

SECTION 01000

PROJECT REQUIREMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: The Work to be done consists of the furnishing of all labor, materials, and equipment, and the performance of all Work included in this Contract. The summary of the Work is presented in Section 01010: Summary of Project.
- B. Work Included:
1. The Contractor shall furnish all labor, superintendence, materials, plant power, light, heat, fuel, water, tools, appliances, equipment, supplies, and means of construction necessary for proper performance and completion of the Work. The Contractor shall obtain and pay for all necessary local building permits. The Contractor shall perform and complete the Work in the manner best calculated to promote rapid construction consistent with safety of life and property and to the satisfaction of the 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 by Owner, and shall do all Work and pay all costs incidental thereto. He shall repair or restore all structures and property that may be damaged or disturbed during performance of the Work.
 2. The cost of incidental work described in these 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.
 3. The Contractor shall provide and maintain such 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.

C. Public Utility Installations and Structures:

1. Public utility installations and structures shall be understood to include all poles, tracks, pipes, wires, conduits, vaults, manholes, and all other appurtenances and facilities pertaining thereto whether owned or controlled by the 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.
2. The Contract Documents contain data relative to existing public utility installations and structures above and below the ground surface. These data are not guaranteed as to their completeness or accuracy and it is the responsibility of the Contractor to make his own investigations to inform himself fully of the character, condition, and extent of all such installations and structures as may be encountered and as may affect the construction operations.
3. The Contractor shall protect all public utility installations and structures from damage during the Work. Access across any buried public utility installation or structure shall be made to avoid any damage to these facilities. All required protective devices and construction shall be provided by the Contractor at his expense. All existing public utilities damaged by the Contractor shall be repaired by the Contractor, at his expense. No separate payment shall be made for such protection or repairs to public utility installations or structures.
4. Public utility installations or structures owned or controlled by the 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.
5. Where public utility installations or 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.

6. The Contractor shall, at all times in performance of the Work, employ acceptable methods and exercise reasonable care and skill so as to avoid unnecessary delay, injury, damage, or destruction of public utility installations and structures; and shall, at all times in the performance of the Work, avoid unnecessary interference with, or interruption of, public utility services, and shall cooperate fully with the owners thereof to that end.
7. 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.
8. The maintenance, repair, removal, relocation, or rebuilding of public utility installations and structures, when accomplished by the Contractor as herein provided, shall be done by methods approved by the 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 prints (24 inches by 36 inches) and one (1) reproducible copy of the specifications (8.5 inches by 11 inches).
 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 for 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.
2. 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, 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. 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 01010

SUMMARY OF PROJECT

PART 1 - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

- A. This Contract is for the construction of the Lehigh Acres Municipal Services Improvement District – “**CREST Phase II**”, as shown on the Drawings and specified herein. The Work consists of furnishing all labor, equipment, and materials for the construction of the facilities consisting of, but not limited to, the following:

All work for the Project shall be constructed in accordance with the Drawings and Specifications prepared by Engineer and the proposed improvements will be awarded and constructed, if award is made, under one Contract. Bids shall be submitted for furnishing, delivering and installing all materials, equipment and services, including labor, for the Work, which generally involves: the construction of one (1) stormwater treatment system complete with vegetative plantings. The Work will include reinforced concrete pipes, precast concrete endwalls, concrete mitered end sections, aluminum slide gates, rip-rap stabilization, fencing, and site restoration at the project site located at 7875 Wheeler Road, LaBelle Florida 33935, as depicted on the project drawings.

1.02 PROJECT SEQUENCE

- A. The Contractor shall establish his Work sequence based on the use of material and labor necessary to facilitate completion of construction and testing within the specified Contract Time(s). The Contractor shall employ enough crews such that the project progresses towards completion without major interruptions or stoppages in the Work. The proposed project sequence, including the Contractor's plans for provision of temporary facilities, clean-up and testing shall be submitted to the Engineer prior to starting construction. **Aluminum slide gate shop drawing approvals and the gate manufacturing process typically have long lead times so they need to be started as early as possible after the Notice to Proceed.**
- B. The Contractor will be required to meet the substantial and final completion dates listed under Article 4 of the Agreement.

- C. Contractor shall maintain an up-to-date schedule as the Work progresses and submit a copy of the revised progress schedule with each request for payment.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01020

MEASUREMENT AND PAYMENT

PART 1- GENERAL

1.01 DESCRIPTION

- A. This section describes the method used to determine quantities of Work performed or materials supplied for which a price is given in the Bid. It establishes the basis upon which payment will be made for all Payment Items.
- B. Subject to provisions in the General Conditions, all Work and payment for all Work is represented by Payment Items and their associated unit prices or lump sum prices.

1.02 PAYMENT

- A. Subject to all other contract requirements, the Contractor shall be paid for "as-built" quantities of Work for which a price is given in the bid.
- B. Quantities on the Bid Form are for comparison in competitive bidding only and do not constitute the basis for payment or measurement of quantities.
- C. Quantities on the Bid Form are estimated and may be increased or decreased without limit.
- D. No separate payment will be made for one Payment Item as Work incidentally required to complete the Work of another Payment Item.
- E. Payment for Work performed shall be made in accordance with the unit prices and lump sum amounts listed in the Bid.

1.03 MEASUREMENT FOR PAYMENT

- A. Payment Limit Lines:
 - 1. Where payment limit lines are shown on the Contract Drawings, measurements of a Payment Item quantity will be made up to, but not beyond such limit lines.
 - 2. Where the actual Work of a Payment Item falls short of the payment limit line, measurement will be made to the line of the actual Work.

3. No payment will be made for quantities outside of payment limit lines unless authorized in writing by the Owner.

B. Methods of Measurement:

1. Measurements of lengths, widths, slope angles, and depths or elevations shall be made to determine "as-built" quantities of lengths, areas and volumes pertinent to the Payment Items.
 - a. Unless otherwise specified, all lengths shall be horizontal distances.
 - b. Slope angles and elevations shall be measured using land surveying equipment.
2. Graphic representations of measured quantities shall be drafted to scale using the Drawings where convenient and appropriate. Additional drawings shall be drafted if required.
 - a. Irregular shapes representing areas and volumes shall be measured using a compensating polar planimeter or a computer digitizer.
 - b. Regular shapes shall be scaled.
3. Use of Drawings:
 - a. Unless otherwise agreed upon between the Contractor and Owner, the Drawings shall be used as the basis to establish existing grades and other existing topographic features.

C. Payment limits where Payment Lines are not shown on the Drawings:

1. Pipe Length: Measurement of pipe shall be made along the top of pipe, excluding fittings, valves and manholes, in place, taken as the laying length.
2. Except as specified otherwise, measurements of Payment Item quantities of weights, lengths, areas and volumes shall be made:
 - a. On "as-built" and in-place completed Work, during construction or at the time of Substantial Completion.
 - b. If no other feasible and practical methods of measurements are available, by delivery slips delivered to the Engineer.

3. Adjustments shall be made to eliminate overlaps in area and volume measurements.

1.04 PAYMENT ITEMS

- A. Separate payment will be made for the Unit Price and Lump Sum items listed on the Bid Form. Related work not specifically listed or identified below in 1.04 B and C, but evidently necessary for satisfactory completion of the Payment Item shall be considered to be included with the associated Item.
- B. No separate payment will be made for the following Work, and its cost shall be included in the Bid Price of the Payment Item to which it is associated:
 1. Trench excavation, sheeting, shoring and bracing.
 2. De-watering, erosion and sedimentation control, and turbidity screening.
 3. Fill, backfill and grading.
 4. Removal, replacement and restoration of driveways, mailboxes, sod, seed, and plantings.
 5. Removal, replacement and restoration of culverts and storm sewer pipe crossings of driveways and roads.
 6. Cleanup.
 7. Testing, including all materials and equipment.
 8. Maintenance of utility service.
 9. Appurtenant restoration of work areas.
 10. Removal and replacement of fencing and other structures.
 11. Record Drawings.
 12. Field Office.
 13. Saw cutting.
 14. Coordination with other contractors.
 15. Layout of the work.
 16. Notifications to property owners of construction schedule and service interruptions.
 17. Coordination of activities and work hours with DOT Operations.
 18. Safety barricades, safety fencing, caution signs, detours, etc.

PART 2- PRODUCTS

1.01 DESCRIPTION

1. Mobilization/Demobilization (Bid Item No. 1)

- a. Preparatory Work and operations in mobilizing for beginning work on the Project and demobilizing for ending work on the Project. The establishment of field offices, buildings, safety equipment, first aid supplies, sanitary and other facilities, as required by these Specifications, State and local laws, and any other preconstruction

expense necessary for the state of the Work; the cost of field engineering, including disposal of cleared and grubbed material and debris, permits and fees, construction schedules, construction photographs, project signs, shop drawings, temporary facilities, lay down storage area, construction aids, erosion control, work associated with Contractor support during Owner/Engineer testing, reviews and inspection, re-inspection and any rework resulting from same, cleaning, project records documents, operating and maintenance data.

- b. The Contractor shall submit invoices substantiating the cost of “Mobilization/Demobilization” with each pay request. Fifteen percent (15%) of the cost for “Mobilization/Demobilization” will be withheld until substantial completion has been accepted by the Owner.

2. General Requirements (Bid Item No. 2)

- a. Measurement of each item 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 Insurance requirements costs, the costs of all Bonds, dewatering requirements & associated permitting, clearing, erosion control program, demolition items, and all Administrative costs associated with acquiring and maintaining the necessary coverage as described in the Contract Documents. The Contractor shall submit invoices substantiating the cost of “General Requirements” with each pay request.

3. Remaining Bid Items (Bid Items 3 thru 33)

- a. Payment for the remaining bid items shall be according to the unit quantity of each pay item actually completed during the given pay request period.
- b. The Owner reserves the right to modify or delete items listed in the Bid Schedule in order to make use of all available funding. Such modifications shall be made solely at the Owner’s discretion. All quantities of work, whether increased or decreased are to be performed at the unit price stated in the Bid Schedule.

END OF SECTION

SECTION 01030

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. Contractor shall use the Application and Certificate for Payment Form included in Section 620 as the official pay request form.
- B. Related Requirements Described Elsewhere:
 - 1. Agreement: Section 520.
 - 2. Certificate of Substantial Completion: Section 625
 - 3. Progress Payments, Retainages, and Final Payment: Standard General Conditions: Section 700 as amended by the Supplementary Conditions: Section 800.
 - 4. Schedule of Values: Section 01120.
 - 5. Contract Closeout: Section 01180.
 - 6. Project Record Documents: Section 01200.

1.02 FORMAT REQUIRED

- A. Submit applications typed on the form provided in Division 0, Section 620: Application and Certificate for Payment Form, with itemized data typed on 8-1/2 inch x 11 inch or 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 invoices 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 the following items:

1. Project.
2. Application number and date.

3. Detailed list of enclosures.
4. For Stored Materials:
 - a. Item number and identification as shown on application.
 - b. Description of specific material.
- 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 01200: Project Record Documents. As a pre-requisite 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 01100: 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.
- F. Provide construction photographs to support construction progress.

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 01180: Contract Closeout.
- B. Furnish evidence of completed operations and insurance in accordance with the General Conditions.
- C. Provide Contractor's Final Release of Lien (Section 980) and other close-out submittals as required by the General Conditions.

1.06 SUBMITTAL PROCEDURE

- A. Submit Applications for Payment to the Engineer by the first (1st) day of each calendar month for which payment is requested as stipulated in the Agreement. Review the percents complete with the Engineer and resolve any conflicts or discrepancies.
- B. Number of copies for each Application for Payment: Two (2) 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. Upon receipt Owner will add the Application for Payment to the next scheduled Lehigh Acres Municipal Services Improvement District's Board Meeting agenda. After Board approval of the Application for Payment a check (typically within 10 days) will be made out in the contractor's name for the full amount of payment approved less any required retainage.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01040

PROJECT COORDINATION

PART 1 - GENERAL

1.01 WORK INCLUDED

Furnish personnel and equipment that will be efficient, appropriate and large enough to secure a satisfactory quality of Work and a rate of progress that will ensure the completion of the Work within the Contract Time. If at any time such personnel appears to the Engineer to be inefficient, inappropriate or insufficient for securing the quality of Work aforementioned, he may order the Contractor to increase the efficiency, change the character or increase the personnel and equipment, and the Contractor shall conform to such order. Failure of the Engineer to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the Work and rate of progress that will ensure the completion of the Work within the Contract Time.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 CONSTRUCTION COORDINATION

- A. The Contractor shall coordinate construction activities with the Owner and Engineer in order to maintain sufficient progress of the Work.
- B. Contractor shall notify residences along a street scheduled for work, in writing of the Work to be performed, when the work will be performed, the approximate duration of work and the traffic control/rerouting measures that will be used to maintain access. Failure to properly notify residents ahead of the work will result in the Contractor rescheduling his work activities to comply with these notification requirements.
- C. The Contractor shall be responsible for coordinating schedules with all subcontractors/trades and in incorporating the Work of all subcontractors or trades where necessary and as required.
- D. Cutting, patching, drilling and fitting shall be carried out where required by the trade or subcontractor having jurisdiction; however, the Contractor shall be solely responsible for this Work and any damages that may arise out of performing this Work.

- E. Contractor shall provide all temporary utilities and power, temporary piping, and by-pass pumping as required for the performance of the Work. By-pass pumping shall be capable of handling the peak hourly flows.

3.02 PROTECTION OF CONSTRUCTION AND EQUIPMENT

- A. All newly constructed Work shall be carefully protected from damage in any way. All portions of the Work damaged shall be reconstructed by the Contractor at no additional cost to the Owner.
- B. Protect all structures in a suitable manner to prevent damage. Should any part of a structure become heaved, cracked or otherwise damaged, all such damaged portions of the Work shall be completely repaired and made good by the Contractor at his own expense and to the satisfaction of the Engineer. If in the final inspection of the Work, any defects, faults or omissions are found, the Contractor shall cause the same to be repaired or removed and replaced by proper materials and workmanship without extra compensation for the materials and labor required. Further, the Contractor shall be fully responsible for the satisfactory maintenance and repair of the construction and other Work undertaken herein and any damages caused by the performance of the Work, for at least the warranty period described in the Contract.
- C. The Contractor shall completely restore all pavement, landscaping, or other areas disturbed by the construction activities.

3.03 PRIVATE LAND

- A. The Contractor shall not enter onto or occupy private land outside the site, except by written permission of the appropriate owners. Contractor shall provide Owner a copy of such written permission prior to entering onto the private property.

3.04 PIPE LOCATIONS

- A. 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 different or additional items where required.

3.05 OPEN EXCAVATIONS

- A. Contractor shall adequately safeguard all open excavations by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons or damage to property. The Contractor shall provide suitable and safe

bridges and other crossings for accommodating travel by workmen. All open excavations shall comply with applicable OSHA Standards.

3.06 TEST PITS

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

3.07 CARE AND PROTECTION OF PROPERTY

- A. The Contractor shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the Work on the part of the Contractor (or his sub-contractors), such property shall be restored by the contractor, at his expense, to a condition equal to or better than that existing before the damage occurred, or he shall make good the damage done, in another manner acceptable to the Property Owner and the Engineer.

3.08 COOPERATION WITHIN THIS CONTRACT

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

3.09 LOCATION OF UTILITIES

- A. The Contractor shall be solely responsible for locating all existing utilities and pipelines. It will be necessary for the Contractor to plan his work and to coordinate with the Utility Owner, when needed, prior to construction activities.

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 means/methods.
 3. The method of field staking for the construction of the Work shall be at the option of the Contractor. The Owner has provided the engineering survey necessary to establish reference points and benchmarks which in his judgement are necessary to enable the Contractor to proceed with his Work.
 4. The accuracy of any method of staking shall be the responsibility of the Contractor. All surveying for vertical and horizontal control (beyond the benchmarks provided) shall be the responsibility of the Contractor.
 5. The Contractor shall be held responsible for the preservation of all stakes and benchmarks. If any stakes or benchmarks are carelessly or willfully disturbed by the Contractor, the Contractor shall not proceed with any Work until he has re-established such points, benchmarks, 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 provide any additional layout, control points or staking necessary to complete the Work.
- B. Related Requirements Described Elsewhere:
1. Summary of Project: Section 01010.
 2. Project Record Documents: Section 01200.

1.02 QUALIFICATIONS OF SURVEYOR OR FIELD ENGINEER

- A. Qualified field engineer or 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.
- C. Registered professional land surveyor, with construction layout experience, 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 excavation, grading, filling, and topsoil placement.
 - b. Utility slopes and pipe invert elevations.
 - c. Drainage structure locations and elevations.
 - 2. Batter boards for structures.
 - 3. Foundation locations, column locations, equipment pads and finish floor levels.

4. Controlling lines and levels required for any mechanical and electrical trades.
- C. Quality Control - From time to time through-out the construction duration the surveyor should check the Work to verify the layouts are correct.

1.05 RECORDS

- A. Maintain a complete, accurate log of all control and survey work as it progresses.
- B. Provide survey data needed for the Contractor's Record Drawings, indicating the "as-built" location and elevation of all new structures and pipes. An electronic copy of the survey data shall also be provided in AutoCad release 2018 or newer format.

1.06 SUBMITTALS

- A. Submit name and address of surveyor and professional engineer to the Owner and Engineer.
- B. On request of the Owner or 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 any variances from the Contract Documents.
- D. Submit drawings showing locations and elevations 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 01060
PERMITS AND FEES

PART 1 - GENERAL

A. Permits by Contractor:

1. Comply with all conditions specified in each of the permits and licenses.
2. A copy of the permits obtained by the Owner will be furnished to the Contractor.
3. No Work shall begin until all permits listed below have been provided by the Owner and all necessary permits required but not listed below have been obtained by the Contractor.
4. Contractor is responsible for obtaining (INCLUDING PAYING PERMIT FEES) any permits not listed below, which may include dewatering permits and any other state, federal, county or local permits required for the Work.

B. Permits by Owner:

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

<u>Permit</u>	<u>Permit No.</u>	<u>Issue Date</u>
SFWMD	26-106482-P	06-06-2022

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

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 Condition 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
FDOT Spec	Standard Specification for Road and Bridge Construction Florida Department of Transportation, latest edition
E/A	Engineer and/or Architect
EDA	Economic Development Association
EI	Edison Electric Institute
EPA	Environmental Protection Agency
FASD	Florida Association of Special Districts
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
FSA	Florida Stormwater Association
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
LAMSID	Lehigh Acres Municipal Services Improvement District
LCBOCC	Lee County Board of County Commissioners
LCDOT	Lee County Department of Transportation
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
RAS	Return Activated Sludge
RPM	Revolutions Per Minute
SAE	Society of Automotive Engineers
SDI	Steel Decks Institute
SJI	Steel Joists Institute
SFWMD	South Florida Water Management District
SMACNA	Sheet Metal & 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 or	United States of America Standards Institute
WAS	Waste Activated Sludge

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

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01080

REFERENCE SPECIFICATIONS

PART 1 - GENERAL

1.01 GENERAL

- A. **Applicable Publications.** Whenever in these Specifications references are made to published specifications, codes, standards, or other requirements, it shall be understood that wherever no date is specified, only the latest specifications, standards, or requirements of the respective issuing agencies which have been published as of the date that the Work is advertised for bids, shall apply; except to the extent that said standards or requirements may be in conflict with applicable laws, ordinances, or governing codes. No requirements set forth herein or shown on the Drawings shall be waived because of any provision of or omission from said standards or requirements.
- B. **Assignment of Specialists.** In certain instances, specification test requires (or implies) that specific work is to be assigned to specialist or expert entities who must be engaged for the performance of the Work. Such assignments shall be recognized as special requirements over which the Contractor has no choice or option. These requirements shall not be interpreted so as to conflict with the enforcement of building codes and similar regulations governing the Work. They are not intended to interfere with local union jurisdiction settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of Work is recognized as "expert" for the indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of Contract requirements remains with the Contractor.

1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Without limiting the generality of other requirements of the Specifications, all Work specified herein shall conform to or exceed the requirements of such referenced documents which are not in conflict with the requirements of these Specifications or applicable codes.
- B. References herein to "Building Code" shall mean the Florida Building Code (FBC) as published by the International Code Council (ICC). The latest edition of the code as approved and used by the local agency as of the date of award as adopted by the agency having jurisdiction shall apply to the Work herein, including all addenda, modifications, amendments, or other lawful changes thereto.

- C. In case of conflict between codes, reference standards, Drawings, and the other Contract Documents, the most stringent requirements shall govern. All conflicts shall be brought to the attention of the Engineer for clarification and directions prior to ordering or providing any materials or labor. The Contractor shall bid the most stringent requirements.
- D. Applicable Standard Specifications. The Contractor shall construct the Work specified herein in accordance with the requirements of the Contract Documents and the referenced portions of those referenced codes, standards, and specifications listed.
- E. In addition to the Specifications contained in these Contract Documents, the following listed documents shall be incorporated into and become a part of these Specifications, insofar as the applicable sections apply to the proposed Work called for in the plans or any addenda thereto:
 - 1. Florida Department of Transportation (FDOT), Standard Specifications for Road and Bridge Construction, latest edition.
 - 2. Manual of Uniform Traffic Control Devices for Streets and Highways, latest edition.
 - 3. Lee County Utility Standards Manual, latest edition.
 - 4. American Society for Testing and Materials (ASTM), Standards and Specifications, latest edition.
 - 5. Federal Occupational Safety and Health Administration (OSHA), Rules and Regulations, latest edition.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01090

PROJECT MEETINGS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. The Contractor shall cooperate with the Engineer in scheduling and attending the preconstruction meeting, coordinate and run the periodic progress meetings and specifically called meetings throughout the progress of the Work. Engineer will prepare sign in sheet and agenda for the pre-construction meeting and the Contractor shall:
 - a. Prepare sign in sheet and agenda for all progress meetings.
 - b. Make physical arrangements for all progress meetings.
 - c. Preside at all meetings.
 - d. Record all meetings along with taking notes and distributing meeting minutes.
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 may attend meetings to ascertain that the Work is expedited consistent with Contract Documents and construction schedules.
4. The Contractor shall record the progress meetings in their entirety and shall provide the Engineer with a regular cassette copy of such recording, having good quality and clarity. A copy of the minutes of each progress meeting shall be available five business days after the meeting.

B. Related Requirements Described Elsewhere:

1. Construction Progress Schedules: Section 01100.
2. Shop Drawings, Working Drawings, and Samples: Section 01110.
3. Project Record Documents: Section 01200.

1.02 PRECONSTRUCTION MEETING

- A. Engineer will schedule a preconstruction meeting no later than fifteen (15) days after the date the Agreement is executed. 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 (if applicable).
 - 4. Contractor and his superintendent.
 - 5. Major subcontractors.
 - 6. Representatives of major suppliers and manufacturers (as appropriate).
 - 7. Governmental representatives (as appropriate).
 - 8. Others as requested by the Contractor, Owner, and Engineer.
- D. The Engineer shall preside at the preconstruction meeting. The Contractor shall provide for keeping minutes and distribution of minutes to the Owner, Engineer and others. 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 would include 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.

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.
 - e. 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 (establish emergency contacts and distribute phone numbers for such).
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. Liquidated damages.
30. Posting of signs and installation of Project Sign.
31. Pay request submittal dates.
32. Equal opportunity requirements.

1.03 PROGRESS MEETINGS

- A. The Contractor 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:
LA-MSID Admin. Office – 601A East County Lane, Lehigh Acres, FL 33936 or on-site Construction Trailer if one is available.
- 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 Contractor shall preside at the meetings and provide for keeping minutes and distribution of the minutes to the Owner, Engineer, and others. 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 (4-week look ahead schedule).
 - 3. Field observations, problems, conflicts.
 - 4. Problems which may impact construction schedule.
 - 5. Review of off-site fabrication and material delivery schedules.

6. Corrective measures and procedures to regain projected schedule.
 7. Status of approved Construction Schedule and revisions to the Construction Schedule as appropriate.
 8. Progress schedule during succeeding work period.
 9. Coordination of schedules with subcontractors.
 10. Review status of submittals and submittal schedule, expedite as required.
 11. Maintenance of quality standards.
 12. Pending changes and substitutions.
 13. Shop drawing reviews.
 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 time items.
 16. Other business.
- G. The Contractor is to attend progress meetings and is to study previous meeting minutes 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 manufacturer, 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 01110: Shop Drawings, Working Drawings, and Samples.

PART 2- PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01100

CONSTRUCTION PROGRESS SCHEDULES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Promptly after award of the Contract (within 15 days), prepare and submit to the Engineer estimated construction progress schedule demonstrating complete fulfillment of all Contract requirements utilizing the Critical Path Method (hereinafter referred to as CPM) or Gantt Chart (hereinafter referred to as Bar Chart) in planning, coordinating, and performing the Work under this Contract (including all activities of subcontractors, equipment vendors, and suppliers). The principles and definition of CPM and Bar Chart terms used herein shall be as set forth in the Associated General Contractors of America (AGC) publication, Construction Planning & Scheduling Manual, Copyright 1984, or McGraw Hill publication, Construction Project Scheduling, Copyright 1992.
2. Submit revised progress schedules on a monthly basis. No partial payments shall be approved until there is an approved construction progress schedule on hand.

B. Related Requirements Described Elsewhere:

1. Summary of Project: Section 01010.
2. Project Meetings: Section 01090.
3. Applications for Payment: Section 01030.
4. Shop Drawings, Working Drawings, and Samples: Section 01110.
5. Schedule of Values: Section 01120.

1.02 QUALIFICATIONS

- A. A statement of computerized CPM or Bar Chart capability shall be submitted in writing prior to the submittal of the first schedule and shall verify that either Contractor's organization has in-house capability to use either technique or that Contractor will employ a consultant who is so qualified.

- B. In-house capability shall be verified by description of construction projects to which Contractor or Contractor's consultant has successfully applied computerized scheduling and shall include at least two (2) projects valued at least half the expected value of this project.

1.03 FORM OF SCHEDULES

A. Gantt Chart

1. Prepare schedules in the form of a horizontal bar chart.
2. Provide a separate horizontal bar for each trade or operation within each structure or item.
3. 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.
 - b) Identify the first work day of each month.
4. Scale and Spacing: Sufficient to allow space for notations and future revisions.
5. Maximum Sheet Size: 24 inches by 36 inches.
6. Format of Listings: The chronological order of the start of each item of work for each structure.
7. Identification of Listings: By major specification section numbers as applicable and by structure.
8. Construction Progress Schedules shall be computer generated using software equal to Primavera Project Planner for Windows by Primavera Systems, Inc., Bala Cynwyd, P.A., Microsoft Project by Microsoft Corporation or approved equal.

B. Critical Path Method

1. Prepare schedules in the CPM "activity-on-node"
2. Provide a separate horizontal bar for description of each activity, trade or operation within each item.
3. 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.
 - b) Identify any float or lag times available in the schedule.
 - c) Identify early start, late start, late finish, milestones, critical path, etc.
4. Scale and Spacing: Sufficient to allow space for notations and future revisions.
 5. Maximum Sheet Size: 24 inches by 36 inches.
 6. Format of Listings: The chronological order of the start of each item of work for each structure.
 7. Identification of Listings: By major specification section numbers as applicable and by structure.
 8. Construction Progress Schedules shall be computer generated using software equal to Primavera Project Planner for Windows by Primavera Systems, Inc., Bala Cynwyd, P.A., Microsoft Project by Microsoft Corporation or approved equal.

1.04 CONTENT OF SCHEDULES

A. Construction Progress Schedule:

1. Show the complete sequence of construction by activity and by structure.
2. Show the dates for the beginning and completion of each major element of construction in no more than a two (2) week increment scale. Specifically list, but do not limit to:
 - a. Shop Drawing Schedule.
 - b. Installation of culverts.
 - c. Site clearing.
 - d. Subcontractor work.
 - e. Project closeout.

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 for construction progress schedules shall be in accordance with Section 01110: Shop Drawings, Work 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.
 3. The dates approved submittals will be required from the Engineer.
- C. A typewritten list of all long lead items (weir gates, actuators, telemetry equipment, any high demand 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 agreed 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.
- E. Scheduling Constraints: The work within Owner's property must be completed within the maximum number of days start to finish, as indicated in the Contract. Additionally, work must proceed on a continuous basis, without stoppages, except for nights and weekends. There shall be no lapses between phases of construction.

1.05 PROGRESS REVISIONS

- A. Indicate progress of each activity to date of submission.
- B. Show changes occurring since previous submission of schedule:
1. Major changes in scope.
 2. Activities modified since previous submission.
 3. Revised projections of progress and completion.

4. Other identifiable changes.
- C. Provide a narrative report as needed to define:
1. Problem areas, anticipated delays, and the impact on the schedule.
 2. Corrective action recommended, and its effect.
 3. The effect of changes on schedules of other prime contractors.
- D. If the Work falls behind the critical path schedule by two (2) weeks or more, the Contractor shall prepare a recovery schedule.

1.06 SUBMISSIONS

- A. Submittal Requirements.
1. Logic network and/or time-phased bar chart, computer generated.
 2. Computerized network analysis:
 - a. Sort by early start
 - b. Sort by float
 - c. Sort by predecessor/successor
 3. Narrative description of the logic and reasoning of the schedule.

B. Time of Submittals.

Within ten (10) 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 total length of time indicated on the initial CPM schedule shall equal the exact number of days in the Contract Time as defined in Section 520: Agreement, or less. The schedule produced and submitted shall also indicate calendar dates, including project starting and completion dates, based on the contract commencement and completion dates indicated in the Notice to Proceed. The Engineer will complete the review of the schedule within fifteen (15) working days after receipt. During the review process, the Engineer may meet with a representative of Contractor to review the proposed plan and schedule to discuss any clarifications or adjustments that may be necessary.

- 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, a change in Contract Time or a recovery schedule is required and requested.

- D. Acceptance. The finalized schedule will be acceptable to the Owner when, in the opinion of the Engineer, it demonstrates an orderly progression of the Work to completion in accordance with the Contract Documents. Such acceptance will neither impose on the Engineer or Owner, 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 Owner 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 (lump sum price breakdown), as applicable, will be acceptable to the Owner as to form and content when, in the opinion of the Engineer, it demonstrates a substantial basis for equitably distributing the Contract Price. When the network diagram and tabulated schedule have been accepted, the Contractor shall submit to the Engineer six (6) copies of the time-scaled network diagram, six (6) copies of a computerized tabulated schedule in which the activities have been sequenced by numbers, six (6) copies of a computerized tabulated schedule in which the activities have been sequenced by early starting date, and six (6) copies of a computerized, tabulated schedule in which activities have been sequenced by total float, and six (6) copies sorted by predecessor/successor.
- 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 Paragraph 1.09 herein, 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.

1.07 DISTRIBUTION

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

1.08 CHANGE ORDERS

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

1.09 CPM STANDARDS

- A. CPM, as required by this Section, shall be interpreted to be generally as outlined in Associated General Contractors of America (AGC) publication, Construction Planning & Scheduling Manual, Copyright 1984, or McGraw Hill publication, Construction Project Scheduling, Copyright 1992.
- B. Work schedules shall include a graphic network and computerized, tabulated schedules as described below. To be acceptable the schedule must demonstrate the following:
 - 1. A logical succession of work from start to finish.
 - 2. Definition of each activity. Activities shall be identified by major specification section numbers, as applicable, and by major structure.
 - 3. A logical flow of work crews/equipment (crews are to be defined by manpower category and man-hours; equipment by type and hours).
 - 4. Show all work activities and interfaces including submittals as well as major material and equipment deliveries.
- C. Networks.

1. The CPM network, or diagram, shall be in the form of a time-scaled diagram of the customary activity-on-node and may be divided into a number of separate pages with suitable notation relating the interface points among the pages. Notation on each activity line shall include a brief work description and a duration, as described in Paragraph 1.09, D. herein.
 2. All construction activities and procurement shall be indicated in a time-scaled format, and a calendar shall be shown on all sheets along the entire sheet length. Each activity arrow shall be plotted so the beginning and completion dates of said activity can be determined graphically by comparison with the calendar scale. All activities shall be shown using the symbols that clearly distinguish between critical path activities, non-critical path activities, and float for each non-critical activity. All non-critical path activities shall show estimated performances time and float time in scaled form.
- D. The duration indicated for each activity shall be in calendar days and shall represent the single best time considering the scope of the work and resources planned for the activity including time for inclement weather. Except for certain non-labor activities, such as curing concrete or delivering materials, activity durations shall not exceed fourteen (14) days nor be less than one (1) day unless otherwise accepted by the Engineer.
- E. Tabulated Schedules. The initial schedule shall include the following minimum data for each activity.
1. Activity Beginning and Ending Numbers (i-j numbers) (single activity numbers may be used).
 2. Duration.
 3. Activity Description.
 4. Early Start Date (Calendar Dated).
 5. Late Start Date (Calendar Dated).
 6. Early Finish Date (Calendar Dated).
 7. Late Finish Date (Calendar Dated).
 8. Identified Critical Path.
 9. Total Float (Note: No activity may show more than 20 days float).

10. Cost of Activity.
 11. Equipment Hours, by type; Man-Power Hours, by crew or trade.
- F. Project Information. Each schedule tabulation shall be prefaced with the following summary data included:
1. Project Name.
 2. Contractor.
 3. Type of Tabulation (Initial or Updated).
 4. Project Duration.
 5. Project Scheduled Completion Date.
 6. Effective or Starting Date of the Schedule.
 7. New Project Completion Date and Project Status (if an updated or revised schedule).
 8. Actual Start Date and Actual Finish Date (for all updated schedules.)

1.10 SCHEDULE MONITORING

- A. At not less than monthly intervals or when specifically requested by Engineer, Contractor shall submit to the Engineer a computer printout of an updated schedule for those activities that remain to be completed. Typically, the updated schedule will be submitted with the application for payment as specified below.
- B. The updated schedule shall be submitted in the form, sequence, and number of copies requested for the initial schedule.

1.11 PROGRESS MEETINGS

For the monthly progress meeting, Contractor shall submit a revised CPM schedule and a four-week look-ahead schedule, showing all activities completed, in progress, uncompleted, or scheduled to be worked during the weeks. The four weeks include the current week plus the next three weeks. All activities shall be from the approved CPM and must be as shown on the CPM unless behind or ahead of schedule. One copy of the revised CPM schedule shall be submitted with each copy of that month's application for payment.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01110

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 Notice to Proceed, 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. General Conditions: Section 700.
- 2. Shop Drawing Submittal Form: Section 950.
- 3. Construction Progress Schedules: Section 01100.
- 4. Project Record Documents: Section 01200.
- 5. Start-Up Form: Section 965.
- 6. Certificate of Completed Demonstration Form: Section 970.

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.
- 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 it pertains to his own work and any work affected under other parts or sections 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 as illustrated below.

<p>(OWNER'S NAME) (PROJECT NAME) (PROJECT NUMBER)</p> <p>SHOP DRAWING NO.: _____</p> <p>SPECIFICATION SECTION: _____ DRAWING NO. _____</p> <p>WITH RESPECT TO THIS SHOP DRAWING OR SAMPLE, I HAVE DETERMINED AND VERIFIED ALL QUANTITIES, DIMENSIONS, SPECIFIED PERFORMANCE CRITERIA, INSTALLATION REQUIREMENTS, MATERIALS, CATALOG NUMBERS, AND SIMILAR DATA WITH RESPECT THERETO AND REVIEWED OR COORDINATED THIS SHOP DRAWING OR SAMPLE WITH OTHER SHOP DRAWINGS AND SAMPLES AND WITH THE REQUIREMENTS OF THE WORK AND THE CONTRACT DOCUMENTS.</p> <p>_____ NO VARIATION FROM CONTRACT DOCUMENTS</p> <p>_____ VARIATION FROM CONTRACT DOCUMENTS AS SHOWN</p> <p>(CONTRACTOR'S NAME) (CONTRACTOR'S ADDRESS)</p> <p>BY: _____ DATE: _____ AUTHORIZED SIGNATURE</p>
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- 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 conform 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. "Revise And Resubmit" - Contractor shall make revisions and resubmit the Shop Drawing to the Engineer. The resubmittal shall incorporate the Engineer's comments highlighted or noted 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 review.

- 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 Contract Documents.

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, calculation or other sufficient information to completely explain the structure, machine, or system described and its intended manner of use. Prior to commencing such work, working drawings must have been reviewed without specific exceptions by the Engineer, which review will be for general conformance and will not relieve the Contractor in any way from his responsibility with regard to the fulfillment of the terms of the Contract. All risks 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 01120
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 Preconstruction 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 approved Critical Path Method (CPM) 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. Format shall parallel that shown in Section 620.
- C. 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.
- D. Only materials unique to the project may be billed when stored on site. Materials of standard use such as staking materials, marking paint, fuel, oil, conduit, wire, small-diameter pipe, reinforcing steel, etc., shall not be accepted for payment.
- E. 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, if necessary, 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 01130

TESTING AND TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Contractor will employ and pay for services of an Independent Testing Laboratory to perform testing specifically indicated on the Contract Documents or specified in the Specifications and may at any other time elect to have materials and equipment tested for conformity with the Contract Documents.
2. Contractor shall cooperate with the laboratory to facilitate the execution of its required services.
3. The Contractor shall provide Engineer with all test results herein within five (5) days of receipt from laboratory.

B. Related Requirements Described Elsewhere:

1. Conditions of the Contract.
2. Respective sections of the Specifications and certification of products.
3. Each Specification section that states laboratory tests required, and gives standards for testing.
4. The testing laboratory's inspection, sampling and/or testing is required for, but not limited to the following items:
 - a. Concrete: Division 03.
 - b. Earthwork: Division 31.
 - c. Utilities: Division 33.
 - d. Transportation: Division 34.
 - e. Waterway and Marine: Division 35

5. The following schedule defines the frequency and payment responsibilities for the various tests required by the Contract Documents:

Test	Notes	Paid for By
Soil Compaction	<u>Pipe Work:</u> every 200 LF each lift of compaction (minimum) <u>Beneath Structures:</u> every 500 SF each lift of compaction (minimum)	Contractor
LBR	<u>Trench Repairs:</u> one each road crossing or each 600 SF of pavement (minimum) <u>New Parking Areas:</u> each 1,000 SF of area (minimum) <u>New Roadways:</u> each 200 LF of pavement (minimum)	Contractor
Concrete	Air Content, Temperature and Slump test each concrete delivery along with the compression testing of five cylinders for every 50 C.Y. placed (minimum)	Contractor
Asphaltic Concrete Pavement	Per FDOT Specifications	Contractor

- C. Additional Tests: In the event that any of the first test samples do not meet the applicable material specification, the Contractor shall take measures necessary to conform the material and equipment to the Specifications and retest. All additional tests required to show compliance with the Specifications shall be paid for by the Contractor.

1.02 LABORATORY DUTIES: LIMITATIONS OF AUTHORITY

- A. Cooperate with Engineer and Contractor; provide qualified personnel promptly when given notice of required services.
- B. Perform specified inspections, sampling and testing of materials and methods of construction according to applicable testing procedures.

1. Comply with specific testing standards and methods; ASTM, other recognized testing authorities, and as specified.
 2. Determine and report on compliance with the requirements of the Contract Documents.
- C. Promptly notify the Engineer and Contractor of material, equipment or operations which do not meet the specifications of the Contract Documents.
- D. Promptly submit six (6) copies of reports of inspections and tests to the Engineer including:
1. Date issued.
 2. Project title and Engineer's job number.
 3. Testing Laboratory name and address.
 4. Name and signature of inspector.
 5. Date of inspection or sampling.
 6. Record of temperature and weather.
 7. Date of test.
 8. Identification of product and applicable specification section.
 9. Location in project.
 10. Type of inspection or test.
 11. Compliance with Contract Documents or not.
- E. Perform additional services as required by Owner.
- F. Laboratory is not authorized to:
1. Release, revoke, alter, or enlarge on requirements of Contract Documents.
 2. Approve or reject any portion of work.
 3. Perform any duties of the Contractor.

1.03 QUALIFICATIONS OF LABORATORY

- A. The testing laboratory shall meet “Recommended Requirements of Independent Laboratory Qualifications” published by American Council of Independent Laboratories. For concrete and steel testing the laboratory shall comply with the requirements of ASTM E 329, “Standards of Recommended Practice for Inspection and Testing Agencies for Concrete and Steel Used in Construction”.
- B. Submit a copy of the most recent report of inspection of facilities made by Materials Reference Laboratory of National Bureau, with any memorandum of remedies of deficiencies reported by the inspection.
- C. Testing equipment shall be calibrated at a maximum 12-month interval by devices of known accuracy certified by either:
 - 1. National Bureau of Standards
 - 2. Accepted values of natural physical constants
 - 3. Accredited Calibration Agency

1.04 CONTRACTOR'S RESPONSIBILITIES

- A. Cooperate with 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 schedule and facilitate inspections/tests.

- E. Notify laboratory 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 01140

TEMPORARY FACILITIES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: It shall be the sole option of the Contractor to provide the following temporary facilities, except when required by law, and no separate payment will be made for any such facilities:
 - 1. Telephone, fax, internet.
 - 2. Storage sheds.
 - 3. Tempoary field office.
 - 4. Temporary electrical service.
 - 5. Temporary sanitary sewer facilities.
 - 6. Temporary water service.
- B. Temporary facilities provided By Owner:
 - 1. 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.
- B. Maintain adequate volume of water for construction purposes.

- C. Water Source:
 - 1. It is the Contractor's responsibility to secure any necessary water for this project.
- D. Maintain strict supervision of use of any temporary services provided.
 - 1. Enforce conformance with applicable codes and standards.
 - 2. Enforce sanitary practices.
 - 3. Prevent waste of water.
- E. Costs of Installation and Operation: Contractor must pay any costs for water used by all trades, including costs of installation, maintenance, and removal of pipe and equipment.
- F. Requirements of Regulatory Agencies:
 - 1. Obtain, pay for permits, fees, deposits required by governing authorities.
 - 2. Comply with federal, state and local codes.

1.03 TEMPORARY ELECTRICITY

- A. Furnish and install temporary electric power service for construction needs as required throughout construction period. Temporary power for the proposed facilities must be obtained from the Lee County Electric Cooperative or Florida Power and Light per applicable service area agreements.
 - 1. Power centers for miscellaneous tools and equipment used in construction work.
 - a. Locate so that power is available at any desired point with no more than 100 feet extension.
 - b. Provide weatherproof distribution box with minimum of four (4) 20 amp, 120 volt grounded outlets.
 - c. Provide circuit breaker protection for each outlet.
 - d. Provide equipment grounding continuity for entire system.
 - e. Users shall provide grounded, Underwriters Laboratories, Inc. (UL) approved extension cords from power center to point of operations.

2. Power for construction equipment.
 3. Power for testing and checking equipment.
 4. Power for welding units and for other equipment having special power requirements.
- B. Capacity:
1. Adequate electrical service for construction use by all trades during construction period.
 2. Notify Power Company if unusually heavy loads such as welding, and other special power requirements, will be connected.
 - a. Provide special circuits for heavy load requirements.
 - b. Do not overload any circuit.
- C. Power Source:
1. Supplier: LCEC or FP&L
 2. Provide minimum 240 volt, single phase, 60 hertz power service to project site.
- D. Maintain strict supervision of use of temporary services:
1. Enforce conformance with applicable standards.
 2. Enforce safe practices.
 3. Prevent abuse of services.
- E. Costs of Installation and Operation: Contractor must pay any costs of temporary electrical power used, including costs of installation, meter, maintenance, and removal of temporary services from point of connection.
- F. Requirements of Regulatory Agencies:
1. Obtain and pay for permits as required by governing authorities.
 2. Comply with applicable codes.
 - 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.
 - 1. Potable water for construction personnel:
 - a. Portable containers to dispense drinking water.
 - b. Maintain temperature between 45 degrees Fahrenheit (°F) and 55°F.
 - 2. Enclosed toilet facilities for construction personnel.
 - 3. General employee washing facilities.
- B. Minimum number of fixtures:
 - 1. Toilets and Urinals
 - a. For less than 20 employees: One (1) toilet.
 - b. For 20 or more employees: One (1) toilet and 1 urinal per 40 workers.
 - 2. Washing Facilities: Adequate for number of employees, for type of work requiring washing facilities.
- C. 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.
- D. Cost of Installation and Operation:

1. Contractor must pay any costs of temporary sanitary facilities, including costs of installation, maintenance and removal.
 2. Costs of Water: As specified in Paragraph 1.02C.1., herein.
 3. Pay service charges for use of portable units.
- E. 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.
- F. Enclosure for Toilet Facilities:
1. Weatherproof, sightproof, sturdy temporary enclosures.
 2. Insect-proof screening, adequate natural ventilation.
- G. 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, sanitary and must not violate requirements of applicable codes.
2. At Contractor's option, patented specialty products may be used, in compliance with applicable codes.

2.02 ELECTRICITY

- A. Provide required facilities, including transformers, conductors, poles, conduits, raceways, breakers, fuses and switches.
- B. Provide appropriate enclosures for environment in which used, in compliance with NEMA standards.

2.03 TEMPORARY SANITARY FACILITIES

- A. Drinking Water Facilities (Portable Containers):
 - 1. Tightly closed, and equipped with dispensing tap.
 - 2. Clearly label contents.
 - 3. Do not use for other purposes.
 - 4. Provide single-service disposable cups, with sanitary container for unused cups, and receptacles for used cups.
- B. Toilet Facilities
 - 1. Portable Toilets; either:
 - a. Chemical toilets.
 - b. Recirculating toilets.
 - c. Combustion toilets.
 - 2. Toilet Tissue: Provide at each toilet, on suitable dispenser.

2.04 TEMPORARY PARKING

- A. Provide a location, approved by the Engineer, of a gravel or other suitable surface for Contractor's employee and visitor parking. Personal vehicles will be restricted from the work area.
- B. Provide gravel parking space at the Contractor's trailer (if one is provided) for eight (8) vehicles.

2.05 SECURITY LIGHTING

- A. Provide for adequate pole mounted flood lights for parking area at the Contractor trailer area. Maintain lighting on a photocell or timer.

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.
 - 2. Service as often as necessary to prevent accumulation of wastes, and creation of unsanitary conditions.
 - 3. Use only until sewer and water service can be provided to site.
- B. Washing Facilities: Provide faucet and drain facilities.

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 01150

MOBILIZATION/DEMOBILIZATION

PART I - GENERAL

1.01 DEFINITION AND SCOPE

- A. Mobilization shall include the costs of obtaining all permits, moving onto the site of all equipment and other construction facilities as required for the proper performance and completion of the Work. Mobilization shall include, but not be limited to, the following principal items.
1. Moving equipment and materials onto the site(s) required for the construction operations necessary to complete the Work..
 2. Installing temporary construction power, wiring, and lighting facilities (if applicable).
 3. Establishing emergency procedures and a site safety program.
 4. Securing any necessary water supplies for construction.
 5. Providing on-site sanitary facilities and potable water facilities as required.
 6. Arranging for and erecting any material storage yards or contractor's employee parking facilities.
 7. Providing any necessary field engineering services.
 8. Disposing of any cleared debris or construction trash.
 9. Fabricating and erecting any project signs.
 10. Installing and maintaining erosion control devices.
 11. Obtaining all required permits.
 12. Posting all OSHA, EPA, Department of Labor, and other work site required notices.
 13. Having Contractor's superintendent at the job site full time.
 14. Preparing and submitting a detailed construction CPM schedule acceptable to the Engineer as specified and updating it as required.

15. Preparing and submitting a schedule of values of the Work.
 16. Preparing and submitting a schedule of submittals.
 17. Preparing and submitting shop drawings, material data, cut sheets and material samples.
 18. Attending project/progress meetings, preparing payment applications, measuring material quantities, preparing request for information, testing services and detailed construction layout services.
- B. Demobilization is the timely and proper removal of all contractor owned material, equipment or temporary facilities from the job site and the proper cleaning or restoration work necessary to bring the site into full compliance with the contract documents.

1.02 PAYMENT FOR MOBILIZATION/DEMOBILIZATION

- A. Payment for Mobilization/Demobilization should be included in Bid Item #1 of the Bid Form, Section 410. The Contractor will also need to provide details of the cost associated with his Mobilization/Demobilization for the Schedule of Values required under section 01120.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01160
CONSTRUCTION AIDS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: Furnish, install and maintain required construction aids along with their removal upon completion of Work.
- B. Related Requirements Described Elsewhere:
 - 1. Summary of Project: Section 01010.
- C. Comply with applicable requirements specified in Sections of Divisions 2 through 50.

1.02 PAYMENT FOR CONSTRUCTION AIDS

- A. Separate payment for construction aids will not be made for this project and the costs for any such aids should be included in the individual pay items it is associated with.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Materials may be new or used, suitable for the intended purpose, but must not violate requirements of applicable codes and standards.

2.02 CONSTRUCTION AIDS

- A. Provide construction aids and equipment required by personnel and to facilitate execution of the Work: scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes and other such facilities and equipment such as temporary valves, plugs, fittings, coffer dams, by pass trenches, etc. Refer to respective Sections for particular requirements of each trade.
- B. When permanent stair framing is in place, provide temporary treads, platforms and railings, for use by construction personnel.
- C. Maintain facilities and equipment in safe, sound, first-class condition.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Consult with the Engineer, review site conditions and factors which affect construction procedures and construction aids, which may be affected by execution of the Work.

3.02 GENERAL

- A. Comply with applicable requirements specified in sections of Divisions 2 through 50.
- B. Relocate construction aids as required by progress of construction, by storage of work requirements and to accommodate legitimate requirements of Owner and other contractors employed at the site.

3.03 REMOVAL

- A. Completely remove temporary materials, equipment and services:
 - 1. When construction needs can be met by use of permanent construction.
 - 2. At completion of work.
- B. Clean and restore areas damaged by installation or use of temporary facilities.
 - 1. Remove foundations and underground installations for construction aids.
 - 2. Clean the site, grade and sod areas affected by temporary installations to required elevations, slopes, and ground cover.
- C. Restore permanent facilities used for temporary purposes to specified condition or in kind if not specified.

END OF SECTION

SECTION 01170

CLEANING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: Conduct periodic cleaning during progress of the Work and at completion of the Work.

1.02 DISPOSAL REQUIREMENTS

- A. Conduct cleaning and disposal of debris in compliance with applicable codes, ordinances, regulations, and anti-pollution laws.

1.03 PAYMENT FOR CLEANING

- A. Separate payment for cleaning will not be made for this project and any such costs should be included under the Mobilization/Demobilization pay item.

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, including watering down construction roads if necessary.
- B. Clean interior of equipment boxes prior to the start of final connections and continue cleaning on an as-needed basis until project is finished.
- C. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall into waterways or preserve areas.

3.03 FINAL CLEANING

- A. Employ skilled cleaning workers for final cleaning and site clean-up.
- B. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from all visible exterior surfaces and all interior spaces.
- C. Clean all mud, paint splatter, grease, etc. from the catwalks and monitoring platform surfaces.
- D. Prior to final completion, or Owner acceptance, Contractor shall conduct an inspection of sight-exposed exterior surfaces and all work areas, to verify that the entire Work is clean.

END OF SECTION

SECTION 01180

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: Comply with requirement stated in Conditions of the Contract and in Specifications for administrative procedures in closing out the Work.
- B. Related Requirements Described Elsewhere:
 - 1. Cleaning: Section 01170.
 - 2. Operating and Maintenance Data: Section 01190.
 - 3. Project Record Documents: Section 01200.
 - 4. Warranties and Bonds: Section 01210.

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 according to the requirements of Section 01190.
 - 2. Project Record Documents are complete and have been submitted and reviewed according to the requirements of Section 01200.
 - 3. All areas to be used and occupied are safe and operable.
 - 4. All painting, finishes, fencing, gravel placement, final grading, sodding, planting, clean-up and removal of construction debris has been completed and ready for inspection.
 - 5. All deficiencies noted on inspection reports or nonconformances are corrected or the correction plan has been 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 a 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 site/facility to include the Owner. Engineer shall determine the completeness of the punchlist and readiness of the facility for operation/occupancy by the Owner.
 2. Prepare and deliver to Owner a tentative Certificate of Substantial Completion with the tentative punchlist 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 Form (Section 625) with a revised tentative list of items to be completed or corrected. Any incomplete work allowed on a punchlist must be reinspected upon completion and any deficiencies found will remain on the punchlist until it is completed to the satisfaction of the Engineer..

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 Specifications.
 - 3. Contractor must submit evidence of permitting approval from applicable 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 fully operational.
 - 5. All punchlist items have been corrected or completed and the Work is ready for final inspection.

- C. The Engineer will make an inspection to verify the status of completion, with reasonable promptness, after receipt of such written 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 all 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: Section 01210.
- B. Evidence of Payment and Release of Liens: In accordance with the requirements of the General Conditions, Supplementary Conditions and Sections 970 and 980.
- C. Certificate of Insurance for Products and Completed Operations.
- D. All public records in the possession of Contractor, as defined by Chapter 119, Florida Statutes.

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 amendment.
 - b. Allowances.
 - c. Unit prices.
 - d. Deductions for uncorrected work.
 - e. Penalties and bonuses (if applicable).
 - 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 01190

OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. This Section includes operations which cannot be specified in detail as separate items but can be sufficiently described as to the kind and extent to work involved. The Contractor shall furnish all labor, materials, equipment, and incidentals to complete the work under this Section.
2. The work of this Section includes, but is not limited to, the following:
 - a. Cleaning, lubricating and otherwise prepping equipment for operation.
 - b. Incidental work required for adjusting and setting up operational equipment.
 - c. Gathering all technical operational and maintenance data for all equipment from the manufactures.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All materials required for this Section shall be of the same quality as materials provided with the equipment being installed or as recommended by the equipment Manufacturer.
- B. All materials needed for start-up and adjusting of equipment shall be supplied and replaced as necessary.
- C. Provide hard backed three ring binders of sufficient size to hold all operation and maintenance materials for each individual equipment group, including: Slide Gates, Actuators, & Telemetry Equipment.

PART 3 - EXECUTION

3.01 CLEAN UP

- A. The Contractor shall remove all construction material, packaging, and other debris remaining on the job as the result of construction operations and start-up activities

and shall render the site of the Work in a neat and orderly condition, ready for full time operation.

3.02 INCIDENTAL WORK

- A. Do all incidental work not otherwise specified, but obviously necessary for the proper completion of the contract as specified and as shown on the Drawings.

END OF SECTION

SECTION 01200

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: Maintain at the site for the Owner one (1) 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 01110.

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 Masterformat 2016 Edition 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 color codes as designated by the Engineer.

1.04 RECORDING

- A. Label each plan sheet "RECORD DRAWING" with a rubber stamp having one (1) inch high letters, along the outside border.
- 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. 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.
 - 2. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
 - 3. Field changes of dimensions and details.
 - 4. Changes made by Field Order or by Change Order.
 - 5. Details not on original Contract Drawings.
 - 6. Equipment and piping relocations.
- 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 record shop drawings within the Operation and Maintenance Manual, for each piece of equipment, each electrical system, each mechanical system and each instrumentation system.

1.05 SUBMITTAL

- A. At Contract closeout, deliver one (1) original set and two (2) copies of all Record Documents to the Engineer for the Owner along with one (1) electronic copy.
- B. Accompany submittal with transmittal letter in triplicate, 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 01210

WARRANTIES AND BONDS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Compile specified warranties, guarantees and bonds, as specified in Articles 2, 7 and 15 of Section 00700: General Conditions and as further described in these Specifications.

B. Related Work Described Elsewhere:

1. General Conditions: Section 00700.
2. Contract Closeout: Section 01180.

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" and list the following:
 - 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 with sufficient width to easily fit documents. 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 a minimum of one (1) year, unless otherwise specified, commencing at the time of Substantial Completion unless otherwise specifically listed on the Certificate of Substantial Completion Form: Section 625.
- B. The Contractor shall be responsible for obtaining certificates of warranty for all major equipment installed for the project and which has at least a 1/2 hp motor or which lists for more than \$1,000. The Engineer reserves the right to request warranties for equipment not classified as major. The Contractor shall still warrant equipment not considered to be "major" in the Contractor's one-year warranty period even though certificates of warranty may not be required.
- C. In the event that the equipment manufacturer or supplier is unwilling to provide a one (1) year warranty commencing at the time of Substantial Completion, then 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 for the entire Work, starting at the time of Substantial Completion.

- D. The Owner shall incur no labor or equipment repair or replacement cost during the warranty/guarantee period.
- E. Warranty/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 any equipment and/or components furnished by the manufacturer or the Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION