

ADDENDUM No. 1 – MARCH 3, 2016

BID NO. IFB 16-104, FINANCE PROJECT No. WT1602

N. BOOSTER PUMP AND ELEVATED TANK PIPING MODIFICATION

Each recipient of this Addendum No. 1 to the Invitation for Bid (IFB) who responds to the IFB acknowledges all of the provisions set forth in the IFB and agrees to be bound by the terms thereof. This addendum shall modify, clarify, change or add information and clarification and become part of the above referenced IFB.

CLARIFICATION:

1. All questions shall be addressed to Ana DeMelo (ana.demelo@aecom.com) in writing and will be answered in addendum. The last day for questions is March 22, 2016 by 5 PM.

The following is a list of questions/comments received (responses are listed in bold below each question):

1. Is there a cost or budgetary estimate for this project?
The cost estimate for the project is approximately \$92,700.
2. We looked on the website for the City and on the Demandstar website and noticed that the Division 1 General Requirements were not in the project manual for the referenced project. Please advise.
Please see attached Division 1 specifications.

Proposers must acknowledge receipt of this Addendum No. 1 in the space provided below. This Addendum forms an integral part of the IFB documents and therefore must be executed and submitted with you proposal.

Issued By: City of Lake Worth
Finance Office
March 3, 2016

Signed By: 
Purchasing Agent

PROPOSER/Company

Company Name: _____

Signed By: _____ Print Name: _____

Title: _____

Date: _____

DIVISION 1

CITY OF LAKE WORTH

N. Booster Pump and Elevated Tank Piping Modification

BID No. IFB 16-104
FINANCE PROJECT No. WT 1602

March 3, 2016

SECTION 01000 - GENERAL 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 Work.

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 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 CONSULTANT, and in strict accordance with the Contract Documents. The CONTRACTOR shall clean up the work and maintain it during and after construction, until accepted, and shall do all work and pay all costs incidental thereto. The CONTRACTOR 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 Contract 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 aforementioned incidental work.
3. The CONTRACTOR shall provide and maintain such modern plant, tools, and equipment as may be necessary, in the opinion of the CONSULTANT, 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 its workmanship, materials, and equipment.

1.02 CONTRACT DOCUMENTS

A. 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. 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.

B. Intent:

1. Work not specified 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 silence of the Specifications as to any detail, or the 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 sub-CONTRACTORS shall be through the CONTRACTOR.
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 insure 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.

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 CONSULTANT 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 CONSULTANT 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 CITY.
3. Tests of electrical and mechanical equipment and appliances shall be conducted in accordance with the recognized federal, state and local law test codes and manufacturer recommendation.

B. Costs:

1. All inspection and testing of materials furnished under this Contract will be provided by the CONTRACTOR, unless otherwise expressly specified.
2. Materials and equipment submitted by the CONTRACTOR as the equivalent to those specifically named in the Contract may be tested by the CITY for compliance. The CONTRACTOR shall reimburse the CITY 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 CONSULTANT authoritative evidence in the form of Certificate of Manufacture that the materials to be used in the work have been manufactured and tested in conformity with the Contract Documents upon Project completion.
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. 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.

1.05 CARE AND PROTECTION OF PROPERTY

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, such property shall be restored by the CONTRACTOR, at his expense, to a condition similar or equal to that existing before the damage was done, or he shall make good the damage in other manner acceptable to the CONSULTANT.

1.06 MEASUREMENT AND PAYMENT

Payments will be made on completion of each phase of the Work and acceptance by the CITY shall be made pursuant to this Contract.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01010 - SUMMARY OF WORK

PART 1 - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS/REQUIREMENTS INCLUDED

- A. The work under this project consists of:
- Installation of approximately 90 LF of 8-inch DIP water main, gate valves, check valve, reducers, fittings and appurtenances to create a by-pass system to allow flow to the booster pump station.
 - Installation of approximately 42 LF of 10-inch DIP water main, gate valves, check valve, tapping sleeves, fitting and appurtenances to create a by-pass system at the North elevated water tank.
- C. Omission of a specific item or component of a system obviously necessary for the proper functioning of the equipment or system shall not relieve the Contractor of the responsibility of furnishing the item as part of the work at no additional expense to the Owner.
- D. Except as specifically noted elsewhere, Contractor(s) shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, transportation, water, heat, utilities, and temporary facilities necessary for the proper execution and completion of work.
- E. Concurrent with the installation of the water main, drainage or sanitary sewer improvements and when shown on the project construction drawings, the work includes swale development and improvements on both sides of the streets in the project area. Work includes re-grading, driveway apron reconstruction and all surface restoration.
- F. Restoration shall immediately follow the acceptance of required system testing and be performed as required to return the area to equal or better than existing conditions.

1.02 RELATED REQUIREMENTS

- A. Measurement and Payment Procedures: Section 01025
- B. Construction Facilities and Temporary Controls: Section 01500

1.03 CONTRACTS

- A. Construct the Work in accordance with Section 01025: Measurement and Payment Procedures.

1.04 CONTRACTOR'S USE OF SITE/PREMISES

- A. Contractor shall limit their use of the premises for Work and storage, to the areas designated.
- B. Coordinate use of premise under direction of CITY and/or CONSULTANT.
- C. Assume full responsibility for the protection and safekeeping of Products under this Contract, stored on the site.
- D. Move any stored Products, under Contractor's control, which interfere with operations of the CITY, other contractors or the general public.

1.05 SAFETY AND OSHA COMPLIANCE

- A. The Contractor shall comply in all respects with all Federal, State and Local safety and health regulations. Copies of the Federal regulations may be obtained from the U.S. Department of Labor, Occupation Safety and Health Administration (OSHA), Washington, DC 20210 or their regional offices.
- B. The Contractor shall comply in all respects with the applicable Workman's Compensation Laws.

PART 2 – PRODUCTS

2.1 All materials shall be per City of Lake Worth Approved Product List Manufacturers, or Approved Equal. Preferences are given to materials MADE IN THE UNITED STATES OF AMERICA, as well as, ductile iron fittings supplied by American Cast Iron Pipe Company from Brazil, Sigma Corporation from China, and Star-Pipe Products from the United States and China; and Electronic Marking System (EMS) full-range makers by 3M from Mexico.

2.2 SALVAGED MATERIALS

In the absence of special provisions to the Contract, salvaged materials, equipment or supplies that occur are the property of the CITY and shall be cleaned, stored and delivered to the CITY as directed by the CITY's Project Manager.

2.3 CERTIFIED CHEMICALS

The Contractor shall use U.S. Department of Agriculture certified chemicals only during performance of all work under this contract. All chemicals used during project construction or furnished for project whether herbicide, pesticide, disinfectant, polymer, reactant or other classification, must show approval of either EPA or USDA and be accompanied by an MSDS. Use of all such chemicals and disposal of residue shall be in strict conformance with manufacturer's instructions.

PART 3 – EXECUTION

3.1 CONTRACTOR SUPERVISION

- A. As required by the Contract Documents, the Contractor's Project Representative (Superintendent) shall be on site at all times and actively engaged in controlling and coordinating all on site project activities including direction and oversight of self-performed and subcontractor work activities.
- B. The Superintendent/Contractor's Project Representative shall have the full authority to receive instructions to execute the orders or directions of the CITY and CONSULTANT.

3.2 GENERAL

- A. The Contractor shall, prior to entering any section, prepare Pre Construction video and digital photographs, in accordance with Section 01390 VIDEO SITE SURVEY, of each property and Right-of-Way (ROW) areas to determine existing site conditions. Together the video and photographs will provide the basis for the condition of restoration.
- B. The Contractor shall notify all property owners / residents forty-eight (48) hours prior to working in public Rights-of-Way or easements affecting or adjoining their properties. Notification shall be by hand-delivered flyer that shall contain the following information:
 - 1. Project Name
 - 2. Date of Commencement
 - 3. Description of Work
 - 4. Name of Contractor
 - 5. Name of Contractor's Representative
 - 6. Local Phone Number of Contractor's Representative

The CITY must approve the Contractor's notification prior to issuance. Contractor must submit Contractor's Notification to CITY and CONSULTANT in writing within one (1) week prior to working in public Right-Of-Ways (ROW) or easements affecting for adjoining property owner's property.

- C. The Contractor shall, prior to the removal of any fences, erect temporary fences to secure the owner's property. These temporary fences shall be of 4' high woven

wire (2" x 4" grid), on the T line post 10' on centers. These fences shall run along the easement line and will remain in place until the permanent fence is re-erected.

- D. The Contractor shall not start major construction activities, such as pipeline and structure excavations, or preparation for major activities, such as setting wellpoints and header pipe, just prior to extended holiday periods such as the typical week taken off at the end of each year.

3.3 NPDES COMPLIANCE

- A. Prior to the commencement of work, the Contractor must obtain the permit coverage for stormwater discharge from large and small construction activities and must implement appropriate pollution prevention techniques and SWPPP to minimize erosion and sedimentation to properly manage the stormwater runoff. The Contractor shall prepare a NPDES Site Plan including sketches and Best Management Practice procedures for review and comment from the Project Manager. The NPDES Site Plan shall include the control of stormwater, ground water and subsurface water during dewatering operations.

(DEP adopted Rule 62-621.300 (4), F.A.C., with specific provisions for requesting permit coverage for the management of stormwater discharge from large and small construction activities.)

- B. The permit coverage for construction activities is to be obtained by submitting DEP form 62-621.300 (4) (b) Notice of Intent (NOI) to Use Generic Permit for Stormwater Discharge from Large and Small Construction Activities and by preparing and implementing a Stormwater Pollution Prevention Plan (SWPPP). After construction is complete, Notice of Termination (NOT) to discontinue the permit coverage is to be submitted by utilizing form 62-621.300 (6).

- C. For additional information contact NPDES Stormwater Section at:

Florida Department of Environmental Protection
Tallahassee, FL 32399-2400
(850) 921-9904

3.4 PROTECTION OR REMOVAL OF UTILITY LINES

- A. Prior to construction the Contractor shall locate for physical location, elevation and dimensions and adequately uncover existing utilities, (within the path of its proposed work), to determine possible conflicts. By starting underground constructions, the Contractor has agreed that it is fully responsible for any and all damages and/or delays that may arise from not having adequately locating the underground utilities. This applies to underground utilities that are shown on the project construction drawings and those that have been physically marked in the field by the various locating organizations or agencies.

- B. Information provided on the plans may be used as an approximate guide to assist the Contractor, however, the Contractor shall rely on actual field investigation to assure that all of the existing utilities are accurately located prior to commencement of its work.
- C. Existing structures reflect the best available information, but it shall be the Contractor's responsibility to acquaint itself with all information and to avoid conflict with existing conditions. Contractor shall protect all existing utility lines that are to be retained, or utility line constructed during excavation operations, from damage during excavation and backfilling; if damaged, repair at Contractor's expense.
- D. Existing Utility Lines to be Retained: Contractor shall repair damaged lines that are not shown on drawings, or locations of which are not known to Contractor in sufficient time to avoid further damage.
- E. Uncharted or incorrectly charted underground utilities that are discovered during construction shall be incorporated into the project As-Builts with vertical and horizontal coordinates.
- F. Prior to commencement of any excavation, the Contractor shall comply with Florida Statute 553.851 for the protection of underground gas lines and underground telecommunication lines.

END OF SECTION

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SECTION 01025 - MEASUREMENT AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 GENERAL

- A. The Contractor shall receive and accept the compensation provided in the Bid and the Contract as full payment for furnishing all materials, labor, tools and equipment, for performing all operations necessary to complete the work under the Contract, and also in full payment for all loss or damages arising from the nature of the work, or from any discrepancy between the actual quantities of work and quantities herein estimated by the CONSULTANT, or from the action of the elements or from any unforeseen difficulties which may be encountered during the execution of the work until the final acceptance by the CITY.
- B. The prices stated in the Bid include all costs and expenses for taxes, labor, equipment, materials, commissions, transportation charges and expenses, patent fees and royalties, labor for handling materials during inspection, together with any and all other costs and expenses for performing and completing the work as shown on the Drawings and specified herein. The basis of payment for an item at the unit price shown in the proposal shall be in accordance with the description of that item in this Section.
- C. The Contractor's attention is again called to the fact that the quotations for the various items of work are intended to establish a total price for completing the work in its entirety. Should the Contractor feel that the cost for any item of work has not been established by the Bid Form or Payment Items, he shall include the cost for that work in some other applicable bid item, so that his proposal for the project does reflect his total price for completing the work in its entirety.

1.02 MEASUREMENT

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

1.03 AUTHORITY

- A. Measurement methods delineated in the FDOT Standard Specifications for Road and Bridge Construction 2015 Edition, or the individual specification sections complement the criteria of this section. In the event of conflict, the

Contractor shall notify the CITY in writing. In determining the resolution, the CITY shall consider the requirement of the individual specification section, FDOT requirements and this Section.

- B. Any requirements of the Contract Documents, i.e., technical specifications or project construction drawings for which the method of payment is not explicitly defined are considered to be incidental costs and should be included in other pay items as appropriate.

1.04 RELATED SECTIONS:

- A. Testing Allowance
- B. Applications for Payments: Section 1027
- C. Shop Drawings, Working Drawings, and Samples: Section 01340
- D. Schedule of Values: Section 01370
- E. Change Order Procedures: Section 01153
- F. Field Engineering: Section 01050
- G. Record Drawing Requirements: Section 01705

1.05 ALLOWANCES

- A. When a Testing Allowance is identified on the Schedule of Bid Items, the following applies:
 - 1. Costs in Testing Allowance includes engaging a certified testing agency; execution of tests; and reporting results as approved by the CITY and CONSULTANT.
 - 2. Costs not included in the Testing Allowance:
 - a. Costs of testing services used by Contractor separate from Contract Document requirements
 - b. Testing agency's stand-by time.
 - c. Costs of retesting upon failure of previous tests as determined by the CONSULTANT.

3. Only those items qualified for CITY's reimbursement shall be considered. Such items may include water quality testing of dewatering activities, geotechnical, concrete strength cylinders, special compaction and proctor testing, etc. All predetermined items shall have written, advance approval of the CITY.
 4. Payment Procedures:
 - a. Submit two (2) copies of the testing and/or inspecting firm's invoice and copies of the Test Reports with next Application for Payment to the CITY.
 - b. Reimbursement to the Contractor upon proof of payment (to the testing and/or inspecting firm) on approval by the CONSULTANT.
- B. When other allowances, such as SFWMD dewatering permit application fees, or coordination with FPL/AT&T/ Comcast or other utility are identified on the Schedule of Bid Items, the following applies:
1. Only those items qualified for CITY reimbursement shall be considered. All items shall have written, advance approval of the CITY.
 2. Payment Procedures:
 - a. Submit two (2) copies of the agreed invoicing format with proof of payment (as applicable) with next Application for Payment.

1.06 SCHEDULE OF VALUES

- A. Submit Schedule of Values at the Pre-Construction Meeting.
- B. The Schedule of Values shall be a computer generated original. When the Contractor's proposed Schedule of Values is accepted by the CITY, it shall become the basis for the Application for Payment.
- C. Contractor shall only revise the accepted Schedule of Values to identify, as separate line items approved on a Field Order or Change Order. The CITY may issue a Field Order substituting or modifying Schedule of Value items.

1.07 APPLICATIONS FOR PAYMENT

- A. Submit five (5) copies of each Application for Payment (AFP). After certification by the CONSULTANT, the CONSULTANT will retain one (1) copy, one (1) copy will be returned to the Contractor and three (3) copies will be forwarded to the CITY for review, authorization and processing.

B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment outlining the following:

1. Provide a column for each of the following:

- a. Item Number
- b. Item Description
- c. Quantity
- d. Unit of measurement
- e. Scheduled Value
- f. Change Orders
- g. Work Completed:
 1. Previous Period (Quantity and Value)
 2. This Period (Quantity and Value)
- h. To Date (Quantity and Value)
- i. Percentage of Completion
- j. Balance to Finish
- k. Retainage

NOTE: There is no column for “Materials Stored”, the CITY does not pay for items ordered and/or stored on site. As defined later in this Section, payment for pay items are paid for once the item is installed, measured in place, completed and accepted.

C. Application for Final Payment must be marked FINAL. Contractor must include in the FINAL AFP package, proof of payment and final settlement with the CITY with regards to any temporary and/or construction water meters used during the course of the project.

D. When existing Right-Of-Way (ROW) irrigation must be disturbed due to pipeline installation or swale development, any existing irrigation lines shall be marked on the Contractors drawings prior to or at the time of temporary cutting-&-capping. The replacement of existing irrigation in the Public Right-Of-Way as the result of pipeline installation or swale development is NOT a pay item. Replacement of existing ROW irrigation shall be incidental to the Unit Price of the pipeline or swale development.

1.08 MEASUREMENT OF AND PAYMENT FOR WORK

- A. Monthly Payments to the Contractor.** The Contractor shall plan its work for construction on the basis of twelve (12) monthly pay periods per year. So long as the work is prosecuted in compliance with the provisions of the Contract, the Contractor will, on or about the last day of the pay period, make an approximate estimate, in writing on a form approved by the CITY of the proportionate value of the work done, items, and locations of the work performed up to and including the last day of the period then ending. The CONSULTANT will then review such estimate and make the necessary recommendations to the Contractor for revision. The Contractor shall revise the Application for Payment and resubmit to the CONSULTANT for review and Certification. **Redlined Applications for Payment will not be accepted by the CITY.** If the Contractor and the CONSULTANT do not agree on the approximate estimate of the proportionate value of the work done for any pay period, the determination of the CONSULTANT shall be binding. The amount of such estimate after deducting ten percent (10%) and all previous payments, shall be due and payable to the Contractor in accordance with the Florida Prompt Payment Act, §218.70 Florida Statutes, as may be amended from time to time.
- B. Substantiating Data:** When the CONSULTANT requires substantiating information, Contractor shall submit data justifying quantities and dollar amounts in question. Contractor shall provide three (3) copies of data with cover letter for each copy of submittal showing application number and date, and line item by number and description.

1.09 MEASUREMENT AND PAYMENT - UNIT PRICES

- A.** Measurement methods delineated in individual specification sections complement criteria of this section. In event of conflict, requirements of individual specification section govern.
- B.** Contractor shall take daily and weekly measurements and compute quantities. The Contractor shall review and sign these daily and weekly measurements with the CONSULTANT. The CONSULTANT shall also sign-off on the weekly measurement sheets indicating the CONSULTANT's progressive concurrence with the quantities. The Contractor shall transmit the signed-off weekly measurement sheets to the CONSULTANT. These measurement sheets shall be used to form the basis of the quantities claimed on the Application For Payment.
- C.** Unit Quantities

1. Quantities indicated in the Schedule of Bid Items are for bidding and contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the Consultant and CITY determine payment.
 2. If the actual Work requires more or fewer quantities than those quantities indicated in the bid items, Contractor shall provide the required quantities at the unit sum/prices contracted.
- D. Payment Includes: Full compensation for required labor, products, tools, equipment, facilities, transportation, services and incidentals; erection; application or installation of an item of the Work; and overhead and profit.
- E. Final payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the CONSULTANT and CITY, multiplied by the unit sum/price for Work, which is incorporated in or made necessary by the Work.

1.10 Measurement of Quantities:

- A. Weigh Scales: Inspected, tested and certified by the applicable State of Florida Weights and Measures department within the past year.
- B. Platform Scales: Of sufficient size and capacity to accommodate the conveying vehicle.
- C. Metering Devices: Inspected, tested and certified by the applicable State of Florida Weights and Measures Department within the past year.
- D. Measurement by Weight: Concrete reinforcing steel rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
- E. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
- F. Measurement by Area: Measured by square dimension using mean length and width or radius.
- G. Linear Measurement: Measured by linear dimension, at the item centerline. Minor offsets (less than a total of five (5) feet) will not be measured for payment. Measurement shall be along the horizontal axis at finished grade.
- H. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed and accepted item or unit of the Work.

- I. Payment for Work does not indicate acceptance. Work items previously paid for may require additional work effort to bring them into compliance with the requirements of the specific technical specifications and/or project drawings.

1.11 UNIT OF MEASURE – SCHEDULE OF BID PRICES

A. Payment for furnishing and installing those items cited in the Schedule of Bid Items and subsequent Schedule of Values is noted herein. Refer to items applicable to the project. If “remove and replace” is indicated on the project construction drawings (by either annotation or line weight), then the item descriptions below include the removal and proper disposal of the existing items.

B. Water Main

1. Payment for water main and restraining devices shall be determined by the number of linear feet of pipe furnished, installed in place, compacted, restored, tested and approved.
2. Payment to furnish and install DI Compact MJ fittings shall be at the unit price bid per ton for such fittings furnished in accordance with the Contract Documents. Weight shall be based on published weights provided by the fitting manufacturer.
3. Payment to install pigging wyes, caps for line flushing, fill and flush assemblies, and all temporary sampling points, including all appurtenances, shall be at the unit price bid for each item.
4. Pipe Lines for Water Mains: These items include all necessary labor and equipment, including clearing and preparing pipe corridor, removal of existing utilities as shown on the plans, * excavation of any type including rock & muck, hand trimming excavation, complying with the State of Florida Trench Safety Act, pipe bedding with insitu material, sheeting, shoring, dewatering (where required), pipe, restraining devices, Mega-Stop bell protection system, electronic markers (3M Full Range EMS Marker), metallic pipe location tape & locating wire, sleeves, concrete thrust blocks, backfill, compaction, density testing, swabbing / flushing, temporary plugs, pressure testing and as-built verification and documentation.
5. This pay item includes restraining devices for all piping and fittings to be restrained as shown on the plans.
6. This pay item includes all restoration (e.g. sidewalks, asphalt, sod, replacement of existing irrigation pipe and sprinkler heads, etc.) due to piping installation that is not included in other bid items. Sod shall be St.

Augustine where irrigation exists and Bahia where no irrigation exists. Excludes swale restoration which will be paid under a separate item.

C. Valves

1. Valves: By the unit. Includes furnishing and installing valve and valve and furnishing & installing fittings, restraining devices, electronic markers (3M Full Range EMS Marker), concrete collar (where required), accessories and installation, complete and accepted.
2. This pay item includes restraining devices as required.
3. This pay item includes all restoration (e.g. sidewalks, asphalt, sod, replacement of existing irrigation pipe and sprinkler heads, etc.). Excludes swale restoration which will be paid under a separate item.

D. Tapping Assemblies

1. Payment for tapping assembly installations will be based on the installation of each item, complete, including tapping sleeve and valve, box and cover (as required), testing, and all appurtenances.
2. This pay item includes restraining devices as required.
3. This pay item includes all restoration (e.g. sidewalk, asphalt, sod, replacement of existing irrigation pipe and sprinkler heads, etc.). Excludes swale restoration which will be paid under a separate item.

E. Hydrants

1. Payment for removing and salvaging or disposal of fire hydrants shall be at the unit price bid per each and shall constitute full compensation for but not limited to removal of the hydrant assembly, plugging the existing main, transporting to a designated site within the City or disposal as directed by the Engineer and all restoration work. Materials to be salvaged shall be delivered to the Owner at no additional cost.
2. Payment to furnish and install fire hydrant assemblies on the new water main shall be at the unit price bid per each and shall include but is not limited to hydrant, tee, tapping sleeve, valve, piping, and all appurtenances.
3. Payment reconnect existing fire hydrant assemblies on proposed water main shall be at the unit price bid per each and shall include but is not limited to tee, valve, piping, and all appurtenances.

4. This pay item includes all restoration (e.g. sidewalks, asphalt, sod, replacement of existing irrigation pipe and sprinkler heads, etc.). Excludes swale restoration which will be paid under a separate item.

F. Master Meter

1. Payment for furnishing and installing the 12” master meter will be based on the installation of each item, complete, including concrete vault, cover, testing and all appurtenances as shown on the Drawings.
2. This pay item includes all restoration (e.g. sidewalks, asphalt, sod, replacement of existing irrigation pipe and sprinkler heads, etc.) as well as removal and plugging for all temporary installations. Excludes swale restoration which will be paid under a separate item.

G. Sampling Points

1. Payment for sampling points will be based on the installation of each item, complete, including all appurtenances shown on the Drawings
2. This pay item includes all restoration (e.g. sidewalks, asphalt, sod, replacement of existing irrigation pipe and sprinkler heads, etc.) as well as removal and plugging for all temporary installations. Excludes swale restoration which will be paid under a separate item.

H. Water Services

1. Payment for new water services will be based on the installation of each item, complete, including meter boxes or touch read lids, poly pipe, corporation stop, saddle, curb stop and all appurtenances.
2. Payment for transferring services from rear to front of property will include abandonments of exiting meter location and private service line, including right of entry forms, plumbing permits, installation of private service line to the existing house valve location and the relocation of the existing meter to the front of property, complete, meter boxes or touch read lids, poly pipe, corporation stop, saddle, curb stop and all appurtenances.
3. This pay item includes connecting the new service from the new water main to the relocated/existing front yard meter box.
4. Payment for water service casing pipe shall be determined by the number of linear feet of pipe furnished, installed in place, compacted, restored, tested, and approved

5. This pay item includes all restoration (e.g. sidewalks, asphalt, sod, replacement of existing irrigation pipe and sprinkler heads, etc.). Excludes swale restoration which will be paid under a separate item.

I. Line Stops

1. Payment for line stops will be based on the installation of each item, including but not necessarily limited to: furnishing and installing line stop equipment; installing and removing tapping sleeve and valve; plugging existing pipe; abandoning existing waterline as necessary including all fittings and restraints; all excavation; permanent and temporary shoring of the excavation; groundwater control, treatment and disposal; bedding, backfill and compaction; and clean up.
2. This pay item includes all restoration (e.g. sidewalks, asphalt, sod, replacement of existing irrigation pipe and sprinkler heads, etc.). Excludes swale restoration which will be paid under a separate item.

J. Remove and Dispose of Asbestos Concrete Pipe

1. Payment for removal and disposal of asbestos concrete pipe shall be determined by the number of linear feet of pipe removed and disposed including but not limited to: proper and safe removal of the buried asbestos cement pipe, proper bagging in leak tight plastic (with total of 6 mil thickness) for the Class II non-friable asbestos containing materials, transportation and delivery to the Solid Waste Authority operated Landfill, proper ACP materials documentation and use of personal protective equipment.
2. This pay item includes clearing and preparing pipe corridor, excavation of any type including rock & muck, hand trimming excavation, complying with the State of Florida Trench Safety Act, sheeting, shoring, dewatering (where required) and all restoration (e.g. sidewalks, asphalt, sod, replacement of existing irrigation pipe and sprinkler heads, etc.). Excludes swale restoration which will be paid under a separate item.

K. Abandon Water Main

1. Payment for non-asbestos concrete water main abandonment shall be determined by the number of linear feet of pipe abandoned in place as directed under hard surface areas.
2. Pipe shall be filled with flowable grout fill under hard surface areas.
3. This pay item includes all preparation for and verification of grouting completion.

4. This pay item includes all restoration (e.g. sidewalks, asphalt, sod, replacement of existing irrigation pipe and sprinkler heads, etc.). Excludes swale restoration which will be paid under a separate item.

L. Cut and Cap – Abandon in Place Water Main

1. Payment for water main abandonment for non-asbestos concrete pipe shall be determined by the number of locations cut and capped, complete in green or landscaped areas.
2. This item includes all labor and materials required for each location cut and capped in green or landscaped areas.
3. This pay item includes all restoration (e.g. sidewalks, asphalt, sod, replacement of existing irrigation pipe and sprinkler heads, etc.). Excludes swale restoration which will be paid under a separate item.

M. Cured-in-Place Sewer Trunk Line Rehabilitation

1. The Contract unit price bid for this item shall include compensation for labor, material and equipment required to reline sanitary sewer trunk line.
2. Payment shall be at the Contract unit price (linear feet) installed, complete and accepted. The minimum length shall be that deemed necessary to effectively span the pipelining distance of the necessary repair unless otherwise specified.
3. This pay item includes all restoration (e.g. sidewalks, asphalt, sod, replacement of existing irrigation pipe and sprinkler heads, etc.). Excludes swale restoration which will be paid under a separate item.

N. Cured-in-Place Sewer Lateral Rehabilitation

1. The Contract unit price bid for this item shall include compensation for labor, material and equipment required to reline sanitary sewer laterals.
2. Payment shall be at the Contract unit price (per each) installed, complete and accepted.
3. This pay item includes all restoration (e.g. sidewalks, asphalt, sod, replacement of existing irrigation pipe and sprinkler heads, etc.). Excludes swale restoration which will be paid under a separate item.

O. Concrete Sidewalk

1. Concrete sidewalk replacement shall include removal and disposal of the demolished sidewalk portions, compaction of the sidewalk replacement area, density testing, formwork, concrete, installation of the sidewalk,

finishing, curing agent, preparation of and testing concrete cylinders, restoration, sod replacement of existing irrigation pipe and sprinkler heads (to match existing quality and quantity), and all other work and materials required for a complete installation.

2. Payment shall be at the Contract unit price (per square foot, measured length times the width) installed, complete and accepted.
3. Sidewalk replacement beyond the limits established by the project construction drawings will not be considered for payment.

P. Driveway Apron Restoration (Asphalt and Concrete)

1. Driveway Apron Restoration shall include all work necessary to repair affected driveways including, but not necessarily limited to: all excavation, removal and disposal of the damaged aprons, removal and disposal of temporary materials; saw cutting; tack coat; compaction; adjusting castings and utility boxes; forms; reinforcing; doweling; concrete; aggregate material; hot mix asphalt pavement; finishing, jointing and curing of concrete; all applicable testing; removal and disposal of surplus and unsuitable materials; replacement or repair of utilities, drainage systems, structures, and miscellaneous property; clean-up, restoration, sod replacement of existing irrigation pipe and sprinkler heads (to match existing quality and quantity), and all other work and materials required for a complete installation
2. Payment shall be at the Contract unit price (per square yard installed, complete and accepted).

Q. Driveway Apron Restoration (Brick Paver)

1. Driveway Apron Restoration shall include all work necessary to repair affected driveways including, but not necessarily limited to: all excavation; removal and storage of the removed aprons; compaction; adjusting castings and utility boxes; placement of existing pavers; all applicable testing; removal and disposal of surplus and unsuitable materials; replacement or repair of utilities, drainage systems, structures, and miscellaneous property; clean-up, restoration, sod replacement of existing irrigation pipe and sprinkler heads (to match existing quality and quantity), and all other work and materials required for a complete installation.
2. Payment shall be at the Contract unit price (per square yard installed, complete and accepted).

R. Monolithic Vertical Curb, Gutter and Sidewalk

1. Monolithic curb, gutter and sidewalk shall include all work necessary to construct the Monolithic curb, gutter and sidewalk including but not necessarily limited to: removal, disposal, excavation, grading and compaction.
2. Payment shall be at the Contract unit price (per lineal feet installed, complete and accepted).

S. Swale Reconstruction and Sodding

1. Swale Reconstruction and Sodding shall include all work necessary to construct the swale including but not necessarily limited to: excavation, washed stone base (as necessary), grading, and sodding.
2. Payment shall be at the Contract unit price (per square yard installed, complete and accepted).

T. Flowable Fill

1. Payment shall be at the Contract unit price (per cubic yard installed, complete and accepted)

U. Trench Restoration (Pervious)

1. Trench restoration shall include all work necessary to restore affected unpaved areas as indicated in the construction drawings including, but not necessarily limited to: sod, replacement of existing irrigation pipe and sprinkler heads, etc. due to piping installation that is not included in other bid items. Sod shall be St. Augustine where irrigation exists and Bahia where no irrigation exists. Excludes swale restoration which will be paid under a separate item.
2. Payment shall be at the Contract unit price (per linear foot of trench, complete and accepted).

V. Trench Restoration (Paved Areas)

1. Furnish and install asphalt replacement to the extent and locations shown on the construction drawings.
2. Replacement shall be asphaltic concrete.
3. Payment shall be at the Contract unit price (per linear foot of trench, complete and accepted).
4. This bid item includes the adjustment of manhole and covers.

W. Concrete Curb Removal

1. Removal of existing concrete curb to the extent and locations shown on the construction drawings
2. Payment shall be at the Contract unit price (per linear feet of curb, complete and accepted).

X. Roadway Demolition

1. Removal of existing asphalt and base to the extent and locations shown on the construction drawings.
2. Removal of existing driveway apron to the extent and locations shown on the construction drawings
3. Payment shall be at the Contract unit price (per square yard of roadway, complete and accepted).

Y. Roadway Construction

1. Furnish and place stabilized subgrade, limerock base course and asphalt replacement to the extent and locations shown on the construction drawings.
2. Payment shall be at the Contract unit price (per square yard of roadway item, complete and accepted).
3. This bid item includes the adjustment of manhole and covers.

Z. Roadway Milling

1. Milling of existing asphalt pavement to the extent and locations shown on the construction drawings.
2. Payment shall be at the Contract unit price (per square yard of roadway, complete and accepted).

AA. Pavement Markings

1. The Contract unit price bid for this item shall include compensation for all labor, material and equipment.
2. Pavement markings shall be installed per detail included in the drawings.
3. Traffic Striping and Pavement Marking: Measure lineal feet or each provided (as indicated on schedule) of traffic striping and pavement marking material applied.
4. Reflective Pavement Markers: Measure on the basis of providing each reflective marker required.

BB. Mobilization/Demobilization, Bonds, Insurance & General Requirements

1. Payment for the General Conditions shall be made per item and shall be full compensation for preparatory work and operations in mobilizing and demobilizing for the project including but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to and from the project site, Maintenance of Traffic, for establishment of temporary offices, buildings, safety equipment, sanitary and other facilities and compliance with permit conditions for permits secured by either the Owner or Contractor.
2. MOT plans shall be required for work within City of Lake Worth R-O-W.
3. Audio Video Documentation shall be performed pre and post construction as specified in Section 01390 VIDEO AND PHOTOGRAPHIC SITE SURVEY.
4. The cost of bonds, permits, required insurance and any other pre-construction expense necessary for the start of the work shall also be included in the General Conditions.

CC. NPDES Compliance

1. Payment for NPDES compliance shall include the preparation of the NPDES Plan, development and compilation of the BMPs, site implementation and documentation of inspections.
2. Contractor shall refer to the Schedule of Bid Items for instructions on the method of calculation for this Pay Item. Any bidder who enters an amount greater than the 1.5% limit for this pay item may be disqualified and the CITY and Consultant may not evaluate their bid proposal. This cost shall be shown on the Schedule of Values.
3. Partial payments for the NPDES compliance shall be made in accordance with the following schedule:

Percent of Original Contract Amount Earned	Allowable percent of NPDES Compliance
10	10
25	25
50	50
75	No additional payment
Final Payment	100

DD. Record Drawings

1. Payment for Record Drawings shall be made at the Contract lump sum price and shall be full compensation for preparation and maintenance of the Record Drawings as specified in technical specification 01340 SHOP DRAWING REQUIREMENTS and the requirements of this Special Conditions.
2. Partial payments for the Record Drawings shall be made in accordance with the following schedule:

Percent of Original Contract Amount Earned	Allowable percent of lump sum price for Record Drawings
10	10
25	25
50	50
75	No additional payment
Final Payment	100

3. Contractor shall submit updated As-Built Drawings with each Pay Application Request.

EE. Indemnification

1. Payment under this item is in accordance with of the Front-End Contract Documents.

PART 2 PRODUCTS - Not Used.

PART 3 EXECUTION - Not Used.

* SPECIAL NOTE:

The CITY retains the option to utilize up to 20% of the excess material from excavation and trenching operations. If the CITY exercises this option, Contractor shall stockpile the excess material and deliver to the CITY's facility as directed by the CITY's Representative.

END OF SECTION

SECTION 01027 - APPLICATION FOR PAYMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: Submit Applications for Payment to the CONSULTANT in accordance with schedule established by Conditions of the Contract and Agreement between CITY and Contractor.
- B. Related requirements described elsewhere:
 - 1. Agreement:
 - 2. Application for Payment Form.
 - 3. Progress Schedules: Section 01310.
 - 4. Schedule of Values: Section 01370
 - 5. Construction Photographs: Section 01380.
 - 6. Contract Closeout: Section 01700.
 - 7. Project Record Documents: Section 01720.

1.02 FORMAT REQUIRED

- A. Submit applications typed on form acceptable to CITY, Documents (Application for Payment Form), with itemized data typed on 8-1/2 inch x 11 inch or 8-1/2 inch x 14-inch white paper continuation sheets.

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 value to agree with respective percents.
 - 3. Execute certification with signature of a responsible officer of Contract firm.
- B. Continuation Sheets:

1. Fill in total list of all scheduled component items of work, with item number and scheduled dollar value for each item.
2. Fill in dollar value in each column for each scheduled line item when work has been performed. 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 work.
4. As provided for in the "Application for Payment" form, the Contractor shall certify, for each current pay request, that all previous progress payments received from the CITY, 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 for Payment like affidavits by all subcontractors.

1.04 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

- A. Contractor shall submit suitable information, with a cover letter identifying:
 1. Project.
 2. Application number and date.
 3. Detailed list of enclosures.
- B. Submit one (1) copy of data and cover letter for each copy of application.
- C. The Contractor is to maintain an updated set of drawings to be used as record drawings in accordance with Section 01720: Project Record Documents. As a prerequisite for monthly progress payments, the Contractor is to submit the updated record drawings for review by the CITY and the CONSULTANT.
- D. Each monthly application for payment shall incorporate the corresponding "monthly progress status report" prepared per the requirements of Section 01310: Progress Schedule.
- E. Contractor shall submit a duly executed letter from surety consenting to payment due and progress to date.
- F. Provide construction photographs in accordance with Section 01380: Construction Photographs.

1.05 PROGRESS PAYMENT PROCEDURES

- A. The Contractor will prepare and submit four (4) original monthly invoices for work completed during the one-month period. Application For Payment shall be submitted in the format of the sample form provided by the CITY. All information must be completed for the pay application to be accepted. CITY's purchase order number for the project must be placed on each application. The Application for Payment must be submitted at least three (3) days in advance in an electronic format for review by the CITY and CONSULTANT for approval. **Redlined Applications for Payment will not be accepted by the CITY.**
- B. If the Application for Payment and support data are not approved, the Contractor is required to submit new, revised or missing information according to the CONSULTANT's instructions. Otherwise, the Contractor shall prepare and submit to the CITY or CONSULTANT an invoice in accordance with the estimate as approved. CITY will pay Contractor, in accordance with Florida Prompt Payment Act, §218.70, Florida Statutes, as may be amended from time to time.
- C. Each Application For Payment shall be accompanied by an updated project schedule (three-week ahead schedule) along with the Construction/Progress photographs and Project Record Drawings in accordance with Section 01720: PROJECT RECORD DOCUMENTS and 01380: CONSTRUCTION PHOTOGRAPHS or as directed by the CITY. Any Application For Payment that is received without these items will be returned to the Contractor without review.
- D. The Contractor shall prepare a schedule of values by phases of work to show a breakdown of the Contract Sum corresponding to the payment request breakdown and progress schedule line items. The schedule of values must also show dollar value for each unit of work scheduled. Approved Change Order items shall be added as separate line items.
- E. Prior to initial payment request, the Contractor shall submit the following documents to the CITY and Consultant for their review and approval:
 - 1. List of principle subcontractors and suppliers.
 - 2. Schedule of values.
 - 3. Shop drawing log.
 - 4. Project schedule.

1.06 PREPARATION OF APPLICATION FOR FINAL PAYMENT

- A. Fill in Application form as specified for progress payments. Provide

information as required by the General Conditions and Section 01700: Contract Closeout.

- B. Furnish evidence of completed operations insurance in accordance with the General Conditions.
- C. Provide Final Release of Lien and other closeout submittals as required by the General Conditions.

1.07 SUBMITTAL PROCEDURES

- A. Submit Applications for Payment to the CITY at the time stipulated in the Agreement. Review the percents complete with the CONSULTANT and resolve any conflicts or discrepancies.
- B. Number of copies for each Final Application for Payment:
 - 1. CITY: Two (2) copies.
 - 2. CONSULTANT: One (1) copy
 - 3. Contractor: As required for its needs.
- C. When the CONSULTANT finds Application properly completed and correct, it will transmit the certificate for payment to the CITY, with copy for the Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

- 3.01 Upon receipt by CONSULTANT and CITY of Contractor's written Notice of Final Completion of its work under this Contract, CONSULTANT and CITY shall verify all work has been completed on the project. When all work has been verified as complete, and the Contractor submits the items listed below, the Contractor may submit a final Application For Payment:
 - A. Complete work listed as incomplete at the time of Substantial Completion and obtain CONSULTANT certification of completed Work.
 - B. Provide copy of records indicating notification to all subcontractors and material suppliers of Contractor's Performance and Payment Bonds.
 - C. Transfer operational, access, security and similar provisions to CITY; remove temporary facilities, tools and similar items.

END OF SECTION

SECTION 01041 - PROJECT COORDINATION

PART I – GENERAL

1.01 REQUIREMENTS INCLUDED

A. The Contractor shall:

1. Coordinate work of its employees and subcontractors.
2. Expedite its work to assure compliance with schedules.
3. Coordinate its work with that of work by CITY.
4. Comply with orders and instructions of CONSULTANT.

1.02 RELATED REQUIREMENTS

- A. Section 01010: Summary of Project.
- B. Section 01027: Applications for Payment.
- C. Section 01200: Project Meetings.
- D. Section 01310: Progress Schedules.
- E. Section 01340: Shop Drawings, Work Drawings and Samples.
- F. Section 01500: Construction Facilities and Temporary Controls.
- G. Section 01700: Contract Closeout.

1.03 CONSTRUCTION ORGANIZATION & START-UP

A. CONSULTANT shall establish on-site lines of authority and communications:

1. Schedule and conduct pre-construction meeting and progress meetings as specified in Section 01200: PROJECT MEETINGS.
2. Establish procedure for:
 - a. Submittals
 - b. Reports and records
 - c. Recommendations

- d. Coordination of drawings
 - e. Schedules
 - f. Resolution of conflicts
3. Interpret Contract Documents:
 - a. Transmit written interpretations to Contractor, and to other concerned parties.
 4. Assist in Obtaining permits and approvals:
 - a. Verify that Contractor and subcontractors have obtained inspections for Work and for temporary facilities.
 5. Control the use of Site:
 - a. Allocate space for Contractor's use for field offices, sheds, and work and storage areas.
 6. Inspection and Testing:
 - a. Inspect work to assure performance in accord with requirements of Contract Documents.
 - b. Administer special testing and inspections of suspect Work.
 - c. Reject Work, which does not comply with requirements of Contract Documents.
 - d. Coordinate Testing Laboratory Services:
 1. Verify that required laboratory personnel are present.
 2. Verify that tests are made in accordance with specified standards.
 3. Review test reports for compliance with specified criteria.
 4. Recommend and administer any required re-testing.

1.04 CONTRACTOR'S DUTIES

A. Construction Schedules:

1. Prepare a detailed schedule of basic operations.

2. Monitor schedules as work progresses:
 - a. Identify potential variances between scheduled and probable completion dates for each phase.
 - b. Recommend to CITY adjustments in schedule to meet required completion dates.
 - c. Document changes in schedule; submit to CITY, CONSULTANT and to involved subcontractors.
 3. Observe work of each subcontractor to monitor compliance with schedule.
 - a. Verify that labor and equipment are adequate for the work and the schedule.
 - b. Verify that product procurement schedules are adequate.
 - c. Verify that product deliveries are adequate to maintain schedule.
 - d. Report noncompliance to CONSULTANT, with recommendation for changes.
- B. Process Shop Drawings, Product Data and Samples:
1. Prior to submittal to CONSULTANT, review for compliance with Contract Documents:
 - a. Field dimensions and clearance dimensions.
 - b. Relation to available space.
 - c. Effect of any changes on the work of any subcontractor.
- A. Review Drawings prepared by Mechanical and Electrical subcontractors:
1. Prior to submittal to CONSULTANT, review for compliance with Contract Documents:
- B. Prepare Coordination Drawings as required to resolve conflicts and to assure coordination of the work of, or affected by, mechanical and electrical trades, or by special equipment requirements.
1. Submit to CONSULTANT.

2. Reproduce and distribute copies to concerned parties after CONSULTANT review.
- C. Maintain reports and records at job site, available to CONSULTANT and CITY.
1. Daily log of progress of work.
 2. Records.
 - a. Contracts.
 - b. Purchase orders.
 - c. Materials and equipment records.
 - d. Applicable handbooks, codes and standards.
 3. Maintain file of record documents.

1.05 CONTRACTOR'S CLOSE-OUT DUTIES

- A. Mechanical and Electrical equipment start-up:
1. Coordinate checkout of utilities, operational systems and equipment.
 2. Organize initial start-up and testing.
 3. Record dates of start of operation of systems and equipment.
 4. Submit to CITY written notice of beginning of warranty period for equipment put into service.
- B. At completion of Work, conduct an inspection to assure that:
1. Specified cleaning has been accomplished.
 2. Temporary facilities have been removed from site.
- C. Substantial Completion:
1. Conduct an inspection to develop a list of Work to be completed or corrected.
 2. Assist CONSULTANT in inspection.

3. Supervise correction and completion of work of subcontractors.

1.06 CONSULTANT'S CLOSE-OUT DUTIES

A. Final Completion:

1. When Contractor determines that work is finally complete, conduct an inspection to verify completion of Work.

B. Administration of Contract closeout:

1. Receive and review Contractor's final submittals.
2. Transmit to CITY with recommendations for action.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

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SECTION 01050 - FIELD ENGINEERING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: Contractor to provide Field Engineering service for the Project.

1. Survey work required in execution of Project.
2. The method of field staking for the construction of the Work shall be at the option of the Contractor. The CITY has provided the engineering surveys, if available, necessary to establish reference points which in the CITY's judgment are necessary to enable the Contractor to proceed with its work.
3. The accuracy of any method of staking shall be the responsibility of the Contractor. All engineering for vertical and horizontal control shall be the responsibility of the Contractor.
4. The Contractor shall be held responsible for the preservation of all stakes and marks. If any stakes or marks are carelessly or willfully disturbed by the Contractor, the Contractor shall not proceed with any work until it has established such points, marks, lines and elevations as may be necessary for the prosecution of the Work.
5. The Contractor shall retain the services of a registered land surveyor licensed in the State of Florida to identify existing control points and maintain a survey during construction.

B. Related Requirements Described Elsewhere:

1. Summary of Work: Section 01010.
2. Project Record Documents: Section 01720.

1.02 QUALIFICATIONS OF SURVEYOR

A. Qualified registered land surveyor, acceptable to the CITY.

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 Consultant.
2. Report to the CONSULTANT 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 CITY. Establish replacement based on original survey control.

1.04 PROJECT SURVEY REQUIREMENTS

- A. Establish a minimum of two (2) permanent benchmarks each on site.
 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.
- C. From time to time, verify layouts by same methods.

1.05 RECORDS

- A. Maintain a complete, accurate log of all control and survey work as it progresses.
- B. At the end of the project, submit a certified site survey at 1-inch equals 30 feet scale on 24 inches by 36 inches sheet. Survey shall include: all topographic features, at least every 100 feet, along the installed fence line, at the inside edge of the 12-foot sodden area, and the property/R-O-W line.

1.06 SUBMITTALS

- A. Submit name and address of surveyor to the CONSULTANT.
- B. On request of the CONSULTANT, submit documentation to verify accuracy of Field Engineering work.
- C. Submit certificate signed by a registered surveyor certifying that elevations are in conformance with the Contract Documents, or if not in conformance, certify as to variances from the Contract Documents.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01065 - PERMITS AND FEES

PART 1 – GENERAL

- A. The Contractor shall obtain all permits and licenses related to its work, including but not limited to, the necessary construction permits. Cost of permit fees shall be paid by Contractor. CITY to be invoiced at actual cost without markup.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 NPDES COMPLIANCE

- A. In addition to other required field permitting, prior to the commencement of work, the Contractor must obtain the permit coverage for stormwater discharge from large and small construction activities and must implement appropriate pollution prevention techniques and SWPPP to minimize erosion and sedimentation to properly manage the stormwater runoff. The Contractor shall prepare a NPDES Site Plan including sketches and Best Management Practice procedures for review and comment from the Project Manager. The NPDES Site Plan shall include the control of stormwater, ground water and subsurface water during dewatering operations.

(DEP adopted Rule 62-621.300 (4), F.A.C., with specific provisions for requesting permit coverage for the management of stormwater discharge from large and small construction activities.)

- B. The permit coverage for construction activities is to be obtained by submitting DEP form 62-621.300 (4) (b) Notice of Intent (NOI) to Use Generic Permit for Stormwater Discharge from Large and Small Construction Activities and by preparing and implementing a Stormwater Pollution Prevention Plan (SWPPP). After construction is complete, Notice of Termination (NOT) to discontinue the permit coverage is to be submitted by utilizing form 62-621.300 (6).
- C. For additional information contact NPDES Stormwater Section at:

Florida Department of Environmental Protection Tallahassee, FL 32399-2400 (850) 921-9904

END OF SECTION

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SECTION 01100 - SPECIAL PROJECT PROCEDURES

PART 1 - GENERAL

1.01 PUBLIC NUISANCE

- A. The Contractor shall not create a public nuisance including, but not limited to, encroachment on adjacent lands, flooding of adjacent lands, or excessive noise.
- B. Sound levels measured by the Consultant shall not exceed 50 dBA from 7 P.M. to 7 A.M. or 60 dBA 7 A.M. to 7 P.M. This sound level shall be measured at the exterior of the nearest exterior wall of the nearest residence. Levels at the equipment shall not exceed 85 dBA at any time. Sound levels in excess of these values are sufficient cause to have the work halted until equipment can be quieted to these levels. Work stoppage by the Consultant of Owner for excessive noise shall not relieve the Contractor of the other portions of this Specification including, but not limited to, completion dates and bid amounts.
- C. Construct all work to prevent run-off from flowing off site.
- D. No extra charge may be made for time lost due to work stoppage resulting from the creation of a public nuisance.
- E. The Contractor shall notify all property owners/residents, forty-eight (48) hours prior to working in public rights-of-ways or easements affecting or adjoining their properties. Notification shall be hand-delivered flyer that shall contain the following information:
 - 1. Project Name
 - 2. Date of Commencement
 - 3. Description of Work
 - 4. Name of Contractor
 - 5. Name of Contractor's Representative
 - 6. Local phone number of Contractor's Representative.

The CITY shall approve the Contractor's notification prior to issuance of flyer to the public. Contractor must submit Contractor's Notification to CITY and CONSULTANT in writing within one (1) week prior to working in public Right-of-Ways (ROW) or easements affecting or adjoining property owner's

property.

1.02 HAULING AND CONSTRUCTION OPERATIONS

- A. The Contractor shall keep its haul route and work area(s) neat and clean, and shall bear all responsibility for the cleanup of any spill which occurs during the transport of material to be disposed of. The Contractor shall immediately clean up any such spill or waste. If the Contractor fails to clean up such spill, or waster immediately, the CITY shall have the right to clean up or arrange for its clean up and charge to the Contractor all costs, including engineering, administrative costs and overhead, incurred by the CITY in connection with such cleanup. The CITY may also charge to the Contractor any cost incurred or penalties imposed on the CITY as a result of any spill, dump or discard. Under no circumstances is this material to be discharged into the waterways or any place other than where authorized to do so by the appropriate authority. The term "Contractor" as used in this section shall include the Contractor's Subcontractors and other Contractors.
- B. The general requirements for vehicles hauling such waste materials are as follows: Transport vehicle must be of type(s) approved for this application by the State of Florida. Vehicles must be loaded within legal weight limits and operated safely within all traffic and speed regulations.
- C. The routes used by the Contractor for the conveyance of this material on a regular basis shall be subject to approval by the governing authority having jurisdiction over such routes. To the extent possible, the use of residential streets shall be prohibited.
- D. Provide protection for plans designated to remain. Replace damaged plants.
- E. Provide barriers to prevent unauthorized entry to site and to protect existing facilities and adjacent properties from damage.
- F. Provide flag person(s) and necessary traffic control devices when trucks or construction equipment is entering or leaving the site.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01110 - ENVIRONMENTAL PROTECTION PROCEDURES

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. The work covered by this Section consists of furnishing all labor, materials and equipment and performing all work required for the prevention of environmental pollution in conformance with applicable federal, state and local laws and regulations, during and as the result of construction operations under this Contract. For the purpose of this Specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances; adversely affect plants or animals; or degrade the utility of the environment for aesthetic and/or recreational purposes.
- B. The control of environmental pollution requires consideration of air, water and land, and involves management of noise and solid waste, as well as other pollutants.
- C. The Contractor shall schedule and conduct all work in a manner that will minimize the erosion of soils in the area of the work. Provide erosion control measures required to prevent silting, muddying, or pollution of wetlands, streams, rivers, impoundments, lakes, stormwater ponds, etc. All erosion control measures shall be in place in an area prior to any construction activity in that area and shall be maintained throughout construction. Specific requirements for erosion and sedimentation controls are specified in Section 02270. The Contractor will be required to meet all the conditions specified in the permits and in the Specifications.
- D. All specific conditions attached to existing permits for this site shall be included in the sedimentation and erosion control measures.

1.2 APPLICABLE REGULATIONS

- A. The Contractor shall comply with all applicable Federal, State and local laws and regulations and applicable permits and their specific conditions concerning environmental pollution control and abatement.

1.3 NOTIFICATIONS

- A. The CITY and/or CONSULTANT will notify the Contractor in writing of any non-compliance with the foregoing provisions or of any environmentally objectionable acts and corrective action to be taken. State or local agencies responsible for verification of certain aspects of the environmental protection

requirements shall notify the Contractor in writing, through the CITY or CONSULTANT, of any non-compliance with State or local requirements. The Contractor shall, after receipt of such notice from the CITY or Consultant or from the regulatory agency through the CITY and/or CONSULTANT, immediately take corrective action. Such notice, when delivered to the Contractor or their authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails or refuses to comply promptly, the CITY may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the Contractor unless it is later determined that the Contractor was in compliance.

1.04 IMPLEMENTATION

- A. Prior to commencement of the Work, the CONTRACTOR shall meet with the CITY and CONSULTANT to develop mutual understandings relative to compliance with this provision and administration of the environmental pollution control program.
- B. The Contractor shall remove temporary environmental control features, when approved by the CITY or CONSULTANT, and incorporate permanent control features into the project at the earliest practicable time.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 EROSION CONTROL

- A. The Contractor shall provide positive means of erosion control such as shallow run on and run off ditches around construction to carry off surface water. Erosion control measures, such as siltation basins, hay check dams, mulching, jute netting and other equivalent techniques, shall be used as appropriate. Flow of surface water into excavated areas shall be prevented. Ditches around construction area shall also be used to carry away water resulting from dewatering of excavated areas. If dewatering is necessary and exceeds SFWMD thresholds, a dewatering plan must be prepared by a certified Registered Professional Engineer in the State of Florida and submitted to the CITY and CONSULTANT; then submitted and approved by the South Florida Water Management District prior to the commencement of work requiring dewatering. Contractor must comply with permits. However, no water from dewatering activities may be discharged offsite. At the completion of the Work, ditches shall be backfilled and the ground surface restored to original condition.

3.2 PROTECTION OF STREAMS AND CANALS

- A. Care shall be taken by Contractor to prevent, or reduce to a minimum, any damage to any ditch or the stormwater outfall canal, from pollution by debris, sediment or other material, or from the manipulation of equipment and/or materials in or near such ditches. Water that has been used for washing or processing, or that contains oils or sediments that will reduce the quality of the water in the ditch, shall not be directly returned to the ditch. Such waters will be diverted through a settling basin or filter approved by the CITY or CONSULTANT and meet required standards before being directed into the ditches and other water bodies.
- B. The Contractor shall not discharge water from dewatering operations directly into any live or intermittent stream, channel, wetlands, surface water or any storm sewer. Water from dewatering operations shall be treated by filtration, settling basins, or other approved method to reduce the amount of sediment contained in the water to allowable levels.
- C. All preventative measures shall be taken by Contractor to avoid spillage of petroleum products and other pollutants. In the event of any spillage, prompt remedial action shall be taken in accordance with a contingency action plan approved by the Florida Department of Environmental Protection. Contractor shall submit two (2) copies of approved contingency plans to the CITY and CONSULTANT.

3.3 PROTECTION OF LAND RESOURCES

- A. Land resources within the project boundaries and outside the limits of permanent work shall be restored to a condition, after completion of construction that will appear to be natural and not detract from the appearance of the project. Contractor shall confine all construction activities to areas shown on the Drawings.
- B. Outside of areas requiring earthwork for the construction of the new facilities, the Contractor shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without prior approval from the CITY and CONSULTANT. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorage unless specifically authorized by the CITY and CONSULTANT. Where such special emergency use is permitted, first wrap the trunk with a sufficient thickness of burlap or rags over which softwood cleats shall be tied before any rope, cable, or wire is placed. The Contractor shall in any event be responsible for any damage resulting from such use.
- C. Where trees may possibly be defaced, bruised, injured, or otherwise damaged by the Contractor's equipment, dumping or other operations, protect such

trees by placing barricades around them. Monuments and markers shall be protected similarly before beginning operations near them.

- D. Any trees or other landscape feature scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition.

All trimming or pruning shall be performed in an approved manner by experienced workmen with saws or pruning shears. Tree trimming with axes will not be permitted.

Climbing ropes shall be used where necessary for safety. Trees that are to remain, either within or outside established clearing limits, that are subsequently damaged by the Contractor and are beyond saving as determined by the CITY and/or CONSULTANT shall be immediately removed and replaced.

- E. The locations of the Contractor's storage, and other construction structures required temporarily in the performance of the Work, shall be cleared as shown on the Drawings. Drawings showing storage facilities shall be submitted for approval of the CITY and CONSULTANT.

- F. If the Contractor proposes to construct temporary roads or embankments and excavations for work areas, it shall submit the following for approval at least thirty (30) days prior to scheduled start of such temporary work.

1. A layout of all temporary roads, excavations and embankments to be constructed within the work area.
2. Details of temporary road construction.
3. Drawings and cross sections of proposed embankments and their foundations, including a description of proposed materials.

- G. The Contractor shall remove all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess of waste materials, or any other vestiges of construction as directed by the CITY and CONSULTANT. The disturbed areas shall be prepared and seeded as described in Section 02486 SEED, MULCH and FERTILIZER, or as approved by the CONSULTANT.

- H. All debris and excess material will be disposed of in approved areas as noted on the Drawings.

3.4 PROTECTION OF AIR QUALITY

- A. Burning. No open fires or burning will be permitted. If need dictates burning of any kind, Contractor must obtain prior approval of CITY and obtain appropriate permits from the state and local government agencies.
- B. Dust Control. The Contractor will be required to maintain all excavations, embankment, stockpiles, access roads, waste areas, borrow areas, and all other work areas within or without the project boundaries free from dust which could cause the standards for air pollution to be exceeded, and which would cause a hazard or nuisance to others.
- C. An approved method of stabilization consisting of sprinkling or other similar methods will be required to control dust. The use of petroleum products is prohibited.
- D. Sprinkling, to be approved, must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times, and the Contractor must have sufficient competent equipment on the job to accomplish this if sprinkling is used. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs, as determined by the CITY and/or CONSULTANT.

3.5 MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION

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

END OF SECTION

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SECTION 01153 - CHANGE ORDER PROCEDURES

PART 1 – GENERAL

1.01 SCOPE:

- A. The CITY, without invalidating the Contract, may make adjustments to bid item quantities by adding to or deducting from the quantities on the Schedule of Bid Items, as the Work progresses. These adjustments shall be in accordance with the unit or line item price set forth on the Schedule of Bid Items and are tracked as Work progresses, and approved on the monthly Application for Payment form.

1.02 REQUIREMENTS INCLUDED

- A. Promptly implement Change Order procedures.
 - 1. Provide full written data required to evaluate change.
 - 2. Maintain detailed records of work done on a time and material/force account basis.
 - 3. Provide full documentation to CONSULTANT on request.
- B. Designate in writing the member of Contractor's organization.
 - 1. Who is authorized to accept changes in the Work.
 - 2. Who is responsible for informing others in the Contractor's employ the authorization of changes in the Work.
- C. CITY will designate in writing the person who is authorized to execute Change Orders.

1.03 RELATED REQUIREMENTS

- A. Bid Form.
- B. Agreement.
- C. General Conditions.
- D. Supplementary Conditions.
- E. Section 01027: Application for Payment.
- F. Section 01310: Progress Schedule.

- G. Section 01370: Schedule of Values.
- H. Section 01630: Substitutions and Product Options.
- I. Section 01700: Contract Closeout.

1.04 DEFINITIONS

- A. Change Order: See General Conditions.
- B. Construction Change Authorization: A written order to the Contractor, signed by CITY and CONSULTANT, which amends the Contract Documents as described, and authorizes Contractor to proceed with a change that affects the Contract Sum or the Contract Time, for inclusion in a subsequent Change Order.
- C. Field Order: A written order, instructions, or interpretations, signed by CONSULTANT making minor changes in the Work not involving a change in Contract Sum or Contract Time.

1.05 PRELIMINARY PROCEDURES

- A. CONSULTANT may initiate changes by submitting a Proposal Request to Contractor. Request will include:
 - 1. Detailed description of the change, products, and location of the change in the Project.
 - 2. Supplementary or revised Drawings and Specifications.
 - 3. The projected time span for making the change, and a specific statement as to whether overtime work is, or is not, authorized.
 - 4. A specific period of time during which the requested price will be considered valid.
 - 5. Such request is for information only, and is not an instruction to execute the changes, nor to stop work in progress.
- B. Contractor may initiate changes by submitting a written notice to Consultant containing:
 - 1. Description of the proposed changes.
 - 2. Statement of the reason for making the changes.

3. Statement of the effect on the Contract Sum and the Contract Time.
4. Statement of the effect on the Work of separate contractors.
5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

1.06 CONSTRUCTION-CHANGE AUTHORIZATION

- A. In lieu of Proposal Request, CONSULTANT may issue a construction change authorization for Contractor to proceed with a change for subsequent inclusion in a Change Order.
- B. Authorization will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change, and will designate the method of determining any change in the Contract Sum and any change in Contract Time.
- C. CITY and CONSULTANT will sign and date the Construction Change Authorization as authorization for the Contractor to proceed with the changes.
- D. Contractor shall sign and date the Construction Change Authorization to indicate agreement with the terms therein.

1.07 DOCUMENTATION OF PROPOSALS AND CLAIMS

- A. Support each quotation for a lump-sum proposal, and for each unit price which has not previously been established, with sufficient substantiating data to allow CONSULTANT to evaluate the quotation.
- B. On request provide additional data to support time and cost computations:
 1. Labor required.
 2. Equipment required.
 3. Products required.
 - a. Recommended sources of purchase and unit cost.
 - b. Quantities required.
 4. Taxes, insurance, and bonds.
 5. Credit for work deleted from Contract, similarly documented.

6. Overhead and profit.
 7. Justification for any change in Contract Time.
- C. Support each claim for additional costs, and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal, plus additional information:
1. Name of CITY's authorized agent who ordered the work, and the date of the order.
 2. Dates and times work was performed, and by whom.
 3. Time record, summary of hours worked, and hourly rates paid.
 4. Receipts and invoices for:
 - a. Equipment used, listing dates and times of use.
 - b. Products used, listing of quantities.
 - c. Subcontractors.
- D. Document requests for substitutions for products as specified in Section SC01630.

1.08 PREPARATION OF CHANGE ORDERS

- A. CONSULTANT will initiate each Change Order.
- B. Change Order will describe changes in the Work, both additions and deletions, with attachments of revised Contract Documents to define details of the change.
- C. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

1.09 LUMP-SUM/FIXED PRICE CHANGE ORDER

- A. Content of Change Orders will be based on, either:
 1. CONSULTANT's Proposal Request and Contractor's Responsive Proposal as mutually agreed between CITY and Contractor; or
 2. Contractor's Proposal for a change, as recommended by the CONSULTANT.
- B. CITY and CONSULTANT will sign and date the Change Order as authorization for the Contractor to proceed with the changes.

C. Contractor shall sign and date the Change Order to indicate agreement with the terms therein.

1.10 UNIT PRICE CHANGE ORDER

A. Content of Change Orders will be based on, either:

1. CONSULTANT's definition of the scope of the required changes; or
2. Contractor's Proposal for a change, as recommended by CONSULTANT; or
3. Survey of completed work.

B. The amounts of the unit prices to be:

1. Those stated in the Agreement.
2. Those mutually agreed upon between CITY and Contractor.

C. When quantities of each of the items affected by the Change Order can be determined prior to start of the work:

1. CITY and CONSULTANT will sign and date the Change Order as authorization for Contractor to proceed with the changes.
2. Contractor shall sign and date the Change Order to indicate agreement with the terms herein.

D. When quantities of the items cannot be determined prior to start of the work:

1. CONSULTANT will issue a construction change authorization-directing Contractor to proceed with the change on the basis of unit prices.
2. At completion of the change, CONSULTANT will determine the cost of such work based on the unit prices and quantities used.
 - a. Contractor shall submit documentation to establish the number of units of each item and any claims for change in Contract Time.
3. CONSULTANT will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
4. CITY and Contractor will sign and date the Change Order to indicate their agreement with the terms therein.

1.11 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/ CONSTRUCTION CHANGE AUTHORIZATION

- A. CONSULTANT will issue a Construction Change Authorization directing Contractor to proceed with the changes.
- B. At completion of the change, Contractor shall submit itemized accounting and supporting data as provided in the Article "Documentation of Proposals and Claims" of this Section.
- C. CONSULTANT will determine the allowable cost of such work, as provided in General Conditions and Supplementary Conditions.
- D. CONSULTANT will sign and date the Change Order to establish the change in Contract Sum and in Contract Time.
- E. CITY and Contractor will sign and date the Change Order to indicate their agreement therewith.

1.12 CORRELATION WITH CONTRACTOR'S SUBMITTALS

- A. Contractor shall periodically revise Schedule of Values and Request for Payment forms to record each change as a separate item of work, and to record the adjusted Contract Sum.
- B. Contractor shall periodically revise the Construction Schedule to reflect each change in Contract Time.
 - 1. Contractor shall revise sub-schedules to show changes for other items of work affected by the changes.
- C. Upon completion of work under a Change Order, Contractor shall enter pertinent changes in Record Documents.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01200 - PROJECT MEETINGS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. The Consultant shall schedule and administer pre-construction meeting, monthly progress meetings, and specifically called meetings throughout the progress of the Work. The Consultant shall:
 - a. Prepare agenda for meetings.
 - b. Make physical arrangements for meetings.
 - c. Preside at meetings.
2. Representatives of Contractor, subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
3. The Contractor shall attend meetings to ascertain that work is expedited consistent with Contract Documents and construction schedules. The Consultant shall record the pre-construction meeting and each progress meeting in its entirety, and shall provide the Consultant with a voice recording, having good quality and clarity, and a typed transcript of the minutes of each meeting. A copy of the minutes of each progress meeting shall be available five (5) business days after the meeting.

B. Related Requirements Described Elsewhere:

1. Progress Schedules: Section 01310.
2. Shop Drawings, Working Drawings, and Samples: Section 01340.
3. Security and Safety Procedures for Infrastructure Projects: Section 01540
4. Project Record Documents: Section 01720.

1.02 PRE-CONSTRUCTION MEETING

- A. The Consultant shall schedule a preconstruction meeting no later than ten (10) days after date of issuance of Award letter.
- B. Location: A local site, convenient for all parties, designated by the Consultant.
- C. Attendance:

1. CITY's representative.
 2. Consultant and Consultant's professional consultants.
 3. Resident project representative.
 4. Contractor and its superintendent.
 5. Major subcontractors.
 6. Representatives of major suppliers and manufacturers as appropriate.
 7. Governmental and Utilities representatives as appropriate.
 8. Others as requested by the Contractor, CITY and Consultant.
- D. The purpose of the pre-construction meeting is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The suggested agenda should include:
1. Distribution and discussion of:
 - a. List of major subcontractors and suppliers.
 - b. Projected schedules.
 - c. Schedule of Values
 - d. NPDES plan
 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. CITY's requirements.
 - c. Access and traffic control.
 10. Construction facilities, controls and construction aids.
 11. Temporary utilities.
 12. Safety and first aid procedures.
 13. Check of required Bond and Insurance certifications.
 14. Completion time for Contract and liquidated damages.
 15. Request for extension of Contract Time.
 16. Weekly job meeting for all involved.
 17. Security procedures.
 18. Procedures for making partial payments.
 19. Guarantees on completed work.
 20. Equipment to be used.
 21. Staking of work.
 22. Project inspection.

23. Labor requirements.
24. Laboratory testing of material requirements.
25. Provisions for material stored on site.
26. Requirements of other organizations.
27. Rights-of-way and easements.
28. Housekeeping procedures.
29. Liquidated damages.
30. Posting of signs.
31. Pay request submittal dates.
32. Equal opportunity requirements.

1.03 PROGRESS MEETINGS

- A. The Consultant shall schedule and conduct regular periodic meetings. The progress meetings will be held 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: Site selected by Consultant.
- D. Attendance:
 1. Consultant and its representatives as needed.
 2. Contractor.
 3. CITY's representatives.
 4. Subcontractors (active on the site).
 5. Others as appropriate to the agenda (suppliers, manufacturers, other subcontractors, etc.).

- E. The Consultant shall preside at the meetings and provide for keeping minutes and distribution of the minutes to the CITY, Consultant and others. The purpose of the meetings will be to review the progress of the Work. The agenda will include but not be limited to the following:
1. Review approval of minutes of previous meeting.
 2. Review of work progress since previous meeting and work scheduled (3-week look ahead schedule).
 3. Field observations, problems, and conflicts.
 4. Problems which impede construction Schedule.
 5. Review of off-site fabrication, delivery schedules.
 6. Corrective measures and procedures to regain projected schedule.
 7. Status of approved construction schedule.
 8. Progress schedule during succeeding work period.
 9. Coordination of schedules.
 10. Review status of submittals, expedite as required.
 11. Maintenance of quality standards.
 12. Pending changes and substitutions.
 13. Shop Drawing problems.
 14. Review proposed changes for:
 - a. Effect on construction schedule and on completion date.
 - b. Effect on other contracts of the Project.
 15. Construction schedule.
 16. Critical/long lead items.
 17. Other business.
- F. The Contractor is to attend monthly progress meetings and is to study previous meeting minutes and current agenda items, and be prepared to

discuss pertinent topics and provide specific information including but not limited to:

1. Status of all submittals and what specifically is being done to expedite them.
 2. Status of all activities behind schedule and what specifically will be done to regain the schedule.
 3. Status of all material deliveries, latest contact with equipment manufacturer and specific actions taken to expedite materials.
 4. Status of open deficiencies and what is being done to correct the same.
- G. The Contractor is to provide a current submittal log at each progress meeting in accordance with Section 01340: Shop Drawings, Working Drawings and Samples.

1.04 SPECIAL MEETINGS

- A. The Contractor may be required to attend certain City Hall meetings to inform the public before commencement or during progress of the project to discuss specific issues.

PART 2- PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01310 - PROGRESS SCHEDULE

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Prior to Pre-Construction Meeting, Contractor shall prepare and submit to the CONSULTANT initial construction schedule(s) demonstrating complete fulfillment of all Contract requirements utilizing a Critical Path Method (hereinafter referred to as CPM) in planning, coordinating and performing the Work under this Contract (including all activities of subcontractors, equipment vendors and suppliers). The principles and definition CPM terms used herein shall be as set forth in the Associated General Contractors of America (AGC) publication, The Use of CPM in Construction, A Manual for General Contractors and the Construction Industry, latest edition, but the provisions of this Specification shall govern the planning, coordinating and performance of the Work. Assumed notice to proceed date for this schedule shall be ninety (90) days from bid opening date.
2. After issuance of Notice To Proceed, Contractor shall submit revised progress schedules on a bi-weekly 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. Applications for Payment: Section 01027
3. Change Order Procedures: Section 01153
4. Project Meetings: Section 01200
5. Shop Drawings, Working Drawings, and Samples: Section 01340
6. Schedule of Values: Section 01370

1.02 QUALIFICATIONS

- A. A statement of computerized CPM capability shall be submitted by Contractor in writing prior to the award of the Contract and shall verify that either Contractor's organization has in-house capability to use the CPM technique or

that Contractor will employ a CPM 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 CPM and shall include at least two (2) projects valued at least half the expected value of this Project.

1.03 FORM OF SCHEDULES

- A. Maximum Sheet Size: 24 inches by 36 inches.

1.04 CONTENT OF SCHEDULES

- A. Construction Progress Schedule:

1. Show the complete sequence of construction by activity.
2. Show the dates for the beginning of, and completion of, each major element of construction in no more than a two (2) week increment scale. Specifically list, but not limit to:
 - a. Obtaining all permits/construction easements (if needed)
 - b. Shop Drawing submitted/review time
 - c. Site clearing/filling
 - d. Site utilities
 - e. Pipeline installation
 - f. Roadway installation
 - g. Subcontractor work
 - h. Equipment installations
 - i. Finishing
 - j. Instrumentation
 - k. Painting
 - l. Operator training
 - m. Testing
 - n. Start-up
 - o. Receipt of spare parts
3. Show projected percentage of completion for each item, as of the first day of each month.
4. Show projected dollar cash flow requirements for each month of construction and for each activity as indicated by the approved Schedule of Values.

- B. Submittals schedule for Shop Drawings and Samples shall be in accordance with Section 01340: Shop Drawings, Product Data and Samples. Indicate on

the Schedule the following:

1. The dates for Contractor's submittals.
 2. The dates of submittals for CITY-furnished products, if applicable.
 3. The dates for approved submittals that will be required from the CONSULTANT.
- C. A typewritten list of all long lead items (equipment, materials, etc.).
- D. To the extent that the progress schedule or any revised progress schedule shows anything not jointly agreed upon or fails to show anything jointly agree upon, it shall not be deemed to have been approved by the CONSULTANT. 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 CONSULTANT's approval of the progress schedule.

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 must 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. Within ten (10) working days after the conclusion of the CONSULTANT's review of initial schedule, 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 CONSULTANT within fifteen (15) working days after receipt. The network diagram and tabulated schedule when accepted by the CONSULTANT shall constitute the Project work schedule unless a revised schedule is required due to substantial changes in the work scope, a change in Contract Time or a recovery schedule is required and requested.
- C. Acceptance. The finalized schedule will be acceptable to the CONSULTANT, when in the opinion of the CONSULTANT; it demonstrates an orderly progression of the Work to completion in accordance with the Contract requirements. Such acceptance will neither impose on the CONSULTANT 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 CONSULTANT, when in the opinion of the CONSULTANT, 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 CONSULTANT as to form and content, when in the opinion of the CONSULTANT, it demonstrates a substantial basis for equitably distributing the Contract Sum. When the network diagram and tabulated schedule have been accepted, The Contractor shall submit to the CONSULTANT five (5) copies of the time-scaled network diagram, five (5) copies of a computerized tabulated schedule in which the activities have been sequenced by numbers, five (5) copies of a computerized tabulated schedule in which the activities have been sequenced by early starting date, and five (5) copies of a computerized, tabulated schedule in which activities have been sequenced by total float, and five (5) copies sorted by predecessor/successor.

- D. Revised Work Schedules. Contractor, if requested by the CONSULTANT, shall provide a revised work schedule if, at any time, the CONSULTANT 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.
- E. Schedule Revisions. The CONSULTANT 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 CONSULTANT.

1.07 DISTRIBUTION

- A. Contractor shall distribute copies of the reviewed schedules to:
1. CONSULTANT
 2. Jobsite file
 3. Subcontractors
 4. Other concerned parties
 5. CITY (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 by Contractor.

1.09 CPM STANDARDS

- A. CPM, as required by this Section, shall be interpreted to be generally as outlined in the Associated General Contractor's (AGC) publication, The Use of CPM in Construction, A Manual for General Contractors and the Construction Industry, Copyright 1976.

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.
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-type and may be divided in to a number of separate pages with suitable notation relating the interface points among the pages. Individual pages shall not exceed 36 inches by 60 inches. Notation on each activity line shall include a brief work description and a duration, as described in Paragraph 1.09D., 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 such 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 CONSULTANT.

E. Tabulated Schedules. The initial schedule shall include the following minimum data for each activity.

1. Activity Beginning and Ending Numbers, single activity numbers may be used.

2. Duration.
 3. Activity Description.
 4. Early Start Date (Calendar Dated).
 5. Early Finish Date (Calendar Dated).
 6. Identified Critical Path.
 7. Total Float (Note: No activity may show more than 20 days float).
 8. Cost of Activity.
 9. Equipment Hours by type, man power/hours by crew or trade.
- F. Project Information. Each tabulation shall be prefaced with the following summary data.
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 Projects Completion Date and Project Status, if an updated or revised schedule.
 8. Actual Start Date and Finish Date for all update schedules.

1.10 SCHEDULE MONITORING

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

1.11 PROGRESS MEETINGS

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

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01340 - SHOP DRAWINGS, WORKING DRAWINGS AND SAMPLES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. The Contractor shall submit to the CONSULTANT for review, approval or for acknowledgment, items such as 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 they 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 Contract Drawings.
2. With the Contractor's executed agreement and Bond Submittal, the Contractor shall submit to the CONSULTANT 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 CONSULTANT 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 Specifications. This procedure is required in order to expedite final review of Shop Drawings. The Contractor shall include Shop Drawing review time on the Project schedule (see section 01310).
3. The Contractor is to maintain an accurate updated submittal log and will bring this log to each scheduled progress meeting with the City and the CONSULTANT. This log should include the following items:
 - a. Submittal-Description and Number assigned.
 - b. Date to CONSULTANT.
 - c. Date returned to Contractor.
 - d. Status of Submittal (Approved as Noted, Rejected/Re-submit).
 - 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:
- 2. Progress Schedules: Section 01310.
- 3. Material and Equipment: Section 01600.
- 4. Project Record Documents: Section 01720.
- 5. Operating and Maintenance Data: Section 01730.

1.02 CONTRACTOR'S RESPONSIBILITY

- A. The Contractor shall furnish the CONSULTANT a schedule of Shop Drawings submittals fixing the respective dates for the submission of Shop Drawings, the beginning of manufacture, testing and installation of materials, supplies and equipment. This schedule shall indicate those that are critical to the progress schedule.
- B. 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 CONSULTANT, with approval.
- C. The Contractor shall submit to the CONSULTANT all drawings and schedules sufficiently in advance of construction requirements to provide no less than twenty-one (21) calendar days for checking and appropriate action from the time the Consultant receives them.
- D. 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 Contract Drawings, Project Specifications and referenced specifications or codes.
 - b. The Contractor shall also list any deviations from Contract Drawings, Project Specifications and referenced specifications or codes and identify in "green" ink prominently on the drawings.
 6. Submittal Log Number conforming to Specification Log Number.
- E. The Contractor shall submit SIX (6) COPIES OF SHOP DRAWINGS TO THE CONSULTANT. The CONSULTANT will review the submittal and return to the Contractor three (3) copies with appropriate review comments.
- F. 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 CONSULTANT of the necessary Shop Drawings.
- G. The Contractor shall not use Shop Drawings as means of proposing alternate items to demonstrate compliance to Contract requirements.
- H. Each submittal will bear a stamp indicating that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractors review and approval of that submittal.
- I. 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 CONSULTANT 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 CONSULTANT'S REVIEW OF SHOP DRAWINGS

- A. The CONSULTANT's review of Shop Drawings, Data and Samples as submitted by the Contractor, will be to determine if the items(s) conform to the information in the Contract Documents and are compatible with the design concept. The CONSULTANT'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 requirements.
 - 2. As relieving the Contractor of responsibility for any errors, including details, dimensions, and materials.
 - 3. As approving departures from details furnished by the Consultant, except as otherwise provided herein.
- C. If the drawings or schedules as submitted describe variations and show a departure from the Contract requirements which the CONSULTANT finds to be in the interest of the City and to be so minor as not to involve a change in Contract Price or time for performance, the CONSULTANT may return the reviewed drawings without noting an exception.
- D. "Approved As Noted" - Contractor shall incorporate CONSULTANT's comments into the submittal before release to manufacturer. The Contractor shall send a letter to the CONSULTANT acknowledging the comments and their incorporation into the Shop Drawing.
- E. "Amend And Resubmit" - Contractor shall resubmit the Shop Drawing to the CONSULTANT. The resubmittal shall incorporate the CONSULTANT's comments highlighted on the Shop Drawing.
- F. "Rejected" - Contractor shall resubmit Shop Drawing for review by Consultant.
- 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 CONSULTANT on previous submissions. The Contractor shall make any corrections required by the CONSULTANT.
- H. If the Contractor considers any correction indicated on the drawings to constitute a change to the Contract Drawings or Specifications, the Contractor shall give written notice thereof to the CONSULTANT.
- I. When the Shop Drawings have been completed to the satisfaction of the CONSULTANT, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the CONSULTANT.

- 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 CONSULTANT, make all submittals in groups containing all associated items for:
 - 1. Systems.
 - 2. Processes.
 - 3. As indicated in specific Specifications Sections.
- K. All drawings, schematics, manufacturer's product Data, certifications and other Shop Drawing submittals required by a system specification shall be submitted at one time as a package to facilitate interface checking.
- L. Only the CONSULTANT shall utilize the color "red" in marking Shop Drawing submittals.
- M. For any submittal returned to the Contractor marked "Amend and Submit" or "Rejected," Contractor shall pay CITY a resubmittal fee of \$250.00. Monies shall be deducted from monies owed Contractor by CITY monthly and incorporated into a Change Order at completion of the contract.

1.04 SHOP DRAWINGS

- A. Shop Drawings shall be complete and detailed and shall consist of fabrication, erection and setting drawings and schedule drawings, manufacturer's scale drawings, and wiring and control diagrams. Cuts, catalogs, pamphlets, descriptive literature, and performance and test data, shall be considered only as supportive information. 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, product or models. Delete information which is not applicable to the Work by striking or cross-hatching.
- C. Each Shop Drawing shall have a blank area 3-1/2 inches by 3-1/2 inches, located adjacent to the title block. The title block 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 number.
9. Specification section.
10. Application Contract Drawing Number.

D. Data on materials and equipment include, without limitation, materials and equipment lists, catalog data sheets, cuts, performance curves, diagrams, 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.

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 false work; for underpinning; and for such other work as may be required for construction but does not become an integral part of the Project.
- B. Working Drawings shall be signed by a registered Professional Consultant, currently licensed to practice in the State of Florida.

1.06 SAMPLES

- A. The Contractor shall furnish, for the approval of the Consultant, samples required by the Contract Documents or requested by the CONSULTANT. Samples shall be delivered to the CONSULTANT 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 work until approved by the CONSULTANT.
- 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 two (2) samples of each item shall be submitted.

C. Field samples and mock-ups:

1. Contractor shall erect, at the Project site, at a location acceptable to the Consultant.
2. Size of area: 15 feet long x 6 feet high or that specified in the respective specification section.
3. Fabricate each sample and mock-up complete and finished.
4. Remove mock-ups at conclusion of Work or when acceptable to the Consultant.

D. 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 and Brand (if any).
6. Location in Project.

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

- E. The Contractor shall prepare a transmittal letter in triplicate for each shipment of samples containing the information required in Paragraph 1.06B above. It shall enclose a copy of this letter with the shipment and send a copy of this letter to the CONSULTANT. 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.

- F. Approved samples not destroyed in testing shall be sent to the

CONSULTANT 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 work shall match the approved Samples. Samples which failed testing or were not approved will be returned to the Contractor at its expense, if so requested at time of submission.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01370 - SCHEDULE OF VALUES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Contractor shall submit to the Consultant a Schedule of Values allocated to the various lump sum portions of the Work, within fifteen (15) days of the Notice to Proceed date.
2. Upon request of the Consultant, Contractor shall 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. 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), 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 an 8-1/2 inch by 11 inch or 8-1/2 inch by 14 inch white paper. Contractor's standard forms and computer printout will be considered for approval by the Consultant upon Contractor's request. Identify schedule with:

1. Title of Project and location.
2. Consultant and Project number.
3. Name and address of Contractor.
4. Contract designation.
5. Date of submission.

- B. Schedule shall list the installed value of the component parts of the Work in sufficient detail to serve as a basis for computing 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 line item, list sub-values of major products or operations under the item.
- E. For the various portions of the Work:
 - 1. Each item shall include a directly proportional amount of the Contractor's overhead and profit.
 - 2. For items on which progress payments will be requested for stored materials, break down the value into:
 - a. The cost of the materials, delivered unloaded, with taxes paid. Paid invoices required for materials. Payment for materials shall be limited to the invoiced amount only.
 - b. The total installed value.
- F. The sum of all lump sum values listed in the schedule shall equal the total Contract Sum.

1.03 UNIT QUANTITIES:

- A. Quantities indicated in the Schedule of Bid Items are for bidding and contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the Consultant and CITY determines payment.
- B. If the actual Work requires more or fewer quantities than those quantities indicated in the bid items, Contractor shall provide the required quantities at the unit sum/prices contracted.

1.04 REVIEW AND RESUBMITTAL

- A. After review by Consultant, Contractor shall revise and resubmit Schedule of Values and Schedule of Unit Material values pursuant to this Section.
- B. Contractor shall resubmit revised Schedules in same manner pursuant to this Section.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01380 - CONSTRUCTION PHOTOGRAPHS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: The Contractor shall employ a competent professional photographer to take construction record photographs periodically during the course of the Work using a digital camera and a preconstruction video inspection.
- B. Related Requirements Described Elsewhere:
 - 1. General Requirements: Section 01000.
 - 2. Summary of Project: Section 01010.
 - 3. Video and Photographic Site Survey: Section 01390
 - 4. Project Record Documents: Section 01720.

1.02 PHOTOGRAPHY REQUIRED

- A. Photographs taken in conformance with this Section shall be furnished to the Consultant with each Application for Payment.
- B. Views and Quantities Required:
 - 1. Five (5) views of overall Project site monthly, or as directed by the Consultant.
 - 2. Two (2) aerial views of overall Project site after completion of site restoration and landscaping.
 - 3. Provide five (5) 3-inch by 5-inch prints and one (1) 8-inch by 10-inch print of each view, plus one (1) copy in digital format.
 - 4. Additional aerial photographs may be used upon prior approval by the CITY.
- C. In addition to the general progress photographs required, photographs of each tie-in point shall be taken prior to backfill and turned in with the monthly Application for Payment.

1.03 COSTS OF PHOTOGRAPHY

- A. The Contractor shall pay costs for specified photography and prints. Parties requiring additional photography or prints shall pay the photographer directly.

PART 2 - PRODUCTS

2.01 PRINTS

- A. Color:

- 1. Paper: Single weight, color print paper.
- 2. Finish: Smooth surface, glossy.
- 3. Size: 8 inches by 10 inches and 3 inches by 5 inches.
- 4. Paper Weight: Single weight

- B. Identify each print on back, listing:

- 1. Name of Project.
- 2. Orientation of view.
- 3. Date and time of exposure.
- 4. Name and address of photographer.
- 5. Photographer's numbered identification of exposure.

- B. Aerial photographs shall be color.

2.02 NEGATIVES/DIGITAL FILES

- A. The negatives/digital files are to be categorized by month taken and must correspond to the progress photographs that accompany each. At project closeout, the negatives/digital files are to be submitted to the CITY. If the Contractor uses digital photography, then the images shall be provided on CD.

PART 3 - EXECUTION

3.01 TECHNIQUE

- A. Factual Presentation.
- B. Correct exposure and focus.

1. High resolution and sharpness.
2. Maximum depth-of-field.
3. Minimum distortion.

3.02 VIEWS REQUIRED

- A. Photograph from locations to adequately illustrate condition of construction and state of progress.
 1. At successive periods of photography, take at least one (1) photograph from the same overall view as previously.
 2. Consult with the Consultant at each period of photography for instructions concerning views required.
 3. All views to contain a relative dimension reference that is easily recognizable by the average person. In views where dimensions are critical, use of recognizable measuring devices such as a folding ruler, measuring tape in a manner the makings are clear and sharp in the photograph and the device located in close relationship with subject of photograph.

3.03 DELIVERY OF PRINTS

- A. Deliver prints to the CONSULTANT to accompany each Application for Payment.
- B. Distribution of prints as soon as processed is anticipated to be as follows:
 1. CITY: one (1) set.
 2. Consultant: two (2) sets.
 3. Project record file one (1) set stored by Contractor and furnished to Consultant at project completion.
 4. Contractor one (1) set.

END OF SECTION

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SECTION 01390 - VIDEO AND PHOTOGRAPHIC SITE SURVEY

PART 1 - GENERAL

1.01 SECTION INCLUDES:

- A. The work under this Section includes the performance of a Pre and Post Construction Video Survey of the condition of existing facilities, public Rights-of Way (ROW), easements, roads, private property, and other surface features and “before and after” digital still photographs.

1.02 RELATED SECTIONS:

- A. Section 01050 – Field Engineering
- B. Section 01380 – Construction Progress Photographs

1.03 PRE/POST-CONSTRUCTION VIDEO INSPECTION

- A. Prior to start of construction, Contractor shall retain the services of a firm specializing in pre-construction video inspection.
- B. Video inspection shall delineate all aspects of facilities on site and surrounding properties.
- C. Any claims for damages not clearly shown as existing prior to construction shall be paid for by the Contractor, unless conclusive evidence to the contrary is provided.

1.04 SUBMITTALS:

- A. Pre-Construction Video and Photographic Site Survey
 - 1. The Contractor shall submit one (1) copy of the Pre Construction Video Survey with video log to the CITY for review and acceptance.
- B. Post-Construction Video Site Survey
 - 1. At the discretion of the CITY, the requirement for a Post-Construction video may be waived.
 - 2. The Contractor shall submit one (1) copy of the Post-Construction Video Survey with log to the CITY for review.
 - 3. Accompanying this submittal, or as a separate submittal in the event the CITY waives the Post Construction Video, the Contractor shall issue a

letter attesting to having reviewed the Pre Construction Video Survey and confirm restoration of surface attributes.

PART 3 - EXECUTION

4. VIDEO SITE SURVEY

- A. The Contractor shall provide the CONSULTANT with a DVD accurately representing existing conditions of the site to be disturbed by its operations. This DVD shall be submitted at least twenty-one (21) days prior to the start of work on this project.
- B. Recording shall be on a new, high quality, DVD. The camera shall be capable of producing clean color images. The original is to be submitted to the CONSULTANT for review and a copy is to be retained by the Contractor until Final Acceptance. CITY shall receive one (1) copy of the Final Videotaping after approval by the CONSULTANT.
- C. At a minimum, the video shall contain:
 - 1. At the beginning of the video, the project name and date of taping shall be superimposed on the picture.
 - 2. As the location of the video taping progresses, i.e., the individual street name shall be temporally superimposed on the picture.
 - 3. Centerline stationing at 100 feet intervals or clear reference to the individual residences (by street number) and/or business (by street number and name).
 - 5. The video shall be run twice the full length of the project, first facing and proceeding ahead station wise and slightly angled to the right of centerline. The second run shall be the full length of the project facing and proceeding back station wise and slightly angled to the right of centerline.
 - 6. Both shootings shall contain the centerline within the view of the observer. The taping is to be continuous during each run. Areas of special importance / interest may be “zoomed-in” on to provide the necessary details but must be “zoomed-out” to the original view before proceeding.
- D. Audio content
 - 1. Simultaneously record the audio portion during videotaping.
 - 2. Audio recording shall assist in viewer orientation and in any Audio recording will only consist of camera operator commentary.

- E. Prepare a written video log that describes the contents of each tape including:
 - 1. Name of streets and/or easements.
 - 2. Videotape location designator.
 - 3. Coverage begin/end, station and location.
 - 4. Recording date.

- F. The video shall present a clear and accurate representation of existing conditions. If the CITY determines that this intent is not met, the tape shall be returned and the area re-televised at no additional cost to the CITY.

- G. This accepted video along with the still photographs will serve as an aid to the CITY in determining existing conditions. Nothing contained in the video or still photographs will supersede or relieve the CITY from determining the acceptability of restoration.

- H. Prior to Substantial Completion, the Contractor is responsible to review the video and still photographs and prepare a detailed list of surface improvements to be reinstated. This list shall include lawn areas, trees and plants, driveways, driveway aprons, roadways, signage, sprinkler systems, sidewalks, mailboxes and any other existing conditions affected by the work and submit to the CITY for review and approval.

3.02 PHOTOGRAPHIC SURVEY

- A. In addition to the videotape, the Contractor shall take “before and after” digital still photographs of each home and/or property. The photographs of each home and/or property shall consist of a set of photographs (3 minimum) and shall provide property-line to property-line coverage of the roadway, swale and sidewalk areas for each property. The “areas of interest” are the edge of roadway, condition of the swale, type of grass, landscaping within the swale, mail box and driveway apron.

- B. The digital “file” name is to be the address of the property being photographed and shall be incorporated as part of the image. The Contractor shall provide the CITY with the following for review and acceptance:
 - 1. One (1) CD with the digital files in street named/numbered subdirectory and a digital file log.

2. Two (2) sets of “Before” color prints and one (1) set of “After” color prints of each digital file, with the file name displayed. Color print sets are to be bound with a Table of Contents and divided and tabbed by street name/number.
 3. “Before” photographs (color prints and CD) shall be submitted twenty-one (21) days in advance of the commencement of the work. “After” photographs (color prints and CD) shall be submitted with the final Application For Payment (refer to Section 01380 PROGRESS PHOTOGRAPHS for additional requirements).
- C The Contractor shall provide a bound set of accepted pre-construction photographs to the Consultant to be maintained at the Consultant’s Field Office for use during the project.

END OF SECTION

SECTION 01400 - QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 GENERAL

- A. Contractor is required to follow all technical specification requirements with regards to material quality, certification, placement and installation. If the Contractor has questions concerning these items, it is required to generate and issue a Request For Information to the CITY and Consultant for resolution and or guidance.
- B. In the absence of other quality requirements, FDOT Standard Specifications and Index, of the most current edition, shall prevail.

1.02 RELATED SECTIONS

- A. Section 01025 – Measurement and Payment Procedures
- B. Section 01050 – Field Engineering
- C. Section 01340 – Shop Drawings, Work Drawings and Samples

1.03 Field QA/QC

- A. The Contractor shall monitor quality control over suppliers, subcontractors, products and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, issue Request For Information to the Consultant before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings / catalog cut sheets or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.04 TOLERANCES

- A. Installed tolerances:
 - 1. Plus / minus 0.20 foot radius of plan center
 - 2. Plus / minus 0.05 foot vertical
 - 3. Plus / minus 10% of specified vertical slope
 - 4. Plus / minus 5% uniformity of specified vertical slope measured between any two points of a single run of pipe.
- B. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- C. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Consultant before proceeding.
- D. Adjust products to appropriate dimensions, position before securing products in place.

1.05 TESTING SERVICES

- A. Contractor required to hire a professional, licensed independent firm to perform tests and other services specified.
- B. Field copies of on site density testing are to be left on site at the completion of each day's testing. The independent firm is required to "map" the results of each day's testing results on the Contractor's.
- C. Certified, signed and sealed test reports will be submitted by the independent firm to the Consultant, CITY and Contractor, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
- D. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
- E. Testing does not relieve Contractor to perform work to Contract requirements.
- F. Re-testing required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the CITY or Consultant.

1.06 INSPECTION SERVICES

- A. The CITY shall appoint, employ, and pay inspector for specified services for inspection. These services may be from the Consultant, or from the CITY or any combination of the above.
- B. The Inspector shall perform construction observation, inspections and other services specified in individual specification sections and as required by the CITY and/or Consultant.
- C. The Contractor shall cooperate with Inspector; furnish safe access and assistance by incidental labor as requested. Additionally, the Contractor shall keep the inspection personnel fully informed of the needs, scheduling and progress of the project.
- D. This inspection does NOT relieve the Contractor from performing their own QA/QC on the Work as required in this and other technical specification sections.

1.07 MANUFACTURERS' FIELD SERVICES

- A. When specified in the Contract documents, requiring material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.01 EXAMINATION

- A. The Contractor shall verify that existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Perform “receiving” inspection of materials, structures and equipment.

- D. Perform “in-process” inspection as the Work progresses.
- E. Monitor and inspect the work performed by subcontractors as the Work progresses.
- F. Examine and verify specific conditions described in individual technical specification sections.
- G. Notify the CITY and Consultant, forty-eight (48) hours prior to the expected time for inspection purposes and/or the witnessing of pressure testing. All pressure testing shall be witnessed by the CITY and/or Consultant.

END OF SECTION

SECTION 01410 - TESTING LABORATORY SERVICES

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

A. CITY will employ services of an Independent Testing Laboratory to perform specified testing. Contractor shall pay costs of services from allowance specified in Section 01025: Measurement and Payment (Allowances).

1. Contractor shall cooperate with laboratory to facilitate the execution of its required services.
2. Employment of the laboratory shall in no way relieve Contractor's obligations to perform the Work of the Contract.

1.02 RELATED REQUIREMENTS

A. Conditions of the Contract: Inspection and testing required by laws, ordinances, rules, regulations, orders or approvals of public authorities.

1.03 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY

A. Laboratory is not authorized to:

1. Release, revoke, alter or enlarge on requirements of Contract Documents.
2. Approve or accept any portion of the Work.
3. Perform any duties of the Contractor.

1.04 CONTRACTOR'S RESPONSIBILITIES

A. Cooperate with laboratory personnel and/or Consultant, provide access to Work or manufacturer's operations.

B. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.

C. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other material mixed which require control by the testing laboratory.

D. Furnish copies of Products Test Reports as required.

E. Furnish incidental labor and facilities:

1. To provide access to Work to be tested.
 2. To obtain and handle samples at the Project site or at the source of the product to be tested.
 3. To facilitate inspections and tests
 4. For storage and curing of test samples.
- F. Notify laboratory sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.
1. When tests or inspections cannot be performed after such notice, reimburse CITY for laboratory personnel and travel expenses incurred due to Contractor's negligence.
- G. Make arrangements with laboratory and pay for additional samples and tests required for Contractor's convenience.

1.05 SPECIFIC TESTS, INSPECTION AND METHODS REQUIRED (NOT USED)

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 PAYMENT

- A. Testing of materials and products will be performed by an independent testing laboratory appointed and paid for per Section 01025 – Measurement and Payment (Allowances).
- B. The CITY will authorize the cost of one (1) series of tests only on the area or item being evaluated. The Contractor shall pay for costs of additional testing as required due to improper performance of Work.
- C. When Work of this Contract, or portions of Work, are completed, notify the testing laboratory or Consultant to perform or witness the tests. Do not proceed with additional portions of Work until results have been verified.

END OF SECTION

SECTION 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 – GENERAL

- 1.01 REQUIREMENTS INCLUDED Contractor shall furnish, install and maintain temporary utilities required for construction. Remove on completion of work.
- 1.02 RELATED REQUIRMENTS
- A. General Conditions.
 - B. Section 01010: Summary of Work
- 1.03 REQUIREMENTS OF REGULATORY AGENCIES
- A. Comply with National Electric Code.
 - B. Comply with Federal, State, and local codes and regulations and with utility company requirements.

PART 2 – PRODUCTS

- 2.01 MATERIALS, GENERAL
Materials may be new or used, but must be adequate in capability for the required usage of the CITY, must not create unsafe conditions, and must not violate requirements of applicable codes and standards.
- 2.02 TEMPORARY TELEPHONE SERVICE
- A. Superintendent, foreman or other contractor personnel in charge shall be equipped with a functioning cell phone during the term of the contract.
- 2.03 TEMPORARY WATER
- A. Schedule use and provide deposit to the City's Water Utility Department for a portable hydrant meter. No water shall be taken from the existing water distribution system unless it's through the portable hydrant meter. The Contractor shall install and maintain a certified backflow preventer or check valve on all CITY issued portable hydrant meters; **no exceptions**. Using water from private homes and/or business' is strictly forbidden.
 - B. Water utilization for concrete plaster and mortar shall meet the respective requirements and standards set forth for water utilized in these construction materials.
- 2.04 TEMPORARY SANITARY FACILITIES
- A. Provide sanitary facilities in compliance with Federal, state and local laws and regulations.
 - B. Service, clean and maintain facilities and enclosures.
- 2.05 TEMPORARY CONTROLS
- A. Noise Control: See Section 01100 – Special Project Procedures

B. Dust Control:

1. Provide positive methods and apply dust control materials to minimize raising dust from construction operations, and provide positive means to prevent airborne dust from dispersing into the atmosphere.

C. Pest and Rodent Control:

1. Provide pest and rodent control prior to start of construction to prevent infestation of surrounding neighborhood.
 - a. Employ methods and use materials that will not adversely affect conditions at the site or on adjoining properties.
 - b. Should the use of rodenticides be considered necessary, submit an informational copy of the proposed program to the Consultant. Clearly indicate:
 - 1) The area or areas to be treated
 - 2) The rodenticides to be used, with a copy of the manufacturer's printed instructions.
 - 3) The pollution preventative measures to be employed.
2. The use of any rodenticide shall be in full accordance with the Manufacturer's printed instructions and recommendations.

D. Debris Control:

1. Maintain all areas under Contractor's control free of extraneous debris.
2. Initiate and maintain a specific program to prevent accumulation of debris at construction site, storage and parking areas, or along access roads and haul routes.
 - a. Provide acceptable containers for deposit of debris.
 - b. Prohibit overloading of trucks to prevent spillages on access and haul routes.
 - 1) Provide periodic inspection of traffic areas to enforce requirements.
3. Schedule periodic collection and disposal of debris.
 - a. Provide additional collections and disposals of debris whenever the periodic schedule is inadequate to prevent accumulation.

E. Pollution Control:

1. Provide methods, means and facilities required to prevent contamination of soil, water or atmosphere by the discharge of noxious substances from construction operations.
2. Provide equipment and personnel, perform emergency measures required to contain any spillages, and to remove contaminated soils or liquids.
 - a. Excavate and dispose of any contaminated earth off-site, and replace with suitable compacted fill and topsoil.
3. Take special measure to prevent harmful substances from entering public waters.
 - a. Prevent disposal of wastes, effluents, chemicals, or other such substances adjacent to streams, or in sanitary or storm sewers.
4. Provide systems for control of atmospheric pollutants
 - a. Prevent toxic concentrations of chemicals
 - b. Prevent harmful dispersal of pollutants into the atmosphere

PART 3 – EXECUTION

3.01 GENERAL

- A. Maintain and operate systems to assure continuous service.
- B. Modify and extend systems, as work progress requires.

3.02 REMOVAL

- A. Completely remove temporary materials and equipment when their use is no longer required.
- B. Clean and repair damage caused by temporary installations or use of temporary facilities.

END OF SECTION

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SECTION 01505 – MOBILIZATION

PART I - GENERAL

1.01 DEFINITION AND SCOPE

A. Mobilization shall include the Contractor obtaining of all permits, insurance, and bonds; moving onto the site of all plant and equipment, temporary buildings and other construction facilities; all as required for the proper performance and completion of the Work. Mobilization shall include, but not be limited to, the following principal items:

1. Move onto the site all Contractor's plan and equipment required for first month operations.
2. Install temporary construction power, wiring, and lighting facilities.
3. Establish fire protection plan and safety program.
4. Secure construction water supply.
5. Provide on-site sanitary facilities and potable water facilities as specified.
6. Arrange for and erect Contractor's work and storage yard and employees' parking facilities.
7. Submit all required insurance certificates and bonds.
8. Obtain all required permits.
9. Post all OSHA, EPA, Department of Labor, and all other required notices.
10. Have Contractor's superintendent at the job site full time.
11. Submit a detailed construction CPM schedule acceptable to the Consultant as specified.
12. Submit a Schedule of Values of the Work.
13. Submit a schedule of submittals.

1.02 DEMOBILIZATION

A. Demobilization is the timely and proper removal of all contractor- owned material, equipment or plant, from the job site and the proper restoration or completion of work necessary to bring the site into full compliance with the

Contract Documents.

1.03 PAYMENT FOR MOBILIZATION/DEMOBILIZATION

- A. Contractor shall be limited to a maximum of 3.0 percent of the total price bid for mobilization. The cost of mobilization/demobilization shall be shown in the Schedule of Values.
- B. Demobilization shall be shown in the schedule of values as a minimum 25 percent of the value for mobilization.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

**SECTION 01540 - SECURITY AND SAFETY PROCEDURES FOR
INFRASTRUCTURE PROJECTS**

PART 1 GENERAL

1.01 As a minimum, the Contractor shall provide and assure that all of its personnel have and wear common colored Company shirts, safety vests, hard hats and substantial leather work shoes / boots. Other Personal Protective Equipment (PPE) as required by governing local, state and Federal laws and regulations.

1.02 SECTION INCLUDES

- A. Responsibility for Work Security
- B. Protection of Work in Progress, Materials and Equipment
- C. Protection of Existing Property
- D. Security Program
- E. Entry Control
- F. Personnel Identification
- G. Security Service
- H. Miscellaneous Restrictions

1.03 RELATED SECTIONS

- A. Section 01010 – Summary of Project
- B. Section 01500 - Temporary Facilities and Controls

1.04 RESPONSIBILITY OF WORK SECURITY

- A. Contractor shall, at its expense, at all times conduct all operations under the Contract in a manner to avoid the risk of loss, theft or damage by vandalism, sabotage or other means to any property. Contractor shall promptly take all reasonable precautions that are necessary and adequate against any conditions that involve a risk of loss, theft or damage to its property, at a minimum.
- B. Contractor shall continuously inspect all its work, materials, equipment and facilities to discover and determine any such conditions and shall be solely responsible for discovery, determination and correction of any such condition.

- C. Contractor shall prepare and maintain accurate reports of incidents of loss, theft or vandalism and shall furnish these reports to CITY within three (3) days of each incident.

1.05 PROTECTION OF WORK IN PROGRESS, MATERIALS AND EQUIPMENT

- A. Contractor shall be responsible for and shall bear any and all risk of loss or damage to work in progress, all materials delivered to the site, and all materials and equipment involved in the Work until completion and final acceptance of Work under this Contract. Excluded from Contractor's responsibility is any loss or damage that results from the sole active negligence of the CITY or its representatives.

1.06 PROTECTION OF EXISTING PROPERTY

- A. Contractor shall so conduct its operations as not to damage, close, or obstruct any utility installation, highway, road or other property until permits therefore have been obtained. If facilities are closed, obstructed, damaged or rendered unsafe by Contractor's operations, Contractor shall, at its expense, make such repairs and provide temporary guards, lights and other signals as necessary or required for safety and as will be acceptable to the CITY.
- B. Contractor shall conduct its operation so as not to damage any existing buildings or structures. The Contractor shall verify that means and methods of construction used inside, adjacent to, under or over existing buildings will not cause damage. The Contractor shall provide protection methods that are acceptable to the CITY.
- C. Unless otherwise specifically provided in the Contract, Contractor shall not do any work that would disrupt or otherwise interfere with the operation of any pipeline, telephone, electric, radio, gas, transmission line, ditch or other structure, nor enter upon lands in their natural state until approved by the CITY.
- D. Thereafter, and before it begins such work, Contractor shall give due notice to CITY of its intention to start such work. Contractor shall not be entitled to any extension of time or any extra compensation on account of any postponement, interference or delay caused by any such line, ditch or structure on or adjacent to the site of work.
- E. Contractor shall preserve and protect all cultivated and planted areas and vegetation such as trees, plants, shrubs and grass on or adjacent to the premises, which, as determined by CITY, do not reasonably interfere with the performance of this Contract.
- F. Contractor shall be responsible for damage to any such areas and vegetation

and for unauthorized cutting of trees and vegetation, including, without limitation, damage arising from the performance of its work through operation of equipment or stockpiling of materials. All cost in connection with any repairs or restoration necessary or required by reason of any such damage or unauthorized cutting shall be borne by Contractor.

1.07 SECURITY PROGRAM

- A. At the Pre-Construction Meeting, the CITY will make a final determination on which, if any, of the following requirements are to be implemented.
 - 1. Protect Work existing premises and CITY's operations from theft, vandalism, and unauthorized entry.
 - 2. Initiate program at project mobilization.
 - 3. Maintain program throughout construction period until CITY acceptance precludes the need for Contractor security.

1.08 RESTRICTIONS

- A. Do not allow cameras on site or photographs taken except by written approval of the CITY.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

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SECTION 01568 - TEMPORARY EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. The Work specified in this Section consists of designing, providing, maintaining and removing temporary erosion and sedimentation controls as required by rules and regulations and permit conditions.
2. Temporary erosion controls include, but are not limited to, grassing, mulching, setting, watering and reseeding on-site surfaces and soil and burrow area surfaces and providing interceptor ditches at ends of berms and at those locations which will ensure that erosion during construction will be either eliminated or maintained within acceptable limits as established by the CITY.
3. Temporary sedimentation controls include, but are not limited to silt dams, traps, barriers, and appurtenances at the foot of sloped surfaces which will ensure that sedimentation pollution will be either eliminated or maintained within acceptable limits as established by the CITY.
4. Contractor is responsible for providing effective temporary erosion and sedimentation control and leaving them installed at completion of the Work.

PART 2 - PRODUCTS

2.01 SEDIMENTATION CONTROL

- A. Bales shall be clean, seed-free cereal hay type.
- B. Netting shall be fabricated of material acceptable to the CITY.
- C. Filter stone shall be crushed stone which conforms to Florida Department of Transportation (FDOT) specifications.
- D. Concrete block shall be hollow, non-load bearing type.
- E. Concrete shall be exterior grade not less than 1-inch thick.

PART 3 - EXECUTION

3.01 SEDIMENTATION CONTROL

- A. Install and maintain silt dams, traps, barriers, and appurtenances as shown on the approved descriptions and working drawings. Hay bales which deteriorate and filter stone which is dislodged shall be replaced.

3.02 PERFORMANCE

- A. Should any of the temporary erosion and sediment control measures employed by the Contractor fail to produce results which comply with the requirements of the State of Florida, the CITY or Consultant, Contractor shall immediately take whatever steps are necessary to correct the deficiency at its own expense.

END OF SECTION

SECTION 01570 – MAINTENANCE OF TRAFFIC

PART 1 GENERAL

1.01 Contractor shall provide all labor, material and services to perform all operations required for the maintenance and protection of vehicular and pedestrian traffic in conformance to all applicable FDOT laws and regulations and subject to acceptance and permits by Owner, Palm Beach County and FDOT as applicable.

1.02 REFERENCES

- A. State of Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Section 102, 2015 Edition (or latest edition)
- B. State of Florida Manual of Traffic Control and Safe Practices for Street and Highway Construction, Maintenance and Utility Operations
- C. The Manual of Uniform Traffic Control Devices, latest edition
- D. ROW Permit

1.03 SUBMITTAL

- A. Submit Traffic Control Plans, ROW Permit Applications and Construction Schedule to the Owner, Palm Beach County (if applicable), and the FDOT (if applicable) for review and acceptance 30 days prior to the start of construction.

1.04 SIGNS AND DEVICES

- A. Traffic Control and Informational Signs
- B. Traffic Cones and Drums, and Lights
- C. Traffic Controllers Equipment

1.05 CONSTRUCTION PARKING CONTROL

- A. Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles and Owner's operations. Contractor's employee's personal vehicles shall NOT be parked "in and around" the project site. Contractor's employee's personal vehicles shall be parked at the storage yard.

1.06 TRAFFIC CONTROLLERS

- A. Provide trained and equipped traffic controllers to regulate traffic when construction operations encroach on public traffic lanes.

1.07 LIGHTS

- A. Use approved barricades with lights during hours of low visibility to delineate traffic lanes and to guide traffic.

1.08 TRAFFIC SIGNS AND DEVICES

- A. At approaches to site and on site, install at crossroads, detours, parking areas, and elsewhere as needed, to direct construction and affected public traffic. The Contractor shall submit traffic control through work zone plans based on FDOT Roadway and Traffic Design Standards, 2015 Edition (or latest edition).
- B. Relocate as Work progresses, to maintain effective traffic control.

1.09 REMOVAL

- A. Remove equipment and devices when no longer required.
- B. Repair damage caused by installation.

1.10 SPECIFIC TRAFFIC CONTROL

- A. Contractor shall maintain through traffic on all public roads at all times unless stated otherwise herein.
- B. Contractor shall maintain access to all vehicular driveways (public or private) at all times. Contractor shall backfill and install temporary rock base as necessary in order to provide safe and functional access to all driveways.
- C. Contractor shall coordinate with the Police and Fire Departments for whom the Contractor will provide satisfactory access at all times.
- D. Contractor shall maintain, at the minimum, one travel lane, in each direction, when performing work within the Palm Beach County Right-of-Way.

1.11 EXECUTION

- A. The Contractor shall arrange its work to cause minimum disturbance to normal pedestrian and vehicular traffic; and shall be held responsible for

providing and maintaining suitable means of access (including emergencies) to all public and private properties during all stages of the construction.

- B. If it becomes necessary to block off an entire street to vehicular traffic during construction (other than for an emergency situation), the Contractor must secure the written authorization of the CITY and Palm Beach County or FDOT as acknowledged as a condition of the Right-of-Way (ROW) permit(s) prior to completely blocking off the roadway.

1.12 UNIT PRICE – MEASUREMENT AND PAYMENT

- A. Refer to Section 01025 - MEASUREMENT AND PAYMENT PROCEDURES.

END OF SECTION

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SECTION 01600 - MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: Material and equipment incorporated into the Work:

1. Manufactured and fabricated products:
 - a. Design, fabricate and assemble in accord with the best engineering and shop practices.
 - b. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.
 - c. Two (2) or more items of the same kind shall be identical, by the same manufacturer.
 - d. Products shall be suitable for service conditions.
 - e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
2. Do not use material or equipment for any purpose other than that for which it is designed or specified.

1.02 MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION

- A. When Contract Documents require that installation of Work shall comply with manufacturer's printed instructions. Contractor shall obtain and distribute copies of such instructions to parties involved in the installation, including five (5) copies to the Consultant.
1. Maintain one (1) set of complete instructions at the job site during installation and until completion.
- B. Contractor shall handle, install, connect, clean, condition and adjust products in strict accord with such instructions and in conformity with specified requirements.
1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Consultant for further instructions.
 2. Do not proceed with Work without clear instructions.

- C. Contractor shall perform work in accordance with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

1.03 TRANSPORTATION AND HANDLING

- A. Contractor shall arrange deliveries of products in accordance with progress schedules, coordinate to avoid conflict with work and conditions at the site.
 - 1. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
 - 2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals, and that products are properly protected and undamaged.
- B. Contractor shall provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

1.04 STORAGE AND PROTECTION

- A. The Contractor shall furnish a covered, weather-protected storage structure providing a clean, dry, non-corrosive environment for all mechanical equipment, valves, architectural items, electrical and instrumentation equipment, and special equipment to be incorporated into this Project. Storage or equipment shall be in strict accordance with the "instructions for storage" of each equipment supplier and manufacturer including connection of heaters, placing of storage lubricants in equipment, etc. Corroded, damaged or deteriorated equipment and parts shall be replaced before acceptance of the Project. Equipment and materials not properly stored will not be included in a payment estimate.
- B. Contractor shall store products in accord with manufacturer's instructions, with seals and labels intact and legible.
 - 1. Store products subject to damage by the elements in weather-tight enclosures.
 - 2. Maintain temperature and humidity within the ranges required by manufacturer's instructions.
 - 3. Store fabricated products above the ground, on blocking or skids, prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.

4. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- C. All materials and equipment to be incorporated in the Work shall be handled and stored by the Contractor before, during and after shipment in a manner to prevent warping, twisting, bending, breaking, chipping, rusting, and any injury, theft or damage of any kind whatsoever to the material or equipment.
- D. Contractor shall store under a roof or off the ground cement, sand and lime, and shall be kept completely dry at all times. All structural and miscellaneous steel, and reinforcing steel shall be stored off the ground or otherwise to prevent accumulations of dirt or grease, and in a position to prevent accumulations of standing water and to minimize rusting. Beams shall be stored with the webs vertical. Precast concrete beams shall be handled and stored in a manner to prevent accumulations of dirt, standing water, staining, chipping or cracking. Brick, block and similar masonry products shall be handled and stored in a manner to reduce breakage, chipping, cracking and spalling to a minimum.
- E. All materials, which, in the opinion of the Consultant, have become so damaged as to be unfit for the use intended or specified, shall be promptly removed by the Contractor from the site of the Work, and the Contractor shall receive no compensation for the damaged material or its removal.
- F. Contractor shall arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.
- G. Protection After Installation: Contractor shall provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove covering when no longer needed.
- H. The Contractor shall be responsible for all material, equipment and supplies sold and delivered to the CITY under this Contract until final inspection of the Work and acceptance thereof by the CITY. In the event any such material, equipment and supplies are lost, stolen, damaged or destroyed prior to final inspection and acceptance, the Contractor shall replace same without additional cost to the CITY.
- I. Should the Contractor fail to take proper action on storage and handling of equipment supplied under this Contract within seven (7) days after written notice to do so has been given, the CITY retains the right to correct all deficiencies noted in previously transmitted written notice and deduct the cost

associated with these corrections from the Contractor's Contract. These costs may be comprised of expenditures for labor, equipment usage, administrative, clerical, engineering and any other costs associated with making the necessary corrections.

1.05 STORAGE AND HANDLING OF EQUIPMENT ON SITE

A. Because of the long period allowed for construction, special attention shall be given to the storage and handling of equipment on site. As a minimum, the procedure outlined below shall be followed by Contractor:

1. All equipment having moving parts such as gears, electric motors, etc. and/or instruments shall be stored in a temperature and humidity controlled building approved by the Consultant, until such time as the equipment is to be installed.
2. All equipment shall be stored fully lubricated with oil, grease, etc. unless otherwise instructed by the manufacturer.
3. Manufacturer's storage instructions shall be carefully studied by the Contractor and reviewed with the Consultant by him. These instructions shall be carefully followed and a written record of this kept by the Contractor.
4. Moving parts shall be rotated a minimum of once weekly to insure proper lubrication and to avoid metal-to-metal "welding". Upon installation of the equipment, the Contractor shall start the equipment, at least half the load, once weekly for an adequate period of time to insure that the equipment does not deteriorate from lack of use.
5. Lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. Mechanical equipment to be used in the Work, if stored for longer than ninety (90) days, shall have the bearings cleaned, flushed and lubricated prior to testing and startup, at no extra cost to the CITY.
6. Prior to acceptance of the equipment, the Contractor shall have the manufacturer inspect the equipment and certify that its condition has not been detrimentally affected by the long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in a condition equal to that of equipment that has been shipped, installed, tested and accepted in a minimum time period. As such, the manufacturer will guarantee the equipment equally in both instances. If such a certification is not given, the equipment shall be judged to be defective. It shall be removed and replaced at the Contractor's expense.

1.06 SPARE PARTS

- A. Spare parts for certain equipment provided under Divisions 11: Equipment; 13: Special Construction; 15: Mechanical; and 16: Electrical have been specified in the pertinent sections of the Technical Specifications. The Contractor shall collect and store all spare parts so required in an area to be designated by the Consultant. In addition, the Contractor shall furnish to the Consultant an inventory listing all spare parts, the equipment they are associated with, the name and address of the supplier, and the delivered cost of each item. Copies of actual invoices for each item shall be furnished with the inventory to substantiate the delivered cost.

1.07 GREASE, OIL AND FUEL

- A. All grease, oil and fuel required for testing of equipment shall be furnished with the respective equipment. The CITY shall be furnished with a year's supply of required lubricants including grease and oil of the type recommended by the manufacturer with each item of equipment supplied.
- B. The Contractor shall be responsible for changing the oil in all drives and intermediate drives of each mechanical equipment after initial break-in of the equipment, which in no event shall be any longer than three (3) weeks of operation.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 01630 - SUBSTITUTIONS AND PRODUCT OPTIONS

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Contractor shall furnish and install products specified under options and conditions for substitutions stated in this Section.

1.02 RELATED REQUIREMENTS

- A. Information for Bidders and General Conditions.
- B. Section 01410: Testing Laboratory Services.
- C. Section 01700: Contract Closeout.

1.03 PRODUCTS LISTED

- A. Within thirty (30) days after award of Contract, submit to Consultant six (6) copies of complete list of major products which are proposed for installation.
- B. Tabulate products by specification section number and title.
- C. For products specified only by reference standards, list for each such product:
 - 1. Name and address of manufacturer.
 - 2. Trade name.
 - 3. Model or catalogue designation.
 - 4. Manufacturer's data:
 - a. Reference standards.
 - b. Performance test data.

1.04 CONTRACTOR'S OPTIONS

- A. For products specified only by reference standard, select product meeting that standard, by any manufacturer.
- B. For products specified by naming several products or manufacturers, select any one of those products and manufacturers named which complies with Specifications.
- C. For products specified by naming only one or more products or manufacturers

and stating "or equal", select one of those named products or manufacturers. After award of Contract, submit a request as for substitutions, for any product or manufacturer which is not specifically named.

- D. For products specified by naming only one product and manufacturer, there is no option and no substitution will be allowed.

1.05 SUBSTITUTIONS

- A. Within a period of thirty (30) days after award of Contract, Consultant will consider formal requests from the Contractor for substitution of products in place of those specified:

1. After the end of that period, the request will be considered only in case of product unavailability or other conditions beyond the control of the Contract Documents:

- B. Submit a separate request for each substitution. Support each request with:

1. Complete data substantiating compliance of the proposed substitution. Support each request with:
 - a. Product identification, including manufacturer's name and address.
 - b. Manufacturer's literature; identify:
 - 1) Product description.
 - 2) Reference standards.
 - 3) Performance and test data.
 - c. Samples, as applicable.
 - d. Name and address of similar projects on which product has been used, and the date of each installation.
2. Itemized comparison of the proposed substitution with product specified; list significant variations.
3. Data relating to changes in the construction schedule.
4. Any effect of the substitution on separate contracts.
5. List of changes required in other work or products.

6. Accurate cost data comparing proposed substitution with product specified.
7. Designation of required license fees or royalties.
8. Designation of availability of maintenance services and sources of replacement materials.

C. Substitutions will not be considered for acceptance when:

1. They are indicated or implied on Shop Drawings or product data submittals without a formal request from Contractor.
2. They are requested by anyone other than Contractor.
3. Submitted without data relating to changes in construction schedule.
4. Any effect of substitution on separate contracts is not included.
5. A list of changes required in other work or products is not included.
6. Accurate cost data comparing proposed substitution with product specified is not included.
7. Designation of required license fees or royalties is not included.
8. Designation of availability of maintenance services, sources of replacement materials is not included.
9. Acceptance will require substantial revision of Contract Documents.

D. Substitute products shall not be ordered or installed without written acceptance of Consultant.

E. Consultant will determine the acceptability of proposed substitutions. Contractor shall pay all costs associated with Consultant's review.

1.06 CONTRACTOR'S REPRESENTATION

A. In making formal request for substitution Contractor represents that:

1. It has investigated the proposed product and has determined that it is equal to or superior in all respects to that specified.
2. It will provide same warranties or bonds for substitution as for product specified.

3. It will coordinate installation of accepted changes as may be required for the Work to be complete in all respects.
4. It waive claims for additional costs caused by substitution which may subsequently become apparent.
5. It will pay all costs, resulting under separate contracts, which result from the substitution.
6. It will pay all engineering costs for redesign or revision of the Contract Documents.
7. Cost data is complete and includes related costs under this Contract, but not:
 - a. Costs under separate contracts.
 - b. Consultant's costs of redesign or revision of Contract Documents.

1.07 CONSULTANT DUTIES

- A. Review Contractor's requests for substitutions with reasonable promptness.
- B. Notify Contractor in writing of decision to accept or reject requested substitution.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01700 - CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: Contractor shall 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 01710
 - 2. Project Record Documents: Section 01720
 - 3. Operating and Maintenance Data: Section 01730
 - 4. Warranties and Bonds: Section 01740.

1.02 SUBSTANTIAL COMPLETION

- A. The Work will not be substantially complete, and Contractor may not request substantial completion inspection unless the following submittals and work is completed:
 - 1. All work specified herein and shown on the drawing is complete.
 - 2. Project Record Documents have been submitted and reviewed to the requirements of Section 01720.
 - 3. All deficiencies noted on inspection reports or non-conformances are corrected or the correction plan approved.
 - 4. Contractor to submit evidence of compliance with the requirements of governing authorities.
- B. When the conditions of paragraph 1.02 A. are met the Contractor shall submit to the Consultant:
 - 1. A written notice that it considers the Work, or portion thereof, is substantially complete, and request an inspection.
- C. Within a reasonable time after receipt of such notice, the Consultant will make an inspection to determine the status of completion.

D. When the Consultant finds that the Work is substantially complete, Consultant will:

1. Attend a Substantial Completion walk-through of the facility to include the CITY, Contractor and Consultant and/or Engineer of Record to determine the completeness of the Project and readiness of the facility for occupancy.
2. Prepare and deliver to CITY a Certificate of Substantial Completion with the punchlist of items to be completed or corrected before final inspection.

1.03 FINAL INSPECTION

A. Prior to Contractors request for a final inspection the following submittals and Work must be complete:

1. Project Record Documents must be approved.
2. Equipment and systems have been tested in the presence of the CITY's representative and are operational and training, when applicable.
3. All punchlist items have been corrected.

B. The Consultant will, within reasonable time, make an inspection to verify the status of completion with reasonable promptness after receipt of Contractor's request.

C. Should the Consultant consider that the Work is incomplete or defective:

1. The Consultant 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 Consultant that the Work is complete.
3. The Consultant will within a reasonable amount of time, re-inspect the Work and the Contractor shall be liable for re-inspection fees as described in paragraph 1.04.

D. When the Consultant finds that the Work is acceptable under the Contract Documents, the Contractor may make closeout submittals.

1.04 RE-INSPECTION FEES

A. Should the Consultant perform re-inspections due to failure of the Work to

comply with the claims of status of completion made by the Contractor:

1. Contractor will compensate the CITY for such additional services.
2. CITY will deduct the amount of such compensation from the final payment to the Contractor.

1.05 CONTRACTOR'S CLOSEOUT SUBMITTALS

- A. Warranties and Bonds: To requirements of Section 01740.
- B. Evidence of Payment and Release of Liens: To requirements of General and Supplementary Conditions.
- C. Certificate of Insurance for Products and Completed Operations.
- D. Final Application for Payment
- E. Certificate of Substantial Completion.
- F. Certificate of Final Inspection, Testing, and Acceptance
- G. Closeout of all applicable permits:
 1. State or other jurisdictional permits (as applicable):
 - a. FDOT
 - b. LWDD
 - c. SFWMD
 - d. USACE
 - e. FEC
 - f. CSX
 2. PBC ROW/MOT
 3. PBC Health Department
 4. PBC Building Department
 5. City of Lake Worth Right-of-Way (ROW)
 6. City of Lake Worth Building Department

1.06 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit a final statement of accounting to the Consultant.

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. Deductions for liquidated damages.
 - f. Deductions for re-inspection payments.
 - g. Other adjustments.
3. Total Contract Sum, as adjusted.
4. Previous payments.
5. Sum remaining due.

C. Consultant 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.

1.08 RECORD DOCUMENT SUBMITTAL REQUIREMENTS

- A. Submit data on 8 ½ x 11 inch pages in three-ring binders with durable covers.
- B. Prepare binder cover and binder spine with printed title “RECORD DOCUMENT MANUAL”, title of project, and subject matter of binder when multiple binders are required.
- C. Internally subdivide the binder contents with permanent page dividers and tabs.
- D. Contents: Prepare a Table of Contents as follows:

1. Part 1: Directory, listing names, addresses, and telephone numbers of Engineer, Contractor, Subcontractors and major equipment suppliers.
 2. Part 2: Project documents and certificates, including the following:
 - a. Certificate of Substantial Completion with signed-off Substantial Completion punchlist.
 - b. Certificate of Final Acceptance.
 - c. Warranty of Title, form WT-1
 - d. Final Release of Lien
 - e. Pre- and Post-construction videos and photographs on DVD or CD.
 - f. Certifications of closeout of all applicable permits (NPDES, PBC Health Department, SFWMD, LWDD, PBC or CBB Building Permits, etc.)
- E. Submit Operation and Maintenance (O & M) Manuals for all equipment. The O&M Manuals shall include the following information:
- a. Manufacturer's name, address, and telephone number.
 - b. List of equipment
 - c. Parts list for each component
 - d. Operating instructions
 - e. Maintenance instructions for equipment and systems.
- F. Submit to the CITY, one (1) draft copy of the RECORD DOCUMENT MANUAL fifteen (15) days prior to the request for Final Inspection, Testing and Acceptance. This copy will be reviewed and returned prior to Final Inspection, Testing and Acceptance, with the CITY's comments. Revise content of all document sets as required.
- G. Submit one (1) revised FINAL RECORD DOCUMENT MANUAL and six (6) sets for all Operation and Maintenance Manuals, within ten (10) days after Final Inspection, Testing and Acceptance.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

- A. Submit written certification that the Work has been completed in accordance with Contract Documents and is ready for the Substantial Completion and/or Final Completion walk-throughs.
- B. Provide submittals to the Consultant and the CITY that are required by governing or permitting authorities such as Palm Beach County Health Department, Palm Beach County Traffic/Land Development, FDOT, etc. in order to closeout the project.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and full release of retainage.
- D. Final payment and release of retention with NOT be made until the RECORD DOCUMENT MANUALS, Operation and Maintenance Manuals, and the "AFTER" photographic survey, video, and photographs on DVD/CD have been received and accepted by the CITY.

END OF SECTION

SECTION 01705 - RECORD DRAWING REQUIREMENTS

PART 1 GENERAL

1.01 The Record Drawings are prepared by the Contractor and are used to document the actual construction and other conditions noted in the Contract Documents.

1.02 REQUIREMENTS INCLUDE

A. Contractor shall maintain at the site, a record copy of:

1. Drawings
2. Approved Shop Drawings, Product Data and Samples
3. Field Test Records

1.03 RELATED SECTIONS:

- A. Measurement and Payment – Section 01025
- B. Shop Drawings, Work Drawings, and Samples – Section 01340
- C. Testing Laboratory Services – Section 01410
- D. Substitutions and Product Options – Section 01630

1.04 RELATED REQUIREMENTS

- A. The completed final Record Drawings shall be certified by a Florida Registered Land Surveyor. This certification shall consist of the surveyor's embossed seal bearing his/her registration number, the surveyor's signature and date (of the survey) on each sheet of the drawing set (including the cover and key sheet). Standard Detail sheets are not required to be included in the Record Drawing set. In addition, all Record Drawing sheets shall list the company name, business address, and telephone number of surveyor. Additionally, the Record Drawings shall meet all Minimum Technical Standards (MTS) requirements.
- B. AutoCAD computer generated progress Record Drawings are required to be submitted with each Application For Payment.

1.05 MAINTENANCE OF RECORD DRAWINGS

- A. The Contractor shall maintain full size (24"x36") field drawings to reflect the installed / accepted items of work as the Work progresses. Upon completion of the Work, the Contractor shall submit two (2) sets of full size, signed and sealed Record Drawings and one (1) CD or DVD with the electronic PDF and AutoCAD files (AutoCAD 2010 or newer format). All Record Drawings shall be generated with AutoCAD, and conversions from any other CAD platform to AutoCAD once the drawings are finished are not allowed. Points collected shall be generated with AutoCAD Land Desktop or AutoCAD Civil 3D. An electronic set of the design drawings (including all pertinent XREF's, CTB files, images, etc.) will be furnished to the Contractor by the design engineer at no cost.
- B. Contractor shall label each document, "PROJECT RECORD DRAWING" in neat large printed letters, or by rubber stamp.
- C. Contractor shall maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
- D. Record information must be created concurrently with construction progress. Contractor shall not conceal any work until required information is recorded.
- E. Contractor shall make documents and samples available for inspection by CITY and CONSULTANT at all times.

1.06 RECORD DRAWINGS

- A. Survey/GPS Points: All points shall be collected via NAD83 FL State Plane coordinates and elevations collected via the NAVD88 vertical datum. All drawings shall be in the proper coordinate base, coordinates shall be called out on the drawings, and all field collected data shall be submitted in comma delimited text electronic format.
- B. Record Drawings shall include complete as installed information including paving and drainage relative to pavement location; concrete curb; gutter and sidewalks; elevations of surface drainage flows to insure proper routings of storm water runoff; location of inlets, manholes, outfalls, endwalls and control structures; as well as pipe inverts, top of grates, rim elevations, and other features that were constructed in the Project.
- C. The Record Drawings shall include complete as installed information of the utility systems, (water, sanitary sewer and storm water systems) including service laterals, sample points, valves, backflow preventers, information relative to location of manholes, valve pits (enclosures), wet wells, lift stations, as well as the inverts and rim elevations, and any other features that were either constructed as part of the project or discovered during the construction of the project. Any and all As-Built utilities that vary from the

design drawing set shall be moved spatially to its correct locations and reflected accordingly in the AutoCAD, PDF, and hard copy Record Drawings.

- D. Dimensional ties to water lines shall be provided, both horizontal and vertical, at a minimum of every 200 linear feet (lf). Each water line dimensional tie shall include centerline stationing and be referenced to the nearest edge of roadway paving with elevation of the top of the pipe.
- E. Contractor's Record Drawings shall include the key sheet / key map with exact system pipe line and valve locations indicated including GPS coordinates.
- F. Computer generated Record Drawings shall be submitted; data in tabular form will not be accepted.
- G. Additionally, GPS coordinates certified by the surveyor, shall be provided for:
 - 1. Water Mains (including raw water as applicable): Valves, fittings, fire hydrants, permanent sample points, service taps and meters.
 - 2. Sanitary Sewers: - Manholes and cleanouts.
 - 3. Stormwater systems: Inlets, manholes and outfalls (including MES).
 - 4. Force Mains: Valves and fittings.
 - 5. Reuse Mains: Valves, fittings, permanent sample points, service taps and meters.
 - 6. Wellfields: Wellheads and valves
 - 7. General: Street light poles, hand-holds and pull boxes
- H. Representative items of work that shall be shown on the Record Drawings as verified, changed or added are shown below:
 - 1. Plans:
 - a. Structure types, location with grade of rim and flow-line elevations.
 - b. Piping system type (water main, gravity sewer, etc.), length, size and elevations.
 - c. Utility type, length, size and elevation in conflict structures

- d. All maintenance access structures, valve pits, valves and hydrants within right-of way.
 - e. Critical spot elevations at high or low intersections and the midpoint of all intersections.
 - f. Sewer laterals.
2. Pavement Marking and Signing Plans: Sign location where installed if different from plans.
- I. Record Drawing shall include the following criteria at a minimum.
- 1. Record Drawings of water lines shall include the following information:
 - a. Top of pipe elevations and horizontal location every 100 linear feet (lf).
 - b. Separation callouts between water main, sanitary sewer mains and laterals, reclaimed water and storm drainage piping and structures.
 - c. Final elevations of surface feature including roadway crown, edge of pavement (roadway and sidewalk) and swale elevations every 200 liner feet (lf).
 - d. GPS locations and elevations of fittings, valves, fire hydrants, permanent sample points and water service taps and meters.
 - e. All tie-ins to existing lines shall be shown in an enlarged detail of the tie-in configuration.
 - f. All water services
 - 2. Record Drawings of all gravity sanitary sewer lines include the following information:
 - a. Rims, inverts and length of piping between structures as well as slopes.
 - b. Separation callouts between water main, sanitary sewer mains and laterals and storm drainage piping and structures.
 - c. The stub ends of all sewer laterals shall be located via GPS and if there are any cleanouts installed on the sewer laterals then the invert elevation of these cleanouts need to be obtained.

- d. Lift station Record Drawings shall consist of top of wet well elevation, invert elevation of the incoming line, bottom of the wet well and of the compound area.
3. Force main Record Drawings shall be prepared the same as the water line Record Drawings.
4. Reclaimed water Record Drawings shall be prepared the same as the water line Record Drawings.
5. Record Drawings of all storm water drainage systems shall include the following information:
 - a. Structures, grate elevations, inverts and diameter and length of pipe line between structures, type of drainage system (conveyance and/or exfiltration) and weir elevations if applicable.
 - b. Separation callouts between water main, sanitary sewer mains and laterals and storm drainage piping and structures.
 - c. Cross section (ROW to ROW) every 50 feet or critical change in elevation and at each inlet showing sidewalk, inlet grate and/or top and bottom of swale/slope, edge of roadway, roadway crown, edge of roadway, grate and sidewalk elevations.
6. All rock and asphalt Record Drawings for parking lot, roadways and swales areas shall consist of the following:
 - a. Rock elevations at all high and low points, and at enough intermediate points to confirm slope consistency and every 50' for roadways.
 - b. Rock elevations shall be taken at all locations where there is a finish grade elevation shown on the design plans.
 - c. All catch basin and manhole rim / grate elevations shall be shown.
 - d. Elevations around island areas are required.
 - e. As constructed elevations shall be taken on all paved and unpaved swales prior to placement of asphalt and/or topsoil/sod, at enough intermediate points to confirm slope consistency and conformance to the plan details.
7. Lake and canal bank Record Drawings shall include a key sheet of the lake for the location of cross sections. Lake and canal bank cross sections shall be plotted at a minimum of every 100 linear feet (lf) and the top and

bottom of slope/edge of water around the lake or canal, unless otherwise specified. Record Drawings shall consist of the location and elevation of the top of bank, edge of water and the deep cut line, with the distance between each shown on the drawing. If there are contours indicated on the design plans, then they shall be recorded as well.

- a. Retention area Record Drawings elevations shall be taken at the bottom of the retention area and at the top of bank. If there are contours indicated on the design plans, then they shall be recorded as well.
- b. If a change is made via field order or deviation to any structure, pipeline, etc., a new location shall be noted on the Record Drawings. The Consultant may request additional Record Drawing information to verify horizontal or vertical locations.

1.07 SUBMITTAL

- A. Record Drawings - As a condition precedent to the Contractor's request for Final Inspection, Testing and Acceptance, the Contractor shall furnish to CITY a complete set of full size paper prints, marked-up Record Drawings with "RECORD DRAWINGS" clearly printed on each sheet for review and approval. If there was no change to the drawing, it shall be marked "RECORD DRAWING – NO CHANGE". All final Record Drawing sheets shall be certified, signed and sealed by the Contractor's surveyor.
- B. Additionally, the Contractor shall certify by stamping and signing each Record Drawing sheet indicating the fact that it has been reviewed and accepted.
- C. Initially, two (2) signed and sealed paper prints are to be submitted to the Project Manager for review. Following review by the Consultant and CITY, any comments are to be addressed. On final submission, the following items shall be provided:
 1. Two (2) sets of signed and sealed drawings (24 in. x 36 in.). If sent by mail or courier, the drawings shall be packaged in properly sized shipping tubes.
 2. PDF and AutoCAD electronic files on CD or DVD. All proposed data must be crossed out and the computer generated As-Built data must be easily identified and put on AutoCAD layers other than those used by the Design Engineer, with the text "ASB" preceding the layer name. A bold or different font and line weight may be used. A sample of record data must be added to the legend and shown on each plan/profile sheet.

- D. The electronic files submitted must be in PDF and AutoCAD 2010 or newer format. All digital files are to be copied on CD or DVD. All fonts and linetypes shall be from the standard AutoCAD library. Any attachments to drawings (i.e., XREFs, Images, CTB files, or any such attached files) shall be written to CD or DVD. Original layer states shall be saved in AutoCAD prior to making any changes to drawings using the Layer State Manager under the Layer Properties Manager dialog box. As a minimum requirement, electronic files must include all features that were shown on the approved construction plans.

- E. When identified on the Schedule of Bid Items as a separate pay item, Record Drawings shall be paid for once the FINAL project Record Drawings have been submitted to and accepted by the CITY and CONSULTANT.

PART 2 PRODUCTS - Not Used.

PART 3 EXECUTION - Not Used.

END OF SECTION

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SECTION 01710 – CLEANING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: Contractor shall execute cleaning, during progress of the Work and at completion of the Work.

1.02 DISPOSAL REQUIREMENTS

- A. Contractor shall conduct cleaning and disposal operations to comply with codes, ordinances, regulations, and anti-pollution laws.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.
- B. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.
- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.01 DURING CONSTRUCTION

- A. Execute daily cleaning to keep the Work, the site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations or personal activities.
- B. Remove waste materials, debris and rubbish from the site as needed and dispose of at legal disposal areas away from the site.
- C. Contractor shall coordinate and cooperate with the CITY for the routine collection of garbage, debris and recycle materials by assuring access to oversized vehicles. If access to the property owner pick-up points, Contractor shall gather the collection bins, stage them in a pick-up area and then return to the individual property owners after the garbage and/or recycle has been picked-up.

3.02 DUST CONTROL

- A. Clean interior spaces prior to the start of finish painting and continue cleaning on an as-needed basis until paint is finished.
- B. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly-coated surfaces.

3.03 FINAL CLEANING

- A. Employ skilled workmen for final cleaning.
- B. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.
- B. Prior to final completion, or Owner occupancy, Contractor shall conduct an inspection of sight-exposed interior and exterior surfaces and all work areas, to verify that the entire Work is clean.

END OF SECTION

SECTION 01720 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 IN-PROGRESS PROJECT RECORD DOCUMENTS

A. All dimensions and annotations that are noted below shall be included on the progress and final Record Drawings. Contractor shall maintain on site one (1) record copy for the Consultant of the following as it progresses:

1. Drawings:
 - a. Trench bottom elevations
 - b. Top of bedding (when imported bedding is required)
 - c. Pipe invert at each structure
 - d. Station and off-set measurements including grate elevations for structures.
 - e. GPS coordinates/notations
 - f. Mapping of all soil density test results (pass and fail)
2. Specifications
3. Addenda.
4. Change Orders and other modifications of the Contract.
5. Consultant's Field Orders or written instructions.
6. Approved Shop Drawings, Working Drawings and Samples.
7. Field Test records.
8. Maintenance of Traffic (MOT) Plans
9. Construction photographs.

B. Related Requirements Described Elsewhere:

1. Field Engineering: Section 01050.
2. Shop Drawings, Working Drawings and Samples: Section 01340.

3. Construction Photographs: Section 01380.
4. Video and Photographic Site Survey: Section 01390

1.02 RECORDING

- A. Label each document "PROJECT RECORD" in neat large printed letters.
- B. Record information concurrently with construction progress.
 1. Do not conceal any work until required information is recorded.
- C. Drawings: Legibly mark to record actual construction:
 1. Depths of various elements of foundation in relation to finish first floor datum.
 2. Location of existing internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
 3. Field changes of dimension and detail.
 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. Product substitutions and alternates utilized.
 3. Changes made by Field Order or by Change Order.

1.02 SUBMITTAL

- A. At Contract closeout, deliver Record Documents to the Consultant for the CITY.
- B. Accompany submittal with transmittal letter in duplicate, containing:
 1. Date.

2. Project title and number.
3. Contractor's name and address.
4. Title and number of each Record Document.
5. Signature of Contractor or his authorized representative.

PART 2 - PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

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SECTION 01730 - OPERATING AND MAINTENANCE DATA

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Contractor shall compile product data and related information appropriate for CITY's maintenance and operation of products furnished under Contract.
 - a. Prepare operating and maintenance data as specified in this Section and as referenced in other pertinent sections of Specifications.
2. Contractor shall instruct CITY's personnel in maintenance of products and in operation of equipment and systems.

B. Related Requirements Described Elsewhere:

1. Contract Closeout: Section 01700
2. Project Record Documents: Section 01720

1.02 QUALITY ASSURANCE

A. Preparation of data shall be done by personnel:

1. Trained and experienced in maintenance and operation of described products.
2. Familiar with requirements of the Section.
3. Skilled as technical writer to the extent required to communicate essential data.
4. Skilled as draftsman competent to prepare required drawings.

1.03 FORM OF SUBMITTALS

A. Prepare data in form of an instructional manual for use by CITY's personnel.

B. Format:

1. Size: 8-1/2 inches x 11 inches.

2. Paper: 20 pound minimum, white, for typed pages.
3. Text: Manufacturer's printed data, or neatly typewritten.
4. Drawings:
 - a. Provide reinforced punched binder tab, bind in with text.
 - b. Reduce larger drawings and fold to size of text pages but not larger than 14 inches x 17 inches.
5. Provide fly-leaf for each separate product, or each piece of operating equipment.
 - a. Provide typed description of projects and major component parts of equipment.
 - b. Provide identified tabs.
6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS".

List:

- a. Title of Project.
- b. Identity of separate structure as applicable.
- c. Identity of general subject matter covered in the manual.

C. Binders:

1. Commercial quality three-post binders with durable and cleanable plastic covers.
2. Maximum post width: 2 inches.
3. When multiple binders are used, correlate the data into related consistent groups.

1.04 CONTENT OF MANUAL

- A. Neatly typewritten table of contents for each volume, arranged in systematic order.
1. Contractor, name of responsible principal, address and telephone number.

2. A list of each project required to be included, indexed to content of the volume.
3. List, with each project, name, address and telephone number of:
 - a. Subcontractor or installer.
 - b. A list of each product required to be included, indexed to content of the volume.
 - c. Identify area of responsibility of each.
 - d. Local source of supply for parts and replacement.
4. Identify each product by product name and other identifying symbols as set forth in Contract Documents.

B. Product Data:

1. Include only those sheets which are pertinent to the specific product.
2. Annotate each sheet to:
 - a. Clearly identify specific product or part installed.
 - b. Clearly identify data applicable to installation.
 - c. Delete references to inapplicable information.

C. Drawings:

1. Supplement product data with drawings as necessary to clearly illustrate:
 - a. Relations of component parts of equipment and systems.
 - b. Control and flow diagrams.
2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
3. Do not use Project Record Documents as maintenance drawings.

D. Written test, as required to supplement product data for the particular installation:

1. Organize in consistent format under separate headings for different procedures.
 2. Provide logical sequence of instruction of each procedure.
- E. Copy of each warranty, bond and service contract issued.
1. Provide information sheet for CITY's personnel, give:
 - a. Proper procedures in event of failure.
 - b. Instances which might affect validity of warranties or bonds.

1.05 MANUAL FOR MATERIALS AND FINISHES

- A. Submit **six (6) copies** of complete manual in final form to the CITY through the CONSULTANT.
- B. Content: for architectural products, applied materials and finishes:
1. Manufacturer's data, giving full information on products.
 - a. Catalog number, size, composition.
 - b. Color and texture designations.
 - c. Information required for reordering special manufacturing products.
 2. Instructions for care and maintenance.
 - a. Manufacturer's recommendation for types of cleaning agents and methods.
 - b. Cautions against cleaning agents and methods which are detrimental to product.
 - c. Recommend schedule for cleaning and maintenance.
- C. Content, for moisture protection and weather-exposed products:
1. Manufacturer's data, giving full information on products.
 - a. Applicable standards.
 - b. Chemical composition.

- c. Details of installation.
- 2. Instructions for inspection, maintenance and repair.
- D. Additional requirements for maintenance data: Respective sections of Specifications.

1.06 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit five (5) copies of complete manual in final form to the CITY through the CONSULTANT.
- B. Content, for each unit of equipment and system, as appropriate:
 - 1. Description of unit and component parts.
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data and tests.
 - c. Complete nomenclature and commercial number of replaceable parts.
 - 2. Operating procedures:
 - a. Start-up, break-in, routine and normal operating instructions.
 - b. Regulation, control, stopping, shut-down and emergency instructions.
 - c. Summer and winter operating instructions.
 - d. Special operating instructions.
 - 3. Maintenance procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting".
 - c. Disassembly, repair and reassembly.
 - d. Alignment, adjusting and checking.
 - 4. Servicing and lubrication required.
 - 5. Manufacturer's printed operating and maintenance instructions.

6. Description of sequence of operation by control manufacturer.
 7. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.
 - a. Predicted life of parts subject to wear.
 - b. Items recommended to be stocked as spare parts.
 8. As-installed control diagrams by controls manufacturer.
 9. Each contractor's coordination drawings.
 - a. As-installed color coded piping diagrams.
 10. Charts of valve tag numbers, with location and function of each valve.
 11. List of original manufacturer's spare parts, manufacturer's current prices and recommended quantities to be maintained in storage.
 12. Other data as required under pertinent sections of specifications.
- C. Content, for each electric and electronic systems, as appropriate:
1. Description of system and component parts.
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data and tests.
 - c. Complete nomenclature and commercial number of replaceable parts.
 2. Circuit directories and panelboards.
 - a. Electrical service
 - b. Controls
 - c. Communications
 3. As installed color coded wiring diagrams.
 4. Operating procedures:
 - a. Routine and normal operating instructions.

- b. Sequences required.
- c. Special operating instructions.
- 5. Maintenance procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting".
 - c. Disassembly, repair and reassembly.
- 6. Manufacturer's printed operating and maintenance instructions.
- 7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
- 8. Other data as required under pertinent sections of specifications.
- D. Prepare and include additional data when the need for such data becomes apparent during instruction of CITY's personnel.
- E. Additional requirements for operating and maintenance data: Respective sections of Specifications.

1.07 SUBMITTAL SCHEDULE

- A. Submit two (2) copies of completed data in final form to the CITY through the CONSULTANT no later than thirty (30) days following the Consultant's review of the last shop drawing and/or other submittal specified under Section SC01340.
 - 1. One copy will be returned with comments to be incorporated into final copies.
- B. Submit **six (6) copies** of approved manual in final form directly to the offices of the Consultant, within thirty (30) calendar days of product shipment to the project site and preferably within 30 days after the reviewed copy is received.
- C. Append six (6) copies of addendum to the operation and maintenance manuals as applicable and certificates as specified within thirty (30) days after final inspection and plant start-up test.

1.08 INSTRUCTION OF CITY'S PERSONNEL

- A. Fully instruct CITY's designated operating and maintenance personnel in

operation, adjustment and maintenance of products, equipment and systems.

- B. Review operating and maintenance manual with CITY's operating and maintenance personnel in full detail to explain all aspects of operations and maintenance.
- C. A list shall be provided to the CITY detailing the date, time and attendees of all training sessions.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01740 - WARRANTIES AND BONDS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Contractor shall compile specified warranties and bonds, as in the City of Lake Worth Contract Documents and as specified in these Specifications.

B. Related Work Described Elsewhere:

1. City of Lake Worth Contract Documents.
2. Contract Closeout: Section 01700.

1.02 SUBMITTAL REQUIREMENTS

- ##### A. Assemble warranties, bonds and service and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.

- ##### B. Number of original signed copies required: Two (2) each.

- ##### C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.

1. Product of work item.
2. Firm, with name of principal, address and telephone number.
3. Scope.
4. Date of beginning of warranty, bond or service and maintenance contract.
5. Duration of warranty, bond or service maintenance contract.
6. Provide information for CITY's personnel:
 - a. Proper procedure in case of failure.
 - b. Instances which might affect the validity of 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) post binder.
 - a. Fold larger sheets to fit into binders.
 - 2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS". List:
 - a. Title of Project.
 - b. Name of Contractor.
- C. Binders: Commercial quality, three (3) post binder, with durable and cleanable plastic covers and maximum post width of two (2) inches.

1.04 WARRANTY SUBMITTALS REQUIREMENTS

- A. For all major pieces of equipment, submit a warranty from the equipment manufacturer. The manufacturer's warranty period shall be concurrent with the Contractor's for one (1) year, unless otherwise specified, commencing at the time of final acceptance by the CITY.
- B. The Contractor shall be responsible for obtaining certificates for equipment warranty for all major equipment specified under technical specifications for Divisions 11: Equipment; 13: Special Construction; 15: Mechanical; and 16: Electrical and which has at least a 1 hp motor or which lists for more than \$1,000. The Consultant reserves the right to request warranties for equipment not classified as major. The Contractor shall still warrant equipment not considered to be "major" in the Contractor's one-year warranty period even though certificates of warranty may not be required.
- C. In the event that the equipment manufacturer or supplier is unwilling to provide a one (1) year warranty commencing at the start of the Correction Period, the Contractor shall obtain from the manufacturer a two (2) year warranty commencing at the time of equipment delivery to the job site. This two (2) year warranty from the manufacturer shall not relieve the Contractor of the one (1) year warranty.
- D. The CITY shall incur no labor or equipment cost during the guarantee period.

- E. Guarantee shall cover all necessary labor, equipment and replacement parts resulting from faulty or inadequate equipment design, improper assembly or erection, defective workmanship and materials, leakage, breakage or other failure of all equipment and components furnished by the manufacturer.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 01800 - MISCELLANEOUS WORK AND CLEANUP

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. Restoring of driveways and fences.
 - b. Cleaning up.
 - c. Incidental work.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Materials required for this Section shall be of the same quality as materials that are to be restored. Where possible, the Contractor shall reuse existing materials that are removed and then replaced.

PART 3 - EXECUTION

3.01 RESTORING OF DRIVEWAYS AND FENCES

- A. Existing public and private driveways disturbed by the Contractor shall be replaced. Paved drives shall be repaved to the limits and thickness existing prior to construction. Gravel drives shall be replaced and regraded.
- B. The Contractor shall remove, store and replace existing fences during construction. Only the sections directed by the Consultant shall be removed. If any section of fence is damaged due to the Contractor's negligence, it shall be replaced with fencing equal to or better than that damaged, and the work shall be satisfactory to the Consultant.

3.02 CLEAN UP

- A. The Contractor shall remove all construction material, buildings, equipment

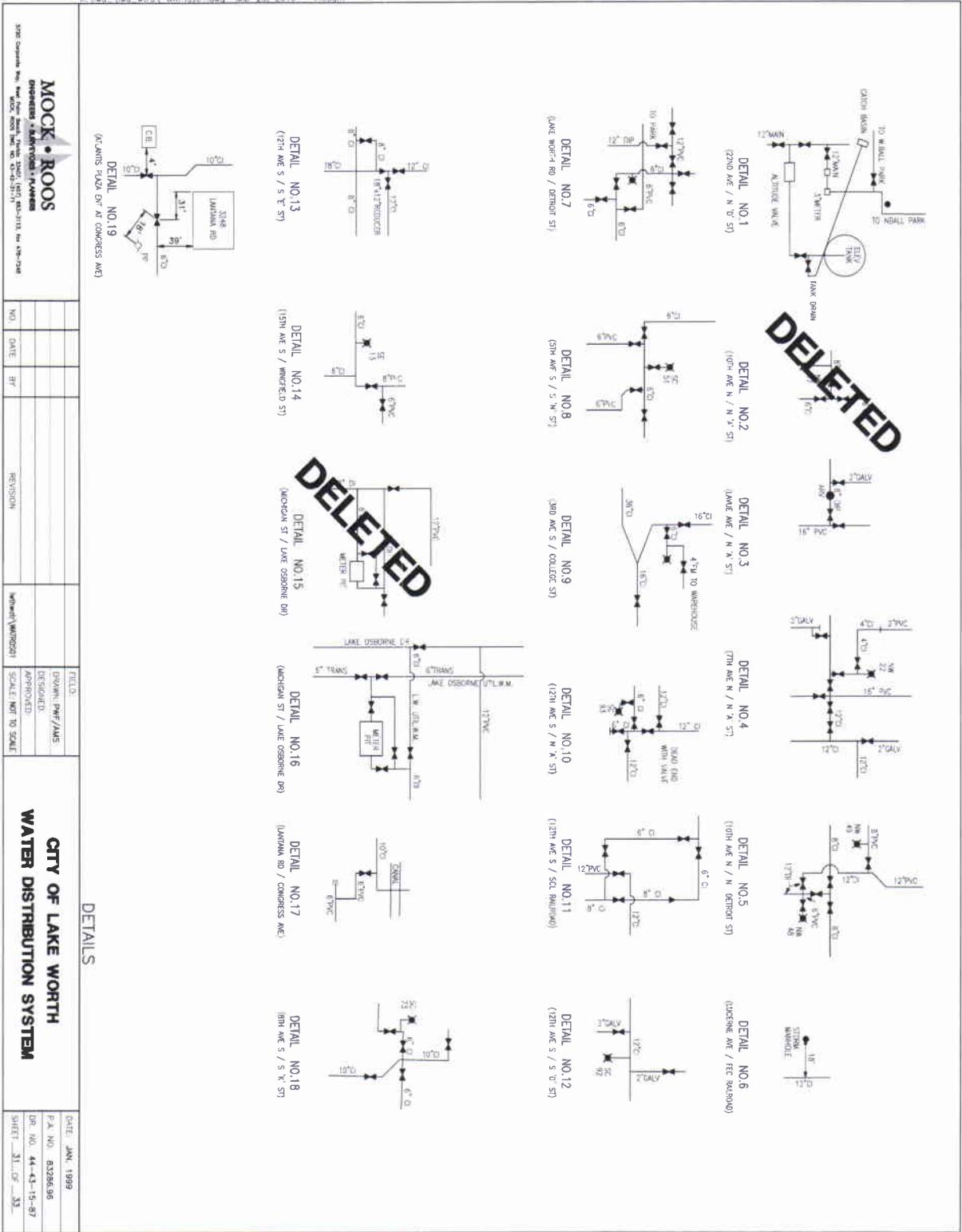
and other debris remaining on the job as the result of construction operations and shall render the site of the work in a neat and orderly condition.

3.03 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

Appendix A



MOCK • ROOS
 ENGINEERS & ARCHITECTS & PLANNERS
 5700 Corporate Reg. Bldg. Suite 2000, North Street, (407) 833-3113, Fax (407) 833-3100
 MOCK ROOS INC. REG. NO. 27-01-0117

NO.	DATE	BY	REVISION	APPROVED	SCALE

CITY OF LAKE WORTH
WATER DISTRIBUTION SYSTEM

DATE: JAN. 1999
 P.A. NO. 83286-98
 DR. NO. 44-43-15-87
 SHEET 31 OF 33