performs the Contract, the Surety and the CONTRACTOR have no obligation under this Bond, except to participate in conferences as provided in pa

3. If there is no OWNER Default, the Surety's obligation under this Bond shall arise after:

   3.1. The OWNER has notified the CONTRACTOR and the Surety at the addresses described in paragraph 10 below, that the OWNER is considering declaring a CONTRACTOR Default and has requested and attempted to arrange a conference with the CONTRACTOR and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Contract. If the OWNER, the CONTRACTOR and the Surety agree, the CONTRACTOR shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the OWNER's right, if any, subsequently to declare a CONTRACTOR Default; and

   3.2. The OWNER has declared a CONTRACTOR Default and formally terminated the CONTRACTOR's right to complete the Contract. Such CONTRACTOR Default shall not be declared earlier than twenty days after the CONTRACTOR and the Surety have received notice as provided in paragraph 3.1; and

   3.3. The OWNER has agreed to pay the Balance of the Contract Price to:

      3.3.1. The Surety in accordance with the terms of the Contract;

      3.3.2 Another contractor selected pursuant to paragraph 4.3 to perform the Contract.

4. When the OWNER has satisfied the conditions of paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

   4.1. Arrange for the CONTRACTOR, with consent of the OWNER, to perform and complete the Contract; or

   4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or

   4.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the OWNER for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the OWNER and the contractor selected with the OWNER's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the OWNER the amount of damages as described in paragraph 6 in excess of the Balance of the Contract Price incurred by the OWNER resulting from the CONTRACTOR Default; or

   4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances;

      4.4.1 After investigation, determine the amount for which it may be liable to the OWNER and, as soon as practicable after the amount is determined, tender payment therefor to the OWNER; or

      4.4.2 Deny liability in whole or in part and notify the OWNER citing reasons therefor.

5. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the OWNER to the Surety demanding that the Surety perform its obligations under this Bond, and the OWNER shall be entitled to enforce any remedy available to the OWNER. If the Surety proceeds as provided in paragraph 4.4, and the OWNER refuses the payment tendered or the Surety has denied pliability, in whole or in part, without further notice the OWNER shall be entitled to enforce any remedy available to the OWNER.

6. After the OWNER has terminated the CONTRACTOR's right to complete the Contract, and if the Surety elects to act under paragraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the OWNER shall not be greater than those of the CONTRACTOR under the Contract, and the responsibilities of the OWNER to the Surety shall not be greater than those of the OWNER under the Contract. To a limit of the amount of this Bond, but subject to commitment by the OWNER of the Balance of the Contract Price to mitigation of costs and damages on the Contract, the Surety is obligated without duplication for:

   6.1. The responsibilities of the CONTRACTOR for correction of defective Work and completion of the Contract;

   6.2. Additional legal, design professional and delay costs resulting from the CONTRACTOR's Default, and resulting from the actions or failure to act of the Surety under paragraph 4; and

   6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the CONTRACTOR.

7. The Surety shall not be liable to the OWNER or others for obligations of the CONTRACTOR that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the OWNER or its heirs, executors, administrators, or successors.

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

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located and shall be instituted within two years after CONTRACTOR Default or within two years after the CONTRACTOR ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

   12.1 Balance of the Contract Price: The total amount payable by the OWNER to the CONTRACTOR under the Contract after all proper adjustments have been made, including allowance to the CONTRACTOR of any amounts received or to be received by the OWNER in settlement of insurance or other Claims for

damages to which the CONTRACTOR is entitled, reduced by all valid and proper payments made to or on behalf of the CONTRACTOR under the Contract.

12.2. Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

12.3. CONTRACTOR Default: Failure of the CONTRACTOR, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.

12.4. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY--Name, Address and Telephone)
AGENT or BROKER: OWNER'S REPRESENTATIVE (Engineer or other party):

Payment Bond

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

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

CONTRACT
Date:
Amount:
Description (Name and Location):

BOND
Date (Not earlier than Contract Date):
Amount:
Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL
Company: (Corp. Seal)

Signature: _____
Name and Title:

SURETY
Company: (Corp. Seal)

Signature: _____
Name and Title:
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL
Company: (Corp. Seal)

Signature: _____
Name and Title:

SURETY
Company: (Corp. Seal)

Signature: _____
Name and Title:

EJCDC No. 1910-28-B (1996 Edition)
Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the OWNER to pay for labor, materials and equipment furnished for use in the performance of the Contract, which is incorporated herein by reference.

2. With respect to the OWNER, this obligation shall be null and void if the CONTRACTOR:

2.1. Promptly makes payment, directly or indirectly, for all sums due Claimants, and

2.2. Defends, indemnifies and holds harmless the OWNER from all claims, demands, liens or suits by any person or entity who furnished labor, materials or equipment for use in the performance of the Contract, provided the OWNER has promptly notified the CONTRACTOR and the Surety (at the addresses described in paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the CONTRACTOR and the Surety, and provided there is no OWNER Default.

3. With respect to Claimants, this obligation shall be null and void if the CONTRACTOR promptly makes payment, directly or indirectly, for all sums due.

4. The Surety shall have no obligation to Claimants under this Bond until:

4.1. Claimants who are employed by or have a direct contract with the CONTRACTOR have given notice to the Surety (at the addresses described in paragraph 12) and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

4.2. Claimants who do not have a direct contract with the CONTRACTOR:

1. Have furnished written notice to the CONTRACTOR and sent a copy, or notice thereof, to the OWNER, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and

2. Have either received a rejection in whole or in part from the CONTRACTOR, or not received within 30 days of furnishing the above notice any communication from the CONTRACTOR by which the CONTRACTOR had indicated the claim will be paid directly or indirectly; and

3. Not having been paid within the above 30 days, have sent a written notice to the Surety and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the CONTRACTOR.

5. If a notice required by paragraph 4 is given by the OWNER to the CONTRACTOR or to the Surety, that is sufficient compliance.

6. When the Claimant has satisfied the conditions of paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

6.1. Send an answer to the Claimant, with a copy to the OWNER, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

6.2. Pay or arrange for payment of any undisputed amounts.

7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

8. Amounts owed by the OWNER to the CONTRACTOR under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any Performance Bond. By the CONTRACTOR furnishing and the OWNER accepting this Bond, they agree that all funds earned by the CONTRACTOR in the performance of the Contract are dedicated to satisfy obligations of the CONTRACTOR and the Surety under this Bond, subject to the OWNER's priority to use the funds for the completion of the Work.

9. The Surety shall not be liable to the OWNER, Claimants or others for obligations of the CONTRACTOR that are unrelated to the Contract. The OWNER shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

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

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by paragraph 4.1 or paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, the OWNER or the CONTRACTOR, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is, that this Bond shall be construed as a statutory Bond and not as a common law bond.

14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, the CONTRACTOR shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS

15.1. Claimant: An individual or entity having a direct contract with the CONTRACTOR or with a Subcontractor of the CONTRACTOR to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of the CONTRACTOR and the CONTRACTOR's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

15.2. Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes pthereto.

15.3. OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY--Name, Address and Telephone)
AGENCY or BROKER: OWNER'S REPRESENTATIVE (Engineer or other party):

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

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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.

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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

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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, material man, 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).

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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.

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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 therefore.

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

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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 adaptation 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 therefore 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:

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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 therefore 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,

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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 therefore 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

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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 therefore 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, and 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 therefore 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 4.06. G 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

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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 exclusion 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;

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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

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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 hereunder. 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

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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

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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 therefore. 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

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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 Subcon-

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tractors 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 therefore 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

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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).

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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

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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 employ-

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ee (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 therefore, 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 therefore 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

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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 that 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.

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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 therefore 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.

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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.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

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 therefore as provided in Paragraph 10.05.

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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*

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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.

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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, expediters, 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

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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.

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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 therefore 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

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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 therefore 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 therefore 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 therefore.

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

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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 therefore 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 therefore 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.

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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.

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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 therefore.

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 therefore. 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

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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 therefore. 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

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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 therefore 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),

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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

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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.

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SUPPLEMENTARY GENERAL CONDITIONS
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SUPPLEMENTARY
GENERAL CONDITIONS

1. APPLICABILITY

1.1 The Supplementary General Conditions are intended to be complimentary to the General Conditions. They are intended to outline additional details and further explain the General Conditions. Should a conflict or discrepancy arise between the General Conditions and the Supplementary General Conditions, the Supplementary General Conditions shall govern.

2. PROVISIONS REQUIRED BY LAW DEEMED INSERTED

2.1 Each and every provision of law and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the Contract shall forthwith be physically amended to make such insertion or correction.

3. CONTRACTOR'S UNDERSTANDING

3.1 If the CONTRACTOR, in the course of the work, finds any discrepancy between the drawings and the physical conditions of the locality, or any error or omissions in the drawings or in the layout as given by points and instructions, or discovers unforeseen underground or aboveground conditions or any other unexpected conditions requiring additional work by the CONTRACTOR, it shall be his duty to immediately inform the ENGINEER, in writing, and the ENGINEER shall promptly check the accuracy of the information. Any work done after such discovery, until any necessary changes are authorized, will be done at the CONTRACTOR'S risk.

4. CONTRACTOR'S RESPONSIBILITY FOR THE WORK

4.1 Prior to the completion of the work by the CONTRACTOR and the acceptance thereof by the OWNER, the work shall remain at the risk of the CONTRACTOR and said CONTRACTOR shall be required to repair, replace, renew, and make good at his own expense all damages caused by force or violence of the elements or any cause whatsoever, provided however, that in such cases the CONTRACTOR shall be entitled to a reasonable extension of time within which to complete said work. If the cause of the delay shall be due to the negligence, fault, or omission of the CONTRACTOR, the CONTRACTOR shall not be entitled to the extension of time mentioned in the said paragraph.

4.2 Anything mentioned in the specifications and not shown in the drawings, or shown in the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both.

5. STAKING/SURVEY REQUIREMENTS

5.1 The **CONTRACTOR** shall provide all construction staking required to construct the project.

5.2 **All survey work for the project shall be under the direct and active supervision of a Professional Surveyor and Mapper licensed pursuant to Chapter 472, F.S.**

5.3 AS-BUILTS

Per Paragraph 20 of these Supplemental Conditions.

6. TESTING

6.1 Construction testing shall be performed by an independent laboratory and shall be in accordance with the Construction Specifications included herein.

6.2 **The selection of the testing laboratory and the costs of the testing shall be the responsibility of the CONTRACTOR.** Any tests which fail to meet the minimum values specified shall be paid for by the CONTRACTOR. Any additional tests required by the ENGINEER, other than those specified as a minimum, shall be paid for by the OWNER.

6.3 The scheduling of the tests with the testing laboratory shall be the responsibility of the CONTRACTOR. Each unit of work shall be tested and approved by the ENGINEER prior to starting another unit of work. No work shall be done nor materials used without suitable supervision or inspection by the ENGINEER.

7. PRESERVATION OF PROPERTY, RESPONSIBILITY FOR DAMAGE

7.1 The CONTRACTOR shall preserve from damage all property along the line of work, or which is in the vicinity of or is in anyway affected by the work, the removal or destruction of which is not called for by the plans. This applies to private property, public utilities, trees, shrubs, crops, signs, monuments, fences, pipe and underground structures, public highways (except natural wear and tear of highways resulting from legitimate use thereof by the CONTRACTOR), etc., and whenever such property is damaged due to the activities of the CONTRACTOR, it shall be immediately restored to a condition similar or equal to that existing before such damage or injury was done by the CONTRACTOR and at his own expense, or it shall be charged against any moneys due.

7.2 CONTRACTOR shall be responsible for maintenance of the project during construction and shall bear all risk of loss for damage to the project by any cause whatsoever during the term of construction.

7.3 In case of failure on the part of the CONTRACTOR to restore such property, road or street, or make good such damage or injury, the ENGINEER may, upon 48 hours notice, proceed to repair, rebuild or otherwise restore such property, road or street as may be deemed necessary, and the cost thereof will be deducted from any moneys due or which may become due the CONTRACTOR under the contract.

8. PARTIAL PAYMENT

8.1 The CONTRACTOR will receive partial payments on monthly estimates based on the amount of work done and accepted by the ENGINEER. The partial payments shall be approximate only, and all partial estimates and payments shall be subject to correction in the final estimate and payment.

8.2 The CONTRACTOR shall prepare and submit to the ENGINEER for approval an estimate covering the total quantities under each item of work that has been completed from the start of the job up to and including the last day of the payment period, and the value of the work so completed determined in accordance with the schedule of unit prices for such items, together with supporting evidence as may be required by the OWNER and/or ENGINEER. This estimate shall also include an allowance for the cost

of such materials and equipment required in the permanent work as has been delivered to the site and suitably protected but not as yet incorporated in the work. This allowance shall be a maximum of 50% of supplier's invoice.

8.3 **All requests for partial payment shall be submitted to the ENGINEER by the last normal work day of each month. Requests received after this date shall be deferred to the following month. Payment shall be made to the CONTRACTOR within 30 days of receipt of a complete and valid request for partial payment.**

8.4 The amount of such payments shall be the total value of the work done to the date of the estimate, based on the quantities and the contract unit prices, less an amount retained and less payments previously made. The amount retained shall be 10% of the amount due until final acceptance.

8.5 The OWNER shall require, as a condition precedent to making any payment, that the CONTRACTOR provide a Contractor's Affidavit and partial or complete Release of Lien, on forms approved by the OWNER. The Contractor's Affidavit shall state that all indebtedness incurred by the CONTRACTOR for labor, equipment, materials and services has been paid by the CONTRACTOR, and for all payments subsequent to the first payment hereunder, as evidence of such payment, CONTRACTOR may be required by OWNER to provide the OWNER with Mechanic's Lien Release or Waivers of Lien from all subcontractors, suppliers of materialmen.

9. FINAL PAYMENT

9.1 When final acceptance has been made by the OWNER, the ENGINEER will then review the amount of final request for payment and certify the amount of this approval. All prior estimates and payments shall be subject to correction in the final estimate and payment. The amount of this estimate, less any sums that may have been deducted or retained under provisions of the contract, will be paid to the CONTRACTOR within 30 days after the final estimate has been approved by the ENGINEER, provided that the following requirements have been met:

9.1.1 The CONTRACTOR has agreed in writing to accept the balance due, as determined by the ENGINEER, as full settlement of his account under the contract, and of all claims in connection therewith.

9.1.2 The CONTRACTOR has furnished affidavits to the effect that all bills are paid and no suits are pending in connection with work done under the contract, and the CONTRACTOR has otherwise fully complied with the provisions of the Florida Lien Law.

9.1.3 All test results, etc., have been received by the ENGINEER.

9.1.4 Any inspections, etc., required by the local governmental entities having jurisdiction have been made.

9.2 The Contract will be considered complete when all work has been finished, the final inspection certified by the ENGINEER, and the project finally accepted in writing by the OWNER. The CONTRACTOR'S responsibility shall then terminate except as otherwise required and set out in these Contract Documents.

10. FAILURE TO COMPLETE WORK ON TIME

10.1 Time is of the essence in this Contract but it will be difficult or impossible to ascertain the exact amount of loss which the OWNER will suffer by reason of delays in the

completion of the work. It is, therefore, agreed that for each calendar day that any part of the work remains uncompleted after the expiration of the time stipulated for completion of the entire work, or for a portion of the work for which a time of completion is stipulated, with such extensions of time, if any, as may have been recommended by the ENGINEER and approved by the OWNER, the amount or amounts of money stated in these Supplementary General Conditions shall be deducted as liquidated damages from any money due the CONTRACTOR, or if no money is due the CONTRACTOR, the OWNER shall have the right to recover said amount or amounts from the CONTRACTOR, from the Surety, or from both. This deduction is not a penalty but constitutes liquidated damages for the loss to the OWNER because of the increase in expenses for administration, engineering, supervision and inspection, and loss of revenue resulting from the delay.

10.2 The CONTRACTOR shall take into account all contingent work which has to be done by other parties, arising from any cause whatsoever, and shall not plead his want of knowledge of said contingent work as an excuse for delay in this work, or for its non-performance.

10.3 Nothing in this Article shall be construed as limiting the right of the OWNER to annul the Contract, to take over the work, or to claim damages for the failure of the CONTRACTOR to abide by each and every one of the terms of this Contract as set forth and provided for in the Contract Documents.

11. TIME OF COMPLETION

11.1 All work shall be completed as outlined in the Agreement.

12. LIQUIDATED DAMAGES:

12.1 The amount of liquidated damages to be assessed shall be Two Hundred, Fifty dollars ($250.00) per calendar day for failure to complete the contract as outlined in the Contract Documents.

12.2 It is hereby understood and mutually agreed, by and between the CONTRACTOR and the OWNER, that the date of beginning and the time for completion as specified in the Contract of the work to be done here under are ESSENTIAL CONDITIONS of this Contract; and it is further mutually understood and agreed that the work embraced in this Contract shall be commenced on a date to be specified in the Notice to Proceed.

12.3 The CONTRACTOR agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will insure full completion thereof within the time set forth in the Proposal. It is expressly understood and agreed, by and between the CONTRACTOR and the OWNER, that the time for the completion of the work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

12.4 If the CONTRACTOR shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the OWNER, then the CONTRACTOR does hereby agree, as a part consideration for the awarding of this Contract, to pay to the OWNER the amount specified in the Contract not as a penalty but as liquidated damages for such breach of Contract as hereinafter set forth, for each and every calendar day including Sundays and Holidays that the CONTRACTOR shall be in default after the time stipulated in the Contract for completing the work.

12.5 The said amount is fixed and agreed upon by and between the CONTRACTOR and OWNER because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the OWNER would in such event sustain, and said amount is agreed to be the amount of damages which the OWNER would sustain and said amount shall be retained from time to time by the OWNER from current periodical estimates or in the final Change Order.

12.6 It is further agreed that time is of the essence of each and every portion of this Contract and of the Specifications wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the Contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence of this Contract. Provided, that the CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:

12.6.1 To any preference, priority or allocation order duly issued by the Government.

12.6.2 To unforeseeable cause beyond the control and without the fault or negligence of the CONTRACTOR, including, but not restricted to, acts of God, or of the public enemy, acts of the OWNER, acts of another contractor in the performance of a contract with the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather, and;

12.6.3 To any delays of Subcontractor or suppliers occasioned by any of the causes specified in subsection (1) and (2) of this article: Provided, further, that the CONTRACTOR shall, notify the OWNER, in writing, of the causes of the delay. The OWNER shall ascertain the facts and extent of the delay and notify the CONTRACTOR within a reasonable time of its decision in the matter.

12.7 If the CONTRACTOR finds that he will be unable to complete the work under this Contract within the time period set forth in the Proposal plus any time extensions allowed due to the above causes, he may submit a formal written request to the OWNER through the ENGINEER for a time extension for causes other than those specified heretofore. Such formal request must be submitted by Friday 12:00 (noon) for any cause that has occurred within the previous seven (7) calendar days, and be accompanied by an up-to-date report of construction status, a revised, detailed construction schedule and any further documentation which the OWNER may require or which the CONTRACTOR may consider pertinent and favorable to his request. The OWNER will consider said request and will either allow or reject same, in writing within a reasonable period of time. Should a time extension be allowed, a change order will be prepared by the ENGINEER amending the terms of the Contract accordingly. If rejected, no further action will be taken and the Contract will remain unchanged.

12.8 In addition to such liquidated damages, the CONTRACTOR and/or his Surety shall be liable for the amount thereof, from Contract completion date until actual final completion, for all expenses for resident supervision and also for engineering supervision furnished by the OWNER and/or the ENGINEER plus 50 per cent thereof for overhead. These expenses shall be deducted by the OWNER from money due the CONTRACTOR.

12.9 The date upon which the assessment of liquidated damages as provided herein shall cease shall be the date of Substantial Completion which shall be as certified by the ENGINEER. For purposes of determining the amount of the expenses described above, the date of actual final completion of the Contract shall be determined by the ENGINEER and shall be the date after which no additional work on the project would be necessary to produce a project completely in accordance with the requirements of

the Contract Documents and completely acceptable to the ENGINEER.

13. INSURANCE REQUIREMENTS

5.1 PERFORMANCE AND OTHER BONDS: (Delete in its entirety and substitute the following:

CONTRACTOR shall furnish performance and payment bonds, each in an amount equal to one-hundred ten (110%) percent of the Contract Price as security for the faithful performance and payment of all CONTRACTOR'S obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due. Except as otherwise provided by Law or Regulation or by the Contract Documents CONTRACTOR shall also furnish such other Bonds as are required by the Supplementary Conditions. All Bonds signed by an agent must be accompanied by a certified copy of the authority to act.

5.4 CONTRACTOR'S LIABILITY INSURANCE (Add the following)

5.4.14 The limits of liability for the insurance required by Paragraph 5.4 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by laws and regulations.:

5.4.1 and 5.4.2	Worker's Compensation, etc. under Paragraphs 5.4.1 and 5.4.2 of the General Conditions:		
	(1)	State	Statutory
	(2)	Applicable Federal	Statutory
	(3)	Employer's Liability	$100,000 Each Occurrence
5.4.3., 5.4.4. and 5.4.5.	Comprehensive General Liability (under Paragraphs 5.4.3 through 5.4.5 of the General Conditions):		
	(1)	Bodily Injury (Including completed operations and product liability):	
		$1,000,000	Each Occurrence
		$1,000,000	Annual Aggregate
		Property Damage:	
		$1,000,000	Each Occurrence
		$1,000.000	Annual Aggregate
		or a combined single limit of $2,000,000	
	(2)	Property Damage Liability insurance including Explosion, Collapse, and Underground coverages where applicable	Combined Single Limit each occurrence & in Annual Aggregate $1,000,000

(3)	Personal Injury, with employment exclusion deleted $1,000,000	Combined Single Limit each occurrence & Annual Aggregate

Comprehensive Automobile Liability:

Bodily Injury:

$100,000	Each Person
$300,000	Each Occurrence

Property Damage:

$100,000	Each Occurrence
or combined single limit of	$300,000

5.6 The Contractor shall purchase and maintain until final payment property insurance upon the work at the site to the full insurable value thereof (subject to such deductible amounts as may be provided in these Supplementary Conditions or required by laws and regulations). This insurance shall include the interests of the Owner, the Contractor, Subcontractors, the Engineer, and the Engineer's consultants in the work (all of whom shall be listed as insured of additional insured parties), shall insure against the perils of fire and extended coverage, shall include "all risk" insurance for physical loss and damage including theft, vandalism and malicious mischief, collapse and water damage, and such other perils as may be provided in these Supplementary Conditions, and shall include damages, losses and expenses arising out of or resulting from any insured loss or incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers, architects, attorneys, and other professionals). If not covered under the "all risk" insurance, the Contract shall purchase and maintain similar property insurance on portions of the work that are to be included in an application for payment. The policies of insurance required to be purchased and maintained by the Contractor in accordance with this paragraph 5.6 shall comply with the requirements of paragraph 5.8 of the General Conditions.

5.7 The Contractor shall provide to the Owner within thirty (30) days after the effective date of the agreement, copies of all insurance policies entered into by the Contractor to achieve compliance with the insurance requirements of these contract documents. Should any policy expire with the contract time, or any extension thereof, the Contractor shall provide to the Owner not later than thirty (30) days prior to the expiration date of such policy, a copy of an acceptable replacement policy providing the types and limits of coverage not less than that provided by the expiring policy.

5.8 TO BE DELETED from the General Conditions

5.10 TO BE DELETED from the General Conditions

14. COORDINATION OF UTILITY SERVICE

14.1 Representation of underground utilities is shown from information received from the various utility owners. The locations or elevations of utilities are not represented to be exact and are shown for the convenience of the CONTRACTOR. The CONTRACTOR shall contact the utility owner concerned for any available additional information and coordinate his construction activities accordingly. Any cost incurred for the protection of and/or damages to existing underground utilities will be considered as part of the applicable Contract price for stage excavation and backfill and no additional

compensation will be paid to the CONTRACTOR. If, in the judgement of the ENGINEER, it is impossible to construct a given improvement in the location shown on the drawings, as a result of underground utility or utilities, either the utility owner will move the existing underground utility or an appropriate Change Order will be executed for the moving by the CONTRACTOR.

14.1.1 City of Groveland
1198 Sampey Road
Groveland, Florida 34736
James Huish (352) 429-0227

14.1.2 Progress Energy
2710 David Walker Drive
Eustis, Florida 32726
(352) 589-0771

14.1.3 Comcast Cablevision
8130 CR 44 Leg A
Leesburg, Florida 34788
(352)728-8757

14.1.5 Embarq
33 North Main Street
Winter Garden, Florida 34787
(407) 889-6617

14.1.6 TECO Peoples Gas
1724 Kurt Street
Eustis, Florida 32726
(352) 483-7237

14.2 Prior to initiating any construction work on this project, the CONTRACTOR shall arrange a meeting with representatives of public and private utilities to coordinate and schedule the provision of temporary utility service required during construction and the permanent installation and connection of utilities for the completed construction project.

14.3 The CONTRACTOR shall at all times conduct his operation so as to interfere as little as possible with the existing facilities. The CONTRACTOR shall develop a program in cooperation with the ENGINEER and interested utility officials which shall provide for the construction of, and putting into service the new works in the most orderly manner possible. This program shall be adhered to except as deviations therefrom are expressly permitted. All work of connecting with, cutting into, and reconstructing existing facilities shall be planned so as not to interfere with the existing facility.

14.4 The CONTRACTOR shall maintain uninterrupted service at all service connections. The manner in which this is accomplished shall be left to the discretion of the CONTRACTOR, subject to the approval of the ENGINEER.

14.5 The public and private utilities including water, gas, storm drain and sewer lines, electrical conduit, power lines, cables and appurtenant plant and facilities, are and must be kept in continuous operation, and all work hereunder must be so conducted as to avoid interference with or interruption in the operation of same, and shall be started and completed in the shortest practicable time, in order that these additional contemplated facilities may be available for use without delay. All work hereunder must be so conducted so as to avoid unreasonable interference or interruption in travel of streets,

alleys, or individual access ways. In order to secure these results, the order of procedure and methods of conducting work shall at all times be subject to the approval of the ENGINEER without in any way relieving the CONTRACTOR of responsibility for same.

14.6 It is to be particularly understood that continuity of utility services, noninterference with operation or other construction, and minimum interference with normal travel, and safety of all utility plants and equipment personnel, as well as the safety and well-being of the general public, shall be given prime consideration, and that the decisions of the ENGINEER shall be followed in all matters relating thereto. The CONTRACTOR shall maintain uninterrupted service at all service connections. Should the CONTRACTOR fail to observe such requirements or to provide the necessary and proper safeguards against accidents or damage, the OWNER shall, upon the advice of the ENGINEER and without further notice, have the right to provide same or repair the damage and deduct the cost of same from the Contract, or to suspend work under this contract until such deficiencies are satisfactorily remedied, or to cancel Contract and complete same with his own forces as he may deem advisable, at the CONTRACTOR'S expense.

15. INDEMNIFICATION

15.1 CONTRACTOR shall indemnify and hold harmless OWNER and ENGINEER and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of the use resulting therefrom and (b) is caused in whole or in part by any negligent act or omission of CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. For ten dollars ($10.00) acknowledged to be included and paid for in the Contract Price and other good and valuable consideration, the CONTRACTOR agrees to indemnify and hold harmless the OWNER, the ENGINEER, and their agents, and employees in accordance with the provisions of this paragraph.

15.2 In any and all claims against OWNER or ENGINEER or any of their agents or employees by any employee of CONTRACTOR, and Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 15.1 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 Subcontractor under Workmen's Compensation acts, disability benefit acts or other employee benefit acts.

16. AUTHORITY AND DUTIES OF INSPECTOR

16.1 The ENGINEER shall appoint such Inspectors as are necessary to pass upon the amount, quality and character of the materials to be supplied and to supervise the execution of the work contemplated under this Contract.

16.2 Inspectors employed by the OWNER shall also be authorized to inspect all work done and all materials furnished. Such inspection may extend to any or all parts of the work and to the preparation, fabrication or manufacture of the materials to be used.

16.3 An Inspector is not authorized to revoke, alter or waive any requirements of the Specifications. He shall have the authority to reject materials or suspend the work until any questions at issue can be referred to and decided by the ENGINEER.

16.4 If the CONTRACTOR refuses to suspend operations on verbal order, the Inspector shall issue a written order giving the reason for shutting down the work. After placing the order in the hands of the man in charge, the Inspector shall immediately leave the job. Work done during the absence of the Inspector shall not be accepted nor paid for.

16.5 The Inspector shall in no case act as foreman or perform other duties for the CONTRACTOR, nor interfere with the management of the work by the latter. Any advice which the Inspector may give the CONTRACTOR in no wise shall be construed as binding to the ENGINEER in any way, or releasing the CONTRACTOR from fulfilling all the terms of the Contract.

16.6 The payment of any compensation, whatever may be its character or form, or the giving of any gratuity, or the granting of any valuable favor by the CONTRACTOR to any Inspector, directly or indirectly, is strictly prohibited and any such act on the part of the CONTRACTOR shall constitute a violation of this Contract.

17. SALVAGED EQUIPMENT AND MATERIALS

17.1 All salvaged materials and equipment are the property of the OWNER and shall be stored by the CONTRACTOR at his expense as directed by the ENGINEER except as otherwise provided in these specifications. The CONTRACTOR shall remove and clean all reusable items of materials and/or equipment removed from existing structures that are to be demolished or abandoned in the course of the work.

18. SAFETY REGULATIONS

18.1 In addition to the requirements of the General Conditions section of these specifications, the CONTRACTOR'S attention is specifically directed to the published regulations of the Florida Department of Commerce on the "Use of Cranes, Draglines and similar Equipment Near Power Lines", "Excavations and Trenching Operations", and "Construction and Use of Scaffolds", and similar regulations of that Department.

18.2 The CONTRACTOR shall designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be the CONTRACTOR'S Superintendent unless otherwise designated in writing by the CONTRACTOR to the OWNER and the ENGINEER.

18.3 The CONTRACTOR shall comply with all OSHA (Occupational Safety and Health Administration) requirements.

18.4 The CONTRACTOR is required to be familiar with all Federal and State safety rules and regulations. It shall be the sole responsibility of the CONTRACTOR to adhere to and enforce all such safety rules and regulations. The OWNER shall be held harmless to any citations, fines, or suits of law, that may result as a breach of safety rules and regulations by the CONTRACTOR or any and all Subcontractors of the CONTRACTOR.

19. PUBLIC SAFETY AND CONVENIENCE

19.1 The CONTRACTOR shall at all times so conduct his work as to insure the least possible obstruction to traffic and inconvenience to the general public and the residents in the vicinity of the work, and to insure the protection of persons and property, in a manner satisfactory to the ENGINEER. No road or street shall be closed to the public, except with the permission of the ENGINEER and proper governmental authority. Fire hydrants on or adjacent to the work shall be kept accessible to fire-fighting equipment at all times. Temporary provisions shall be made by the CONTRACTOR to insure the use of sidewalks and the proper functioning of all gutters, sewer inlets, drainage ditches, and

irrigation ditches.

20. RECORD DATA AND AS-BUILTS

20.1 The CONTRACTOR shall maintain during the progress of the project, accurate records of the location, length and elevation of all buildings, structures, equipment, pipe lines and piping installed. In areas where the Contractor is responsible for construction staking and as-builts, the contractor shall promptly, after completion of that portion of the work deliver to the ENGINEER or OWNER record drawings with accurate notations recorded thereon. Final Project As-Built Drawings shall be signed and sealed by a Professional Surveyor & Mapper registered in the State of Florida. The CONTRACTOR will be held responsible for accuracy of such data and shall bear any cost incurred in finding utilities as a result of incorrect data furnished on the as-built drawings supplied by the Contractor. As-Built Drawings are considered an integral part of the work. Therefore, delivery of three (3) sets of final signed and sealed As-Built Drawings, as well as a DVD containing electronic copies shall be required prior to final playment.

21. BARRICADES, WARNING AND DETOUR SIGNS

21.1 The CONTRACTOR shall, in accordance with the requirements of the Florida Department of Transportation's Manual on Traffic Control & Safe Practices, provide, erect and maintain all necessary barricades, suitable and sufficient red lights, danger signals and signs, provide a sufficient number of flagmen and watchmen, and take all necessary precautions for the protection of the work and the safety of the public. Streets or highways closed to traffic shall be protected by effective barricades on which shall be placed acceptable warning signs. The CONTRACTOR shall provide and maintain acceptable warning and detour signs at all closures, intersections and along the detour routes, directing the traffic around the closed portion or portions of the work so that the temporary detour route or routes shall be indicated clearly throughout its or their entire length. All barricades and obstructions shall be illuminated at night and all lights shall be kept burning from sunset until sunrise. Barricades shall be well built and so designed as not to be blown over by the wind.

21.2 Roadways, parkways and other existing work, including sodded or grassed areas, damaged by the CONTRACTOR'S operations shall be repaired at the CONTRACTOR'S expense and left in condition as good as existed before the work was commenced.

22. WORK WITHIN ROAD RIGHTS-OF-WAY

22.1 The CONTRACTOR shall notify the Department of Transportation (D.O.T.), City government or County government, as applicable, at least 24 hours prior to commencing work within the road right-of-way.

22.2 Permits for all work within the right-of-way will be obtained by the OWNER. The CONTRACTOR shall, however, verify the existence of the permit before commencing work within this area.

22.3 All work related to highway crossings and within highway right-of-way shall be in full compliance with the terms of the permit and in accordance with the requirements of the governing authority.

22.4 In event of conflict between the requirements of these Specifications and details and those of the governing authority, the requirements of said governing authority shall govern. This precedence shall be applicable only when right-of-way belonging to the State of Florida, City or County, is involved. In all other cases the more stringent requirements shall govern.

22.5 The costs of any and all items of work required by the governing authority, payment for which is not specifically provided by bid items in the Proposal, shall be included in the prices of bid items to which said items of work are related, incidental, or appurtenant. No additional compensation shall be allowed therefor.

23. RIGHT TO WORK AND TERMINATION DUE TO WORK STOPPAGE

23.1 The Owner strongly believes in the "right to work" and expressly reserves the right to terminate the Agreement or suspend the work upon 24 hours notice upon the occurrence of any work stoppage or "picketing" of the job resulting from the action of any organized labor group. This stipulation shall be contained in any and all subcontracts entered into for any portions of the work. No additional compensation shall be a allowed if so terminated or suspended.

24. DISPUTE RESOLUTION

24.1 The venue for the enforcement, construction or interpretation of this agreement shall be the court system of the Fifth Judicial Circuit, depending on the jurisdictional limits, and all parties do hereby specifically waive any "venue privilege" and/or "diversity of citizenship privilege" which it has now, or may have in the future, in connection with this agreement, or its duties, obligations, or responsibilities or rights hereunder.

24.2 The prevailing party in any litigation arising out of the enforcement, construction or interpretation of this agreement shall be entitled to recover from the losing party all costs and expenses, including reasonable attorney's fees, both at the trial and at the appellate level."

25. PRECONSTRUCTION CONFERENCE

25.1 The ENGINEER shall set the date and time for the preconstruction conference and shall determine attendance requirements. At a minimum, representatives of the CONTRACTOR and all major SUBCONTRACTORS shall be present, along with representatives of the City and the City's Engineer.

25.2 At least 24 hours in advance of the preconstruction conference the CONTRACTOR shall submit the following:

25.2.1 A preliminary construction schedule listing beginning and ending dates or number of days for the completion of each item or work. A bar graph is preferable.

25.2.2 A list of phone numbers for all key personnel and project superintendents or foremen. This list shall include office, mobile, beeper and home phone numbers.

25.2.3 A Preliminary Pay Schedule with estimated dates and amounts of progress payments.

26. STORAGE OF PETROLEUM PRODUCTS OR HAZARDOUS SUBSTANCES

26.1 No fuels, oils or any type of petroleum product nor any hazardous substance shall be stored on the project or any other lands owned by the developer or OWNER.

27. SUBCONTRACTORS AND SUPPLIERS

27.1 Contractor shall complete and submit with his bid the list of subcontractors and suppliers attached as part of the contract documents. Owner reserves the right to approve all subcontractors at their discretion.

28. SHOP DRAWINGS AND MATERIAL SUBMITTALS

28.1 Contractor shall submit six (6) copies of all shop drawings and material submittals. Four copies shall be returned to the Contractor upon approval.

28.2 Review of the first submission and one resubmission of Shop Drawings will be performed by Owner and Owner's Consultants, as appropriate, at no cost to CONTRACTOR. Subsequent additional resubmissions of the Shop Drawing will be reviewed by Owner and Owner's Consultants, however Owner will document work hours and other expenses required to perform such additional review(s) and Contractor shall reimburse Owner for these costs.

29. CLEAN-UP AND COMPLETION

29.1 This section of the Specifications is intended to cover the furnishing of all labor, materials, equipment and/or incidentals necessary to the completion of all the requirements of the drawings, notes, schedules and these Specifications relating to clean-up.

29.2 Throughout the construction period, the CONTRACTOR is to maintain the project in a standard of cleanliness as described in this Section. In addition to the standards described in this Section, the CONTRACTOR will comply with all the requirements for cleaning up in various other sections of these Specifications. The CONTRACTOR will conduct daily inspections, and more if necessary, to verify that requirements of cleanliness are met. In addition to the standards described in this Section, the CONTRACTOR will comply with all pertinent requirements of governmental agencies having jurisdiction, provide all required personnel, equipment and materials needed to maintain the necessary standards of cleanliness, and use only the cleaning materials and equipment which are compatible with the surface being cleaned as recommended by the Manufacturer of the material or as approved by the Representative.

29.3 The CONTRACTOR will retain all stored items in an orderly arrangement allowing maximum access, not impending drainage or traffic, and providing the required protection of materials. The CONTRACTOR is not to allow the accumulation of scrap, debris, waste material and other items not required for the construction of work.

29.4 At least twice a month, and more often if necessary, the CONTRACTOR will completely remove all scrap, debris and waste material from the job site and dispose of it off-site in accordance with all Local, State and Federal regulations. Weekly, and more often if necessary, the CONTRACTOR will inspect all arrangements of materials stored on the site, restack, tidy or otherwise service all requirements of this Section. Daily, and more often if necessary, the CONTRACTOR will inspect the site and pick up all scrap, debris and waste material and remove all such items to the place designated for their storage.

29.5 The CONTRACTOR is to provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the ecology, including the Wildlife Habitat Management Plan.

29.6 The CONTRACTOR will maintain the site in a neat, orderly condition at all times, to the approval of the OWNER'S representative. In case of failure on the part of the CONTRACTOR to comply with all conditions of this section the OWNER may, upon 24

hour notice, proceed to clean the site as may be deemed necessary by the OWNER. All costs encountered by the OWNER, including dump fees, shall be deducted from the next payment due the CONTRACTOR, which payment shall include a 15% management fee applied to all OWNER expenses.

30. WARRANTY

30.1 The CONTRACTOR warrants the subject premises for a period of one year subsequent to acceptance of the improvements. The CONTRACTOR will provide the OWNER with all warranties pursuant to the terms of the General Conditions. In the event that the CONTRACTOR must return to perform warranty work, the CONTRACTOR must thereafter provide for an extended warranty period of at least six (6) months for parts, materials or workmanship replaced or the equivalent of a new replacement part warranty, which ever is greater.

END OF DOCUMENT

SECTION 00841
NOTICE OF AWARD FORM

_____
_____
_____
_____ Date:_____

Project: CITY OF GROVELAND
CRITTENDEN STREET RECONSTRUCTION

You are notified that your bid dated _____, 20__ for the above Contract has been considered and the OWNER, expects to award you a contract.

The Contract Price of your contract is _____
_____ Dollars**($_____)**

Six (6) copies of each of the following proposed Contract Documents (except Project Manual and Drawings) accompany this Notice of Award:

- Agreement between Owner and Contractor
- Performance Bond
- Payment Bond
- Notice of Award
- Certificates of Insurance and Endorsement

You must comply with the following conditions precedent to the award of the contract within ten (10) days of the date of the Notice of Award, that is by_____, 20____.

1. You must deliver to the OWNER six (6) fully executed counterparts of the Agreement.

2. You must deliver with the executed Agreement six (6) completed original documents with original signatures on the Payment and Performance Bond in the form specified in the Bidding Documents, in an amount equal to 110% of the contract price.

3. You must provide in writing the correct name and address of the surety which is providing the Payment and Performance Bonds and the correct name and address of the surety's resident agent for service of process in Florida.

4. You must deliver with the executed Agreement six (6) completed, with original signatures, Certificates and Endorsements of Insurance in the form specified in the Bidding Documents.

Failure to comply with these conditions within the time specified will entitle the OWNER to consider your Bid abandoned, to annul this Notice of Award, and to declare your Bid Security forfeited.

Within ten (10) days after you comply with these conditions, the OWNER will return to you one (1) fully signed counterpart of the Agreement with the Contract Documents attached.

OWNER:

City of Groveland

(Authorized Signature)

(Name & Title)

ACCEPTANCE OF AWARD:

(Contractor)

(Address)

(Authorized Signature
Acknowledge Receipt of Notice)

(Name & Title)

(Date)

Copy to Booth, Ern, Struaghan & Hiott, Inc
(Use Certified Mail,
Return Receipt Requested)

SECTION 00842
NOTICE TO PROCEED

(Contractor) Date: _____

RE:

Notice to Proceed on Project: **CRITTENDEN STREET RECONSTRUCTION**

BID NO. 2015-07-01

You are notified that the Contract Time under the above contract will commence to run on _____ , 20____. On that date you are to start performing the Work and your other obligations under the Contract Documents. Based on the Contract Time stated in the Agreement, we calculate that the dates of Substantial Completion and Final Completion are _____, 20___, and _____, 20___, respectively.

Work at the site must be started by _____ , 20___ as indicated in the Contract Documents.

Enclosed is one set of Drawings and one copy of the Project Manual containing:

Instruction to Bidders
Bid Form
Bid Bond
Executed Agreement
Payment Bond
Performance Bond
Forms
Certificates of Insurance
General Conditions
Supplementary Conditions
Notice to Award
Specifications
Addenda Numbers ___ through___
General Requirements

OWNER:	BY:
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____ Acknowledge Receipt of Notice

Copy to Booth, Ern, Straughan & Hiott, Inc.
(Use Certified Mail,
Return Receipt Requested)

END OF SECTION

SECTION 00843
CHANGE ORDER FORM

PROJECT: _____

_____

CHANGE ORDER NO. _____

DATE OF ISSUANCE:_____

CONTRACTOR:_____

EFFECTIVE DATE:_____

ENGINEER: Booth, Ern, Straughan & Hiott, Inc.

The following changes are hereby made to the Contract Documents:

CHANGE IN CONTRACT PRICE:	CHANGE IN CONTRACT TIMES:
Original Contract Price $_____	Original Contract Times Substantial Completion:_____ Ready for final payment:_____ days or dates
Net changes from previous Change Orders _____	Net change from previous Change Orders _____ days
Contract Price prior to this Change Order $_____	Contract Times prior to this Change Order Substantial Completion:_____ Ready for final payment:_____ days or dates
Net Increase (decrease) of this Change Order $_____	Net Increase (decrease) of this Change Order _____ days
Contract Price with all approved Change Orders $_____	Contract Times with all approved Change Orders Substantial Completion:_____ Ready for final payment:_____ days or dates

CHANGES ORDERED:

I. GENERAL This change order is necessary to cover changes in the work to be performed under this Contract. The General Conditions, Supplementary Conditions, Specifications and all parts of the Project Manual listed in Article 1, Definitions, of the General Conditions apply to and govern all work under this change order.

Change Order No._____

II. REQUIRED CHANGES: _____

_____

._____

._____

_____

_____

_____

_____

_____

_____

III. JUSTIFICATION:_____

_____

_____

_____

_____

_____

_____

_____

_____

IV. PAYMENT: _____

_____

_____

_____

_____

_____

_____

V. APPROVAL AND CHANGE AUTHORIZATION: _____

_____

_____

_____

_____

_____

_____

Acknowledgments:

The aforementioned change, and work affected thereby, is subject to all provisions of the original contract not specifically changed by this Change Order; and,

It is expressly understood and agreed that the approval of the Change Order shall have no effect on the original contract other than matters expressly provided herein.

Change Order Request by: _____

Change(s) Ordered by: _____

RECOMMENDED BY:	ACCEPTED BY:
Booth, Ern, Straughan & Hiott, Inc.	_____
(Engineer)	(Contractor)
By:_____ _____	_____ _____
(Authorized Signature) (Date)	(Authorized Signature) (Date)
_____	_____
(Title)	(Title)

APPROVED BY:

City of Groveland
(Owner)

By:_____ _____
Name & Title (Date)

By:_____ _____
_____, Clerk (Date)

END OF SECTION

SECTION 00844

APPLICATION AND CERTIFICATE FOR PAYMENT FORM

Application No._____ Progress_____ Final_____

Engineer's Project No.: 151014.0002

Project: **CITY OF GROVELAND, CRITTENDEN STREET RECONSTRUCTION**

Contractor:_____Contract Date:_____

Contract for:_____

Application Date:_____For Period Ending_____

Change Order Summary			
Change Orders approved in previous months by OWNER TOTAL		ADDITIONS	DEDUCTIONS
Approved this month			
Number	Date Approved		
	TOTALS		
Net Change by Change Orders			

1. ORIGINAL CONTRACT SUM$_____
2. Net Change by Change Order $_____
3. CONTRACT SUM TO DATE (Line 1 and 2) $_____
4. TOTAL COMPLETED AND STORED TO DATE $_____
5. RETAINAGE: (Column I & N, Forms 00845 and 00846)
   a. _____% of Completed Work $_____
   b. _____% of Stored Material $_____
   Total Retainage (Line 5a and 5b) $_____
6. TOTAL EARNED LESS RETAINAGE
   (Line 4 less Line 5 Total) $_____
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT
   (Line 6 from prior Certificate) $_____
8. AMOUNT DUE THIS APPLICATION $_____
9. BALANCE TO FINISH, PLUS RETAINAGE $_____
   (Line 3 less Line 6)

Contractor's Certification

The undersigned Contractor hereby swears under penalty of perjury that (1) all previous progress payments received from the Owner on account of Work performed under the contract referred to above have been applied by the undersigned to discharge in full all obligations of the undersigned incurred in connection with Work covered by prior Applications for Payment numbered 1 through _____ inclusive; and (2) all materials and equipment incorporated in said Project or otherwise listed in or covered by this Application for Payment are free and clear of all liens, claims, security interest and encumbrances; (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and not defective as that term is defined in the Contract Documents.

Dated _____, 20__ _____
(Contractor)

By:_____
(Name & Title)

COUNTY OF_____ STATE OF_____

Before me on this _____ day of _____, 20____, personally appeared _____, known to me, who being duly sworn, deposes and says that (s)he is the _____ of the Contractor above mentioned; that(s) he executed the above Application for Payment and statement on behalf of said Contractor; and that all of the statements contained therein are true, correct and complete.

_____
Notary Public
Commission Expiration_____

Engineer's Recommendation

Payment of the above AMOUNT DUE THIS APPLICATION is recommended.

Booth, Ern, Straughan & Hiott, Inc.

By:_____ Date:_____
(Authorized Signature)

Owner's Approval

By:_____ _____
(Title)

Acct. No._____ Date:_____

END OF SECTION

SECTION 00845

SCHEDULE OF VALUES

Pay Estimate No. _____ Project: _____

For Period Ending: _____ Prepared by:_____ Page_____of ____

Item	Description	Bid Quantity	Units	Unit Price	Bid Amount	Complete Through Last Period		Complete Through This Period		Value of Items Completed
						Qty.	%	Qty	%	

SECTION 00846
MATERIALS STORED ON SITE

Pay Estimate No. _____ Project: _____ Date Prepared _____

For Period Ending: _____ Prepared by:_____ Page_____of ____

ITEM	DESCRIPTION	VALUE LAST PERIOD			(-) VALUE MAT'L INSTALLED			(+) VALUE MAT'L DELIVERED			VALUE THIS PERIOD		
		QTY.	UNIT PRICE	INVOICE AMOUNT	QTY	UNIT PRICE	INVOICE AMOUNT	QTY.	UNIT PRICE	INVOICE AMOUNT	QTY.	UNIT PRICE	INVOICE AMOUNT

SECTION 00847
SHOP DRAWING SUBMITTAL FORM

Owner: _____

Specification No.: _____
Project: _____

Contractor: _____

FOR BESH USE ONLY
DATE RECEIVED _____
DATE RETURNED _____

BESH
Project No.: 151014.0002

Owner's
Project No.: _____

Contractor's
Submittal No.: _____

Contractor's
Project No.: _____

Resubmittal Yes _____ No _____

ITEM NO	SPEC. SECTION	NO. COPIES	VENDOR	DESCRIPTION	ENGINEER'S ACTION

ACTION CODE (As defined in the General Conditions)

A APPROVED
AN APPROVED AS NOTED
AR AMEND AND RESUBMIT
R REJECTED

SUBMITTED BY:_____
Contractor

DATE:_____

ENGINEER'S COMMENTS:

_____

_____

_____

_____

Distribution
- Contractor ___ Copies
- Owner ___ Copies
- BESH Office ___ Copies
- BESH Subconsultant ___ Copies
- BESH Field ___ Copies

Discipline Review:

_____
Reviewed By Date

Discipline Review:

_____
Reviewed By Date

_____
Project Manager Date

SECTION 00848
CERTIFICATE OF SUBSTANTIAL COMPLETION

OWNER'S Project No.: _____ ENGINEER'S Project No.: 151014.0002

CRITTENDEN STREET RECONSTRUCTION

BID NO. 2015-07-01

CONTRACTOR _____

Contract For _____ Contract Date _____

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof.

To _____
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 its does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract documents. When this Certification applies to a specified part of the Work the items in the tentative list shall be completed or corrected by CONTRACTOR within ____ days of the above date of Substantial Completion.

The date of Substantial Completion is the date upon which all guarantees and warranties begin, except as follows:

_____

The responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities and insurance shall be as follows:

RESPONSIBILITIES:

OWNER_____

_____

_____

CONTRACTOR_____

_____

_____

The following documents are attached to and made a part of this Certificate:

_____

Executed by ENGINEER on_____, 20 _____.

Booth, Ern, Straughan & Hiott, Inc._____ By _____
(Engineer)

The CONTRACTOR accepts this Certificate of Substantial Completion on:

_____, 20___.

_____ By _____
(Contractor)

END OF SECTION

SECTION 00849

PARTIAL RELEASE OF LIEN

PROJECT: **CITY OF GROVELAND, CRITTENDEN STREET RECONSTRUCTION**

MATERIAL SUPPLIER/SUBCONTRACTOR:

KNOW ALL MEN BY THESE PRESENTS**,** THAT THE UNDERSIGNED IN CONSIDERATION OF PAYMENT IN THE SUM OF $_____ RECEIPT WHEREOF IS HEREBY ACKNOWLEDGED, AND OTHER VALUABLE CONSIDERATIONS AND BENEFITS TO THE UNDERSIGNED ACCRUING, DO HEREBY WAIVE, RELEASE AND QUIT CLAIM ALL LIENS, LIEN RIGHTS, CLAIMS OR DEMANDS OF EVERY KIND WHATSOEVER WHICH THE UNDERSIGNED NOW HAS, OR MAY HEREAFTER HAVE, AGAINST THAT CERTAIN REAL ESTATE AND THE IMPROVEMENTS THEREON, LEGALLY DESCRIBED AS:

CITY OF GROVELAND, CRITTENDEN STREET RECONSTRUCTION
BID NO. 2015-07-01

ON ACCOUNT OF WORK AND LABOR PERFORMED, AND/OR MATERIALS FURNISHED IN, TO , OR ABOUT THE CONSTRUCTION OF ANY BUILDING OR BUILDINGS SITUATED THEREON, OR IN IMPROVING SAID PROPERTY ABOVE DESCRIBED, OR ANY PART THEREOF.

IT BEING THE UNDERSTANDING OF THE UNDERSIGNED THAT THIS IS A WAIVER AND RELEASE OF LIEN WHICH THE UNDERSIGNED HAS AGAINST THE PREMISES DESCRIBED HEREIN, ONLY TO THE EXTENT OF THE PAYMENTS SPECIFIED AND ONLY FOR MATERIALS FURNISHED OR WORK DONE UP UNTIL _____ THE UNDERSIGNED WARRANTS THAT NO ASSIGNMENT OF SAID LIENS OR CLAIMS, NOR THE RIGHT TO PERFECT A LIEN AGAINST SAID REAL ESTATE, BY VIRTUE OF THE UNDERSIGNED HAS THE RIGHT TO EXECUTE THIS WAIVER AND RELEASE, AND THAT ALL LABORERS EMPLOYED BY THE UNDERSIGNED, AND ALL BILLS FOR MATERIALS AND SUPPLIES FURNISHED BY OTHERS TO THE UNDERSIGNED IN CONNECTION WITH THE CONSTRUCTION OF IMPROVEMENTS UPON THE AFORESAID PREMISES, TO THE EXTENT OF THE PAYMENT HEREIN REFERRED TO, HAVE BEEN FULLY PAID.

IN WITNESS WHEREOF I/WE HAVE EXECUTED THIS INSTRUMENT UNDER SEAL THIS _____ DAY OF _____ , _____ .

_____
COMPANY

BY:_____.
SIGNATURE

(SEAL)

_____
PRINT NAME AND TITLE

STATE OF FLORIDA
COUNTY OF _____

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS _____ DAY OF _____, BY _____ OF_____HE/SHE IS PERSONALLY KNOWN TO ME OR PROVIDED _____ AS IDENTIFICATION AND DID NOT TAKE AN OATH.

_____ _____
SIGNATURE OF NOTARY SERIAL/COMMISSION NUMBER

_____ _____
PRINTED NAME OF NOTARY EXPIRATION DATE

SECTION 00849
FINAL RELEASE OF LIEN

KNOW ALL MEN BY THESE PRESENTS, that _____
for and in consideration of the sum of _____
($_____) paid to _____
by the _____, receipt of which is hereby acknowledged, do(es) hereby release and quit claim to the _____, the Owner, its successors or assigns, all liens, lien rights, claims or demands of any kind whatsoever which

CITY OF GROVELAND, CRITTEDEN STREET RECONSTRUCTION

BID NO. 2015-07-01

thereon or in otherwise improving said property situated as above described.

IN WITNESS WHEREOF _____ have (has) hereunto set _____ hand and seal this _____ day of _____, 20__, A.D.

WITNESS:

_____ (Seal)

SWORN AND SUBSCRIBED TO BEFORE ME THIS _____ day of _____, A.D.

_____

_____
Notary Public
State of Florida-at-Large

My Commission Expires: _____

END OF SECTION

SECTION 00850
FIELD ORDER

[]	OWNER:	_____	No. Copies	____	
[]	ENGINEER:	BESH	No. Copies	____	
[]	ARCHITECT:	_____	No. Copies	____	
[]	CONTRACTOR:	_____	No. Copies	____	FIELD ORDER
[]	OTHER:	_____	No. Copies	____	NO. _____ [ ]

PROJECT DATA
NAME: _____
LOCATION: _____
OWNER: _____
OTHER: _____

CONTRACT DATA
NUMBER: _____
DATE: _____
DRAWING NO_____
SPECIFICATION SECTION: _____

TO: (Contractor)
_____
_____
_____
_____

You are hereby directed to execute promptly this Field Order which interprets the Contract Documents or orders minor changes in the Work without change in Contract Sum or Contract Time.

If you consider that a change in Contract Sum or Contract Time is required, please submit your itemized proposal to the Engineer immediately and before proceeding with this Work. If your proposal is found to be satisfactory and in proper order, this Field Order will in that event by superseded by a Change Order.

Description (of interpretation or change):_____
_____
_____
_____

Attachments (listing of attached documents that support description):

1. Contractor Request for Information No.:_____`
2. _____
3. _____
4. _____
5. _____

Booth, Ern, Straughan & Hiott, Inc. Project No.:_____

By:_____ Date:_____

END OF SECTION

SECTION 00851
CONTRACTOR REQUEST FOR INFORMATION
(RFI)

[]	OWNER: _____	No. Copies	____	
[]	ENGINEER: ___BESH_____	No. Copies	____	CONTRACTOR
[]	ARCHITECT: _____	No. Copies	____	REQUEST FOR
[]	CONTRACTOR:_____	No. Copies	____	INFORMATION
[]	OTHER: _____	No. Copies	____	NO. _____ [ ]

PROJECT DATA **CONTRACT DATA**

NAME: _____ NUMBER:_____
LOCATION: _____ DATE: _____
OWNER: _____ DRAWING NO:_____
OTHER: _____ SPECIFICATION SECTION:_____

QUESTION:

_____
_____
_____
_____
_____
_____
_____

BY:_____ DATE:_____

REPLY:

_____
_____
_____
_____
_____
_____

BY:_____ DATE:_____

END OF SECTION

SECTION 00852
CONSTRUCTION ACCIDENT REPORT

[]	OWNER: _____	No. Copies ____		CONSTRUCTION
[]	ENGINEER: BESH	No. Copies ____		ACCIDENT
[]	ARCHITECT: _____	No. Copies ____		REPORT
[]	CONTRACTOR: _____	No. Copies ____		NO. ____
[]	OTHER: _____	No. Copies ____		

PROJECT DATA

NAME: _____
LOCATION: _____
OWNER: _____
SUBCONTRACTOR: _____

CONTRACT DATA

NUMBER: _____
OWNER: _____
CONTRACTOR: _____
DATE: _____

ACCIDENT INFORMATION

Accident Date: _____ Time: _____

Name(s) of Injured or Deceased: _____

Describe what occurred:

_____
_____
_____
_____

NOTE: Use other side or attach additional sheets as required.

Names & Address of Witnesses:

_____
_____

Employer's Name & Address:

_____
_____

Name and Place of where treatment was provided:

_____
_____

SKETCH

Send original to Project Manager-in charge of Construction **immediately.**

_____
Signed

END OF SECTION

SECTION 00853
PRESSURE TEST

[]	OWNER:	_____	No. Copies	____	PRESSURE
[]	ENGINEER:	BESH	No. Copies	____	TEST
[]	ARCHITECT:	_____	No. Copies	____	NO. ____
[]	CONTRACTOR:	_____	No. Copies	____	
[]	OTHER:	_____	No. Copies	____	

PROJECT DATA

NAME: _____
LOCATION:_____
OWNER: _____
CONTRACTOR:_____
SUBCONTRACTOR: _____

CONTRACT DATA

NUMBER:_____
OWNER:_____
CONTRACTOR:_____
DATE:_____

LOCATION OF TEST: _____

COMPUTATION FOR MEASURED LEAKAGE:

Time-End of Test: _____
Time-Start of Test: _____
Test Time (Minutes): _____

Pressure-End of Test (psi): _____
Pressure-Start of Test (psi): _____
Average Test Pressure (psi): _____

Quantity of Water Required to Return to Original Pressure (gals.)

_____

Computation for Allowable Leakage:

$$L = SD(P^{1/2})(T)/133,200$$

in which:
L = Allowable Leakage During Test Period (gallons)
S = Length of Pipe Tested (feet)
D = Diameter of the Pipe (inches)
P = Specified Test Pressure (psig)
T = Specified Time (hours)

REMARKS:

_____
_____
_____

THE ABOVE TEST (DOES) (DOES NOT) MEET THE SPECIFICATIONS

TEST WITNESS

_____	_____	_____
by Contractor	by Subcontractor	by RPR

END OF SECTION

SECTION 00861
WORK DIRECTIVE FORM

[]	OWNER:	_____	No. Copies	____	WORK
[]	ENGINEER:	BESH	No. Copies	____	DIRECTIVE
[]	ARCHITECT:	_____	No. Copies	____	NO. [ ]
[]	CONTRACTOR:	_____	No. Copies	____	
[]	OTHER:	_____	No. Copies	____	

PROJECT DATA

NAME: _____
LOCATION: _____
OWNER: _____
OTHER: _____

CONTRACT DATA

NUMBER:_____
DATE:_____
DRAWING No:_____
SPECIFICATION SECTION:_____

TO: (CONTRACTOR) _____

You are directed to proceed promptly with the following change(s):

Description:

Purpose of Work Directive 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 and Materials
[] Unit Prices
[] Cost Plus Fixed Fee
[] Other _____

Method of determining change in Contract Time:

[] Contractor's Records
[] Engineer's Records
[] Other _____

RECOMMENDED:

By _____
Engineer

AUTHORIZED:

By_____
Owner

Attachments (listing of attached documents that support description):

1. Contractor Request for Information No.: _____
2. Request for Proposed Change (RFP) No.: _____
3. Other Supporting documents_____

END OF SECTION

SECTION 00862
DAILY CONSTRUCTION REPORT

[]	ENGINEER:	BESH	No. Copies	____	CONSTRUCTION
[]	ARCHITECT:	_____	No. Copies	____	REPORT
[]	CONTRACTOR:	_____	No. Copies	____	DAYS FROM
[]	FIELD:	_____	No. Copies	____	NOTICE TO
[]	OTHER:	_____	No. Copies	____	PROCEED _____

PROJECT DATA

NAME:	_____	DATE:	_____
LOCATION:	_____	NUMBR:	_____
OWNER:	_____	OWNER:	_____
CONTRACTOR:	_____	HCD:	_____
		CONTRACTOR:	_____

---

1. WEATHER

[]	Sunny	[]	Overcast	Temp. Range	Precipitation
[]	Cloudy	[]	Windy	AM _____°F	Type:_____
				PM _____°F	Duration:_____

2. GROUND CONDITIONS

[]	Saturated	[]	Dry	Time Work Started: _____
[]	Frozen	[]	Wet But Workable	Time Work Stopped: _____

3. RECORD OF LABOR

Contractor	Type	No.	Hrs.	Contractor	Type	No.	Hrs.

4. EQUIPMENT

Contractor	Type	Model	Hrs.	Use

5. MATERIAL RECEIVED

Received By	Type	Quantity	Supplier	Use

6. DESCRIPTION OF WORK PERFORMED

END OF SECTION

SECTION 00863
CHANGE PROPOSAL SUMMARY FORM

[]	OWNER	_____	No. Copies	____	CHANGE
[]	ENGINEER:	BESH	No. Copies	____	PROPOSAL
[]	ARCHITECT:	_____	No. Copies	____	SUMMARY
[]	CONTRACTOR:	_____	No. Copies	____	NO. _____
[]	FIELD:	_____	No. Copies	____	
[]	OTHER:	_____	No. Copies	____	

PROJECT DATA

NAME: _____
LOCATION: _____
OWNER: _____
OTHER: _____

CONTRACT DATA

NUMBER: _____
DATE: _____
DRAWING NO: _____
SPECIFICATION SECTION: _____

REFERENCE: Work Directive No. _____ RFP No. _____
Field Order No. _____ Other _____

DESCRIPTION: _____
_____
_____

PRICING INFORMATION

1. DIRECT LABOR	Skill/Trade	Manhours	Rate	Cost
1.A Production Labor	_____	_____	_____	_____
	_____	_____	_____	_____
1.B Supervision		_____	_____	_____
[] Foreman				
[] Superintendent				
1.C. Field Engineering	_____	_____	_____	_____
1.D. Expenses	_____	_____	_____	_____

_____
Subtotal(1)

2. MATERIALS & EQUIPMENT

Description	Quantity	Unit Price	Cost
2.A Incorporated in Work			
2.B Consumed in Performance			
2.C Equipment			
2.D Direct Costs			
2.E Bonds, Insurance			
		Subtotal(2)	

END OF SECTION

SECTION 00864
REQUEST FOR PROPOSAL CHANGE FORM

[]	OWNER	_____	No. Copies	____	CHANGE
[]	ENGINEER:	BESH	No. Copies	____	PROPOSAL
[]	ARCHITECT:	_____	No. Copies	____	SUMMARY
[]	CONTRACTOR:	_____	No. Copies	____	NO. _____
[]	FIELD:	_____	No. Copies	____	
[]	OTHER:	_____	No. Copies	____	

PROJECT DATA

NAME:_____
LOCATION: _____
OWNER: _____
OTHER: _____

CONTRACT DATA

NUMBER: _____
DATE: _____
DRAWING NO: _____
SPECIFICATION SECTION: _____

TO: (Contractor) _____

Please provide the undersigned with a proposal for the following change in the work within twenty-one (21) calendar days after receipt of this request. The written proposal must clearly delineate the scope of the proposed change in work providing an itemized estimate of time and all material and labor (by trade), subcontract and overhead costs and fees. Any amount claimed for subcontracts must be similarly supported.

Description of change in work:

_____
_____
_____
_____
_____
_____

Change Order Type: (Deletion) (Addition) (Revision)

Constraints of Change: _____
_____

Initiated By: _____

Proposal Must Be Received By: _____ (22 Days From Date Below)

Attachments (Listing of attached documents that support description):

1. Contractor Request for Information No.: _____
2. _____
3. _____
4. _____
5. _____

BOOTH, ERN, STRAUGHAN & HIOTT, INC. PROJECT NO.: _____

Issued By: _____ Date: _____

END OF SECTION

SECTION 00865
CHECK OUT FORM

[]	OWNER	_____	No. Copies	____	CHECK-OUT
[]	ENGINEER:	BESH	No. Copies	____	MEMO NO. _____
[]	ARCHITECT:	_____	No. Copies	____	
[]	CONTRACTOR:	_____	No. Copies	____	
[]	FIELD:	_____	No. Copies	____	
[]	OTHER:	_____	No. Copies	____	

PROJECT DATA

NAME: _____
LOCATION: _____
OWNER: _____
OTHER: _____

CONTRACT DATA

NUMBER: _____
DATE: _____
DRAWING NO: _____
SPECIFICATION SECTION: _____

Name of equipment checked:

Name of manufacturer of equipment:

1. The equipment furnished by us has been checked on the job by us. We have reviewed, where applicable, the performance verification information submitted to us by the Contractor.

2. The equipment is properly installed, except for items noted below.*

3. The equipment is operating satisfactorily, except for items noted below.*

4. The written operating and maintenance information, where applicable, has been presented to the Contractor, and been discussed with him in detail. Five (5) copies of all applicable operating and maintenance information and parts lists have been furnished to him.

Checked By:

Name of Manufacturer's Rep.	Name of General Contractor
Address and Phone # of Rep.	Authorized Sig./Title/Date
Sig./Title/Pers. Making Chk.	Name of Subcontractor
Date Checked	Authorized Sig./Title/Date

Manufacturer's Representative Notations: Exceptions noted at time of check were:

_____

_____

_____

_____

Manufacturer's Representative to note adequacy of related equipment that directly affects operation, performance or function of equipment checked. (No comment presented herein will indicate adequacy of related systems or equipment):

_____

_____

_____

_____

END OF SECTION

SECTION 00866
CERTIFICATE OF COMPLETED DEMONSTRATION FORM

[]	OWNER	_____	No. Copies	____	CERTIFICATE
[]	ENGINEER:	BESH	No. Copies	____	OF COMPLETED
[]	ARCHITECT:	_____	No. Copies	____	DEMONSTRATION
[]	CONTRACTOR:	_____	No. Copies	____	MEMO NO. _____
[]	FIELD:	_____	No. Copies	____	
[]	OTHER:	_____	No. Copies	____	

PROJECT DATA

NAME: _____
LOCATION: _____
OWNER: _____
OTHER: _____

CONTRACT DATA

NUMBER: _____
DATE: _____
DRAWING NO: _____
SPECIFICATION SECTION: _____

NOTE TO CONTRACTOR:

Submit five (5) copies of all information listed below for checking at least one (1) week before scheduled demonstration of the Work. After all information has been approved by the Engineer, give the Owner a Demonstration of Completed Systems as specified and have the Owner sign five (5) copies of this form. After this has been done, a written request for a final inspection of the system shall be made.

MEMORANDUM:

This memo is for the information of all concerned that the Owner has been given a Demonstration of Completed Systems on the work covered under this Specification Section. This conference consisted of the system operation, a tour on which all major items of equipment were explained and demonstrated, and the following items were given to the Owner:

(a) Owner's copy of Operation and Maintenance Manual for equipment or systems specified under this Section containing approved submittal sheets on all items, including the following:

(1) Maintenance information published by manufacturer on equipment items.

(2) Printed warranties by manufacturers of equipment items.

(3) Performance verification information as recorded by the Contractor.

(4) Check-Out Memo on equipment by manufacturer's representative.

(5) Written operating instructions on any specialized items.

(6) Explanation of guarantees and warranties on the system.

(b) Prints showing actual "As-Built" conditions.

(c) A demonstration of the system in operation and of the maintenance procedures which will be required.

_____
(Name of General Contractor)

By: _____
(Authorized Signature, Title and Date

_____
(Name of Subcontractor)

By: _____
(Authorized Signature, Title and Date

Operation and Maintenance Manuals, Instruction Prints, Demonstration and Instruction in Operation Received:

_____
(Name of Owner)

By: _____
(Authorized Signature/Title/Date

END OF SECTION

SECTION 01000
PROJECT REQUIREMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. The Work to be done consists of the furnishing of all labor, materials, and equipment, and the performance of all Work included in this Contract.

2. Work Included:

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

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

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

3. Public Utility Installations and Structures:

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

b. The Contract Documents may contain data relative to existing public utility installations and structures above and below the ground surface.

These data are not guaranteed as to their completeness or accuracy and it is the responsibility of the Contractor to make his own investigations to inform himself fully of the character, condition, and extent of all such installations and structures as may be encountered and as may affect the construction operations.

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

d. Public utility installations or structures owned or controlled by the Owner or other governmental body which are shown on the Drawings to be removed, relocated, replaced, or rebuilt by the Contractor shall be considered as a part of the general cost of doing the Work and shall be included in the prices bid for the various Contract Items. No separate payment shall be made therefor.

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

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

g. The Contractor shall give written notice to Owner and other governmental utility departments and other owners of public utilities of the location of his proposed construction operations, at least 48-hours in advance of breaking ground in any area or on any unit of the Work.

h. The maintenance, repair, removal, relocation, or rebuilding of public utility installations and structures, when accomplished by the Contractor as herein provided, shall be done by methods approved by the owners of such utilities.

1.02 DRAWINGS AND PROJECT MANUAL

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

B. Supplementary Drawings:

1. When, in the opinion of the Engineer, it becomes necessary to explain more fully the Work to be done or to illustrate the Work further or to show any changes which may be required, drawings known as Supplementary Drawings, with specifications pertaining thereto, will be prepared by the Engineer, and the Contractor will be furnished one (1) complete set of reproducible black-line bond copies (24 inches by 36 inches) and one (1) reproducible copy of the Project Manual.

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

C. Contractor to Check Drawings and Data:

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

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

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

E. Intent:

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

2. The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and

materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, the interpretation of these Specifications shall be made upon that basis.

1.03 MATERIALS AND EQUIPMENT

A. Manufacturer:

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

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

B. Delivery:

1. The Contractor shall deliver materials in ample quantities to ensure the most speedy and uninterrupted progress of the Work so as to complete the Work within the allotted time.

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

C. Tools and Accessories:

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

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

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

D. Service of Manufacturer's Engineer:

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

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

1.04 INSPECTION AND TESTING

A. General:

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

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

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

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

B. Costs:

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

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

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

C. Certificate of Manufacture:

1. Contractor shall furnish to Engineer authoritative evidence in the form of a certificate of manufacture that the materials to be used in the Work have been manufactured and tested in conformity with the Contract Documents.

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

D. Shop Tests:

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

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

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

E. Start-up Tests:

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

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

F. Demonstration Tests:

1. Prior to Contractor's request for a Substantial Completion inspection, all equipment and piping installed under this Contract shall be subjected to demonstration tests as specified or required to prove compliance with the Contract Documents.

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

1.05 LINES AND GRADES

A. Grade:

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

2. Adjustments of grades shown on Drawings may be necessary to conform to actual field conditions or to maintain cover under proposed future grades. Such adjustments shall be considered part of the job conditions and no extra compensation will be allowed for such changes, except where specifically

otherwise noted in the Drawings or Specifications. Such adjustments must be approved by the Engineer prior to being made.

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

B. Surveys:

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

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

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

C. Safeguarding Marks:

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

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

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01025
MEASUREMENT AND PAYMENT

1.01 GENERAL

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

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

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

1.02 MEASUREMENT

A. The quantities for payment under this Contract shall be determined by actual measurement of the completed items, in place, ready for service and accepted by the Owner, in accordance with the applicable method of measurement therefore contained herein.

1.03 PAYMENT ITEMS

A. Items are as enumerated on the bid form.

1. Item 1 – General Requirements:

   a. Measurement for various items covered under General Requirements will not be made for payment, and all items shall be included in the lump sum price.

   b. Payment for General Requirements shall include all Insurance requirement costs, the cost of bonds, and all Administrative costs. This item will be paid upon each payment request made by the Contractor. The Contractor shall attach with the pay request invoices to substantiate that appropriate insurance and bonds have been obtained by the Contractor.

2. Item 2 – Mobilization/Demobilization:

a. Measurement of various items for Mobilization/Demobilization will not be made for payment, and all items shall be included in the lump sum price.

b. Payment for Mobilization/Demobilization will be made at the Contract lump sum price for the item, which price and payment shall be full compensation for the preparatory work and operations in mobilizing for beginning Work on the project including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site, and for the establishment of field office, building, safety equipment and first aid supplies, sanitary and other facilities, as required by these Specifications, and State and local laws and regulations; and any other preconstruction expense necessary for the start of the Work; the cost of field engineering, permits and fees, construction schedules, shop drawings, temporary facilities, laydown storage area, construction aids, erosion control, work associated with contractor support during Owner/Engineer reviews and inspection, reinspections and any re-work resulting from same, as described in Section 01710: Cleaning; and Section 01720: Project Records Documents. The Contractor shall submit invoices substantiating the cost of mobilization with each pay request. Ten percent of the cost for mobilization will be withheld until substantial completion and site clean-up.

3. Item 3 – Article 8, Indemnification:

a. Payment for Indemnification: In consideration of the Contractor's Indemnity Agreement as set out in the Contract Documents, Owner specifically agrees to give the Contractor the amount listed in the Bid Form and other good and valuable consideration, receipt of which is acknowledged upon signing of the Agreement.

4. Item 4 – City of Groveland Permits (Allowance)

a. Payment shall be for the actual costs for City of Groveland Permit fees only.

5. Item 5 – Office Furnishing (Allowance)

a. Payment shall be for the actual cost of furnishings that will be used in the new office (desks, chairs, shelves, racks, etc.) selected by the Owner that is not specified within these Contract Documents.

6. Item 6 – Material Testing (Allowance)

a. Payment shall be for the actual cost of the material testing as specified in Section 01410 only.

7. Item 7 – Construction of the Eastern Service Area Water Treatment Plant.

a. Payment for the Eastern Service Area WTP will be made at the contract lump sum price, based upon the approved schedule of values and progress payments.

b. This item shall include all materials, equipment, testing, permits,

appurtenances, and work required for the construction of the Eastern Service Area WTP, excluding bid items listed elsewhere and excluding Additive Alternate bid items.

8. Item 8 – All other work not included in Items 1 through 7.

   a. Payment for this item will be made at the contract lump sum price.

END OF SECTION

SECTION 01027
APPLICATIONS FOR PAYMENT

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: Submit Applications for Payment to the Engineer in accordance with schedule established by Conditions of the Contract and Agreement between Owner and Contractor.

B. Related Requirements Described Elsewhere:

1. Construction Progress Schedules: Section 01310.

2. Schedule of Values: Section 01370.

3. Contract Closeout: Section 01700.

4. Project Record Documents: Section 01720.

1.02 FORMAT REQUIRED

A. Submit applications for payment on the Application and Certificate for Payment Form which will be provided by the Engineer. The application shall consist of itemized data typed on 8-1/2 inch x 11 inch or 8-1/2 inch x 14 inch white paper continuation sheets.

B. Provide itemized data on continuation sheets of format, schedules, line items, and values specified on the Application and Certificate for Payment Form. The Contractor shall use the item descriptions and contract values included in schedule of values, approved and accepted by the Engineer as a basis for preparation of the Application for Payment Form.

1.03 PREPARATION OF APPLICATION FOR EACH PROGRESS PAYMENT

A. Application Form:

1. Fill in required information, including that for Change Orders executed prior to date of submittal of application.

2. Fill in percent complete for each activity and dollar values to agree with respective percents.

3. Execute certification with signature of a responsible officer of Contractor.

B. Continuation Sheets:

1. Fill in total list of all scheduled component items of the Work, with item number and scheduled dollar value for each item.

2. Fill in dollar value in each column for each scheduled line item when Work has been performed or products stored. Round off values to nearest dollar, or as specified for Schedule of Values.

3. List each Change Order executed prior to date of submission, at the end of the continuation sheets. List by Change Order Number, and description, as for an original component item of the Work.

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

5. As provided for in the Application and Certificate for Payment Form, the Contractor shall certify, for each current pay request, that all previous progress payments received from the Owner, under this Contract, have been applied by the Contractor to discharge in full, all obligations of the Contractor in connection with Work covered by prior Applications for Payment, and all materials and equipment incorporated into the Work are free and clear of all liens, claims, security interest, and encumbrances. Contractor shall attach to each Application and Certificate for Payment like affidavits by all Subcontractors.

1.04 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

A. Contractor shall submit suitable information, with a cover letter identifying:

1. Project.
2. Application number and date.
3. Detailed list of enclosures.
4. For stored products:
   a. Item number and identification as shown on application.
   b. Description of specific material and manifest.

B. Submit one (1) copy of data and cover letter for each copy of application.

C. The Contractor is to maintain an updated set of drawings to be used as record drawings in accordance with Section 01720: Project Record Documents. As a prerequisite for monthly progress payments, the Contractor is to exhibit the updated record drawings for review by the Owner and the Engineer.

D. Each monthly application for payment shall incorporate the corresponding "monthly progress status report" and updated construction schedule, prepared in accordance with the requirements of Section 01310: Construction Progress Schedules.

E. As a prerequisite for payment, Contractor shall submit a duly executed letter from surety consenting to payment due and progress to date. The Contractor shall also submit partial releases of lien from all subcontractors and suppliers.

1.05 PREPARATION OF APPLICATION FOR FINAL PAYMENT

A. Fill in application form as specified for progress payments. Provide information as required by the General Conditions and Section 01700: Contract Closeout.

B. Furnish evidence of completed operations and insurance in accordance with the General Conditions.

1.06 SUBMITTAL PROCEDURE

A. Submit Applications for Payment to the Engineer at the time stipulated in the Agreement, or as agreed to at the pre-construction meeting. Review the percents complete with the Engineer and resolve any conflicts or discrepancies.

B. Number of copies for each Application for Payment: Five (5) copies plus additional copies for Contractor's needs.

C. When the Engineer finds the Application and Certificate for Payment Form is properly completed and correct, he will execute the Certificate for Payment and transmit the forms to the Owner, with a copy to the Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01050
FIELD ENGINEERING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: Provide and pay for field engineering service for Project.

1. Survey work required in execution of Work.

2. Civil, structural, or other professional engineering services specified or required to execute Contractor's construction methods.

3. The method of field staking for the construction of the Work shall be at the option of the Contractor.

4. The accuracy of any method of staking shall be the responsibility of the Contractor. All engineering for vertical and horizontal control shall be the responsibility of the Contractor.

5. The Contractor shall be held responsible for the preservation of all stakes and marks. If any stakes or marks are carelessly or willfully disturbed by the Contractor, the Contractor shall not proceed with any work until he has established such points, marks, lines, and elevations as may be necessary for the prosecution of the Work.

6. The Contractor shall retain the services of a registered land surveyor licensed in the State of Florida to identify existing control points and maintain a survey during construction.

B. Related Requirements Described Elsewhere:

1. Conditions of the Contract.

2. Summary of Project: Section 01010.

3. Project Record Documents: Section 01720.

1.02 QUALIFICATIONS OF SURVEYOR OR ENGINEER

A. Qualified engineer or registered land surveyor, acceptable to the Owner and the Engineer.

B. Registered professional engineer of the discipline required for the specific service on the Project, currently licensed in the State of Florida.

1.03 SURVEY REFERENCE POINTS

A. 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 replace Project control points which may be lost or destroyed at no additional cost to the Owner. Establish replacement based on original survey control.

1.04 PROJECT SURVEY REQUIREMENTS

A. Establish a minimum of two (2) 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 replacement.

b. Utility slopes and invert elevations.

2. Batter boards for structure.

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.

1.05 RECORDS

A. Maintain a complete, accurate log of all control and survey work as it progresses.

B. At the end of the project, submit a certified site survey at 1 inch equals 20 feet scale on reproducible tracing sheets 24 inches by 36 inches, indicating the building corners and location of all new structures and elevations of stormwater facilities, pavement areas, sidewalks, finished floors, vaults, and above grade piping.

C. At the end of the project, submit a certified survey at the same scale as the Engineer's line drawings indicating elevations and stationing at 100-foot pipe increments and at all valve and fitting locations.

1.06 SUBMITTALS

A. Submit name and address of surveyor and professional engineer to the Engineer.

B. On request of the Engineer, submit documentation to verify accuracy of field engineering work.

C. Submit certificate signed by a registered engineer or surveyor certifying that elevations and locations of improvements are in conformance with the Contract Documents, or if not in conformance, certify as to variances from the Contract Documents.

D. Submit drawings showing locations of all structures constructed. This drawing shall be included with the Project Record Documents.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01065
PERMITS AND FEES

PART 1 - GENERAL

A. The Contractor shall obtain **all** permits and licenses related to his work, including but not limited to, the necessary construction permits except as otherwise provided herein. The Contractor shall also, if in effect and applicable at the date of bid opening, pay any governmental agency charges and inspection fees required for the prosecution of the work. If the Contractor desires connection of utility services (telephone or electricity) to a field office, he will be responsible for securing the necessary permits and any connection or disconnection charges involved.

B. Permits by Owner: The Owner has applied for, or will apply for, permits from the following agencies:

1. Florida Department of transportation Driveway Connection Permit.

C. The Contractor shall adhere to all permit requirements as contained in permits obtained by the Owner.

D. The Contractor shall obtain all permits required for construction that are not listed above.

END OF SECTION

SECTION 01070
ABBREVIATIONS AND SYMBOLS

PART 1 - GENERAL

1.01 STANDARDS AND ABBREVIATIONS

A. Referenced Standards: Any reference to published specifications or standards of any organization or association shall comply with the requirements of the specification or standard which is current on the date of Advertisement for Bids. In case of a conflict between the referenced specifications or standards, the one having the more stringent requirements shall govern.

In case of conflict between the referenced specifications or standards and the Contract Documents, the Contract Documents shall govern.

B. Abbreviations:

AA	Aluminum Association
AAA	American Arbitration Association
AABC	Associated Air Balance Council
AAMA	Architectural Aluminum Manufacturers Association
AASHO	The American Association of State Highway Officials
ABA	American Bar Association
ABMA	American Boiler Manufacturers Association
ABPA	Acoustical and Board Products Association
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AEIC	Association of Edison Illuminating Companies
AFBMA	Anti-Friction Bearing Manufacturers Association
AGA	American Gas Association
AGC	Associated General Contractors of America
AGMA	American Gear Manufacturers Association
AHA	American Hardboard Association
AI	The Asphalt Institute
AIA	American Institute of Architects
AIA	American Insurance Association
AIEE	American Institute of Electrical Engineers (Now IEEE)
AIMA	Acoustical and Insulating Materials Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association
ANSI	American National Standard Institute
APA	American Plywood Association
API	American Petroleum Institute
APWA	American Public Works Association
AREA	American Railway Engineering Association
ARI	American Refrigeration Institute
ASA	American Standards Association (Now ANSI)
ASAHC	American Society of Architectural Hardware Consultants
ASCE	American Society of Civil Engineers

ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASSCBC	American Standard Safety Code for Building Construction
ASSHTO	American Association of State Highway Transportation Officials
ASTM	American Society for Testing and Materials
AWG	American Wire Gauge
AWI	Architectural Woodwork Institute
AWPA	American Wood Preservers Association
AWPB	American Wood Preservers Bureau
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Institute of America (formerly SCPI)
CDA	Copper Development Association
CFS	Cubic Feet Per Second
CMAA	Crane Manufacturers Association of America
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard
DHI	Door and Hardware Institute
DIPRA	Ductile Iron Pipe Research Association
DOT Spec	Standard Specification for Road and Bridge Construction Florida Department of Transportation
E/A	Engineer and/or Architect
EDA	Economic Development Association
EEI	Edison Electric Institute
EPA	Environmental Protection Agency
FCI	Fluid Control Institute
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
Fed Spec	Federal Specification
FPS	Feet Per Second
FS	Federal Standards
GPM	Gallons Per Minute
HMI	Hoist Manufacturers Institute
HP	Horsepower
HSBII	Hartford Steam Boiler Inspection and Insurance Co.
ID	Inside Diameter
IEEE	Institute of Electrical and Electronic Engineers
IFI	Industrial Fasteners Institute
IPCEA	Insulated Power Cable Engineers Association
IPS	Iron Pipe Size
MGD	Million Gallons Per Day
MHI	Materials Handling Institute
MMA	Monorail Manufacturers Association
NBFU	National Board of Fire Underwriters
NBHA	National Builders' Hardware Association
NBS	National Bureau of Standards
NCSA	National Crushed Stone Association
NCSPA	National Corrugated Steel Pipe Association
NEC	National Electrical Code
NECA	National Electrical Contractors' Association
NEMA	National Electrical Manufacturers' Association

NFPA	National Fire Protection Association
NLA	National Lime Association
NPC	National Plumbing Code
NPT	National Pipe Threads
NSC	National Safety Council
NSF	National Sanitation Foundation
OD	Outside Diameter
OSHA	U.S. Department of Labor, Occupational Safety and Health Act
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PS	United States Products Standards
PSI	Pounds per Square Inch
PSIA	Pounds per Square Inch Absolute
PSIG	Pounds per Square Inch Gauge
RPM	Revolutions Per Minute
SAE	Society of Automotive Engineers
SDI	Steel Decks Institute
SJI	Steel Joists Institute
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SSI	Scaffolding and Shoring Institute
SSPC	Steel Structures Painting Council
SSPC	Structural Steel Painting Council
STA	Station (100 feet)
TDH	Total Dynamic Head
TH	Total Head
UBC	Uniform Building Code
UL	Underwriter's Laboratories, Inc.
USASI	United States of America Standards Institute

C. Additional abbreviations and symbols are shown on the Drawings.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01100
SPECIAL PROJECT PROCEDURES

PART 1 - GENERAL

1.01 PIPE LOCATIONS

A. All pipes shall be located substantially as indicated on the Drawings, but the Engineer reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons. Where fittings are noted on the Drawings, such notation is for the Contractor's convenience and does not relieve him from laying and jointing different or additional items where required.

1.02 OPEN EXCAVATIONS

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

1.03 TEST PITS

A. Test pits for the purpose of locating underground pipeline or structures in advance of the construction shall be excavated and backfilled by the Contractor. Test pits shall be backfilled immediately after their purpose has been satisfied and maintained in a manner satisfactory to the Engineer. The costs for such test pits shall be borne by the Contractor.

1.04 JURISDICTIONAL DISPUTES

A. It shall be the responsibility of the Contractor to pay all costs that may be required to perform any of the Work shown on the Drawings or specified herein in order to avoid any work stoppages due to jurisdictional disputes.

1.05 INCLEMENT WEATHER

A. In the event of inclement weather, the Contractor shall, and shall cause subcontractors to protect carefully the Work and materials against damage or injury from the weather. If, in the opinion of the Engineer, any portion of work or materials have been damaged or injured by reason of failure on the part of the Contractor or any subcontractors to so protect the Work, such Work and materials shall be removed and replaced at the expense of the Contractor.

1.06 COORDINATION OF WORK

A. The Contractor shall cooperate fully so as to eliminate or minimize the creation of conflicts. Adjustments from time to time may be required in the Contractor's work location and/or schedule provided a reasonable notice is given by the Owner or Engineer.

1.07 USE OF PUBLIC STREETS

A. The use of public streets and roads shall be such as to provide a minimum of an inconvenience to the public and to other traffic. Any earth or other excavated materials

spilled from trucks shall be removed by the Contractor and the streets and roads cleaned to the satisfaction of the Owner.

1.08 TRAFFIC

A. All safety precautions shall be taken and all traffic controls be furnished satisfactorily to the City, County, Florida Department of Transportation, and/or other government agencies having jurisdiction, where partial or complete obstruction of highways, roadways, streets, drives or sidewalks is required in the performance of the Work.

1.09 CHEMICALS

A. All chemicals used during project construction, or furnished for project operations, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, must show approval of the State Department of Health, Florida Department of Environmental Protection and if required, also the EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with the manufacturer's instructions or recommended use procedures.

1.10 SAFETY AND HEALTH REGULATIONS

A. The Contractor shall comply with the Department of Labor Safety & Health Regulations for construction promulgated under the Occupational Safety & Health Act of 1970, (PL 91-596) and under Section 107 of the Contract Work Hours & Safety Standards Act (PL 91-54).

B. All equipment furnished and installed under this Contract shall comply to Part 1910, Occupational Safety & Health Standards & Amendments thereto.

C. The Contractor shall comply with the Florida Trench Safety Act (90-96, Florida Law).

D. All materials, equipment, and components that come in contact with drinking water or drinking water chemicals shall be in conformance with ANSI/NSF Standard 61.

1.11 STATE AND FEDERAL PERMITS

A. Construction in Florida Department of Transportation rights-of-way, wetlands and navigable water bodies will be governed by applicable State and Federal permits. All conditions set forth on the permits shall be a part of the Contract and they shall be attached by addendum.

1.12 INSPECTION

A. The authorized representatives and agents of the Environmental Protection Agency and Controlling State and Local Pollution Control Agencies shall be permitted to inspect all work, material, payrolls, personnel records, invoices of materials and any other relevant data and records. The Owner and Engineer shall be permitted access to any work area for the inspection of work and materials. The Owner may, at the Contractor's expense, order the uncovering or removal of any finished work if circumstances indicate faulty work or materials were used in the original installation. The Owner and Engineer shall also be permitted to inspect material invoices, payrolls or any other relevant data or records as may be necessary or required to satisfy the requirements of the Contract.

1.13 ENVIRONMENTAL PROTECTION

A. General:

1. Contractor shall comply with all Federal, State and Local laws and regulations controlling pollution of the environment. Contractor shall take necessary precautions to prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, bitumens, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter. In the event of conflict between such laws and regulations and the requirements of the Specifications, the more restrictive requirements shall apply. Environmental protection requirements specified in other Sections shall be considered as supplementing the requirements of this Section.

2. Failure of the Contractor to fulfill any of the requirements of this Section may result in the Owner ordering the stopping of construction operations.

3. Failure on the part of the Contractor to perform the necessary measures to control erosion, siltation, and pollution will result in the Owner notifying the Contractor to take such measures. In the event that the Contractor fails to perform such measures within 24 hours after receipt of such notice, the Owner may stop the Work as provided above, or may proceed to have such measures performed by others. The cost of such work performed by others plus related fees by the Engineer will be deducted from monies due the Contractor on his Contract.

4. All erosion and pollution control features installed by the Contractor shall be acceptably maintained by the Contractor during the time that construction work is being done.

5. Repair or replace damaged or inoperative erosion and pollution control devices as directed by the Engineer or the Owner's Representative.

6. Where there is a high potential for erosion and possible water pollution, the Contractor shall not expose, by his construction methods or procedures, an area of erosive land at any one time larger than the minimum amount required for the proper and efficient construction operation. If the exposure of any incomplete work corresponding to the exposure period required for erosion is anticipated, temporary protective measures shall be taken to prevent the erosion or collapse of land in that immediate construction area.

B. Erosion and Pollution Control Schedule: At or prior to the preconstruction conference, the Contractor shall submit to the Owner for his information, three (3) copies of his erosion and pollution control work schedule. This schedule shall show the time relationship between phases of the Work which must be coordinated to reduce erosion and pollution, and shall describe construction practices and temporary control measures which will be used to minimize erosion and pollution. The schedule shall also show the Contractor's proposed method of erosion control on haul roads and borrow and material pits, and his plan for disposal of waste materials or other sources of pollution. Maps or other documents may also be required to show the proposed final surface gradient of proposed borrow pits, soil type base course pits, and waste areas. No work shall be started until the erosion and pollution control schedules and methods of operations have been submitted to the Owner for his information.

C. Air Pollution Controls:

1. Contractor shall control dust caused by his operations in the construction of the Project, including but not specifically limited to the following:

    a. Clearing, grubbing, and stripping.

    b. Excavation and placement of embankment.

    c. Cement and aggregate handling.

    d. Limerock stabilization.

    e. Use of haul roads.

    f. Sandblasting or grinding.

2. Contractor shall control air pollution from the following causes in constructing the project:

    a. Volatiles escaping from asphalt and cutback materials.

    b. Use of herbicides or fertilizers.

3. Control of dust and other air pollutants by the Contractor shall include:

    a. Exposing the minimum area of land.

    b. Applying temporary mulch with or without seeding.

    c. Use of water sprinkler trucks.

    d. Use of covered haul trucks.

    e. Use of stabilizing agents in solution.

    f. Use dust palliatives and penetration asphalt on temporary roads.

    g. Use of wood chips in traffic and work areas.

    h. Use of vacuum-equipped sandblasting systems.

    i. Use of plastic sheet coverings.

    j. Restricting the application rate of herbicides to recommended dosage. Materials shall be covered and protected from the elements. Application equipment and empty containers shall not be rinsed and discharged so as to pollute a stream, river, lake, pond, water impoundment, or the ground water.

    k. Relay of operations until climate or wind conditions dissipate or inhibit the potential pollutants.

D. Open Burning of Combustible Wastes: No open burning of combustible waste materials or vegetation shall be permitted. All waste materials shall be removed from the site or within public rights-of-way and disposed in a legal manner.

E. Permanent and Temporary Water Pollution Control (Soil Erosion):

1. Sufficient precautions shall be taken during construction to minimize the run-off of polluting substances such as silt, clay, fuels, oils, bitumens, calcium chloride, or other polluting materials harmful to humans, fish, or other life, into the supplies and surface waters of the State. Control measures must be adequate to assure that turbidity in the receiving water will not be increased more than allowed by the State or controlling agency. Such measures may consist of construction of berms, dikes, dams, drains and sediment basins, or use of fiber mats, woven plastic filter cloths, gravel, mulches, quick growing grasses, sod, bituminous spray and other erosion control devices or methods approved by the State or controlling agency.

2. The Contractor shall not be permitted frequent fording of live streams with construction equipment; therefore, temporary bridges or other structures shall be used wherever such crossings adversely affect sediment levels and an appreciable number of stream crossings are necessary.

3. The Contractor shall promptly clear all waterways and drainage patterns of false work, piling, debris, or other obstructions placed during construction work and not a part of the finished work.

4. The Contractor shall remove and dispose of silt accumulations as directed by the Engineer or the Owner's Representative.

5. If new and additional erosion control structures are to be installed, under this project, to prevent possible future erosion as a result of work under this contract, they shall be constructed concurrently with the other work, as early as possible, and as conditions permit.

F. Noise Control: The Contractor shall provide adequate protection against objectionable noise levels caused by the operation of construction equipment in order to comply with all current City ordinances and these Specifications. Sound levels shall be measured at the exterior of the nearest exterior wall of the nearest residence or building. Levels at construction equipment shall not exceed 85 dBA at any time. Sound levels in excess of allowable values are sufficient cause to have the work halted until equipment can be quieted to these levels. Work stoppage by the Engineer or Owner for excessive noise shall <u>not</u> relieve the Contractor of the other portions of this Specification including, but not limited to completion dates and bid amounts.

1.14 TREE AND SHRUB PROTECTION AND TRIMMING

A. Contractor shall exercise care to protect all trees and shrubs designated to remain. Trees and shrubs outside construction limits shall remain and shall be protected and where damaged, restored to original condition. Contractor shall obtain approval from the Owner prior to removing any trees. Trees damaged within construction limits due to negligence shall be restored to original condition.

B. Tree limbs which interfere with construction operations and are approved for pruning shall be neatly cut with sharp pruning instruments; do not break or chop. All cut faces shall be coated with an approved tree pruning compound which is waterproof, antiseptic, elastic and free of kerosene, coal tar, creosote and other substances harmful to plants. Pruning operations shall be extended to restore the natural shape of the entire tree or shrub. Do not allow fires under or adjacent to trees or other plants which are to remain.

C. Contractor shall protect tree and shrub root systems. Do not store construction materials, debris or excavated materials beyond construction limits. Do not permit vehicles or construction equipment beyond the limits of utility line construction. Restrict foot traffic to prevent excessive compaction of soil over root system. Excavated material shall be stockpiled away from tree drip lines as approved by the Engineer. Protect tree and shrub root systems from damage due to noxious materials in solution caused by run-off or spillage during construction operations, or drainage from stored materials. Protect root systems from flooding, erosion or excessive wetting resulting from dewatering operations. Excavate within the drip line of trees only when approved by the Engineer. Where trees are designated to remain within the limits of construction and trenching for utilities is required within tree drip lines, cut roots with sharp pruning instruments; do not break or chop. Paint roots over 2" caliper with approved tree pruning compound.

D. Trees damaged by construction operations shall be repaired promptly after damage occurs to prevent progressive deterioration of damaged trees. Removed trees, branches, roots and other excess materials shall be removed from the construction site to an approved landfill at the expense of the Contractor.

1.15 SITE CLEANUP AND RESTORATION

A. The Contractor shall keep the working area free at all times of tools, materials and equipment not essential to the progress of the Work. Debris, waste materials, and rubbish shall be properly disposed of and not allowed to accumulate. If the Contractor should fail to do this, the Owner will make the necessary arrangements to affect the cleanup by others and will back charge the cost to the Contractor. If such action becomes necessary on the part of and in the opinion of the Owner, the Owner will not be responsible for the inadvertent removal of material which the Contractor would not have disposed of had he affected the required cleanup.

B. Where material or debris has washed or flowed into or been placed in watercourses, ditches, gutters, drains, catch basins, or elsewhere as result of the Contractor's operations, such material or debris shall be entirely removed and satisfactorily disposed of during progress of the Work, and the ditches, channels, drains etc., kept in a clean and neat condition.

C. On or before the completion of the Work, the Contractor shall, unless otherwise especially directed or permitted in writing, tear down and remove all temporary buildings and structures built by him; shall remove all temporary works, tools, and machinery or other construction equipment furnished by him; shall remove, acceptably disinfect, and cover all organic matter and material containing organic matter in, under, and around privies, houses, and other buildings used by him; shall remove all rubbish from any grounds he has occupied; and shall leave the roads and all parts of the premises and adjacent property affected by his operations, in a neat and satisfactory condition.

D. The Contractor shall restore the entire project site to its original or better condition, with the exception of any area(s) designated for alteration by the Contract Documents. The Contractor shall restore or replace; when and as directed, any public or private property damaged by his work, equipment, or employees to a condition at least equal to that existing immediately prior to the beginning of operations. To this end the Contractor shall do as required all necessary highway or driveway, walk, and landscaping work. Suitable materials, equipment, and methods shall be used for such restoration.

E. The Contractor shall thoroughly clean all materials and equipment installed by him and his subcontractors and on completion of the Work shall deliver it undamaged and in fresh and new appearing condition.

1.16 LAWS AND REGULATIONS

A. It shall be the responsibility of the Contractor to give all notices and comply with all the laws, rules, regulations, ordinances, etc., that may be applicable at the time the Work is started on the project. Should the Contractor discover the Drawings or Specifications are contradictory to, or in variance with the above, he shall notify the Engineer immediately, in writing, in order that any required changes or modifications can be made. It is not the Contractor's responsibility to make certain that the Drawings or Specifications are in non-compliance with any of the above; however, should he be aware of any existing discrepancy, or have reason to believe such may exist and performs work without proper notice to the Engineer, the Contractor shall be responsible for any cost involved in making the necessary alterations or corrections.

1.17 CONTRACTOR'S USE OF PREMISES

A. All project construction work will be accomplished on the Owner's property, public rights-of-way or within temporary construction easements and the Contractor shall confine his activity to those designated areas. The Contractor shall not enter upon private property for any reason without securing prior permission from the property owner. Such permission, including any stipulations, shall be in writing and a copy shall be delivered to the Engineer prior to the Contractor's entry or occupation of the subject property. This requirement will be rigidly enforced, particularly with regard to the utilization of vacant areas adjacent to the work site for the storage of materials or parking equipment.

B. The Contractor shall perform his work in such manner that he will not damage adjacent public or private property. Any damage to existing physical structures or utility services shall be repaired or restored promptly at no expense to the Owner.

C. The Contractor shall avoid damage to and preserve all existing vegetation (grass, shrubs, trees, etc.) on or near the work area which do not, within reason, interfere with construction. The Contractor will be responsible for and required to replace or restore all such vegetation damaged or destroyed at no cost to the Owner. The Contractor will also be responsible for any unauthorized cutting or damage to trees, shrubs, etc., and also damage caused by careless operation of equipment, storage of materials and rutting or tracking of grass by equipment.

D. The Contractor shall conduct access, hauling, filling, and storage operations as specified herein and as shown on the Contract Drawings.

1. On-site borrow areas are designated as follows: Suitable material, as approved by Engineer, from excavations for project structures. Any additional borrow material required shall be provided by the Contractor from off-site.

2. On-site spoil areas will become property of the Contractor and are to be disposed off-site.

E. Construct all fill areas so runoff will not flood improved areas.

F. All connections to existing piping systems shall be made as shown or indicated on the Drawings after consultation, cooperation, and coordination with the Owner. Some such connections may have to be made during off-peak hours (late night or early morning

hours). The Contractor shall give a minimum of 72 hours notice to the Owner when tie-ins with the existing plant utilities are required.

G. For major utility pipeline tie-ins and relocations, the Contractor shall submit a detailed Plan of Action for review and approval by the Owner and the Engineer. No major utility relocation or tie-ins shall proceed until the Plan of Action for that Work is approved.

1.18 HAZARDOUS LOCATIONS

A. The Contractor shall be responsible for identification of hazardous locations, appropriate construction methods, and all other safety issues.

1.19 ADDITIONAL PROVISIONS

A. The Contractor shall provide at his own cost all necessary temporary facilities for access to, and for protection of, all existing structures. The Contractor is responsible for all damage to existing structures, equipment, and facilities caused by his construction operations, and must repair all such damage when and as ordered by the Engineer.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01200
PROJECT MEETINGS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. The Contractor shall cooperate and coordinate with the Engineer to schedule and administer the preconstruction meeting, monthly rogress meetings, and specifically called meetings throughout the progress of the Work. The Contractor shall:

   a. Prepare agenda for meetings.

   b. Make physical arrangements for meetings.

2. Representatives of Contractor, subcontractors, and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.

3. The Owner will attend meetings to ascertain that the Work is expedited consistent with Contract Documents and construction schedules.

4. The Contractor shall record the preconstruction meeting and each progress meeting in its entirety, and shall provide the Engineer with a regular cassette or CD copy of such recording, having good quality and clarity, and a typed transcript of the minutes of the meeting.

B. Related Requirements Described Elsewhere:

1. Construction Progress Schedules: Section 01310.

2. Shop Drawings, Working Drawings, and Samples: Section 01340.

3. Project Record Documents: Section 01720.

1.02 PRECONSTRUCTION MEETING

A. Engineer will schedule a preconstruction meeting no later than twenty (20) days after date of Notice to Proceed. The meeting shall be scheduled at the convenience of all parties.

B. Location: A local site, convenient for all parties, designated by the Engineer.

C. Attendance:

1. Owner's representative.

2. Engineer and his professional consultants.

3. Resident project representative.

4. Contractor and his superintendent.

5. Major subcontractors.

6. Representatives of major suppliers and manufacturers as appropriate.

7. Governmental and Utilities representatives as appropriate.

8. Others as requested by the Contractor, Owner, and Engineer.

D. The Engineer shall preside at the preconstruction meeting. Contractor shall provide for keeping minutes and distribution of minutes. The purpose of the preconstruction meeting is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established.

E. The suggested agenda for the preconstruction meeting will include but not be limited to the following:

1. Distribution and discussion of:

   a. List of major subcontractors and suppliers.

   b. Projected schedules.

   c. Schedule of Values.

2. Critical work sequencing: Relationships and coordination with other contracts and/or work and continuing water treatment plant operation.

3. Major equipment deliveries and priorities.

4. Project coordination: Designation and responsible personnel.

5. Procedures and processing of:

   a. Field decisions.

   b. Proposal requests.

   c. Request for Information.

   d. Submittals.

   d. Change Orders.

   f. Applications for Payment.

6. Submittal of Shop Drawings, project data and samples.

7. Adequacy of distribution of Contract Documents.

8. Procedures for maintaining Record Documents

9. Use of premises:

a. Office, work, and storage areas.

b. Owner's requirements.

c. Access and traffic control.

10. Construction facilities, controls, and construction aids.

11. Temporary utilities.

12. Safety and first aid procedures.

13. Check of required Bond and Insurance certifications.

14. Completion time for contract and liquidated damages.

15. Request for extension of Contract Time.

16. Procedures for periodic monthly (or whatever interval is deemed appropriate or necessary, however, a minimum of monthly meetings will be required) progress meetings, for all involved.

17. Security procedures.

18. Procedures for making partial payments.

19. Guarantees on completed work.

20. Equipment to be used.

21. Project layout and staking of work.

22. Project inspection.

23. Labor requirements.

24. Laboratory testing of material requirements.

25. Provisions for material stored on site and monthly inventory of materials stored.

26. Requirements of other organizations such as utilities, railroads, highway departments, building departments.

27. Rights-of-way and easements.

28. Housekeeping procedures.

29. Posting of signs and installation of Project Sign.

30. Pay request submittal dates.

31. Equal opportunity requirements.

1.03 PROGRESS MEETINGS

A. The Engineer shall schedule regular periodic meetings. The progress meetings will be held a minimum of once every thirty (30) days and at other times as required by the progress of the Work. The first meeting shall be held within thirty (30) days after the preconstruction meeting or thirty (30) days or less after the date of Notice to Proceed.

B. Hold called meetings as required by progress of the Work.

C. Location of the meetings: As designated by the Owner.

D. Attendance:

1. Engineer and his professional Subconsultants as needed.

2. Resident Project Representative.

3. Contractor and his Superintendent.

4. Owner's representatives.

5. Subcontractors (active on the site, as appropriate to the agenda).

6. Others as appropriate to the agenda (suppliers, manufacturers, other subcontractors, etc.).

E. The Engineer shall preside at the meetings. Contractor shall provide for keeping minutes and distribution of the minutes. The purpose of the meetings will be to review the progress of the Work.

F. The suggested agenda for the progress meetings will include but not be limited to the following:

1. Review approval of minutes of previous meeting.

2. Review of Work progress since previous meeting and Work scheduled (3-week look ahead schedule).

3. Field observations, problems, 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. Status of Construction Schedule and revisions to the Construction Schedule as appropriate.

8. Progress schedule during succeeding work period.

9. Coordination of schedules.

10. Review status of submittals and submittal schedule, expedite as required.

11. Maintenance of quality standards.

12. Pending changes and substitutions.

13. Shop drawing problems.

14. Review proposed changes for:

    a. Effect on Construction Schedule and on completion date.

    b. Effect on other contracts of the Project.

15. Critical/long lead items.

16. Other business.

G. The Contractor is to attend progress meetings and is to study previous meeting minutes and current agenda items, and be prepared to discuss pertinent topics and provide specific information including but not limited to:

1. Status of all submittals and what specifically is being done to expedite them.

2. Status of all activities behind schedule and what specifically will be done to regain the schedule.

3. Status of all material deliveries, latest contact with equipment manufacturers, and specific actions taken to expedite materials.

4. Status of open deficiencies and what is being done to correct the same.

H. The Contractor is to provide a current submittal log at each progress meeting in accordance with Section 01340: Shop Drawings, Working Drawings, and Samples.

PART 2- PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01310
PROGRESS SCHEDULES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Prepare and submit to the Engineer in accordance with these Specifications, the estimated construction progress schedules demonstrating complete fulfillment of all contract requirements.

2. Submit revised progress schedules on a monthly basis. No partial payments shall be approved until there is an approved construction progress schedule.

1.02 FORM OF SCHEDULES

A. Prepare schedules in the form of a horizontal bar chart.

1. Provide separate horizontal bar for each trade or operation within each structure or item.

2. Horizontal time scale:

a. Show starting and completion dates for each activity in terms of the number of days after Notice to Proceed. All completion dates shown shall be within the period specified for contract completion. The first Schedule developed for approval shall be for the full length of the contract time. Subsequent schedules developed during construction can be modified based upon actual product deliveries and schedule of work.

b. Identify the first work day of each month.

3. Scale and Spacing: To allow space for notations and future revisions.

4. Maximum Sheet Size: 24 inches by 36 inches.

B. Format of Listings: The chronological order of the start of each item of work for each structure.

C. Identification of Listings: By major specification section numbers as applicable and structure.

1.03 CONTENT OF SCHEDULES

A. Construction Progress Schedule:

1. Show the complete sequence of construction by activity.

2. Show the dates for the beginning of, and completion of, each major element of construction in no more than a one (1) week increment scale.

3. Show projected percentage of completion for each item, as of the first day of each month.

4. Show projected dollar cash flow requirements for each month of construction and for each activity as indicated by the approved Schedule of Values.

B. Submittals schedule for Shop Drawings and Samples shall be in accordance with Section 01340: Shop Drawings, Working Drawings, and Samples. Indicate on the Schedule the following:

1. The dates for Contractor's submittals.

2. The dates submittals will be required for Owner-furnished products, if applicable.

C. A typewritten list of all long lead items (equipment, materials, etc.).

D. To the extent that the progress schedule or any revised progress schedule shows anything not jointly agreed upon or fails to show anything jointly agree upon, it shall not be deemed to have been approved by the Engineer. Failure to include any element of work required for the performance of this Contract shall not excuse the Contractor from completing all work required within any applicable completion date, notwithstanding the Engineer's approval of the progress schedule.

1.04 PROGRESS REVISIONS

A. Indicate progress of each activity to date of submission.

B. Show changes occurring since previous submission of schedule:

1. Major changes in scope.

2. Activities modified since previous submission.

3. Revised projections of progress and completion.

4. Other identifiable changes.

C. Provide a narrative report as needed to define:

1. Problem areas, anticipated delays, and the impact on the schedule.

2. Corrective action recommended, and its effect.

3. The effect of changes on schedules of other prime contractors.

1.05 SUBMITTALS

A. Submittal Requirements.

1. Logic network and/or time phased bar chart.

2. Narrative description of the logic and reasoning of the schedule.

B. Time of Submittals.

Within fifteen (15) working days after Notice to Proceed, Contractor shall submit a network diagram describing the activities to be accomplished in the project and their dependency relationships, (predecessor/successor) as well as a tabulated schedule as herein defined. The schedule produced and submitted shall indicate a project completion date on or before the contract completion date.

C. Within ten (10) working days after the conclusion of the Engineer's review period, Contractor shall revise the network diagram as required and resubmit the network diagram and a tabulated schedule produced therefrom. The revised network diagram and tabulated schedule shall be reviewed and accepted or rejected by the Engineer within fifteen (15) working days after receipt. The network diagram and tabulated schedule when accepted by the Engineer shall constitute the project work schedule unless a revised schedule is required due to substantial changes in the work scope, a change in contract time or a recovery schedule is required and requested.

D. Acceptance. The finalized schedule will be acceptable to the Engineer, when in the opinion of the Engineer, it demonstrates an orderly progression of the Work to completion in accordance with the contract requirements. Such acceptance will neither impose on the Engineer responsibility for the progress or scheduling of the Work nor relieve Contractor from full responsibility therefore. The finalized schedule of shop drawing submittals will be acceptable to the Engineer, when in the opinion of the Engineer, it demonstrates a workable arrangement for processing the submittals in accordance with the requirements. The finalized Schedule of Values will be acceptable to the Engineer as to form and content, when in the opinion of the Engineer, it demonstrates a substantial basis for equitably distributing the contract sum. When the network diagram and tabulated schedule have been accepted, The Contractor shall submit to the Engineer five (5) copies of the time-scaled network diagram.

E. Revised Work Schedules. Contractor, if requested by the Engineer, shall provide a revised work schedule if, at any time, the Engineer considers the completion date to be in jeopardy because of "activities behind schedule." The revised work schedule shall include a new diagram and tabulated schedule conforming to the requirements of this section, designed to show how Contractor intends to accomplish the work to meet the completion date. The form and method employed by Contractor shall be the same as for the original work schedule. No payment will be made if activities fall more than two (2) weeks behind schedule and a revised work schedule is not furnished.

F. Schedule Revisions. The Engineer may require Contractor to modify any portions of the work schedule that become infeasible because of "activities behind schedule" or for any other valid reason. An activity that cannot be completed by its original latest completion date shall be deemed to be behind schedule. No change may be made to the sequence, duration or relationships of any activity without approval of the Engineer.

1.06 DISTRIBUTION

A. Distribute copies of the reviewed schedules to:

1. Engineer.

2. Subcontractors.

3. Other concerned parties.

4. Owner (two copies).

B. Instruct recipients to report promptly to the Contractor, in writing, any problems anticipated by the projections shown in the schedules.

1.07 CHANGE ORDERS

A. Upon approval of a change order, the approved changes shall be reflected in the next scheduled revision or update submittal by Contractor.

1.08 SCHEDULE MONITORING

A. At not less than monthly intervals or when specifically requested by Engineer, Contractor shall submit to the Engineer of an updated schedule for those activities that remain to be completed.

B. The updated schedule shall be submitted in the form, sequence, and number of copies requested for the initial schedule.

1.09 PROGRESS MEETINGS

For the bi-weekly progress meeting, Contractor shall submit a three (3) week look-ahead schedule showing all activities in progress, uncompleted or scheduled to be worked during the three weeks. The three (3) weeks include the current week plus the next two (2) weeks. All activities shall be from the approved schedule and must be as shown on the schedule unless behind or ahead of schedule.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01340

SHOP DRAWINGS, WORKING DRAWINGS, AND SAMPLES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. The Contractor shall submit to the Engineer for review and approval, such Shop Drawings, Test Reports, and Product Data on materials and equipment (hereinafter in this Section called Data), and material samples (hereinafter in this Section called Samples) as are required for the proper control of work, including but not limited to those Shop Drawings, Data, and Samples for materials and equipment specified elsewhere in the Specifications and in the Drawings.

2. Within fourteen (14) calendar days after the Effective Date of the Agreement, the Contractor shall submit to the Engineer a complete list of preliminary data on items for which Shop Drawings are to be submitted. Included in this list shall be the names of all proposed manufacturers furnishing specified items. Review of this list by the Engineer shall in no way expressed or implied relieve the Contractor from submitting complete Shop Drawings and providing materials, equipment, etc., fully in accordance with the Contract Documents. This procedure is required in order to expedite final review of Shop Drawings.

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

   a. Submittal description and number assigned.

   b. Date to Engineer.

   c. Date returned to Contractor (from Engineer).

   d. Status of submittal (Approved, Approved as Noted, Amend and Resubmit, and Rejected).

   e. Date of resubmittal and return (as applicable).

   f. Date material release (for fabrication).

   g. Projected date of fabrication.

   h. Projected date of delivery to site.

   i. Status of O&M manuals submittal.

   j. Specification Section.

   k. Drawings sheet number.

B. Related Requirements Described Elsewhere:

1. Construction Progress Schedules: Section 01310.

2. Material and Equipment: Section 01600.

3. Project Record Documents: Section 01720.

4. Operating and Maintenance Data: Section 01730.

1.02 CONTRACTOR'S RESPONSIBILITY

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

B. Determine and verify:

1. Field measurements.

2. Field construction criteria

3. Catalog numbers and similar data.

4. Conformance with Specifications.

C. The Contractor shall furnish the Engineer a schedule of Shop Drawing submittals fixing the respective dates for the submission of shop and working drawings, the beginning and ending of manufacture, testing, and installation of materials, supplies, and equipment. This schedule shall indicate those that are critical to the progress schedule.

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

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

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

1. Date.

2. Project Title and Number.

3. Contractor's name and address.

4. The number of each Shop Drawings, Project Data, and Sample submitted.

5. Notification of Deviations from Contract Documents.

a. The Contractor shall indicate in **bold type** at the top of the cover sheet of submittal of shop drawing if there is a deviation from the Drawings, Specifications, or referenced specifications or codes.

b. The Contractor shall also list any deviations from the Drawings, Specifications, or referenced specifications or codes and identify in green ink prominently on the applicable Shop Drawings.

6. Submittal Log Number conforming to Specification Section Number.

G. The Contractor shall submit six (6) copies of descriptive or product data information and Shop Drawings to the Engineer plus the number of copies which the Contractor requires returned. All blueprint Shop Drawings shall be submitted with one (1) set of mylar reproducibles and the same number of prints as Shop Drawings, plus the number of copies which the Contractor requires returned. The Engineer will review the blueprints and return to the Contractor the set of marked-up mylar reproducibles with appropriate review comments.

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

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

J. The Contractor shall not use Shop Drawings as a means of proposing alternate items to demonstrate compliance with the Drawings and Specifications.

K. Each submittal will bear a stamp indicating that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal. The Contractor stamp shall be similar to the sample given below.

(OWNER'S NAME)
(PROJECT NAME)
(PROJECT NUMBER)

SHOP DRAWING NO.:_____
SPECIFICATION SECTION:_____ DRAWING NO. _____

WITH RESPECT TO THIS SHOP DRAWING OR SAMPLE, I HAVE DETERMINED AND VERIFIED ALL QUANTITIES, DIMENSIONS, SPECIFIED PERFORMANCE CRITERIA, INSTALLATION REQUIREMENTS, MATERIALS, CATALOG NUMBER, AND SIMILAR DATA WITH RESPECT THERETO AND REVIEWED OR COORDINATED THIS SHOP DRAWING OR SAMPLE WITH OTHER SHOP DRAWINGS AND SAMPLES AND WITH THE REQUIREMENTS OF THE WORK AND THE CONTRACT DOCUMENTS.

_____ NO VARIATION FROM CONTRACT DOCUMENTS
_____ VARIATION FROM CONTRACT DOCUMENTS AS SHOWN

(CONTRACTOR'S NAME)
(CONTRACTOR'S ADDRESS)

BY:_____DATE:_____
AUTHORIZED SIGNATURE

NOTE: NOT TO SCALE

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

1.03 ENGINEER'S REVIEW OF SHOP DRAWINGS

A. The Engineer's review of Shop Drawings, Data, and Samples as submitted by the Contractor will be to determine if the items(s) generally conforms to the information in the Contract Documents and is compatible with the design concept. The Engineer's review and exceptions, if any, will not constitute an approval of dimensions, connections, quantities, and details of the material, equipment, device, or item shown.

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

1. As permitting any departure from the Contract Documents.

2. As relieving the Contractor of responsibility for any errors, including details, dimensions, and materials.

3. As approving departures from details furnished by the Engineer, except as otherwise provided herein.

C. If the drawings or schedules as submitted describe variations and show a departure from the Contract Documents which the Engineer finds to be in the interest of the Owner and to be so minor as not to involve a change in Contract Price or contract time, the Engineer may return the reviewed drawings without noting an exception.

D. "Approved As Noted" - Contractor shall incorporate Engineer's comments into the submittal before release to manufacturer. The Contractor shall send a letter to the Engineer acknowledging the comments and their incorporation into the Shop Drawing.

E. "Amend And Resubmit" - Contractor shall resubmit the Shop Drawing to the Engineer. The resubmittal shall incorporate the Engineer's comments highlighted on the Shop Drawing.

F. "Rejected" - Contractor shall correct, revise and resubmit Shop Drawing for review by Engineer.

G. Resubmittals will be handled in the same manner as first submittals. On resubmittals the Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, to revisions other than the corrections requested by the Engineer on previous submissions. The Contractor shall make any corrections required by the Engineer.

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

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.

J. No partial submittals will be reviewed. Submittals not deemed complete will be stamped "Rejected" and returned to the Contractor for resubmittal. Unless otherwise specifically

permitted by the Engineer, make all submittals in groups containing all associated items for:

1. Systems.

2. Processes.

3. As indicated in specific Specifications Sections.

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

K. Only the Engineer shall utilize the color "red" in marking Shop Drawing submittals.

L. Shop drawing and submittal data shall be reviewed by the Engineer for each original submittal and first resubmittal; thereafter review time for subsequent resubmittals shall be charged to the Contractor and the Contractor shall reimburse the Owner for services rendered by the Engineer as specified in the Supplementary Conditions.

1.04 SHOP DRAWINGS

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

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

C. Each Shop Drawing shall be submitted with an 8-1/2" by 11" cover sheet which shall include a title block for the submittal. Each Shop Drawing cover sheet shall have a blank area 3-1/2 inches high by 4-1/2 inches wide, located adjacent to the title block. The title block/cover sheet shall display the following:

1. Project Title and Number.

2. Name of project building or structure.

3. Number and title of the Shop Drawing.

4. Date of Shop Drawing or revision.

5. Name of Contractor and subcontractor submitting drawing.
6. Supplier/manufacturer.

7. Separate detailer when pertinent.

8. Specification title and Section number.

9. Applicable Drawing number.

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

E. For all mechanical and electrical equipment furnished, the Contractor shall provide a list including the equipment name, and address, and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained.

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

G. All manufacturers or equipment suppliers who propose to furnish equipment or products shall submit an installation list to the Engineer along with the required shop drawings. The installation list shall include at least five (5) installations where identical equipment has been installed and has been in operation for a period of at least two (2) years unless specified otherwise in the Specification Section applicable.

1.05 WORKING DRAWINGS

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

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

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

1.06 SAMPLES

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

B. Samples shall be of sufficient size and quantity to clearly illustrate:

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

2. Full range of color, texture, and pattern.

3. A minimum of three (3) samples of each item shall be submitted.

C. Each sample shall have a label indicating:

1. Name of Project.

2. Name of Contractor and subcontractor.

3. Material or equipment represented.

4. Place of origin.

5. Name of producer/supplier and brand (if any).

6. Location in Project.

7. Submittal and specification numbers.

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

D. The Contractor shall prepare a transmittal letter and a description sheet for each shipment of samples. The description sheet shall contain the information required in Paragraphs 1.06B and C above. He shall enclose a copy of the letter and description sheet with the shipment and send a copy of the letter and description sheet to the Engineer. Approval of a sample shall be only for the characteristics or use named in such approval and shall not be construed to change or modify any Contract requirements.

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

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01370
SCHEDULE OF VALUES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Submit to the Engineer a Schedule of Values allocated to the various lump sum portions of the Work, at the Pre-Construction Conference, and as otherwise specified or requested to be submitted earlier as evidence of the Apparent Low Bidder's qualifications.

2. Upon request of the Engineer support the values with data which will substantiate their correctness. The data shall include, but not be limited to quantity of materials, all sub-elements of the activity, and their units of measure.

3. The Schedule of Values shall establish the actual value for each activity of the Work to be completed taken from the Construction Schedule, and shall be used as the basis for the Contractor's Applications for Payment.

B. Related Requirements Described Elsewhere:

1. Conditions of the Construction Contract.

1.02 FORM AND CONTENT OF SCHEDULE OF VALUES

A. Type schedule on 8-1/2 inch x 11 inch white paper. Contractor's standard forms and computer printouts may be considered for approval by the Engineer upon Contractor's request. Identify schedule with:

1. Title of project and location.

2. Owner and purchase order number.

3. Engineer and project number.

4. Name and address of Contractor.

5. Contract designation.

6. Date of submission.

B. Schedule shall list the installed value of the component parts of the Work in sufficient detail to serve as a basis for computing item prices for progress payments during construction.

C. Identify each line item with the number and the title of the respective section of the Specifications.

D. For each major item of the Work, list sub-values of major products or operations under the major item.

E. For the various portions of the Work:

1. The amount for each item shall reflect a total installed cost including a directly proportional amount of the Contractor's overhead and profit.

2. For items on which progress payments will be requested for stored materials, break down the value into:

a. The cost of the materials, delivered and unloaded, with taxes paid. Paid invoices are required for materials. Payment for materials shall be limited to the invoiced amount only.

b. The total installed value.

F. Round off figures to nearest dollar amount.

G. The sum of the costs of all items listed in the schedule shall equal the total Contract Price.

H. For each item which has an installed value of more than $15,000, provide a breakdown of costs to list major products or operations under each item.

1.03 SUBSCHEDULE OF UNIT MATERIAL VALUES

A. Submit a separate schedule of unit prices for materials to be stored on site and for those materials incorporated into the Work for which progress payments will be requested.

B. The unit values for the materials shall be broken down into:

1. Cost of the material, delivered and unloaded at the site, with taxes paid.

2. Copies of paid invoices for component material shall be included with the payment request in which the material first appears.

C. Only materials unique to the project may be billed when stored on site. Materials of standard use such as conduit, wire, small-diameter pipe, steel, etc., shall not be accepted for payment.

D. The installed unit value multiplied by the quantity listed shall equal the cost of that item in the Schedule of Values.

1.04 REVIEW AND RESUBMITTAL

A. After review by Engineer, revise and resubmit Schedule of Values and Schedule of Unit Material Values as required.

B. Resubmit revised schedules in same manner.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01410
TESTING AND TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. The Contractor shall employ and pay for services of an independent testing laboratory to perform soils and concrete testing. The testing laboratory will be selected by the Engineer and shall complete various testing activities as directed by the Engineer; however, the Contractor shall pay for the testing services from an allowance established in Section 00300.

2. Contractor shall cooperate with the laboratory to facilitate the execution of its required services.

B. Related Requirements Described Elsewhere:

1. Conditions of the Contract.

2. Respective section of the Specifications: Certification of products.

3. Each Specification section listed: Laboratory tests required, and standards for testing.

4. Testing laboratory inspection, sampling and testing is required for, but not limited to the following:

a. Excavating, Backfilling, and Compaction.

b. Stabilized Sub-Base.

c. Limerock Base.

d. Asphaltic Concrete Pavement.

e. Cast-in-Place Concrete.

f. Shotcrete.

C. The following schedule defines the responsibilities of various tests.

Test	Notes	Paid for By
Soil Compaction	Pipe Work: every 100 ft. at each lift of compaction minimum. Beneath Structures: each 500 SF each lift of compaction minimum.	Contractor
Settlement Monitoring	As required by testing laboratory	Contractor

Pressure	As specified in Division 15.	Contractor
Bacteriological	As required by local and State agencies.	Contractor
LBR	Each 600 SF of pavement minimum.	Contractor
Asphaltic Concrete Pavement	Per FDOT Specifications	Contractor
Concrete	Slump test each delivery and compression test five cylinders every 50 C.Y. minimum.	Contractor
Shotcrete	Per Section 13205	Contractor

D. Additional Tests: The Contractor shall pay for first tests as specified herein. In the event that first test samples do not meet the applicable material specifications, the Contractor shall take measures to conform the material and equipment to the Specifications. All subsequent tests after the first test required to show compliance with the Specifications shall be paid for by the Contractor. The costs for retesting shall not be deducted from the allowance.

1.02 CONTRACTOR'S RESPONSIBILITIES

A. Cooperate with Owner's personnel and laboratory personnel. Provide access to Work and manufacturer's operations.

B. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other materials mixes which require control by the testing laboratory.

C. Materials and equipment used in the performance of work under this Contract are subject to inspection and testing at the point of manufacturer 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 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.

D. Furnish incidental labor and facilities:

1. To provide access to Work to be tested.

2. To facilitate inspections and tests.

E. Notify Owner a minimum of three (3) working days in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01500
TEMPORARY FACILITIES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: Provide temporary facilities required which shall include but are not necessarily limited to the following:

1. By Contractor:

a. Telephone.

b. Storage sheds.

c. Temporary water service.

d. Temporary sanitary facilities.

e. Temporary electrical service.

f. Contractor's field office.

g. Engineer's field office.

2. By Owner:

a. None.

1.02 TEMPORARY WATER

A. Furnish and install temporary water service for use throughout construction period.

1. Water for construction purposes.

2. Water for other purposes.

a. Testing.

b. Temporary sanitary facilities.

c. Cleaning.

d. Potable water source (separate).

B. Maintain adequate volume of water for all purposes.

C. Water Source:

1. Supplier: City of Groveland

2. Potable water used shall be separately metered and protected with approved

back flow prevention devices. Potable water used will be billed to the Contractor at current utility rates.

D. Maintain strict supervision of use of temporary services.

1. Enforce conformance with applicable codes and standards.

2. Enforce sanitary practices.

3. Prevent waste of water.

4. Prevent abuse of services.

E. Costs of Installation and Operation: Pay costs for water used by all trades, including costs of installation, maintenance, and removal of pipe, meters, and equipment.

F. Requirements of Regulatory Agencies:

1. Pay for permits, fees, and deposits required by governing authorities.

2. Comply with Federal, State and local codes.

1.03 TEMPORARY ELECTRICITY

A. Furnish and install temporary electric power service for construction needs throughout construction period.

1. Power centers for miscellaneous tools and equipment used in construction work.

2. Power for construction equipment.

3. Power for testing and checking equipment.

4. Power for welding units and for other equipment having special power requirements.

5. Power for Contractors, Subcontractors and Owner/Engineer's field offices.

B. Capacity:

1. Adequate electrical service for construction use by all trades during construction period.

2. Notify power company if unusually heavy loads such as welding, and other special power requirements, will be connected.

a. Provide special circuits for heavy load requirements.

b. Do not overload any circuit.

C. Maintain strict supervision of use of temporary services:

1. Enforce conformance with applicable standards.

2. Enforce safe practices.

3. Prevent abuse of services.

D. Costs of Installation and Operation: Pay costs for temporary electrical power used, including costs of installation, meter, maintenance, and removal of temporary services from point of connection.

E. Requirements of Regulatory Agencies:

1. Obtain and pay for permits as required by governing authorities.

2. Comply with applicable codes.

a. National Electrical Code.

b. National Electrical Safety Code.

c. National Fire Protection Association.

d. Federal, State and local codes and utility company regulations.

1.04 TEMPORARY SANITARY FACILITIES

A. Furnish and install temporary sanitary facilities for use throughout construction period.

B. Maintain strict supervision of use of facilities:

1. Enforce conformance with applicable standards.

2. Maintain, service and clean facilities.

3. Enforce proper use of sanitary facilities.

C. Cost of Installation and Operation:

1. Pay costs for temporary sanitary facilities, including costs of installation, maintenance and removal.

2. Costs of Water: As specified in Paragraph 1.02C.2.

3. Pay service charges for use of portable sanitary units.

D. Facility Locations:

1. Within the project site.

2. Drinking Water: Convenient to work stations.

3. Toilet and washing facilities.

a. Secluded from public observation.

b. Convenient for use of personnel in relation to work stations.

4. Obtain acceptance of Engineer and Owner.

E. Requirements of Regulatory Agencies:

1. Obtain and pay for permits as required by governing authorities.

2. Comply with Federal, State, and local codes.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General:

1. Materials may be new or used, but must be adequate for purpose required.

2. At Contractor's option, patented specialty products may be used, in compliance with applicable codes.

2.02 CONTRACTOR'S FIELD OFFICE AND FACILITIES

A. Provide either a separate building or a trailer of adequate floor space for Contractor's use.

B. The trailer shall be weather-tight, have a tight level floor at least 8 inches off the ground, and shall be insulated, have suitable screened ventilation, and a solid door.

C. The Contractor shall locate all temporary construction offices and storage trailers where approved by the Owner and the Engineer.

PART 3 - EXECUTION

3.01 GENERAL

A. Install work in a neat and orderly manner.

B. Make structurally sound throughout.

C. Maintain to provide continuous service.

D. Modify and extend service as work progress requires.

3.02 TEMPORARY WATER

A. Locate piping and outlets.

1. Provide service convenient to work stations.

2. Avoid interference with:

a. Traffic and work areas.

b. Materials handling equipment.

c. Storage areas.

B. Do not run piping on floor or on ground.

C. When necessary to maintain pressure, provide temporary pumps, tanks, and compressors.

3.03 TEMPORARY ELECTRICITY

A. Service and distribution may be overhead or underground.

B. Locate to avoid interference with:

1. Traffic and work areas.

2. Cranes.

3. Material handling equipment.

4. Storage areas.

C. Do not run branch circuits on floor or on ground.

D. Wire all safety devices specified for final operation of equipment.

E. Check operation of safety devices.

3.04 TEMPORARY SANITARY FACILITIES

A. Portable Toilets:

1. Erect securely, and anchor to prevent dislocation or tipping over.

2. Service as often as necessary to prevent accumulation of wastes, and creation of unsanitary conditions.

B. Washing Facilities: Provide faucets, drains and other washing facilities suitable for the type of work requiring washing.

3.05 REMOVAL

A. Completely remove temporary materials and equipment upon completion of construction.

B. Clean, and repair damage caused by installation and restore to specified, or original condition.

END OF SECTION

SECTION 01505
MOBILIZATION

PART I - GENERAL

1.01 DEFINITION AND SCOPE

A. Mobilization shall include the obtaining of all permits, insurance, and bonds; moving onto the site of all plant and equipment; furnishing and erecting plants, temporary buildings, and other construction facilities; all as required for the proper performance and completion of the Work. Mobilization shall include, but not be limited to, the following principal items.

1. Move onto the site all Contractor's materials and equipment required for first month operations.

2. Provide a temporary field office for the Contractor's use.

3. Provide a temporary field office for the Engineer's use.

4. Install temporary construction power, wiring, and lighting facilities.

5. Establish fire protection plan and safety program.

6. Secure construction water supply.

7. Provide on-site sanitary facilities and potable water facilities as required by agencies having jurisdiction.

8. Arrange for and erect Contractor's work and storage yard and employee's parking facilities.

9. Submit all required insurance certificates and bonds.

10. Obtain all required permits.

11. Post all OSHA, EPA, Department of Labor, and all other required notices.

12. Submit a detailed construction schedule acceptable to the Engineer as specified.

13. Submit a schedule of values of the Work.

14. Submit a schedule of submittals.

1.02 DEMOBILIZATION

A. Demobilization is the timely and proper removal of all Contractor owned material, equipment or plant, from the job site and the proper restoration or completion of work necessary to bring the site into full compliance with the Contract Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01568
TEMPORARY EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. The Work specified in this Section consists of designing, providing, maintaining and removing temporary erosion and sedimentation controls as required by applicable rules and regulations and permit conditions.

2. Temporary erosion controls include, but are not limited to, grassing, mulching, netting, and providing interceptor ditches at ends of berms and at those locations which will ensure that erosion during construction will be either eliminated or maintained within acceptable limits.

3. Temporary sedimentation controls include, but are not limited to, silt dams, traps, barriers, and appurtenances at the foot of sloped surfaces which will ensure that sedimentation pollution will be either eliminated or maintained within acceptable limits.

4. Contractor is responsible for providing effective temporary erosion and sediment control measures during construction or until final controls become effective.

B. Related Work Described Elsewhere:

1. Excavation, Backfilling andGrading: Section 02220.

2. Solid Sodding: Section 02822

PART 2 - PRODUCTS

2.01 EROSION CONTROL

A. Sodding is specified in Section 02922.

B. Netting shall be fabricated of material acceptable to the Owner.

2.02 SEDIMENTATION CONTROL

A. Bales shall be clean, seed-free cereal hay type.

B. Netting shall be fabricated of material acceptable to the Owner.

C. Filter stone shall be crushed stone which conforms to Florida Department of Transportation (FDOT) Specifications.

D. Concrete block shall be hollow, non-load bearing type.
E. Concrete shall be exterior grade not less than 1-inch thick.

PART 3 - EXECUTION

3.01 EROSION CONTROL

A. Minimum procedures for grassing are:

1. Scarify slopes to a depth of not less than 6 inches and remove large clods, rock, stumps, roots larger than 1/2 inch in diameter and debris.

2. Sow seed within 24 hours after the ground is scarified with either mechanical seed drills or rotary hand seeders.

3. Apply mulch loosely and to a thickness of between 3/4 inch and 1-1/2 inches.

4. Apply netting over mulched areas on sloped surfaces.

5. Roll and water seeded areas in a manner which will encourage sprouting of seeds and growing of grass. Reseed areas which exhibit unsatisfactory growth. Backfill and seed eroded areas.

3.02 SEDIMENTATION CONTROL

A. Install and maintain silt dams, traps, barriers, and appurtenances as shown on the approved descriptions and working drawings. Hay bales which deteriorate and filter stone which is dislodged shall be replaced.

3.03 PERFORMANCE

A. Should any of the temporary erosion and sediment control measures employed by the Contractor fail to produce results which comply with the requirements of the State of Florida, the Owner or Engineer, the Contractor shall immediately take whatever steps are necessary to correct the deficiency at his own expense.

END OF SECTION

SECTION 01650
START-UP AND DEMONSTRATION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: Demonstrate to Owner and Engineer that the Work functions as a complete and operable system under normal and emergency operating conditions.

B. Contractor shall provide all materials, personnel, equipment and expendables as needed and as specified to perform the required start-up and demonstration tests.

C. Related Work Described Elsewhere:

1. Progress Schedules: Section 01310.

2. Operating and Maintenance Data: Section 01730.

PART 2 - PRODUCTS

2.01 START-UP PLAN

A. Submit for approval by the Engineer a detailed start-up plan outlining the schedule and sequence of all tests and start-up activities, including submittal of checkout forms, submittal of demonstration test procedures, start-up, demonstration and testing, submittal of certification of completed demonstration and training. Start-up and commissioning may not begin until the plan is approved by the Engineer.

PART 3 - EXECUTION

3.01 COMPONENT TEST AND CHECK-OUT

A. Start-up Certification: Prior to system start-up, successfully complete all the testing required of the individual components of the Work. Submit six (6) copies of CHECK-OUT MEMO'S for each individual component or piece of equipment, signed by the Contractor or the subcontractor and the manufacturer's representative. All copies of the Operation and Maintenance Manuals must be provided before start-up may begin. These forms shall be completed and submitted before Instruction in Operation to Owner or a request for initiating any final inspections. Insert one (1) copy of this form into the applicable section of each Operation and Maintenance Manual.

B. Demonstrate to the Engineer and the Owner's representative, that all temporary jumpers and/or bypasses have been removed and that all of the components are operating under their own controls as designated.

C. Coordinate start-up activities with the Owner's operating personnel at the treatment plant site and with the Engineer prior to commencing system start-up.

3.02 START-UP

A. Confirm that all equipment is properly energized, that the valves are set to their normal operating condition and that the flow path through the new Work is unobstructed.

B. Slowly fill each hydrostatic structure in the process flow stream with water.

C. Initiate start-up and training in accordance with and with the use of the plant operation and maintenance manuals.

D. Observe the component operation and make adjustments as necessary to optimize the performance of the Work.

E. Coordinate with Owner for any adjustments desired or operational problems requiring debugging.

F. Make adjustments as necessary.

3.03 START-UP DEMONSTRATION AND TESTING

A. After all Work components have been constructed, field tested, and started up in accordance with the individual Specifications and manufacturer requirements, and after all Check-Out Forms have been completed and submitted, perform the Start-Up Demonstration and Testing. The demonstration period shall be held upon completion of all systems at a starting date to be agreed upon in writing by the Owner or his representative. Prior to beginning the start-up demonstration testing, the Contractor shall submit a detailed schedule of operational circumstances for approval by the Engineer. The schedule of operational circumstances shall describe, in detail, the proposed test procedures for each piece of equipment. Provide similar test procedure forms for each piece of equipment or section of the Work to include all particular aspects and features of that equipment or section of the Work and as specified in the Technical Sections of the Specifications.

B. The Start-Up Demonstration Testing will be conducted for five (5) consecutive days. The Work must operate successfully during the five (5) day testing period in the manner intended. If the Work does not operate successfully, or if the start-up is interrupted due to other contracts, the problems will be corrected and the test will start over from day one. The party causing the interruption will be subject to the assessment of actual damages due to delay.

C. During the start-up demonstration period, operate the Work, instruct designated plant operating personnel in the function and operation of the Work, and cause various operational circumstances to occur. As a minimum, these circumstances will include average and peak daily flows, random equipment or process failures, tank overflows, surcharges, interlocks and bypasses. Demonstrate the essential features of the equipment and its relationship to other equipment. The approved schedule of operational circumstances and Demonstration Test Procedures Forms will be used as the agenda during the Start-Up Demonstration Testing period for all equipment and sections of the Work. Coordination of the demonstration test schedule will be accomplished through the Engineer.

D. Acceptability of the Work's performance will be based on the Work performing as specified under these actual and simulated operating conditions, to provide water treatment facilities functioning as intended and as defined in the Contract Documents. The intent of the start-up demonstration and testing is for the Contractor to demonstrate to the Owner and the Engineer that the Work will function as a complete and operable

system under normal, as well as emergency operating conditions, and is ready for final acceptance.

E. Demonstrate the essential features of all the mechanical systems including, but not limited to, the following as they apply to the Work. Each system shall be demonstrated once only, after completion of testing.

F. Demonstrate the essential features of all electrical and instrumentation systems including, but not limited to, the following as they apply to the work:

1. Electrical systems controls and equipment.

    a. Electrical power equipment.
    b. Motor control centers.
    c. Motor control devices.
    d. Relays.
    e. Special transformers.
    f. Starting devices.

2. Security System.

3. Lighting systems.

4. Panelboards.

    a. Distribution panels.
    b. Lighting panels.
    c. Main panels, power panels.
    d. Switchboard.

5. Wiring devices.

    a. Face plates.
    b. Low-voltage controls.
    c. Outlets: convenience, special purpose.
    d. Switches: regular, time.

G. Upon successful completion of the Start-up, Demonstration and Testing, the Owner's personnel will receive the specified training for each system. Training of the Owner's personnel will not be considered valid unless it takes place using a system that has successfully passed the Start-up, Demonstration and Testing.

H. Upon completion of all specified operator training, the Contractor shall submit to the Engineer six (6) copies of the Certificate of Completed Demonstration Form, for each item of equipment or system in the Work, signed by the Contractor, Subcontractor, Engineer, and the Owner. Insert one (1) copy of this form in the applicable section of each Operation and Maintenance Manual. A sample Certificate of Completed Demonstration Form is provided in Section 00866.

END OF SECTION

SECTION 01700
CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: Comply with requirements stated in Conditions of the Contract and in Specifications for administrative procedures in closing out the Work.

B. Related Requirements Described Elsewhere:

1. Start-Up: Section 01650

2. Cleaning: Section 01710.

3. Project Record Documents: Section 01720.

4. Operating and Maintenance Data: Section 01730.

5. Warranties and Bonds: Section 01740.

1.02 SUBSTANTIAL COMPLETION

A. The Work will not be substantially complete, and Contractor may not request substantial completion inspection unless the following submittals and work is completed:

1. All Operation and Maintenance manuals have been submitted and approved to the requirements of Section 01730.

2. All equipment has been checked-out by the equipment manufacturer and Certificates of Manufacturer's Check-Out have been submitted as required by Section 01650.

3. All start-up and demonstration testing completed and Certificates of Completed Demonstration submitted to the requirements of Section 01650.

4. Project Record Documents are complete and have been submitted and reviewed to the requirements of Section 01720.

5. All training of Owner's personnel completed.

6. All areas to be used and occupied are safe, operable in automatic and complete.

7. All building occupancy certificates have been issued by the appropriate building permitting agency.

8. All painting, finishes, fencing, cleanup, final grading, grassing, planting, sidewalk construction, and paving shall have been completed and are ready for inspection.

9. All deficiencies noted on inspection reports or nonconformances are corrected or the correction plan approved.

B. When the conditions of paragraph 1.02 A. are met the Contractor shall submit to the Engineer:

1. A written notice that he considers the Work, or portion thereof, is substantially complete, and request an inspection.

2. A punchlist of items to be corrected. (Uncompleted work which is not related to the safe, effective, efficient use of the Project may be allowed on the punchlist with the Engineer's approval.)

C. Within a reasonable time after receipt of such notice, the Engineer will make an inspection to determine the status of completion.

D. Should the Engineer determine that the Work is not substantially complete:

1. The Engineer will promptly notify the Contractor in writing, giving the reasons therefor.

2. Contractor shall remedy the deficiencies in the Work and send another written notice of substantial completion to the Engineer.

3. The Engineer will within reasonable time, reinspect the Work. The Contractor will be liable for reinspection fees as described in Paragraph 1.04, herein.

E. When the Engineer finds that the Work is substantially complete, he will:

1. Schedule a walk-through of the facility to include the Owner. Engineer shall determine the completeness of the punchlist and readiness of the facility for occupancy by the Owner.

2. Prepare and deliver to Owner a tentative Certificate of Substantial Completion with the tentative punch list of items to be completed or corrected before final inspection.

3. After consideration of any objections made by the Owner as provided in Conditions of the Contract, and when the 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. Any incomplete work allowed on a punch list must be reinspected upon completion and any deficiencies found will be added to the punch list.

1.03 FINAL INSPECTION

A. Prior to Contractor's request for a final inspection the following submittals and work must be complete:

1. Project Record Documents must be approved.

2. All spare parts and maintenance materials must be suitably delivered to the Owner per the requirements of the Technical Sections of the Specifications.

3. Contractor to submit evidence of compliance with requirements of governing authorities.

B. After satisfying the requirements of Paragraph 1.03 A. and when Contractor considers the Work complete, he shall submit written certification that:

1. Contract Document requirements have been met.

2. Work has been inspected 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. All punchlist items have been corrected or completed and the Work is ready for final inspection.

C. The Engineer will, within reasonable time, make an inspection to verify the status of completion after receipt of such certification.

D. Should the Engineer consider that the Work is incomplete or defective:

1. The Engineer will promptly notify the Contractor in writing, listing the incomplete or defective work.

2. Contractor shall take immediate steps to remedy the stated deficiencies, and send another written certification to the Engineer that the Work is complete.

3. The Engineer will, within a reasonable amount of time, reinspect the Work and the Contractor shall be liable for reinspection fees as described in Paragraph 1.04, herein.

D. When the Engineer finds that the Work is acceptable under the Contract Documents, the Contractor may make closeout submittals.

1.04 REINSPECTION FEES

A. Should the Engineer perform reinspections due to failure of the Work to comply with the claims of status of completion made by the Contractor:

1. Contractor will compensate the Owner for such additional services.

2. Owner will deduct the amount of such compensation from the final payment to the Contractor.

1.05 CONTRACTOR'S CLOSEOUT SUBMITTALS

A. Warranties and Bonds: To requirements of Section 01740.

B. Evidence of Payment and Release of Liens: To requirements of General and Supplementary Conditions.

C. Certificate of Insurance for Products and Completed Operations.

1.06 FINAL ADJUSTMENT OF ACCOUNTS

A. Submit a final statement of accounting to the Engineer.

B. Statement shall reflect all adjustments to the Contract Sum:

1. The original Contract Sum.

2. Additions and deductions resulting from:

a. Previous change orders or written amendments.

b. Allowances.

c. Unit prices.

d. Deductions for uncorrected work.

e. Penalties and bonuses.

f. Deductions for liquidated damages.

g. Deductions for reinspection payments.

h. Other adjustments.

3. Total Contract Sum, as adjusted.

4. Previous payments.

5. Sum remaining due.

C. Engineer will prepare a final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders.

1.07 FINAL APPLICATION FOR PAYMENT

A. Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01710
CLEANING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: Execute cleaning, during progress of the Work and at completion of the Work.

1.02 DISPOSAL REQUIREMENTS

A. 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 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 daily cleaning to keep the Work, the site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations or personal activities.

B. Provide on-site containers for the collection of waste materials, debris and rubbish.

C. Remove waste materials, debris and rubbish from the site periodically, or as directed by the Owner, and dispose of at legal disposal areas away from the site.

3.02 DUST CONTROL

A. The Contractor shall employ construction techniques that minimize the production and distribution of dust.

B. Clean interior spaces prior to the start of finish painting and continue cleaning on an as-needed basis until painting is finished.

C. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly-coated surfaces.

3.03 FINAL CLEANING

A. Employ skilled workmen for final cleaning.

B. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.

C. Prior to final completion, or Owner occupancy, Contractor shall conduct an inspection of sight-exposed interior and exterior surfaces and all work areas, to verify that the entire Work is clean.

END OF SECTION

SECTION 01720
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: Maintain at the site for the Owner one (l) record copy of:

1. Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other modifications of the Contract.
5. Engineer's Field Orders or written instructions.
6. Approved Shop Drawings, Working Drawings and Samples.
7. Field test records.

B. Related Requirements Described Elsewhere:

1. Field Engineering: Section 01050.
2. Shop Drawings, Working Drawings and Samples: Section 01340.

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Store documents and samples in Contractor's field office apart from documents used for construction.

1. Provide files and racks for storage of documents.
2. Provide locked cabinet or secure storage space for storage of samples.

B. File documents and samples in accordance with CSI format with section numbers as provided herein.

C. Maintain documents in a clean, dry, legible, condition and in good order. Do not use record documents for construction purposes.

D. Make documents and samples available at all times for inspection by the Engineer or the Owner.

E. As a prerequisite for monthly Progress payments, the Contractor is to exhibit the currently updated "Record Documents" for review by the Engineer and Owner. Payment may be withheld if record documents are not satisfactorily maintained.

1.03 MARKING DEVICES

A. Provide felt tip marking pens for recording information in the color code designated by the Engineer.

1.04 RECORDING

A. Label each document "PROJECT RECORD" with a rubber stamp having one (1) inch high letters.

B. Record information concurrently with construction progress.

1. Do not conceal any work until required information is recorded.

C. Drawings: Legibly and clearly mark, to scale, each drawing to record actual construction:

1. Depths of various elements of foundation in relation to finish first floor datum.

2. All underground piping with elevations and dimensions. Changes to piping location. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements. Actual installed pipe material, class, etc.

3. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.

4. Field changes of dimension and detail.

5. Changes made by Field Order or by Change Order.

6. Details not on original Contract Drawings.

7. Equipment and piping relocations.

8. Major architectural and structural changes including relocation of doors, windows, etc.

9. Architectural schedule changes according to Contractor's records and shop drawings.

D. Specifications and Addenda: Legibly mark each section to record:

1. Manufacturer, trade name, catalog number of Supplier of each product and item of equipment actually installed.

2. Changes made by Field Order or by Change Order.

E. Shop Drawings (after final review and approval): Provide six (6) sets of record shop drawings within the Operation and Maintenance Manual, for each process equipment, piping, electrical system and instrumentation system (see Section 01730).

1.05 SUBMITTAL

A. At Contract closeout, deliver Record Documents to the Engineer for the Owner.

B. Accompany submittal with transmittal letter in duplicate, containing:

1. Date.
2. Project title and number.
3. Contractor's name and address.
4. Title and number of each Record Document.
5. Signature of Contractor or his authorized representative.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED

END OF SECTION

SECTION 01740
WARRANTIES AND BONDS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Related Work Described Elsewhere:

1. Contract Closeout: Section 01700.

1.02 SUBMITTAL REQUIREMENTS

A. Assemble warranties, bonds and service and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.

B. Number of original signed copies required: Two (2) each.

C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.

1. Product of work item.

2. Firm, with name of principal, address and telephone number.

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 or warranty or bond.

7. Contractor, name of responsible principal, address and telephone number.

1.03 FORM OF SUBMITTALS

A. Prepare in duplicate packets.

B. Format:

1. Size 8-1/2 inches by 11 inches, punch sheets for standard three (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 (3) D-ring type binders with durable and cleanable white plastic covers and maximum D-ring width of two (2) inches. Binders shall be presentation type with clear vinyl covers on front, back, and spine. Binders shall include two sheet lifters and two horizontal inside pockets.

1.04 WARRANTY SUBMITTALS REQUIREMENTS

A. For all major pieces of equipment, submit a warranty from the equipment manufacturer. The manufacturer's warranty period shall be concurrent with the Contractor's for one (1) year, unless otherwise specified, commencing at the time of final acceptance by the Owner.

B. The Contractor shall be responsible for obtaining certificates for equipment warranty for all major equipment specified under Divisions 11: Equipment; 13: Special Construction; 15: Mechanical; and 16: Electrical. The Engineer reserves the right to request warranties for equipment not classified as major. The Contractor shall still warrant equipment not considered to be "major" in the Contractor's one-year warranty period even though certificates of warranty may not be required.

C. In the event that the equipment manufacturer or supplier is unwilling to provide a one (1) year warranty commencing at the start of the Correction Period, the Contractor shall obtain from the manufacturer a two (2) year warranty commencing at the time of equipment delivery to the job site. This two (2) year warranty from the manufacturer shall not relieve the Contractor of the one (1) year warranty, starting at the time of Owner's acceptance of the equipment.

D. The Owner shall incur no labor or equipment cost during the guarantee period.

E. Guarantee shall cover all necessary labor, equipment, materials, and replacement parts resulting from faulty or inadequate equipment design, improper assembly or erection, defective workmanship and materials, leakage, breakage or other failure of all equipment and components furnished by the manufacturer or the Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 02050
DEMOLITION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. This Section includes furnishing all labor, materials, equipment and incidentals required for demolition of various existing Park components as shown on the Drawings.

2. This Section provides for the complete or partial removal and disposal of specified existing structures, foundations, slabs, piping, mechanical equipment, electrical systems, and miscellaneous appurtenances encountered during demolition operations.

3. The Contractor shall be responsible for:

   a. Removal and proper disposal of all demolished contents.
   b. Removal and disposal of structures, piping, and equipment as designated on the Drawings.
   c. Termination and plugging of abandoned subsurface piping.
   d. Termination of abandoned electric facilities in accordance with local codes and the NEC.
   e. Termination and plugging of abandoned potable and non-potable water piping.
   f. Site restoration.

4. The Contractor shall examine the various drawings regarding the proposed site, visit the proposed site and determine for himself the extent of the demolition work, the extent work whichever is affected therein and all conditions under which he is required to perform the various operations.

1.02 PERMITS AND NOTICES

A. Permits and Licenses: Contractor shall obtain all necessary permits and licenses for performing the demolition work and shall furnish a copy of same to the Engineer prior to commencing the work. The Contractor shall comply with the requirements of the permits.

B. Notices: Contractor shall issue written notices of planned demolition to companies or local authorities owning utility conduit, wires or pipes running to or through the project site. Copies of said notices shall be furnished to the Engineer.

C. Utility Services: Contractor shall notify in writing utility companies or local authorities furnishing gas, water, electrical, telephone or sewer service to remove any equipment owned by them in structures to be demolished and to remove, disconnect, cap or plug their services to facilitate demolition. Copies of said notices shall be furnished to the Engineer.

1.03 CONDITIONS OF STRUCTURES

A. Conditions existing at the time of inspection for bidding purposes will be maintained by the Owner insofar as practicable. However, variation among the structures may occur prior to the start of demolition work.

1.04 RULES AND REGULATIONS

A. The Standard Building Code shall control the demolition, modification or alteration of the existing buildings or structures.

B. No blasting shall be done on site. The Contractor shall not bring or store any explosives on site.

1.05 DISPOSAL OF MATERIAL

A. Salvageable material shall become the property of the Owner, if the Owner so requests. The Contractor shall dismantle all materials to such a size that it can be readily handled, and deliver any of this salvageable material requested by the Owner to a storage area designated by the Owner.

B. The following materials are examples of the type that the Owner desires to keep:

1. Pipes and valves greater than 1-1/2 inches in diameter.

2. All machinery and equipment.

3. All electric panels.

4. Scrap aluminum or other valuable recyclable metals.

C. Any materials that the Owner rejects shall become the Contractor's property and must be removed from the site.

D. Waste concrete and masonry shall be hauled to a legal disposal site by the Contractor.

E. All other waste metal, wood and other material shall be hauled to a waste disposal site by the Contractor.

F. The storage of or sale of removed items on the site shall not be allowed.

1.06 SUBMITTALS

A. The Contractor shall submit to the Engineers for approval, the proposed demolition and removal plan for the structures and modifications as shown on the Drawings or as specified herein prior to the start of work. The Contractor shall include in the schedule the coordination of shutoff, capping and continuation of utility service as required. The demolition and removal plan shall include as a minimum, the following:

1. A detailed sequence of demolition and removal work to ensure the uninterrupted progress of the Park operations and the expeditious completion of the work.

2. Written evidence of approval by the Owner of the work plan.

3. Sequencing and coordination of the work with inspections and subsequent repairs.

B. Before commencing work, all modifications necessary to bypass the facilities to be demolished shall be completed. Contractor shall coordinate with the Owner's personnel to determine the locations of the relevant valves and fittings.

1.07 TRAFFIC AND ACCESS

A. The Contractor shall conduct demolition and modification operations, and the removal of equipment and debris to ensure minimum interference with roads, streets and walks, both on-site and off-site, and to ensure minimum interference with occupied or used facilities.

B. The Contractor shall direct special attention towards maintaining safe and convenient access to the existing site.

C. Before the necessary closure of any street or sidewalk, the Contractor must obtain all ROW permits from the City of Groveland.

1.09 EXISTING UTILITIES

A. The Contractor shall cooperate with the Owner and utility companies to shut off utilities serving structures of the existing facilities as required by demolition operations.

B. The Contractor shall be solely responsible for making all necessary arrangements and for performing any necessary work involved in connection with the discontinuance or interruption of all public and private utilities or services under the jurisdiction of the County or utility companies.

1.10 POLLUTION CONTROL

A. The Contractor shall use water sprinkling, temporary enclosures, and/or other suitable methods as necessary to limit the amount of dust rising and scattering in the air to the lowest level practical. The Contractor shall comply with the governing regulations governing such nuisances.

B. The Contractor shall clean up all dust, dirt and debris caused by demolition operations. The Contractor shall return all plant and adjacent areas to conditions existing prior to the start of work.

PART 2 - MATERIALS (NOT USED)

PART 3 – EXECUTION

3.01 SEQUENCE OF WORK

A. The sequence of demolition and renovation of existing facilities shall proceed in accordance with the approved demolition and removal plan specified in Paragraph 1.06 of this Section.

3.02 REMOVAL OF EXISTING PROCESS EQUIPMENT, PIPING AND APPURTENANCES

A. Existing equipment, non-buried valving and piping, and appurtenances shall be removed or abandoned in-place as shown or indicated on the Drawings, and as specified herein.

B. All non-buried equipment, piping and appurtenances shall be cleaned. Equipment to be retained by the Owner as specified in Paragraph 1.05, above, shall be dismantled sufficiently to permit thorough cleaning. All valves shall be left open.

3.03 QUALITY CONTROL

A. The Contractor shall protect all existing materials and equipment to be salvaged or reused from damage.

B. The Contractor shall cap or plug all lines to be abandoned as shown on the drawings. The Contractor shall place covers and label all junction boxes, conduits and wire as abandoned.

C. The Contractor shall promptly repair any and all damage caused to remaining facilities at no cost to the Owner.

END OF SECTION

SECTION 02110
CLEARING, GRUBBING, AND STRIPPING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: This Section describes the work included in clearing, grubbing, stripping, and otherwise preparing the project site for construction operations.

B. Related Work Specified Elsewhere:

1. Earthwork: Section 02200.

C. Definitions:

1. Clearing: Remove and dispose of shrubs, brush, limbs, and other vegetative growth. Remove all evidence of their presence from the surface including sticks and branches. Remove and dispose of trash piles and rubbish that currently is scattered over the construction site or collects there during construction. Protect trees, shrubs, vegetative growth, and fencing which are not designed for removal. Clearing operations shall be conducted so as to prevent damage to existing structures and installations, and to those under construction, so as to provide for safety of employees and others.

2. Grubbing: Grubbing shall consist of the complete removal of all stumps, roots larger than 1-1/2 inches in diameter, matted roots, brush, timber, logs, and any other organic or metallic debris remaining after clearing not suitable for foundation purposes, resting on, under or protruding through the surface of the ground to a depth of 18 inches below the subgrade. All depressions excavated below the original ground surface for or by the removal of such objects, shall be refilled with suitable materials and compacted to a density conforming to the surrounding ground surface.

3. Stripping: Remove and dispose of all organics and sod, topsoil, grass, and grass roots, and other objectionable material remaining after clearing and grubbing from the areas designated to be stripped. Grass, grass roots and organic material in areas to be excavated or filled shall be stripped to the depth as noted in the soils report. In areas so designated, topsoil shall be stockpiled. Strippings and other unsuitable material, such as deet, shall be disposed of by the Contractor unless directed otherwise by the Engineer.

PART 2 - MATERIALS

2.01 GENERAL

A. Trees and Shrubbery: Existing designated trees and shrubbery, and other vegetative material is not shown on the Drawings: Inspect the site so as to determine the nature, location, size, and extent of vegetative material to be removed or preserved, as specified herein. Preserve, in place, trees that are specifically shown on the Drawings and designated to be preserved.

B. Preservation of Trees, Shrubs, and Other Plant Material:

1. All plant materials (trees, shrubbery, and plants) beyond the limits of clearing and grubbing shall be saved and protected from damage resulting from the work. No filling, excavating, trenching, or stockpiling of materials will be permitted within the drip line of these plant materials. The drip line is defined as a circle drawn by extending a line vertically to the ground from the outermost branches of a plant or group of plants. To prevent soil compaction within the drip line area, no equipment will be permitted within this area.

2. When trees are close together, restrict entry to area within drip line by fencing. In areas where no fence is erected, the trunks of all trees 2 inches or greater in diameter shall be protected by encircling the trunk entirely with boards held securely by 12-gauge wire and staples. This protection shall extend from ground level to a height of 6 feet. Cut and remove tree branches where such cutting is necessary to affect construction operation. Remove branches other than those required to affect the work to provide a balanced appearance of any tree. Scars resulting from the removal of branches shall be treated with a tree sealant.

PART 3 - EXECUTION

3.01 GENERAL

A. Clearing and Grubbing Limits: All excavation areas associated with new structures, slabs, and roadways shall be cleared and grubbed to the following depths:

1. Roadway and Paved Area: 2 feet below existing grade and replace with compacted backfill.

2. Proposed Structures: 2 feet below existing grade within a 5 foot margin beyond each structure, dimension, and replaced with compacted backfill as specified herein.

3. Building Site Areas not specifically noted above: 2 feet below existing grade and replaced with compacted backfill as specified herein.

4. Ground Storage Tank – Per Section 13205

5. All other areas: 1 foot below completed surface grade.

B. Disposal of Clearing and Grubbing Debris: No burning of combustible materials will be allowed. Remove all cleared and grubbed material from the work site and dispose of at an approved site.

C. Areas to be Stripped: All excavation and embankment areas associated with new structures, slabs, walks, and roadways shall be stripped. Stockpile areas shall be stripped.

D. Disposal of Strippings: Remove all stripped material and dispose off-site, at an approved location unless otherwise directed.

END OF SECTION

SECTION 02200
EARTHWORK

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: This section includes materials, testing, and earthwork for excavations, fills, and embankments.

B. Related Work Specified Elsewhere:

1. Excavation, Backfilling and Compaction: Section 02220.

1.02 SUBMITTALS

A. Submit excavation and shoring drawings for worker protection in accordance with the Section 01340: Shop Drawings, Working Drawings and Samples.

B. Submit six (6) copies of a report from a testing laboratory verifying that any off-site borrow material conforms to the gradation specified.

1.03 TESTING REQUIREMENTS

A. Determination of laboratory moisture-density relationship and maximum density shall be by the Modified Proctor Method of ASTM D-1557. At least one (l) test per soil type shall be made.

B. In place soil density shall be determined either by use of a Nuclear Density Meter per ASTM D-2922 or by use of the Drive Sleeve Method per ASTM D-2937. In place field densities shall be taken at one (l) every 5,000 square feet and at not greater than 1 foot vertical intervals for all fill areas under structures and pavement. One (l) density test is required for each pad or isolated footing and for every 20 linear feet of strip/wall footing length.

C. Compaction shall be deemed to comply with the Specifications when no tests fall below the specified relative compaction. The Contractor shall pay the costs of any retesting of work not conforming to the Specifications.

D. Relative compaction is defined as the ratio, expressed as a percentage, of the in-place density to the laboratory maximum density.

E. Density tests will be made for determination of specified compaction by an independent testing laboratory provided by the Contractor as approved by the Engineer. Tests will be made in locations reviewed and approved by the Engineer. If any tests are unsatisfactory, re-excavate and recompact the fill or backfill until the desired compaction is obtained. Additional compaction tests will be taken to each side of an unsatisfactory test at locations approved by the Engineer to determine the extent of re-excavation and recompaction necessary.

PART 2 - PRODUCTS

2.01 FILL AND BACKFILL

A. Fill and backfill shall be clean, granular sand that is free from organic matter, roots, debris, and rocks larger than three inches in the greatest dimension and having less than 10 percent (10%) passing the No. 200 U.S. sieve size.

B. Water for Compaction: Water shall be free of acid, alkali, or organic materials and shall have a pH of 7.0 to 9.0, a maximum chloride concentration of 500 mg/l, and a maximum sulfate concentration of 500 mg/l. Provide all water needed for earthwork. Provide temporary piping and valves to convey water from the source to the point of use. Provide any meters if the water is taken from a water district or agency pipeline.

PART 3 - EXECUTION

3.01 COMPACTION REQUIREMENTS

A. Unless otherwise specified or shown on the Drawings, compact fill, embankments, and backfills to 95 percent (95%) Modified Proctor Density.

B. Dewatering: Provide and operate equipment adequately to keep excavations and trenches free of water per Section 02140. Remove water during period when concrete is being deposited, when pipe is being laid, during the placing of structural fill and backfill, and for inspection/testing of the structural subgrade. Avoid settlement or damage to adjacent property.

C. Excavation is unclassified. Perform all excavation regardless of the type, nature, or condition of the material encountered to accomplish the construction.

D. Placing and Compacting Fill Material:

1. Excavated material which conforms to the specifications may be used for fill or backfill.

2. Place all materials at optimum moisture content.

3. Compact each lift to the extent specified.

E. Foundation Requirements:

1. All structure foundation bottoms shall be recompacted and retested after excavation to densify soils loosened in the excavation process.

2. Soils placed adjacent to footings or walls shall be carefully compacted to avoid damaging the footing or wall. Approved structural sand fills placed in footing excavations above the bearing level, in trench of pipeline excavations within the structure area plus 10 feet beyond the perimeter walls, and in other areas which are expected to provide slab support and/or foundation embedment constraint shall be placed in loose lifts not exceeding 6 inches.

F. Moisture Control of Earth Material: During the compaction operations, maintain optimum practicable moisture content required for compaction purposes in each lift of the material. Maintain moisture content uniform throughout the lift. Insofar as practicable, add water to the material at the site of excavation. Supplement by sprinkling the

material. At the time of compaction, the water content of the material shall be at optimum water content or within 2 percentage points above optimum. Aerate material containing excessive moisture by blading, discing, or harrowing to hasten the drying process.

G. Site Grading:

1. Perform earthwork to the lines and grades shown on the Drawings. Shape, trim and finish slopes to conform with the lines, grades and cross-sections as shown on the Drawings. Make slopes free of exposed roots and loose rocks exceeding 3 inches in diameter. Round tops of banks to circular curves to not less than a 5 foot radius.

2. Neatly and smoothly trim rounded surfaces. Do not over-excavate and backfill to achieve the proper grade.

3. Final grades shall be within 0.1 foot of the required elevation.

H. Disposal of Excess Excavation: Dispose of excess excavated suitable materials at designated on-site soil areas indicated on the Drawings or directed by the Engineer. If on-site disposal is not indicated or directed by the Engineer, dispose of excess excavated materials off-site. Contractor shall make his own arrangements for the disposal of all excess suitable or unsuitable material and bear all costs incidental to such disposal.

END OF SECTION

SECTION 02210
SITE GRADING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: The work in this section consists of furnishing all necessary labor, equipment, material necessary to bring the project site to the lines and grades shown on the Drawings.

B. The Contractor must determine for himself the volume of material required for the site.

C. Definitions:

1. Open Areas: Open areas shall be those areas that do not include building sites, limerock areas, access road right-of-way and parking areas.

2. Maximum Density: Maximum weight in pounds per cubic foot (pcf) of a specific material.

3. Optimum Moisture: Percentage of water in a specific material at maximum density.

4. Rock Excavation: Excavation of any hard natural substance which requires the use of special impact tools such as, jackhammers, sledges, chisels, or other similar devices specifically designed for use is cutting or breaking rock, but exclusive of trench excavating machinery.

D. Related Work Described Elsewhere:

1. Excavation, Backfilling and Compaction: Section 02220.

1.02 SUBMITTALS

A. Submit six (6) copies of a report from a testing laboratory verifying that off-site borrow material conforms to the gradation specified.

1.03 TESTING REQUIREMENTS

A. Determination of laboratory moisture-density relationship and maximum density shall be by the Modified Proctor Method of ASTM D-1557. At least one (1) test per soil type shall be made.

B. In place soil density shall be determined either by use of a Nuclear Density Meter per ASTM D-2922 or by use of the Drive Sleeve Method per ASTM D-2937. In place field densities shall be taken at one (1) every 5,000 square feet at not greater than 1 foot vertical intervals for all fill areas under structures and pavement. One (1) density test is required for each pad or isolated footing and for every 20 lined feet of strip/wall footing length.

C. Compaction shall be deemed to comply with the Specifications when no tests fall below the specified relative compaction. The Contractor shall pay the costs of any retesting of work no conforming to the Specifications.

D. Relative compaction is defined as the ratio, expressed as a percentage, of the in-place density to the laboratory maximum density.

E. Density tests will be made for determination of specified compaction by an independent testing laboratory provided by the Contractor as approved by the Engineer. Tests will be made in locations reviewed and approved by the Engineer. If any tests are unsatisfactory, re-excavate and recompact the fill or backfill until the specified compaction is obtained. Additional compaction tests will be taken to each side of an unsatisfactory test at locations approved by the Engineer to determine the extent of re-excavation and recompaction necessary.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Suitable: Suitable materials for fills shall be classified as A-1, A-3 or A-2-4 in accordance with AASHTO Designation M-145 and shall be free from vegetation and organic material. Not more than 10 percent (10%) by weight of fill material shall pass the No. 200 sieve. The Contractor shall furnish all additional fill material required.

B. Suitable Material To Be Placed In Water: Suitable material for fills to be placed in water shall be classified as A-l or A-3 in accordance with AASHTO Designation M-145.

C. Unsuitable: Unsuitable materials are classified as A-2-5, A-2-6, A-2-7, A-4, A-5, A-6, A-7 and A-8 in accordance with AASHTO Designation M-145.

D. Water for Compaction: Water shall be free of acid, alkali, or organic materials and shall have a pH of 7.0 to 9.0, a maximum chloride concentration of 500 mg/l, and a maximum sulfate concentration of 500 mg/l. Provide all water needed for earthwork. Provide temporary piping and valves to convey water from the source to the point of use. Provide any meters if the water is taken from a water district or agency pipeline.

PART 3 - EXECUTION

3.01 PERFORMANCE

A. Unless otherwise specified or shown on the Drawings, compact fill, embankments, and backfills to 95 percent (95%) Modified Proctor Density.

B. Excavation:

1. Excavation shall conform to the limits indicated on the plans or specified herein. This work shall included shaping and sloping and other work necessary in bringing the earthwork to the required grade, alignment and cross section.

2. All suitable materials removed from the excavation shall be used as far as practicable in the formation of the embankments, subgrades, shoulders, building sites and other places as directed. No excavated material shall be wasted without permission, and where necessary to waste much material it shall be at

the direction of the Engineer. Unsuitable material shall be removed to the required depth and replaced to the satisfaction of the Engineer with suitable material. Unsuitable material existing in open areas may remain, and these open areas may be used for disposal areas for the unsuitable material as directed by the Engineer.

C. Fills:

1. Fills shall be formed of suitable material placed in layers of not more than 8 inches in depth measured loose and rolled and/or vibrated with suitable equipment until compacted. Thickness of layers may be increased provided the equipment and methods used are proven by field density testing to be capable of compacting thicker layers to specified densities. Layer thickness shall be decreased if equipment and methods used are proven to be incapable of compacting the layers to specified densities.

2. Rock that will not pass through a 6 inch diameter ring shall not be placed within the top 12 inches of the surface of the completed fill. Rock that will not pass through a 3 inch diameter ring shall not be placed within the top 4 inches of the completed fill. Broken concrete or asphaltic pavement shall not be used in fills.

3. Muck or other unsuitable material may be used in areas designated in the drawings or as directed by the Engineer. Muck material used as fill shall be placed in layers of not more than 12 inches in depth measured loose. When dry or as directed by the Engineer, this layer shall be disced and harrowed to break up large pieces of the material placed.

4. Final elevations shall be within 0.1 foot of the required elevation and surfaces shall be sloped to drain as shown on the Drawings.

D. Excess excavation of suitable materials shall become, unless otherwise noted, the property of the Owner and shall be disposed of on-site at an area to be determined by the Owner. The Owner may elect to not keep the material in which case the Contractor shall make arrangements and bear all cost of disposing the material off-site. All unsuitable excess material shall be disposed off-site by the Contractor.

E. Moisture Control of Earth Material: During the compaction operations, maintain optimum practicable moisture content required for compaction purposes in each lift of the material. Maintain moisture content uniform throughout the lift. Insofar as practicable, add water to the material at the site of excavation. Supplement by sprinkling the material. At the time of compaction, the water content of the material shall be at optimum water content or within 2 percentage points above optimum. Aerate material containing excessive moisture by blading, discing, or harrowing to hasten the drying process.

END OF SECTION

SECTION 02212
FINISH GRADING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Finish grade sub-soil.

2. Cut out areas to receive stabilizing base course materials for paving and sidewalks.

3. Place, finish grade and compact topsoil.

B. Related Work Described Elsewhere:

1. Earthwork: Section 02200.

2. Site Grading: Section 02210.

3. Solid and Sodding: Section 02822.

1.02 PROTECTION

A. Prevent damage to existing fencing, trees, landscaping, natural features, bench marks, pavement and utility lines. Correct damage at no cost to the Owner.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Topsoil: Friable loam free from subsoil, roots, grass, excessive amounts of weeds, stones, and foreign matter; acidity ranges (pH) of 5.5 to 7.5; containing a minimum of 4 percent (4%) and a maximum of 25 percent (25%) organic matter. Use topsoil stockpiles on site if conforming to these requirements.

PART 3 - EXECUTION

3.01 SUB-SOIL PREPARATION

A. Rough grade sub-soil systematically to allow for a maximum amount of natural settlement and compaction. Eliminate uneven areas and low spots. Remove debris, roots, branches, stones, etc. Remove sub-soil which has been contaminated with petroleum products.

B. Cut out areas to sub-grade elevations, which are to receive stabilizing base for paving and sidewalks.

C. Bring sub-soil to required levels, profiles, and contours. Make changes in grade gradual. Blend slopes into level areas.

D. Slope grade away from building minimum 2 inches in 10 feet unless indicated otherwise on the Drawings.

E. Cultivate sub-grade to a depth of 3 inches, where topsoil is to be placed. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compact sub-soil.

3.02 PLACING TOPSOIL

A. Place topsoil in areas where seeding, sodding, and planting are to be performed. Place to the following minimum depths, up to finished grade elevations.

1. 6 inches for seeded areas.

2. 4-1/2 inches for sodded areas.

3. 12 inches for shrub beds.

B. Use topsoil in relatively dry state. Place during dry weather.

C. Fine grade topsoil eliminating rough and low areas to ensure positive drainage. Maintain levels, profiles, and contours of sub-grade.

D. Remove stone, roots, grass, weeds, debris and other foreign material while spreading.

E. Manually spread soil around trees, plants, buildings, to prevent damage which may be caused by grading equipment.

F. Lightly compact placed topsoil.

3.03 SURPLUS MATERIAL

A. Remove surplus sub-soil and topsoil from site.

B. Leave stockpile areas and entire job site clean and raked, ready to receive landscaping.

END OF SECTION

SECTION 02220
EXCAVATION, BACKFILLING, AND GRADING

PART I - GENERAL

1.01 DESCRIPTION

A. Scope of Work: The work included under this Section consists of dewatering, excavating, trenching, sheeting/shoring, grading, backfilling, and compacting those soil materials required for the construction of the structures, piping, ditches, utility structures and appurtenances as shown on the Drawings and specified herein.

B. Definitions:

1. Maximum Density: Maximum weight in pounds per cubic foot of a specific material.

2. Optimum Moisture Content: The optimum moisture content shall be determined by ASTM D 1557 specified to determine the maximum dry density for relative compaction. Field moisture content shall be determined on the basis of the fraction passing the 3/4-inch sieve.

3. Rock Excavation: Excavation of any hard natural substance which requires the use of special impact tools such as jack hammers, sledges, chisels or similar devices specifically designed for use in cutting or breaking rock, but exclusive of trench excavating machinery.

4. Suitable: Suitable materials for fills shall be classified as A-1, A-3 or A-2-4 in accordance with AASHTO Designation M-145 and shall be free from vegetation, organic material, marl, silt or muck. Not more than 10 percent (10%) by weight of fill material shall pass the No. 200 Sieve. The Contractor shall furnish all additional fill material required.

5. Unsuitable: Unsuitable materials are classified as A-2-5, A-2-6, A-2-7, A-4, A-5, A-6, A-7, and A-B in accordance with AASHTO Designation M-145.

C. Plan For Earthwork:

1. The Contractor shall be responsible for having determined to his satisfaction, prior to the submission of his bid, the conformation of the ground, the character and quality of the substrata, the types and quantities of materials to be encountered, the nature of the groundwater conditions, the prosecution of the work, the general and local conditions and all other matters which can in any way affect the work under this Contract according to the General Conditions.

2. Prior to commencing the excavation, the Contractor shall submit a plan of his proposed operations to the Engineer for review. The Contractor shall reflect the equipment and methods to be employed in the excavation. Prices established in the Proposal for the work to be done will reflect all costs pertaining to the work. No claims for extras based on substrata or groundwater table conditions will be allowed.

D. Trench Safety Act: The Contractor shall comply with all of the requirements of the Florida Trench Safety Act (Chapter 90-96, CS/CB 2626, laws of Florida). The Contractor

shall acknowledge that included in various items of his bid proposal and in the total bid price are costs for complying with the provisions of the Act. Additionally, the Contractor is required to break out the costs for complying with the Florida Trench Safety Act. FAILURE TO COMPLY WITH THE REQUEST IN THIS SECTION SHALL RESULT IN THE BID BEING DECLARED NONRESPONSIVE. Failure to comply with the provisions of the Act shall result in a per item penalty of $1,000 per day that the work is out of compliance.

1.02 APPLICABLE PUBLICATIONS

A. All publications and standard specifications referred to herein are the latest or current issue of that publication or specification as of the specification date.

1.03 QUALITY ASSURANCE

A. The requirements for testing and laboratory services is specified in Section 01410: Testing and Testing Laboratory Services.

1.04 FEDERAL AND STATE REGULATORY REQUIREMENTS

A. All trench excavations which exceed 4 feet in depth shall comply with the applicable trench safety standards as stated in the OSHA excavation safety standards 29 CFR S. 1926.650 Subpart P as regulated and administered by the Florida Department of Labor and Employment Security as the "Florida Trench Safety Act."

1.05 JOB CONDITIONS

A. If, in the opinion of the Engineer, conditions encountered during construction warrant a change in the footing elevation, or in the depth of removal of unsuitable material from that indicated in the soils report, an adjustment will be made in the contract price, as provided in the General and Special Conditions.

1.06 PROTECTION

A. Pre-Construction Survey:

1. Prior to commencing excavation, backfill or dewatering, the Engineer and Contractor shall jointly conduct a survey of those existing structures which, in the opinion of the Engineer, may be subject to settlement or distress resulting from excavation or dewatering operations.

2. The Engineer will monitor the structures surveyed to ascertain evidence of settlement or distress. If settlement or distress becomes evident the Contractor shall be required to repair the structures to the previous condition to the satisfaction of the Engineer. Costs shall be paid by the Contractor.

1.07 SUBMITTALS

A. Submit to the Engineer for review the proposed methods of construction, including dewatering, excavation, bedding, filling, compaction and backfilling for the various portions of the work. Review shall be for method only. The Contractor shall remain responsible for the adequacy and safety of the methods.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General:

1. All fill material from on and off-site sources shall be subject to the approval of the Engineer.

2. All fill material shall be unfrozen and free of organic material, trash, or other objectionable material. Excess or unsuitable material as designated by the Engineer shall be removed from the job site by the Contractor.

B. Common Fill Material:

1. Common fill shall be sand not containing stones, rock, concrete or other rubble larger than 2 inches in diameter. It shall have physical properties which allow it to be easily spread and compacted.

2. The Contractor shall utilize as much excavated material as possible for reuse in accordance with the contract drawings and specifications or as directed by the Engineer.

3. The Engineer shall direct the Contractor on the type of material allowed in certain sections of the earthwork operations.

C. Structural Fill: Structural fill shall be well graded sand to gravelly sand having the following gradation:

U.S. Sieve Size	Percent Passing By Weight
1 - inch	100
No. 4	75-100
No. 40	15-80
No. 100	0-30
No. 200	0-10

D. Class I Soils[1] : Manufactured angular, granular material, 1/4 to 1-1/2 inches (6 to 40 mm) in size, including materials having significance such as crushed stone or rock, broken coral, crushed slag, cinders, or crushed shells. Sieve analysis for crushed stone is given below separately.

1. Crushed Stone: Crushed stone shall consist of clean mineral aggregate free from clay, loam or organic matter, conforming with ASTM C33 stone size No. 89 and with particle size limits as follows:

U.S. Sieve Size	Percent Passing By Weight
1/2	100
3/8	90-100
No. 4	20-55
No. 8	5-30
No. 16	0-10
No. 50	0-5

E. Class II Soils[2] :

[1] Soils defined as Class I soils are not defined in ASTM D2487.

[2] In accordance with ASTM D2487, less than 5 percent (5%) pass No. 200 sieve.

1. GW: Well-graded gravels and gravel-sand mixtures, little or no fines. 50 percent (50%) or more retained on No. 4 sieve. More than 95 percent retained on No. 200 sieve. Clean.

2. GP: Poorly graded gravels and gravel-sand mixtures, little or no fines. 50 percent (50%) or more retained on No. 4 sieve. More than 95 percent retained on No. 200 sieve. Clean.

3. SW: Well-graded sands and gravelly sands, little or no fines. More than 50 percent (50%) passes No. 4 sieve. More than 95 percent retained on No. 200 sieve. Clean.

4. SP: Poorly graded sands and gravelly sands, little or no fines. More than 50 percent (50%) passes No. 4 sieve. More than 95 percent retained on No. 200 sieve. Clean.

F. Coarse Sand: Sand shall consist of clean mineral aggregate with particle size limits as follows:

U.S. Sieve Size	Percent Passing By Weight
No. 10	100
No. 20	0-30
No. 40	0-5

G. Other Material: All other material, not specifically described, but required for proper completion of the work shall be selected by the Contractor and approved by the Engineer.

PART 3 - EXECUTION

3.01 PREPARATION

A. Clearing and Grubbing:

1. Clearing and grubbing shall be performed in accordance with Section 02110.

2. Strip and dispose of topsoil on-site, unless otherwise directed to stockpile the material by the Engineer

3.02 PROTECTION

A. Sheeting and Bracing:

1. Furnish, put in place, and maintain sheeting and bracing as required to support the sides of excavations, to prevent movement which could in any way diminish the width of the excavation below that necessary for proper construction, and to protect adjacent structures, and to protect workers from hazardous conditions or other damage. Such support shall consist of braced steel sheet piling, braced wood lagging and soldier beams or other approved methods. If the Owner is of the opinion that sufficient or proper supports have not been provided, he may order additional supports be installed at the expense of the Contractor, and compliance with such order shall not relieve or release the Contractor from his

responsibility for the sufficiency of such supports. Care shall be taken to prevent voids beside the sheeting, but if voids are formed, they shall be immediately filled and compacted. Where soil cannot be properly compacted to fill a void, lean concrete shall be used as backfill at no additional expense to the Owner.

2. The Contractor shall construct sheeting outside the neat lines of the foundation unless deemed otherwise for his method of operation. Sheeting shall be plumb and securely braced and tied in position. Sheeting and bracing shall withstand all pressure to which the structure or trench will be subjected. Any deformation shall be corrected by the Contractor at his own expense so as to provide the necessary clearances and dimensions.

3. Where sheeting and bracing is required to support the sides of excavations for structures, the Contractor shall engage a Professional Geotechnical Engineer, registered in the State of Florida, to design the sheeting and bracing. The sheeting and bracing installed shall conform with the design, and certification of this shall be provided by the Professional Geotechnical Engineer.

4. The installation of sheeting, particularly by driving or vibrating, may cause distress to existing structures. The Contractor shall evaluate the potential for such distress and, if necessary, take all precautions to prevent distress of existing structures because of sheeting installation.

5. The Contractor shall leave in place to be embedded in the backfill, all sheeting and bracing not shown on the Drawings but which the Owner directs him in writing to leave in place at any time during the progress of the work for the purpose of preventing injury to structures, utilities, or property, whether public or private. The Owner may direct that timber used for sheeting and bracing be cut off at any specified elevation.

6. All sheeting and bracing not left in place shall be carefully removed in such manner as not to endanger the construction, or other structures, utilities, or property. All voids left or caused by withdrawal of sheeting shall be immediately refilled with sand by ramming with tools especially adapted for that purpose, or otherwise directed by the Owner.

7. The right of the Owner to order sheeting and bracing left in place shall not be construed as creating any obligation on his part to issue such orders, and his failure to exercise his right to do so shall not relieve the Contractor from liability for damages to persons or property occurring from or upon the work occasioned by negligence or otherwise, growing out of a failure on the part of the Contractor to leave in place sufficient sheeting and bracing to prevent any caving or moving of the ground.

8. No wood sheeting is to be withdrawn if driven below mid-diameter of any pipe, and under no circumstances shall any wood sheeting be cut off at a level lower than 1 foot above the top of any pipe.

B. Pumping and Drainage:

1. The Contractor shall at all times during construction provide and maintain proper equipment and facilities to remove all water entering excavations, and shall keep such excavations dry so as to obtain a satisfactory undisturbed subgrade foundation condition until the fills, structures or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged

by allowing water levels to return to natural levels as stipulated in Section 02140. The Contractor shall engage a Professional Geotechnical Engineer registered in the State of Florida, to design the dewatering systems for all structures. The Contractor shall submit to the Engineer for review a plan for dewatering systems prior to commencing work. The installed dewatering system shall be in conformity with the overall construction plan, and certification of this shall be provided by the Professional Geotechnical Engineer. The Professional Geotechnical Engineer shall be required to monitor the performance of the dewatering systems during the progress of the work and require such modifications as may be required to assure that the systems are performing satisfactorily.

2. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at the bottom of the excavation and to preserve the integrity of adjacent structures. Well or sump installations shall be constructed with proper sand filters to prevent intermixing of finer grained soil from the surrounding ground.

3. Water entering the excavation from surface runoff shall be collected in shallow ditches around the perimeter of the excavation, drained to sumps, and pumped from the excavation to maintain a bottom free from standing water.

4. The Contractor shall take all additional precautions to prevent buoyant uplift of any structure during construction.

5. The conveying of dewatered liquids in open ditches or trenches will not be allowed. Permission to use any storm sewers, or drains, for water disposal purposes shall be obtained from the authority having jurisdiction. Any requirements and costs for such use shall be the responsibility of the Contractor. The Contractor shall not cause flooding by overloading or blocking up the flow in the drainage facilities, and he shall leave the facilities unrestricted and as clean as originally found. Any damage to facilities shall be repaired or restored as directed by the Owner or the authority having jurisdiction, at no cost to the Owner.

6. Flotation shall be prevented by the Contractor by maintaining a positive and continuous operation of the dewatering system. The Contractor shall be fully responsible and liable for all damages which may result from failure of this system.

7. Removal of dewatering equipment shall be accomplished after the system is no longer required; the material and equipment constituting the system, shall be removed by the Contractor.

8. The Contractor shall take all necessary precautions to preclude the accidental discharge of fuel, oil, etc. in order to prevent adverse effects on groundwater quality.

C. Utility Protection and Changes - Where public or private utilities are encountered:

1. Maintain, support, and save all public utilities from damage.

2. Allow reasonable time and space for owners of private utilities to cooperate in maintaining their facilities.

3. Excavate test pits:

   a. A minimum of two (2) working days or 500 ft. in advance of construction to determine precise location of obstructions and existing utilities which may effect alignment of the Work.
   b. Size: 3 feet square to the depth required, unless larger pit is required to adequately investigate utility locations.
   c. Prior to excavation, notify the Engineer, and affected utility owners.
   d. Test pits shall include excavation, temporary sheeting, dewatering, backfilling, compaction and pavement replacement.

3.03 EXCAVATION

A. Excavating for Structures and Utilities:

1. Excavation work shall be performed in a safe and proper manner with appropriate precautions being taken against all hazards. Excavations shall provide adequate working space and clearances for the work to be performed therein and for installation and removal of concrete forms. In no case shall excavation faces be undercut for extended footings.

2. Excavation shall be made to such dimensions as will give suitable room for bracing and supporting, for pumping and draining, for installing the pipelines, and for all other work required.

   a. Excavation for precast or prefabricated structures shall be carried to an elevation two (2) feet lower than the proposed outside bottom of the structure to provide space for the backfill material.
   b. Excavation for structures constructed or cast-in-place in dewatered or dry excavations shall be carried down to the 2-feet below the bottom of the structure where dewatering methods are such that a dry evacuation bottom is exposed and the naturally occurring material at this elevation leveled and left ready to receive construction. Material disturbed below the founding elevation in dewatered excavations shall be replaced with Class B concrete.

3. Immediately document the location, elevation, size, material type and function of all new subsurface installations, and utilities encountered during the course of construction.

4. Excavation equipment operators and other concerned parties shall be familiar with subsurface obstructions as shown on the Drawings, and should anticipate the encounter of unknown obstructions during the course of the work.

5. Encounters with subsurface obstructions shall be hand excavated.

6. Excavation and dewatering shall be accomplished by methods which preserve the undisturbed state of subgrade soils. Subgrade soils which become soft, loose, "quick" or otherwise unsatisfactory for support of structures as a result of inadequate dewatering or other construction methods, shall be removed and replaced by crushed stone as required by the Engineer at the Contractor's expense.

7. The bottom of excavations shall be rendered firm and dry before placing any structure or pipe. Excavated material not suitable for backfill shall be removed

from the site and disposed of by the Contractor in a legal manner. The bedding schedule for pipes shall be as shown on the drawings.

8. Excavated material shall be stockpiled in such a manner as to prevent nuisance conditions. Surface drainage shall not be hindered.

9. All structure and pipe locations and elevations as required herein must be permanently documented by the Contractor, on the Record Drawings prior to the Engineer's approval of the Application for Payment for that work.

3.04 DRAINAGE

A. The Contractor shall at all times during construction provide and maintain proper equipment and facilities to remove promptly and dispose of properly all water entering excavations, and keep such excavations dry so as to obtain a satisfactory undisturbed subgrade foundation condition. The dewatering method used shall prevent disturbance of earth below grade.

B. All water pumped or drained from the excavated area shall be disposed of in a suitable manner without undue interference with other work, without damage to surrounding property, and in accordance with pertinent rules and regulations.

C. No construction, including pipe laying, shall be allowed in water. Groundwater shall be maintained at least 12 inches below excavation. No water shall be allowed to come into contact with masonry or concrete within 24 hours after being placed. The Contractor shall constantly guard against damage due to water and take full responsibility for all damage resulting from his failure to do so.

D. The Contractor will be required at his expense to excavate below grade and refill with approved fill material if the Owner determines that adequate drainage has not been provided.

3.05 UNDERCUT

A. If the bottom of any excavation is below that shown on the Drawings or specified because of Contractor error, convenience, or unsuitable subgrade due the Contractor's excavation methods, he shall refill to normal grade with fill at his own cost. Fill material and compaction method shall be as directed by the Engineer.

3.06 STABILIZATION

A. Subgrades for concrete structures and trench bottoms shall be firm dense, and thoroughly compacted and consolidated; shall be free from mud and muck; and shall be sufficiently stable to remain firm and intact.

B. Subgrades for concrete structures or trench bottoms which are otherwise solid, but which becomes mucky on top due to construction operations, shall be reinforced with one or more layers of crushed rock or gravel. Not more than 1/2 inch depth of mud or muck shall be allowed to remain on stabilized trench bottoms when the pipe bedding material is placed thereon. The finished elevation of stabilized subgrades for concrete structures shall not be above subgrade elevations shown on the Drawings.

C. All stabilization work shall be performed by and at the expense of the Contractor.

3.07 FILL AND COMPACTION

A. Materials:

1. To the maximum extent available, excess earth obtained from structure and trench excavation shall be used for the construction of fills and embankments.

2. Materials used as backfill shall be free from rocks or stones larger than 2 inches in their greatest dimension; brush, stumps, logs, roots, debris, and organic or other deleterious materials; and must be acceptable to the Engineer.

3. Backfilling and construction of fills and embankments during freezing weather shall not be done except by permission of the Engineer. No backfill, fill, or embankment materials shall be installed on frozen surfaces, nor shall frozen materials be in any backfill, fill or embankment.

B. Placement and Compaction:

1. Backfill materials shall be placed in approximately horizontal layers not to exceed 8 inches in uncompacted thickness. Material deposited in piles or windrows by excavating and hauling equipment shall be spread and leveled before compaction.

2. Each layer of material being compacted shall have the best practicable uniform moisture content to ensure satisfactory compaction. The Contractor will be required to add water and harrow, disc, blade, or otherwise work the material in each layer to ensure uniform moisture content and adequate compaction. Each layer shall be thoroughly compacted by rolling or other method acceptable to the Engineer to 95 percent of relative density at optimum moisture content as determined by Modified Proctor Method, ASTM D1557, (latest).

3. Whenever a trench passes through a backfill or embankment, material shall be placed and compacted to an elevation 12 inches above the top of the pipe before the trench is excavated.

C. Compact and backfill excavations and construct embankments for structures according to the drawings.

D. Pipe shall be laid in open trenches unless otherwise indicated on the Drawings or elsewhere in the Contract Documents.

E. Excavations shall be backfilled to the original grade or as indicated on the Drawings. Deviation from this grade because of settling shall be corrected. Backfill operation shall be performed to comply with all rules and regulations and in such a manner that it does not create a nuisance or safety hazard.

F. Embankments shall be constructed true to lines, grades and cross sections shown on the plans or ordered by the Owner. Embankments shall be placed in successive layers of not more than 8 inches in thickness, loose measure, for the full width of the embankment. As far as practicable, traffic over the work during the construction phase shall be distributed so as to cover the maximum surface area of each layer.

G. If the Contractor requests approval to backfill material utilizing lifts and/or methods other than those specified herein, such request shall be in writing to the Engineer. Approval will be considered only after the Contractor has performed tests, at the Contractor's

expense, to identify the material used and density achieved throughout the backfill area utilizing the method of backfill requested. The Engineer's approval will be in writing.

H. Foundation Preparation

1. The existing ground beneath proposed tankage, building foundations and equipment base slabs and slabs on grade shall be removed and the area proof-rolled. Proof-rolling should consist of at least 10 passes of a self-propelled vibrator compactor capable of delivering a minimum impact force of 30,000 to 35,000 pounds per drum to the soils. Each pass should overlap the preceding pass by 30 percent (30%) to insure complete coverage. Backfilled areas shall be compacted in 8-inch layers to a density of not less than 95 percent (95%) of Modified Proctor Dry Density as determined by ASTM D1557 (latest) for a depth of not less than 2-feet below the bottom of the foundations or concrete slabs. Any unsuitable foundation material shall be removed and replaced with suitable material.

2. Slabs On Grade: Subgrades for concrete slabs shall be removed, backfilled, and compacted to the required grade. The top 2-feet of concrete slab subgrade in cut sections and all fill material shall be compacted in 8-inch layers to a density of not less than 95 percent of Modified Proctor Dry Density as determined by ASTM D1557, (latest).

3.08 TRENCH EXCAVATION (SEE DRAWINGS FOR DETAIL)

A. The Contractor shall not open more trench in advance of pipe laying than is necessary to expedite the work. Four hundred (400) feet shall be the maximum length of open trench on any line under construction. All trench excavation shall be open cut from the surface.

1. Alignment, Grade, and Minimum Cover: The alignment and grade or elevation of each pipeline shall be fixed and determined from offset stakes. Vertical and horizontal alignment of pipes, and the maximum joint deflection used in connection therewith shall be in conformity with requirements of the section covering installation of pipe.

2. Where pipe grades or elevations are not definitely fixed by the contract drawings, trenches shall be excavated to a depth sufficient to provide a minimum depth of backfill cover over the top of the pipe of 42 inches where in paved or graded streets where surface grades are definitely established and 36 inches in other locations. Greater pipe cover depths may be necessary on vertical curves or to provide necessary clearance beneath existing pipes conduits, drains, drainage structures, or other obstructions encountered at normal pipe grades. Measurement of pipe cover depth shall be made vertically from the outside top of pipe to finished ground or pavement surface elevation.

B. Limiting Trench Widths:

1. Trenches shall be excavated to a width which will provide adequate working space and sidewall clearances for proper pipe installation, jointing, and embedment. However, minimum permissible sidewall clearances between the installed pipe and each trench wall, expressed in inches, shall be as follows:

Pipe Size	Minimum Sidewall Clearance

60	24
54	21
48	19
36 or smaller	12

2. Stipulated minimum sidewall clearances are not minimum average clearances but are minimum clear distances which will be required.

3. Cutting trench banks on slopes to reduce earth load to prevent sliding and caving will be permitted only in areas where the increased trench width will not interface with surface features or encroach on right-of-way limits. Slopes shall not extend lower than one foot above the top of the pipe.

C. Mechanical Excavation:

1. The use of mechanical equipment will not be permitted in locations where its operation would cause damage to trees, buildings, culverts, and other existing property, utilities, or structures above or below ground. In all such locations, hand excavating methods shall be used.

2. Mechanical equipment used for trench excavation shall be of the type, design, and construction, and shall be so operated, that the rough trench excavation bottom elevation can be controlled, that uniform trench widths and vertical sidewalls are obtained at least from an elevation one foot above the top of the installed pipe to the bottom of the trench, and that trench alignment is such that pipe when accurately laid to specified alignment will be centered in the trench with adequate clearance between the pipe and sidewalls of the trench. Undercutting the trench sidewall to obtain clearance will not be permitted.

D. Pavement Cutting:

1. Cuts in concrete pavement, asphalt pavement, and asphalt base pavements shall be no larger than necessary to provide adequate working space for proper installation of pipe and appurtenances. Cutting shall be started with an asphalt or concrete saw in a manner which will provide a clean groove for the full depth of pavement along each side of the trench and along the perimeter of cuts for structures.

2. Asphalt pavement and asphalt base pavement over trenches excavated for pipelines shall be removed so that a shoulder not less than 6 inches in width at any point is left between the cut edge of the pavement and the top edge of the trench. Trench width at the bottom shall not be greater than at the top and no undercutting will be permitted. Pavement cuts shall be made to and between straight or accurately marked curved lines which, unless otherwise required, shall be parallel to the centerline of the trench.

3. Pavement removed for connections to existing lines or structures shall not be greater than necessary for the installation as determined by the Engineer.

E. Artificial Foundations in Trenches: Whenever so ordered by the Engineer, the Contractor shall excavate to such depth below grade as the Engineer may direct and the trench bottom shall be brought to grade with such material as the Engineer may order installed. All piling, concrete, or other foundations made necessary by unstable soil shall be installed as directed by the Engineer. Compensation for extra excavation and piling,

concrete, or other foundations, except where provided by contract unit prices, shall be made in accordance with the contract provisions for extra work.

F. Bell Holes: Bell holes shall provide adequate clearance for tools and methods used in installing pipe. No part of any bell or coupling shall be in contact with the trench bottom, trench walls, or granular embedment when the pipe is jointed.

3.09 TESTS

A. Testing is specified in Section 01410: Testing and Testing Laboratory Services.

3.10 DRAINAGE

A. Trenches across roadways, driveways, walks, or other trafficways adjacent to drainage ditches or water courses shall not be backfilled prior to completion of backfilling the trench on the upstream side of the trafficway to prevent impounding water after the pipe has been laid. Bridges and other temporary structures required to maintain traffic across such unfilled trenches shall be constructed and maintained by the Contractor. Backfilling shall be done so that water will not accumulate in unfilled or partially filled trenches. All material deposited in roadway ditches or other water courses crossed by the line of trench shall be removed immediately after backfilling is completed and the original sections, grades, and contours of ditches or water courses shall be restored. Surface drainage shall not be obstructed longer than necessary.

3.11 FINAL GRADING

A. After other outside work has been finished, and backfilling completed and settled, all areas on the site of the work which are to be graded shall be brought to grade with the tolerance of +/- 0.1 feet at the indicated elevations, slopes, and contours where seeding or sodding is not required or, where sodding is required within 3 inches of finished grade. Use of graders or other power equipment will be permitted for final grading and dressing of slopes, provided the result is uniform and equivalent to hand work. All surfaces shall be graded to secure effective drainage. Unless otherwise shown, a slope of at least one percent shall be provided.

B. After grading and where seeding is required, topsoil shall be evenly spread to a minimum depth of 6 inches. Topsoil shall be from an Engineer approved source and shall be clear of trash, debris and surface vegetation more than 6 inches in height.

C. Grading and surfacing shall be completed to the satisfaction of the Engineer.

3.12 EXCESS EXCAVATED MATERIALS

A. Insofar as needed, suitable excavated materials shall be used in fills and embankments shown on the Drawings. All suitable excess excavated material shall be placed at an on-site stockpile area as directed by the Owner.

B. The Contractor shall segregate different types of excavated materials (i.e. sands, clayey sands) as possible in the stockpile area. All unsuitable materials shall be disposed of by the Contractor offsite in a legal manner.

C. The Contractor shall slope and compact the stockpile with a light roller type vehicle to maintain stability.

D. The Contractor shall maintain proper soil and erosion control measures.

3.13 SETTLEMENT

A. The Contractor shall be responsible for all settlement of backfill, fills, and embankments which may occur within the correction period stipulated in the General Conditions.

B. The Contractor shall make, or cause to be made, all repairs or replacements made necessary by settlement within 30 days after notice from the Engineer or Owner.

END OF SECTION

SECTION 02822
SOLID SODDING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: The work specified in this Section consists of establishing a stand of grass, within the areas indicated on the Drawings, by furnishing and placing grass sod. Also included are fertilizing, watering and maintenance as required to assure a healthy stand of grass. Work performed in the County and State Right-of-Ways and private property shall be replaced with like sod.

1.02 SUBMITTALS

A. A certification of sod quality by the producer shall be delivered to the Engineer 10 days prior to use.

PART 2 - PRODUCTS

2.01 GRASS SOD

A. Grass sod shall be Bahia or grass and shall be well matted with grass roots. The sod shall be taken in rectangles, preferably 12 inch by 24 inch, shall be a minimum 2 inches in thickness and shall be live, fresh and uninjured at the time of planting.

B. It shall be reasonably free of weeds and other grasses and shall have a soil mat of sufficient thickness adhering firmly to the roots to withstand all necessary handling. The sod shall be planted as soon as possible after being dug and shall be shaded and kept moist until it is planted.

2.02 FERTILIZER

A. Commercial fertilizer shall comply with the state fertilizer laws.

B. The numerical designations for fertilizer indicate the minimum percentages (respectively) of (1) total nitrogen, (2) available phosphoric acid and (3) water-soluble potash contained in the fertilizer.

C. The chemical designation of the fertilizer shall be 6 percent (6%) nitrogen, 6 percent (6%) phosphorus, and 6 percent (6%) potash. At least 50 percent (50%) of the nitrogen shall be derived from organic sources. At least 50 percent (50%) of the phosphoric acid shall be from normal super phosphate or an equivalent source which will provide a minimum of two (2) units of sulfur. The amount of sulfur shall be indicated on the quantitative analysis card attached to each bag or other container.

2.03 WATER FOR GRASSING

A. The water used in the sodding operations shall be obtained as provided for in Section 01500: Temporary Facilities.

PART 3 - EXECUTION

3.01 PREPARATION OF GROUND

A. The area over which the sod is to be placed shall be scarified or loosened to a depth and then raked smooth and free from debris. Where the soil is sufficiently loose and clean, the Engineer, at his discretion, may authorize the elimination of ground preparation.

3.02 APPLICATION OF FERTILIZER

A. Before applying fertilizer, the soil pH shall be brought to a range of 6.0 to 7.0.

B. The fertilizer shall be spread uniformly over the area to be sodded at the rate of 700 pounds per acre, or 16 pounds per 1,000 square feet, by a spreading device capable of uniformly distributing the material at the specified rate. Immediately after spreading, the fertilizer shall be mixed with the soil to a depth of approximately 4 inches.

C. 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.

3.03 PLACING SOD

A. The sod shall be placed on the prepared surface, with edges in close contact and shall be firmly and smoothly embedded by light tamping with appropriate tools.

B. Where sodding is used in drainage ditches, or on slopes of four (4) to one (1) or greater, the setting of the pieces shall be staggered so as to avoid a continuous seam along the line of low. 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.

C. On slopes greater than two (2) to one (1), the Contractor shall, if necessary, prevent the sod from sliding by means of wooden pegs driven through the sod blocks into firm earth, at suitable intervals.

D. Sod which has been cut for more than 72 hours shall not be used unless specifically authorized by the Engineer after his inspection thereof. Sod which is not planted within 24 hours after cutting shall be stacked in an approved manner and maintained and properly moistened. Any pieces of sod which, after placing, show an appearance of extreme dryness shall be removed and replaced by fresh, uninjured pieces.

E. Sodding shall not be performed when weather and soil conditions are, in the Engineer's opinion, unsuitable for proper results.

3.04 WATERING

A. 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).

3.05 MAINTENANCE

A. The Contractor shall, at his expense, maintain the sodded areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include repairing of any damaged areas and replacing areas in which the establishment of the grass stand does not appear to be developing satisfactorily.

B. Replanting or repair necessary due to the Contractor's negligence, carelessness or failure to provide routine maintenance shall be at the Contractor's expense.

END OF SECTION

SECTION 02950
HOT-MIX ASPHALTIC CONCRETE PAVING

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, materials, and equipment necessary to complete all asphaltic concrete paving as shown on the drawings.

1.02 RELATED WORK

A. Earthwork: Section 02220.

1.03 QUALITY ASSURANCE

A. Qualifications of Asphaltic Concrete Producers: Hot mix asphaltic to be furnished by a bulk asphaltic concrete producer regularly engaged for five (5) years in production of hot-mix, hot-laid asphaltic concrete.

B. Qualifications of Testing Agency: Only recognized commercial testing laboratories with not less than 10 years experience in conducting tests and evaluations of asphaltic concrete materials and design shall be used. Refer to Section 01410.

1. Provide asphaltic concrete testing and inspection service acceptable to Engineer.

2. Include sampling and testing asphaltic concrete materials proposed, and tests and calculations for asphaltic concrete mixtures.

3. Provide field-testing facilities for quality control testing during paving operations.

C. Requirements of Regulatory Agencies: Comply with applicable requirements of:

1. City of Groveland Public Works Department.

2. State of Florida, Department of Transportation, Standard Specifications for Highway and Bridges, latest edition.

1.04 PAVING QUALITY REQUIREMENTS

A. General: In addition to other specified conditions, comply with following minimum requirements:

1. Test in place asphaltic concrete sources for compliance with requirements for density, thickness and surface smoothness.

2. Provide final surface of uniform texture, conforming to required grades and cross sections.

3. Take not less than 4-in diameter pavement specimens for each completed course, from locations as directed by the Engineer.

4. Repair holes from test specimens as specified for patching defective work.

B. DENSITY:

1. Compare density of in-place materials against laboratory specimens of same asphaltic concrete mixture, when subjected to 50 blow of standard Marshal hammer in each side of specimen.

2. Minimum acceptable density of in-place course material in 98 percent of the recorded laboratory specimen density.

C. Thickness: In-place compacted thickness will not be acceptable if exceeding following allowable variation from thickness shown on Drawings.

1. Base Course: ½-in., plus or minus.

2. Surface Curse: ½-in., plus or minus.

D. Surface Smoothness:

1. Test finished surface of each asphaltic concrete course for smoothness, using a 10-ft. straightedge applied parallel to and at right angles of centerline of paved areas.

2. Check surfaced areas at specified intervals as directed by Engineer.

3. Surface variability will not be acceptable if exceeding the following:

a. Base Course: ¼-in in 10 ft.
b. Surface Course: 3/16-in in 10 ft.
c. Crowned Surface:
(1) Test crowned surfaces with a crown template, centered and at right angles to the crown.
(2) Surfaces will to be acceptable if varying more than ¼-in from the template.

1.05 SUBMITTALS

A. Samples: Provide samples of proposed materials for laboratory testing and job-mix design.

B. Test Reports: Submit laboratory reports for following materials tests:

1. Coarse and fine aggregates from each material source and each required grading:

a. Sieve Analysis: ASTM C 136 (AASHTO 27).
b. Unit Weight of Slag: ASTM C 29 (AASHTO 19).
c. Soundness: ASTM C 88 (AASHTO 104) for surface course aggregates only.
d. Sand Equivalt: ASTM D 2419 (AASHTO 176).
e. Abrasion of Course Aggregate: ASTM C 131 (AASHTO 96), for surface course aggregates only.

2. Asphaltic cement for each penetration grade:

a. Penetration: ASTM D 5 (AASHTO 49)
b. Viscosity (Kinematic): ASTM D 2170 (AASHTO 201).

c. Flash Point: ASTM D 92 (AASHTO 48).
d. Ductility: ASTM D 113 (AASHTO 51).
e. Solubility: ASTM D 4 (AASHTO 44).
f. Specific Gravity: ASTM D 70 (AASHTO 43).

3. Job-mix design mixture for each material or grade:

   a. Bulk specific Gravity of course aggregate: ASTM C 117 (AASHTO 85).
   b. Bulk Specific Gravity for fine aggregate: ASTM C 128 (AASHTO 84).

4. Uncompacted asphaltic concrete mix: Maximum Specified Gravity: ASTM D 2041 (AASHTO 209).

5. Compacted asphaltic concrete mix:

   a. Bulk Density: ASTM D 1188 (AASHTO 166).
   b. Marshall Stability and Flow: ASTM D 1559.

6. Density and voids analysis:

   a. Provide each series of asphaltic concrete mixture text specimens, in accordance with A. I. MS-2 “Mix Design Methods for Asphaltic Concrete.”
   b. Use Marshal Method of mix design unless otherwise directed or acceptable to the Engineer.
   c. Report the quantity of absorbed asphaltic cement in pounds of dry aggregate, percent air voids, and percent voids in mineral aggregate.

7. Sampling and testing of asphaltic cement mixture for quality control during paving operations.

   a. Uncompacted asphaltic concrete mix:
      (1) Asphaltic Cement Content: ASTM D 2172 (AASHTO 164).
      (2) Penetration of recovered Asphaltic Cement: ASTM D 5 (AASHTO 49).
      (3) Ductibility of Recovered Asphaltic Cement: ASTM D 113 (AASHTO 51).
   b. Compacted asphaltic concrete mix:
      (1) Bulk Density: ASTM D 1188 (AASHTO 166).
      (2) Marshall stability and flow: ASTM D 1559.

   c. Perform at least one test for each day’s paving.

8. Asphaltic Plant Inspections: ASTM D 290.

9. Additional testing:

   a. Perform as may be required if any of the previous tests indicate insufficient values, or if directed by the Engineer.
   b. Continue testing until specified values have been attained.

10. Asphaltic Concrete materials not complying with specified requirements will not be permitted in the work.

1.06 JOB CONDITIONS

A. Weather Limitations:

1. Apply bituminous prime and tack coated only when the ambient temperature in the shade is above 50 deg F and when the temperature has not been below 35 deg F for 12 hours immediately prior to application.

2. Do not apply when the base surface is wet or contains an excess of moisture, which would prevent uniform distribution and required penetration.

3. Construct asphaltic concrete surface course only when atmospheric temperature is above 40 deg F, when the underlying base is dry, and when weather is not rainy.

4. Asphaltic base course may be placed when air temperature is not below 30 deg F and rising, when acceptable to the Engineer.

B. Grade Control: Establish and maintain the required lines and grades, including crown and cross-slope, for each course during construction operations.

C. Traffic Control:

1. Maintain vehicular and pedestrian traffic during paving operations and as required for other construction activities.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Crushed Aggregate Base Course: Sound, durable particle of crushed stone and screening.

1. Coarse aggregate: Angular particles of uniform density, percentage of wear not to exceed 65 after 500 revolutions as determined by ASTM C131.

2. Fine aggregate: Angular particles produced by crushing atone that meets the requirements for wear and soundness specified for course aggregate.

3. Crushed stone shall meet the requirements of Florida DOT for class A or B stone.

B. Aggregate for Asphaltic Concrete, General

1. Sound, angular crushed stone, crushed gravel, or crushed Alan: ASTM D 692.

2. Sand, stone, or slag screening: ASTM D 1073.

3. Provide aggregate in gradations for various courses to comply with local highway standards.

C. Surface Course Aggregates:

1. Provide natural sand, unless sand prepared from stone, slag, or gravel or combinations are required to suit local conditions.

D. Asphaltic Cement: Comply with ASTM D 946 for 85-100 penetration grade.

E. Prime Coat:

1. Cut back liquid asphaltic.

2. Medium-curing type: ASTM D 2027, grade MC-70.

F. Tack Coat: Emulsified asphaltic.

2.02 ASPHALTIC-AGGREGATE MIXTURES

A. Job-mix criteria:

1. Provide job-mix formulas for each required asphaltic-aggregate mixture.

2. Establish a single percentage of aggregate passing each required sieve size, a single percentage of asphaltic cement to be added to aggregate, and a single temperature at which asphaltic concrete is to be produced.

3. Comply with the mix requirements of local governing highway standards.

4. Maintain material quantities within allowable tolerances of the governing standards.

2.03 TRAFFIC AND PARKING MARKING MATERIALS

A. Traffic and parking lane markings shall be lead-free Thermoplastic Traffic Stripes, Section 653.02, Florida Department of Transportation (DOT) Standard Specifications for roads and bridges, latest edition.

B. Sealing primer and the proportions used shall be as recommended by the manufacturer of the thermoplastic compound.

C. Color:

1. Driving lane Dividers – 6” White

2. No Parking Zone – 4” Yellow

3. Parking Dividers – 4” White

PART 3 - EXECUTION

3.01 SURFACE PREPARATION

A. Subbase preparation:

1. The contractor shall remove from the area all organic substance to the depth of 6-in or 8-in, as shown on the Drawings, below the surface of the proposed

subgrade. The entire areas shall be plowed and dragged prior to placing a stabilizing additive, if required to meet minimum bearing value.

2. Sub-base shall be compacted to a minimum density of 95 percent of the maximum as determined by the Modified proctor density AASHTO T180, and shall have a minimum bearing value of 60 pounds per square inch.

B. Base Course:

1. Check subgrade for conformity with elevations and section immediately before placing base material.

2. Place base material in compacted layer not more than 6-in thick, unless continuing tests indicate the required results are being obtained with thicker layers.

3. In no case will more than 8-in of compacted based be placed in one lift.

4. Spread, shape, and compact all base material deposited on the subgrade during the same day.

5. Compact base course material to not less than 95 percent of maximum density: ASTM D1557, Method D (98 percent maximum density: AASHTO T-180).

6. Test density of compacted base course: ASTM D 2167.

7. Conduct one test for each 250 sq yd of in-place material, but in no case not less than one daily for each layer.

C. Loose and Foreign Material:

1. Remove loose and foreign material from compacted subbase surface immediately before application of paving.

2. Use power brooms or blowers, and hand brooming as required.

3. Do not displace subbase material.

D. Prime Coat:

1. Uniformly apply at rate 0.20 to 0.5 gal/sq yd over compacted and cleaned subbase surface.

2. Apply enough material to penetrate and seal, but not flood the surface.

3. Allow to cure and dry as long as required to attain penetration and evaporation of volatile, and in no case less than 24 hours unless otherwise acceptable to the Engineer.

4. Blot excess asphaltic with just enough sand to prevent pick-up under traffic.

5. Remove loose sand from paving.

E. Tack Coat:

1. Dilute material with equivalent parts of water and apply to contact surfaces of previously constructed asphaltic concrete or Portland cement and similar surfaces.

2. Apply at rate of 0.05 to 0.15 gal/sq yd of surface.

3. Apply tack coat by brush to contact surfaces of structures projecting into ar abutting asphaltic concrete pavement.

4. Allow surface to dry until material is at condition of tackiness to receive pavement.

3.02 FRAME ADJUSTMENTS (if applicable)

A. Placing Frames:

1. Surround frames set to elevation with ring of compacted asphaltic concrete base prior to paving.

2. Place asphaltic concrete mixture up to 1- in below top of frame, slope to grade, and compact by hand tamping.

B. Adjust frames to proper position to meet paving.

C. If permanent covers are not in place, provide temporary covers over openings until completion of rolling operations.

D. Set cover frames to grade, flush with surface adjacent pavement.

3.03 PREPARING THE MIXTURE

A. Comply with ASTM D 995 for material storage, control, and mixing and for plant equipment and operation.

B. Stockpiles:

1. Keep each component of the various-sized combined aggregates in separate stockpiles.

2. Maintain stockpiles so that separate aggregate sizes will not be intermixed and to prevent segregation.

C. Heating:

1. Heat the asphaltic cement at the mixing plant to viscosity at which it can be uniformly distributed throughout the mixture.

2. Use lowest possible temperature to suit temperature – viscosity of asphaltic.

3. Do not exceed 350 deg F.

D. Aggregate:

1. Heat – dry aggregate to reduce moisture content to not more than 2.0 percent.

2. Deliver dry aggregate to mixer at recommended temperature to suit penetration grade and viscosity characteristics of asphaltic cement, ambient temperature, and workability of mixture.

3. Accurately weigh or measure dry aggregates and weigh or meter asphaltic cement to comply with job-mix formula requirements.

E. Mix aggregate and asphaltic cement to achieve 90-95% of coated particles for base mixture and 85-90 percent of coated particles for surface mixture, when tested in accordance with ASTM D 2489.

F. Transporting:

1. Transport asphaltic concrete mixture from mixing sit in trucks having tight, clean compartments.

2. Coat hauling compartments with a lime-water mixture to prevent asphaltic concrete mixture from sticking.

3. Elevate and drain compartment of excess solution before loading mix.

4. Provide covers over asphaltic concrete mixture when transporting to protect from weather and to prevent loss of heat.

5. During periods of cold weather or long-distance deliveries, provide insulation around entire truck bed surface.

3.04 EQUIPMENT

A. Provide size and quantity of equipment to complete the work specified within project time schedule.

B. Bituminous Pavers: Self–propelled that spread hot asphaltic concrete mixtures without tearing, shoving or gouging surfaces, and control pavement edges to true lines without use of stationary forms.

C. Rolling Equipment:

1. Self-propelled, steel-wheeled and pneumatic- tired rollers that can reverse direction without backlash.

2. Other type rollers may be used if acceptable to the Engineer.

D. Hand Tools: Provide rakes, lutes, shovels, tampers, smoothing irons, pavement cutters, portable heaters, and other miscellaneous small tools to complete the work specified.

3.05 PLACING THE MIX

A. Place the asphaltic concrete mixture on prepared surface, spread and strike-off using paving machine.

B. Spread mixture at a minimum temperature of 225 deg F.

C. Inaccessible and small areas may be placed by hand.

D. Place each course at thickness so that when compacted it will conform to the indicated grade, cross-section, finish thickness, and density indicated.

E. Paver Placing:

1. Unless otherwise directed, begin placing along centerline of areas to be paved on crowned section, and at high side on one-way slope, and in direction of traffic flow.

2. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips.

3. Complete base course for a section before placing surface courses.

4. Place mixture in continuous operation as practicable.

F. Hand Placing:

1. Spread, tamp, and finish mixture using hand tools in area where machine spreading is not possible, as acceptable to Engineer.

2. Place mixture at a rate that will insure handling and compaction before mixture becomes cooler than acceptable working temperatures.

G. Joints:

1. Carefully make joints between old and new pavements, or between successive days' work, to ensure a continuous bond between adjoining work.

2. Construct joints to have same texture, density and smoothness as adjacent sections of asphaltic concrete course.

3. Clean contact surface free of sand, dirt, and other objectionable material and apply tack coat.

4. Offset transverse joints in succeeding courses not less than 24-in.

5. Cut back edges of previously placed courses to expose an even, vertical surface for full course thickness.

6. Offset longitudinal joints in succeeding courses not less than 6-in.

7. When the edges of longitudinal joints are irregular, honeycombed, or inadequately compacted, cut back unsatisfactory sections to expose an even, vertical surface for full course thickness.

3.06 COMPACTING THE MIX

A. Provide sufficient rollers to obtain the required pavement density.

B. Begin rolling operations as soon after placing when the mixture will bear weight of roller without excessive displacement.

C. Do not permit heavy equipment, including rollers to stand on finished surface before it has thoroughly cooled or set.

D. Compact mixture with hot hand tampers or vibrating place compactors in areas inaccessible to rollers.

E. Start rolling longitudinally at extreme lower side of sections and proceed toward center of pavement. Roll to slightly different lengths on alternate roller runs.

F. Do not roll centers of sections first under any circumstances.

G. Breakdown Rolling:

1. Accomplish breakdown or initial rolling immediately following rolling of transverse and longitudinal joints and outside edge.

2. Operate rollers as close as possible to paver without causing pavement displacement.

3. Check crown, grade, and smoothness after breakdown rolling.

4. Repair displaced areas by locating at once with lutes or rakes and filling, if required, with hot loose material before continuing rolling.

H. Second Rolling:

1. Second rolling shall be made by a traffic roller.

2. Follow breakdown rolling as soon as possible, while mixture is hot and in condition for compaction.

3. Continue second rolling until mixture has been thoroughly compacted.

I. Finish Rolling:

1. Perform Finish rolling while mixture is still warm enough for removal of roller marks.

2. Continue rolling until roller marks are eliminated and course has attained specified density.

J. Patching

1. Remove and replace defective areas.

2. Cut out and fill with fresh, hot asphaltic concrete.

3. Compact by rolling to specified surface density and smoothness.

4. Remove deficient areas for full depth of course.

5. Cut sides perpendicular and parallel to direction of traffic with edges vertical.

6. Apply tack coat to exposed surface before placing new asphaltic concrete mixture.

3.07 MARKING ASPHALTIC CONCRETE PAVEMENT

A. Cleaning:

1. Sweep surface with power brooms to remove loose material and dirt.

2. Do not begin marking asphaltic concrete pavement until acceptable to the Engineer.

B. Apply thermoplastic material as specified by section 653.03, FDOT Standard Specifications.

1. Provide uniform straight edges.

2. Thickness shall be as required by section 653.03.B.1 FDOT Standard Specifications.

3.08 CLEANING AND PROTECTION

A. Cleaning: After completion of paving operations, clean surfaces of excess or spilled asphaltic materials to the satisfaction of the Engineer.

B. Protection:

1. After final rolling, do not permit vehicular traffic on asphaltic concrete pavement until it has cooled and hardened and in no case sooner than 6 hours.

2. Provide barricades and warning devices as required to protect pavement.

3. Cover openings of structures in the areas of paving until permanent coverings are placed (if applicable).

END OF SECTION