

City of West Palm Beach

MASTER CONTRACT

FOR



ITB # 13-14-129

LIFT STATION REPAIRS AND REHABILITATION

J.V. Diversified, Inc.

**CITY OF WEST PALM BEACH
ENGINEERING DEPARTMENT
JOSHUA McDERMOTT – PROJECT MANAGER
401 CLEMATIS STREET, 4TH FLOOR
WEST PALM BEACH, FL 33401
(561) 494-1040**



CONSULTANT/CONTRACTOR
ORIGINAL

City of West Palm Beach

MASTER CONTRACT for LIFT STATION REPAIRS AND REHABILITATION

ITB No. 13-14-129

Contract No. 14949

Contractor Firm: T.V. DIVERSIFIED, INC.

Contractor Address: 6397 Shadow Creek Village
Lake Worth, FL 33463

Email: tom.vitale@tvdiversified.com

Telephone: (561) 629-7087

FEI/EIN # 262114947

THIS CONTRACT is made and entered into by and between the Contractor identified above and the **CITY OF WEST PALM BEACH**, a municipal corporation of the State of Florida whose address is 401 Clematis Street, West Palm Beach, Florida 33401 (the "City" or "Owner").

WHEREAS, the Owner caused to be prepared specification, drawings and other contract documents for certain work and issued an Invitation to Bid ("ITB") for the above-described project; and

WHEREAS, the Contractor submitted its Bid in response; and

WHEREAS, the Owner determined that the Contractor's Bid represents the best value to Owner and wishes to contract with Contractor under the terms and conditions contained in the Invitation to Bid;

NOW THEREFORE, in consideration of the promises and mutual covenants and obligations herein contained, and subject to the terms and conditions herein stated, the Owner and Contractor understand and agree as follows:

1. **Lift Station Projects.** Contractor shall be entitled to submit bid(s) for the issuance of Work Orders for small projects (under \$300,000) for the repair and/or rehabilitation of existing wastewater and stormwater pump stations and control structures. The work will consist of repair, replacement or rehabilitation of pipes, manholes, inlets, pumps, hatches, rails and other appurtenances at existing wastewater or stormwater facilities. Typically, work will be performed at pumping stations having a wet well with submersible pumps. The work may also include the removal and replacement of valves, gates, pumps, sewer pipes, stormwater pipes, manholes, hatches, vaults, electrical cables, miscellaneous utility line appurtenances, concrete structures and concrete slabs.

Contractor shall provide any and all sheeting, shoring and/or dewatering systems necessary to perform the work and to protect existing homes, driveways, walls, landscaping, roads or utilities from damage. Contractor is responsible for controlled excavation and trenching as well as post-construction repair to restore the roads, sidewalks, yards and driveways to pre-construction conditions.

The Contractor shall be responsible for the costs of all labor (including costs for overtime, night and weekend work), materials, equipment, tools, supplies, transportation, delivery, disposal of waste and surplus material,

appliances, fuel, power, light, water, sanitary facilities, temporary facilities and all other appurtenances and incidentals necessary for installation or repair work conducted at existing facilities.

The Contractor shall be responsible for locating all existing underground utilities including irrigation lines, communication cables, electrical power lines, water lines, gravity mains, force mains, drain pipes and other underground utilities. The Contractor shall be responsible for maintaining and submittal of accurate record drawings depicting the location of all existing and new underground utilities installed or encountered during the performance of its work.

The work shall cause minimal disruption and be performed in an expedited, highly coordinated manner by the Contractor. The Contractor must have adequate staffing at all work locations when activities are occurring so that the work proceeds promptly.

Contractor shall be responsible for all maintenance and protection of vehicular and pedestrian traffic and access to existing properties at all times during construction, except when necessary for underground pipeline installation.

The Contractor shall be responsible for control and bypassing of wastewater and stormwater flow by the use of mechanical pumps, piping, tankers or other temporary means as necessary to keep the existing system upstream of the work zone in service during repair or replacement activities. Backup bypass systems, pumps and tankers shall be readily available in the event of failure of the Contractors primary bypass methods or systems.

The Contractor shall also be responsible for furnishing, providing, implementing and installing and maintaining all maintenance of traffic (MOT) signage and barricades that conform to all City standards. The Contractor shall prepare MOT plans and obtain permits for work in the roadway from the City of West Palm Beach.

All work shall be in accordance with City of West Palm Beach Technical Specifications, the City Approved Materials List, Florida Administrative Code Section 62-604 and FDOT Standard Specifications for Road and Bridge Construction.

2. **Non-Exclusive; No Guaranty.** This Contract is non-exclusive and the Owner reserves the right to award other contracts for work falling within the scope of this Contract. No work order(s) or minimum amount of work or compensation is guaranteed under this Contract.

3. **Scope of Work.** If awarded a Work Order, the Contractor shall furnish all necessary labor, materials, equipment and supplies, and shall execute and complete, to the satisfaction of Owner and in accordance with the terms and conditions of this Contract all work described and shown in the applicable Work Order.

4. **Work Order(s):**

4.1 Owner will issue Work Orders on an as-needed basis. Each work order will be on Owner's form and detail the specific project scope of work, project schedule for completion and compensation. All terms and conditions of this Contract, the General Conditions and the Contract Documents will be applicable to each Work Order. The form of Work Order is attached to this Contract.

4.2 No work is authorized until a work order is fully executed by the Owner. Any amendment to a work order is not effective and not authorized until such amendment is fully executed by the Owner.

4.3 No individual Work Order shall exceed \$299,999.99. No Work Order may be amended to exceed said amount. A comprehensive project shall not be broken into small related segments/projects in order to fall within the limitations of this Contract. Contractor shall not execute any such Work Order.

4.4 Work Orders shall be completed within the time indicated for each Work Order. Time is of the essence of each Work Order. Contractor shall proceed with the work and shall conform to the schedule for each Work Order. Work shall commence on the date indicated in the Notice to Proceed issued by Owner and be substantially complete and then fully complete in accordance with the Work Order schedule and the General Conditions, with such extensions of time as are provided in the General Conditions.

4.5 No Work Order may be issued for Services to be completed after the expiration of this Contract. The form of Owner's Work Order is attached to this Contract.

5. **Payment and Invoices.** Payment for Work Orders shall be made in accordance with the General Conditions of this Contract. Contractor acknowledges that if a construction bond is required, final payment under this Work Order shall not be made until consent of surety is received by Owner. Contractor shall submit individual invoices for each Work Order. Along with each invoice, Contractor will provide a copy of the Work Order, a Subcontractor Utilization Report that lists all subcontractors and suppliers providing services and/or materials under the Work Order, the appropriate completed Small Business participation form and any updated insurance documents.

6. **Term of Contract.**

6.1 **Term of Contract.** Subject to the termination rights of the Owner, this Contract shall have a term of three (3) years, commencing as of the date of execution by the Owner. The Owner shall execute this Contract last.

6.2 **Renewal.** At the sole option of the Owner, this Contract may be renewed for up to two additional twelve (12) month periods. Contract renewal will only be effective upon a written contract amendment executed by both parties. Renewal terms and conditions for this Contract shall be unchanged.

7. **Liquidated Damages.** The actual damages Owner and the public may suffer as a result of the failure to complete work under a Work Order within the scheduled time are not ascertainable at the time of this Contract. If said work under any Work Order is not substantially and then fully completed within the time established by the Work Order and the General Conditions, as may be adjusted, the Contractor shall be liable and hereby agrees to pay to the Owner as liquidated damages, and not as a penalty, a sum per calendar day for each and every day or part of a day thereafter that said work remains incomplete. Unless a Work Order specified otherwise, Contractor shall pay to Owner the sum of Two Hundred Dollars (\$200) per calendar day as liquidated damages. City shall and may deduct and retain the amount of such liquidated damages out of any money which may be due under this Contract. Contractor's Surety shall acknowledge it will be bound by these provisions on liquidated damages on the face of the Surety Bond.

8. **Construction Bond(s).** If a specific Work Order requires a public construction bond, then prior to the commencement of the work under such Work Order, Contractor shall record a public construction bond, in an amount not less than the total cost of such Work Order, on Owner approved forms, with the Clerk of the Court in the Public Records of Palm Beach County and provide a certified copy of the recorded bond(s) prior to commencing work and submittal of first invoice. The City shall be an obligee under such bond(s). The bond shall incorporate by reference the terms of the Contract Documents in their entirety.

9. **Required Insurance.**

9.1 Contractor shall maintain following liability coverage, in the limits specified, and shall provide evidence of such coverage prior to Contract execution:

Comprehensive General Liability: Not less than \$1,000,000.00 Combined Single Limit per each occurrence and \$2,000,000 aggregate, with bodily injury limits. May not be subject to a self-insured retention or deductible exceeding \$25,000.

Automobile Liability: Not less than \$1,000,000.00 for injuries per person in any one accident or occurrence and \$1,000,000.00 in the aggregate for injuries per occurrence or accident, with \$100,000.00 for property damage in any one accident or occurrence. May not be subject to a self-insured retention or deductible exceeding \$10,000.

Worker's Compensation: Worker's Compensation and Employer's Liability Insurance with limits of Employer's Liability Insurance not less than \$500,000 "each accident," \$500,000 "disease policy limit," and \$500,000 "disease each employee."

Any liability coverage on claims made basis shall remain effective for five (5) years after final payment.

9.2 Based on the work to be performed, specific Work Orders for specific utility work projects may require additional insurance coverages.

9.3 Additional Insured: All required insurance (except Worker's Compensation and Professional Liability) shall include an Additional Insured endorsement identifying the City of West Palm Beach as Additional Insured. No costs shall be paid by the Owner for an additional insured endorsement.

9.4 Certificate of Insurance: Evidence of insurance, being a current ACORD certificate of insurance or its equivalent, executed by the insurer, or its agent or broker, evidencing that a policy of insurance and any required endorsements have been issued by the agent/broker shall be delivered to Owner prior to execution of any contract awarded. The Certificate of Insurance shall be dated and show the name of the insured, the specific contract or work authorization by name, WA number and contract number, the name of the insurer, the number of the policy, its effective date, and its termination date.

9.5 Sub-Contractors. Proposer(s) shall ensure that any sub-consultants will maintain during the term of their contract, the above types of insurance, in coverage amounts acceptable to the Owner.

10. Contractor's Understanding. It is understood and agreed that the Contractor shall, prior to the execution of any Work Order, by careful examination, satisfy itself as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of the equipment and facilities needed preliminary to and during the prosecution of the work, and the general and local conditions. Execution of a Work Order by the Contractor shall be a representation that the Contractor has visited the site, reviewed any design criteria furnished by Owner, become generally familiar with local conditions under which the work is to be performed and correlated personal observations with requirements of the Contract Documents. Contractor agrees that its inspection of the site and review of information furnished by Owner shall be adequate investigation. By execution of a Work Order, Contractor represents that the plans and specifications are consistent, practical, feasible and constructible within the scheduled construction time and Contractor affirmatively covenants that Contractor has observed no defects or discrepancies in the plans, specifications or site. Contractor agrees that that if during construction any discrepancies, defects, etc., are discovered by or made known to Contractor, Contractor shall immediately communicate same to the Owner.

11. Warranty. Contractor agrees to correct all Work found by Owner to be defective or not in conformance with the Contract Documents for a period of one year from the final certificate of occupancy for the project (or if no certificate of occupancy to be issued, within one year of substantial completion) or for such longer periods of time as may be set forth with respect to specific warranties contained in the specifications.

12. Ethics. Contractor acknowledges, agrees and commits that it shall comply with all applicable state, county and Owner rules and regulations.

13. Inspector General. Contractor is aware that the Inspector General of Palm Beach County has the authority to investigate and audit matters relating to the negotiation and performance of this Contract and any Work Order hereunder, and may demand and obtain records and testimony from the Contractor and its subcontractors and lower tier subcontractors. Contractor understands and agrees that in addition to all other remedies and consequences provided by law, the failure of Contractor or its subcontractor or lower tier subcontractors to fully cooperate with the Inspector General when requested may be deemed by the Owner to be a material breach of this Contract justifying its termination.

14. Small Business. The aggregate goal for Small Business participation for all Work Orders issued under the contract **15%** of the total value of all Work Orders issued. Contractor agrees to use the certified small businesses identified by Contractor for each Work Order in the manner and proportions set forth in the Work Order and Small Business Commitment form. Contractor agrees to maintain in an orderly fashion all relevant records and information that evidence compliance with the Small Business program and the utilization of an payment to certified small businesses under this Contract. Contractor shall make said records available to the Owner for inspection during reasonable business hours.

payment to certified small businesses under this Contract. Contractor shall make said records available to the Owner for inspection during reasonable business hours.

15. **Contract Documents.** Contractor agrees to complete all work in accordance with the Contract Documents. The term "Contract" and or "Contract Documents" shall include all project and work requirements, the terms and conditions contained in this Contract and the General Conditions, on the Owner website(s), each Work Order and the following documents, all of which taken together are incorporated herein and form the Contract Documents. The Contract Documents constitute the entire agreement between Contractor and Owner and supersedes all prior verbal and written agreements, understandings, negotiations and discussions between the parties hereto. No verbal agreement or conversation with any officer, agent or employee of Owner either before or after execution of the Contract shall affect or modify any of the terms or obligations contained in any of the documents comprising said Contract.

For convenience sake, all of the Contract Documents may not be attached to this Contract, but the indicated documents make up the Contract Documents, regardless of whether they are attached.

- General Conditions
- Technical Specifications
- Schedule of Rates
- Public Construction bond(s)
- Contractor's Insurance
- Drug Free Certification
- The following Contract Documents may be found at www.Ownerofwpb.org/engineering/.
Owner's Approved Materials List
Owner's Engineering Standard Details
- Each Work Order and all associated Documents

The Contract Documents are complementary, and wherever possible the provisions of the documents shall be construed in such manner as to avoid conflicts between provisions of the various documents.

IN WITNESS WHEREOF, the parties execute this Contract through their duly authorized representatives.

ATTEST:

CITY OF WEST PALM BEACH

By: Helen L. Cannon
City Clerk

By: Geraldine Muioi
Geraldine Muioi, Ph.D., Mayor

Date: November 13, 2014

OWNER ATTORNEY'S OFFICE

Approved as to form and legality

By: [Signature]

WITNESS:

Contractor:

T.V. DIVERSIFIED, INC.

[Signature]
Print Name: Tammie Alloe

By: Thomas V. Vitale, Jr.
Thomas V. Vitale, Jr., President



CITY OF WEST PALM BEACH
LIFT STATION REPAIR/REHABILITATION

Work Order No. _____

Contract No. 14949. _____

Contractor: T.V. DIVERSIFIED, INC.

Work Order Title: _____

1. **Work:** A detailed scope of work to be performed under this Work Order is attached as **Exhibit A**.

(check if applicable) Technical specifications and drawings for the Project prepared by _____, dated _____, project number _____ (the "Contract Drawings") describe the work and are Contract Documents for this Work Order.

2. **Schedule:** Time is of the essence of this Work Order. The Contractor shall commence Work under this Work Order on the date indicated in the Notice to Proceed and fully complete said Work in accordance with **Exhibit _____**.

Substantial Completion shall be: _____ days from Notice to Proceed.

3. **Work Order Price.** The total amount to be paid to the Contractor by the Owner under this Work Order shall not exceed the sum of _____ (\$ _____) subject only to adjustment as provided in the General Conditions. No Work Order may exceed the price of Three Hundred Thousand Dollars. Payments shall be made in accordance with the General Conditions. Contractor acknowledges that if a construction bond is required, final payment under this Work Order shall not be made until consent of surety is received by Owner. Contractor shall submit individual invoices for each Work Order. Along with each invoice, Contractor will provide a copy of the Work Order, the appropriate completed Small Business participation form and any updated insurance documents.

(check if applicable) A detailed schedule of values is attached as **Exhibit _____**.

4. **Liquidated Damages.** In accordance with the Contract Documents, Contractor shall be liable and hereby agrees to pay to the Owner as liquidated damages for each and every calendar day or part of a day that the work remains incomplete, the sum of _____ per calendar day.

5. **Construction Bond.** Unless indicated below, Contractor will record the required public construction bond, on Owner forms, with the Clerk of the Court in the Public Records of Palm Beach County and provide a certified copy of the recorded bond prior to commencing work under this Work Order and submittal of first invoice.

(check if applicable) Construction bond not required and Work Order Price is less than \$200,000.

6. **Special Terms.**

7. **Warranty.** Contractor agrees to correct all Work found by Owner to be defective or not in conformance with the Contract Documents for a period of one year from the final certificate of occupancy for the project (or if no certificate of occupancy to be issued, within one year of substantial completion) or for such longer periods of time as may be set forth with respect to specific warranties contained in the specifications.

8. **Small Business:** The small business commitment for this Work Order is _____%. Contractor agrees to maintain in an orderly fashion all relevant records and information that evidence compliance with the Small Business program and the utilization of an payment to certified small businesses under this Contract.

9. **Insurance:** Contractor hereby confirms that it maintains the insurance coverages required under the Contract and that certificates of insurance evidencing current policies are on file with the Owner as of the date of this Work Order.

10. **Contract Reference:** This Work Order shall be performed under the terms and conditions described within the Master Contract for Lift Station Repairs and Rehabilitation, dated _____, 2014, by and between the City of West Palm Beach and the Contractor named above ("Contract").

11. **Contract Documents.** Contractor agrees to complete all work in accordance with the Contract Documents. The following documents are Contract Documents with respect to this Work Order, regardless of whether they are attached:

- Construction Drawings and specifications identified above, if applicable
- Technical Specifications
- Scope of Work
- Contractor's Schedule of Values
- Construction Schedule
- Special Terms
- Grant Requirements
- Substitution Sheet
- Contractor's Material Suppliers List
- Schedule of Subcontractors – including suppliers
- Trench Safety Compliance Form
- Small Business – Statement of Small Business Participation
- The following Contract Documents may be found at www.Ownerofwpb.org/engineering/.
Owner's Approved Materials List
Owner's Engineering Standard Details

CONTRACTOR:
T.V. DIVERSIFIED, INC.

OWNER OF WEST PALM BEACH

By: _____
Thomas V. Vitale, Jr.
President

Geraldine Muoio, Mayor
Date: _____, 20____

ATTEST: _____
City Clerk

OWNER ATTORNEY'S OFFICE
Approval as to form and legality
By: _____



GENERAL CONDITIONS

| <u>SECTION</u> | <u>CAPTION</u> |
|----------------|--|
| GC 1 | Definitions |
| GC 2 | Contract Documents |
| GC 3 | Owner |
| GC 4 | Contractor |
| GC 4.1 | Contractor Responsibilities |
| GC 4.2 | Contractor Review |
| GC 4.3 | Supervision and Labor |
| GC 4.4 | Materials and Equipment |
| GC 4.5 | Substitution |
| GC 4.6 | Quality Assurance |
| GC 4.7 | Permit and Fees |
| GC 4.8 | Notice to Proceed; Schedule; Delay |
| GC 4.9 | Survey; Lines, Grade, Levels and Dimensions |
| GC 4.10 | Record Documents |
| GC 4.11 | Work Site |
| GC 4.12 | Protection of Work and Property |
| GC 4.13 | Concealed or Unknown Conditions |
| GC 4.14 | Safety |
| GC 4.15 | Progress; Reporting |
| GC 4.16 | Shop Drawings, Samples and Submittals |
| GC 5 | Inspections and Testings |
| GC 6 | Correction of Work |
| GC 7 | Work by Others at Site |
| GC 8 | Changes in the Work |
| GC 9 | Completion |
| GC 9.1 | Requirements Prior to Substantial Completion |
| GC 9.2 | Notice |
| GC 9.3 | Substantial Completion |
| GC 9.4 | Inspection and Punch List |
| GC 9.4 | Substantial Completion |
| GC 9.5 | Punch List Retainage |
| GC 9.6 | Requirements Prior to Final Inspection |
| GC 9.7 | Final Inspection |
| GC 9.8 | Owner's Rights |
| GC 9.9 | Final As-Built Documents |

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|--------------|---|
| GC 9.10 | Use of Completed Portions |
| GC 10 | Payment |
| GC 10.1 | Schedule of Values |
| GC 10.2 | Taxes |
| GC 10.3 | Payment When Performance and Payment Bond Required |
| GC 10.4 | Payment Requests |
| GC 10.5 | Initial Payment |
| GC 10.6 | Progress Payments |
| GC 10.7 | Decision to Withhold Certification of Payments Requests |
| GC 10.8 | Retainage |
| GC 10.9 | Payment to Subcontractors |
| GC 10.10 | Final Payment |
| GC 10.11 | Final Payment to Subcontractors |
| GC 10.12 | Allowances |
| GC 10.13 | Contingency Funds |
| GC 10.14 | Withheld Payments |
| GC 10.15 | Local Government Prompt Payment Act |
| GC 11 | Bonds |
| GC 11.1 | Performance and Payment Bonds |
| GC 11.2 | Surety |
| GC 12 | Liens and Releases of Liens |
| GC 13 | Insurance; Indemnification |
| GC 14 | Subcontractors and Suppliers |
| GC 15 | Engineer/Architect's Status |
| GC 16 | Termination and Suspension |
| GC 17 | Unexcused Delay; Liquidated Damages |
| GC 18 | Claims and Disputes |
| GC 19 | Warranty Inspection |
| GC 20 | Royalties and Patents |
| GC 21 | Legal and Ethical Provisions |
| GC 22 | Miscellaneous |

GC 1 DEFINITIONS The following definitions will apply regardless of whether the word(s) is capitalized, if the context is appropriate.

"Addenda" is a document issued prior to the opening of bids which clarifies, corrects or changes the bidding requirements or the proposed Contract Documents.

"Agreement" is the written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

"Change Order" shall mean a written order issued by the Owner and accepted by the Contractor, authorizing additions, deletions, or revisions in the Work, or an adjustment in the contract price, or contract times, issued on or after the Effective Date of the Contract.

"claim" shall mean a demand or assertion by the Owner or Contractor seeking an adjustment of the contract price or contract times, or both, or relief with respect to the terms of the Contract."

"Constructive Change Directive (CDD)" is a document issued to authorize Work when a change order is not yet issued or has not yet been agreed upon.

"Construction Drawings" or "drawings" are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

"Contract date" shall be the date on which the Contract is signed by the last of the two parties to sign and deliver.

"Contract Documents" or "Contract" consist of the Contract between the Owner and Contractor, the payment and performance bonds (or public construction bond), the General Conditions, any supplemental or special terms or conditions of the Contract, Construction Drawings, specifications, bidding documents, addenda, and other documents listed in the Contract, regardless of whether physically attached to the Contract, and any amendments or change orders issued and duly executed after execution of the Contract.

"Contractor" shall mean the entity contracting with the Owner to perform the Work or its authorized representative. Contractor shall be lawfully licensed to perform the Work.

"contract price" is the total amount payable by the Owner to Contractor for performance of the Work under the Contract Documents.

"day" shall mean calendar day, unless otherwise specifically indicated. Where the performance of any act is directed, the time shall be computed so as to exclude the first and include the last day of the prescribed period. When the last day of a period falls on a Saturday, Sunday or legal holiday (observed by the party) the period shall end on the next day that is not a Saturday, Sunday or legal holiday.

"Engineer/Architect" shall be used and shall be understood to mean the professional engineer or architect consultant retained by the Owner as the Engineer or Architect of Record, or the designated staff engineer of the Engineering & Public Works Department of the Owner.

"fifty percent completion" of the Work is defined as that point in time where 50% of the overall value of Work items incorporated and which will remain in place subsequent to Final Completion of the Work have been completed, based upon the schedule of values contained in the Contract. As such, and by way of example, the value of Contractor's mobilization, general conditions, supervision or like items which do not involve permanent incorporation of Work do not apply to the determination of "Fifty Percent Completion" of the Work for purposes of establishing entitlement to a reduction of retainage.

"Final Certification" is the document issued to Owner by the Engineer/Architect upon finding the Work acceptable under the Contract Documents and all requirements fully performed.

"Final completion" shall be deemed to have occurred when the Engineer/Architect finds the Work acceptable under the Contract Documents and that all contract requirements have been fully performed.

"Notice to Proceed" is the written notice given by Owner to Contractor fixing the date on which the Contract time will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

"Owner" or "City" is the City of West Palm Beach. The authorized representative for execution of the Contract and any amendments or change orders is the Mayor.

"project" is the total construction, of which the Work performed under the Contract Documents may be the whole or a portion; and may include construction by the Owner and/or separate contractors.

"schedule of values" shall be a Contractor prepared and maintained schedule allocating portions of the contract price to various portions of the Work and used as a basis for reviewing the Contractor's application for payment.

"shop drawings" are drawings, diagrams, illustrations, schedules and other data specially prepared for the Work by Contractor or its Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work. Shop drawings are not Contract Documents but are used to demonstrate how the Contractor proposed to conform to the design concept of the Contract Documents for those portions of the Work for which the Contract Documents require submittals.

"specifications" are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work and performance of related services.

"subcontractor" is a person or entity in direct or indirect contract with the Contractor, or with any other subcontractor, to perform a portion of the Work.

"substantial completion" shall be deemed to have occurred when the Work has progressed to the point where, in the opinion of the Engineer/Architect, the Work is sufficiently complete, in accordance with the Contract Documents, so that the Owner can utilize the Work and the entire project for its intended purposes, including but not limited to the completion of all specified systems and items relating to life safety and regulatory use, with the exception of incidental or incomplete items except where a lack of completion of such incidental or incomplete items of Work will adversely affect the complete operation of other areas of the Work. Additional conditions (if any) needed to achieve Substantial Completion of the Work and which are project specific are set forth in the Special Terms or Supplemental Conditions.

"Supplemental Conditions" are that part of the Contract Documents which amends or supplements these General Conditions.

"Work", means the construction services required by the Contract Documents and includes all labor, equipment, materials, documents and services to be provided by the Contractor to fulfill the Contractor's obligations under the Contract. Work may refer to the whole or a portion of the project.

The terms "Owner", "Contractor", "Engineer/Architect" and "Subcontractor" are treated throughout the Contract as if each were of the singular number and masculine gender.

GC 2 CONTRACT DOCUMENTS

2.1 EXECUTION, CORRELATION AND INTENT OF DOCUMENTS:

2.1.1 The Contract shall be executed in at least two original sets by Owner and Contractor.

2.1.2 The Contract Documents are intended to include all items necessary for the proper execution and completion of the Work by the Contractor. Any labor, services, materials, equipment or documentation that may reasonably be inferred from the Contract documents or trade usage or prevailing custom as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.

2.1.3 The Contract Documents are complementary, and wherever possible the provisions of the documents shall be construed in such manner as to avoid conflicts between provisions of the various documents. In the event of any inconsistency among the Contract Documents, where such inconsistency is not clarified by change order or addendum, the Contract Documents shall be construed according to the following priorities:

| | |
|-------------------|---|
| First Priority: | Approved Change Orders, Addendums or Amendments |
| Second Priority: | Specifications (quality) |
| Third Priority: | Drawings (location) |
| Fourth Priority: | Supplemental Conditions or Special Terms |
| Fifth Priority: | General Terms and Conditions |
| Sixth Priority: | Contract |
| Seventh Priority: | Invitation to Bid |
| Eighth Priority: | Contractor's Bid |

2.1.4 In any event of inconsistency, however, the latest, and more stringent, or technical, or the lesser quantity requirements shall control the work to be performed by Contractor, as determined by the Engineer/Architect.

2.1.5 Organization of the Specifications into sections or arrangements of the Construction Drawings shall not control how the Work is distributed to subcontractors or among the trades.

2.1.6 The Contract Documents make no attempt to fix the scope of work of any subcontractor nor the responsibilities of the subcontractors.

2.1.7 Unless otherwise stated in the Contract Documents, words that have well-known conventional or technical or construction-industry meanings are used in the Contract Documents in accordance with such meanings.

2.1.8 Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to laws or regulations, shall mean the standard, specification, manual, code, or laws, or regulations in effect at the time of bid opening or on the Contract date if there were no bids.

2.1.9 The following Contract Documents may be found at www.cityofwpb.org/engineering/

Owner's Approved Materials List
Owner's Engineering Standard Details
Owner's Right-of-Way Construction Standards (if applicable)

2.2 CONSTRUCTION DRAWINGS AND SPECIFICATIONS.

2.2.1 The Owner through the Engineer/Architect, or the Engineer/Architect as the Owner's representative, shall furnish Construction Drawings and specifications which represent the requirements of the Work as far as practical to be performed under the Contract Documents. The Owner or

Engineer/Architect will provide the Contractor with copies of all drawings and specifications, not to exceed four (4) complete sets, for the execution of the Work.

2.2.2 The Contractor shall, immediately upon receipt of the specifications and Construction Drawings, check all specifications and drawings furnished and shall promptly notify Owner, in writing, of any illegibility, error, omission, defect or discrepancy discovered in such specifications and drawings and shall comment as appropriate upon construction feasibility and practicality. Contractor shall obtain written interpretation or clarification from Engineer/Architect prior to proceeding with any Work affected by such illegibility, error, omission, defect or discrepancy. Contractor shall be responsible for obtaining building permits for the Work based on the specifications and Construction Drawings. The Contractor shall perform work only in accordance with the specifications and permitted Construction Drawings and any subsequent revisions thereto.

2.2.3 If the permit approval process requires a change to the scope of the work, the Contractor shall notify the Owner and Engineer within seven (7) days of Contractor being informed of the required change or receipt of the permitted Construction Drawings and such notification shall contain a written description of the change and its impact on the cost and schedule, if any. Failure to provide such notice within seven (7) days shall be a complete waiver by the Contractor of all additional cost and time and Contractor shall perform and additional work at its expense and complete the Work according to schedule and in no event shall Contractor recover delay or consequential damages.

2.3 OWNERSHIP AND USE OF DRAWINGS AND SPECIFICATIONS

2.3.1 Any and all Construction Drawings produced for the Owner become the property of the Owner. The Contract Documents, in whole or in part, are to be used by the Contractor only with respect to the project and the Work, and shall not be used by the Contractor for any other purpose without written authorization by the Owner. This prohibition shall survive completion or termination of the Contract. The Contractor may retain copies of Contract Documents for record purposes.

2.3.2 For security reasons, building plans, construction drawings, security features and technical details and specifications of City-owned facilities are not public documents. These documents may be shared by Contractor with those employees and subcontractors as needed to perform the Work. However, Contractor and its subcontractors shall not release such plans, drawings, and specifications to any other third party without Owner's prior written approval.

2.4 ELECTRONIC DATA

Unless specifically stated in Supplemental Conditions or Special Terms, and excepting the electronic documents referenced in GC 2.1.9, the data, specifications and drawings that may be relied upon are limited to the printed copies (hard copies). If the parties intend to transmit any data, information or documentation in digital form, with the intent of reliance on such transmission, and not solely for the convenience of the receiver, the parties to the transmissions shall establish protocols for such transmissions.

GC 3 OWNER

3.1 Owner shall be responsible for obtaining any easements necessary for the Work to be performed at the indicated site.

3.2 The furnishing of any surveys, utility locations, or other site information by the Owner does not relieve Contractor of its responsibilities under the Contract Documents. Owner makes no representation or warranty as to the accuracy of any information provided to Contractor.

3.3 Unless otherwise provided in the Contract Documents, Owner shall provide Contractor with at least one (1) but no more than four (4) complete set(s) of Contract Documents.

3.4 Unless otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer/Architect.

3.5 Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with laws and regulations applicable to the performance of the Work.

3.6 **OWNER'S RIGHT TO STOP WORK.**

If Contractor fails to correct Work that is not in accordance with the Contract Documents, or repeatedly fails to perform Work in compliance with the Contract Documents, Owner may issue a written order to Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated or resolved.

3.7 **OWNER'S RIGHT TO PERFORM WORK.**

Owner reserves the right to perform or complete all or a portion of the Work in the event of Contractor's failure to perform the Work in accordance with the Contract Documents, after written notice of such failure and a five (5) day period to cure such failure(s).- Owner's exercise of its right to perform the Work shall be without prejudice to any other remedies Owner may have. In such event, a change order shall be issued deducting the Owner's costs, including additional compensation to Engineer/Architect, from payments thereafter due to Contractor. The amounts deducted shall be subject to review by Engineer/Architect. If payments due to the Contractor are not sufficient to cover the amount, the Contractor shall pay the difference to Owner.

GC 4 CONTRACTOR

4.1 **CONTRACTOR RESPONSIBILITIES.**

4.1.1 Contractor shall supervise, inspect and direct the Work, competently and efficiently, in accordance with the Contract Documents. The Contractor shall be held liable to Owner for the performance of all Work provided for under the Contract Documents.

4.1.2 Contractor shall employ and or subcontract with subcontractors that are qualified to successfully complete the Work and within the contract time specified.

4.1.3 Contractor shall provide and pay for all labor, materials, equipment, tools, construction equipment and machinery, heat, utilities, travel, lodging, insurance, facilities and services necessary for the proper execution and completion of the Work.

4.1.4 Contractor shall be solely responsible for all construction means, methods, techniques, sequences, procedures and safety programs in connection with the performance of the Work. Contractor shall be solely responsible for the engagement, management and performance of any subcontractors used to perform any portion of the Work.

4.1.5 Contractor shall be liable to Owner for materials and equipment furnished. This shall include all materials and equipment whether manufactured and/or fabricated by other persons. In the event that an agent or other representative of the Owner approved the installation or erection of any item of material or equipment and the Contractor feels the same is not fabricated in good workmanlike manner, Contractor shall forthwith advise the Engineer/Architect and the Owner of such situation in writing.

4.1.6 Contractor shall maintain a log of daily Work activities, including manpower records, weather, delays, major decisions, etc., and provide a copy of same to Owner upon request.

4.1.7 Contractor shall maintain a current roster of subcontractors with name and contact telephone numbers for key personnel and provide a copy of same to the Owner at the beginning of the project and at any time the information is revised.

4.1.8. Contractor shall provide a safety program for the project and conduct a safety meeting prior to commencing work and at regular intervals, no less than once per month, during the prosecution of the Work.

4.1.9 For street and utility construction, Contractor shall give notice of commencement of construction to all nearby properties which may be affected by the Work at least seven (7) calendar days prior to commencement of construction. Owner's project manager will assist Contractor in determining those properties requiring notice.

4.1.10 Contractor shall not perform any Work unless the Contractor is in compliance with GC 4.8.2 and GC 4.10.1.

4.1.11 Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work.

4.2 CONTRACTOR REVIEW

4.2.1 Contractor shall carefully study and review the Construction Drawings, plans and specifications to assure itself and Owner that Contractor has observed no defects or discrepancies in the Construction Drawings or specifications and such plans are consistent, practical, feasible and constructible within the scheduled construction time. It is recognized that Contractor's review is made in Contractor's capacity as a contractor and not as a design professional, unless otherwise specifically provided in the Contract Documents.

4.2.2 The Contractor shall, by careful examination, satisfy itself, to the extent it deems necessary, as to the nature and location of the Work, the conformation of the ground and site, access and transportation of materials, the character, quality and quantity of the materials, storage, handling and disposal of materials, the character and storage of the equipment and facilities needed preliminary to and during the prosecution of the Work, the availability, quantity and quality of labor, water and electric power; availability and condition of roads; climatic conditions; location of underground utilities; existing site conditions, topography and ground conditions; subsurface geology, and nature and quantity of surface and subsurface materials to be encountered; the general and local conditions and all other matters which can in any way affect the performance of the Contract. Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, reviewed any design criteria furnished by Owner, become generally familiar with conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents. No change shall be made to the contract price on account of minor differences between actual field conditions and the Contract Documents. Contractor's failure to assess the site conditions will not relieve it from the responsibility for properly estimating the costs and schedule of performing the Work.

4.2.3 If the Contractor, whether prior to or during construction, discovers or becomes aware of any discrepancies, defects, errors or omissions in the Construction Documents, or any issues or concerns regarding the Work site, Contractor shall immediately report them in writing to the Owner and the Engineer/Architect.

4.2.4 Subsoil Conditions. Unless otherwise stipulated in the Construction Documents, no subsoil investigations have been made. The Contractor shall satisfy itself as to all subsoil conditions as necessary. Contractor shall be responsible for coordinating and scheduling geotechnical services based on Contractor's testing requirements.

4.2.5 Underground Utilities and Facilities. Where applicable, Contractor shall be responsible for locating all underground utilities and facilities. Owner shall not be responsible for the accuracy or completeness of any information or data provided regarding underground utilities or facilities.

4.3 SUPERVISION & LABOR

4.3.1 Contractor shall supervise, direct and inspect the Work using Contractor's best skill and attention. Contractor shall enforce discipline and order at the Work site. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction

4.3.2 Project Manager. To ensure that the work will be performed to the requirements of the Contract Documents, Contractor shall, at all times during the progress of the Work, assign and keep a competent Project Manager satisfactory to the Owner. The Contractor shall advise the Owner and Engineer/Architect, in writing, within ten (10) calendar days after the date of Owner's issuance of a Notice to Proceed, the name and local address of the Project Manager who will be in responsible charge of the project, together with the extent of his authority to represent and act on behalf of the Contractor, along with the Project Manager's cell phone number. In the event the Contractor must replace the Project Manager during the pendency of the Project, Contractor shall, unless otherwise impossible, give Owner at least ten (10) calendar days prior notice of such replacement and advise Owner of the name and cell phone number of the new Project Manager. The Contractor will ensure that Owner and Engineer/Architect shall be able to reach the Project Manager at his cell phone number at all working hours and during emergencies. The Project Manager shall represent the Contractor in his absence and all notices and directions given to him shall be binding as if given to the Contractor. Important directions shall be confirmed on written request in each case. At any time Owner may request and Contractor shall replace the individual performing as Project Manager with an individual acceptable to Owner.

4.3.3 Labor. Contractor shall employ only competent, skilled and suitably qualified personnel to perform the work. Contractor shall remove from the jobsite any personnel of Contractor or subcontractors who is unfit or not properly skilled in the tasks assigned to him, or working in violation of any provision of the Contract. Contractor and all subcontractors shall be bound by and comply with all applicable Federal, State and local laws regarding labor.

4.3.4 Hours. Except as otherwise required for safety or protection of persons or the Work, or adjacent property, and except as otherwise provided in the Contract Documents, all Work at the project site shall be performed Monday through Friday, 8 am to 5 pm. If the Contract Documents specifically required work to be performed beyond normal working hours, weekends or legal holidays, or should the completion time required work to be performed at said times, or should the Contractor, with the Owner's permission, elect to perform work at said times, any additional costs resulting from working at said times are the Contractor's sole responsibility. All work performed after regular working hours, on Sundays or legal holidays, shall be performed without additional expense to Owner.

4.4 MATERIALS & EQUIPMENT.

4.4.1 Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, tools, equipment, services, transportation, and other facilities necessary for the execution and completion of the Work.

4.4.2 Unless otherwise specified, only new, unused materials, equipment and items of recent manufacture, of designated quality, free from defects, will be accepted. All workmanship will be of good quality. Contractor shall, if requested, furnish evidence satisfactory to the Owner as to the kind, quality and manufacturer of materials. Owner will be the final authority for determining conformance of workmanship, materials, equipment and systems with the requirements of the Contract Documents.

4.4.3 No work defective in construction or quality, or deficient in meeting any requirement of the Contract Documents, Construction Drawings or specifications, will be acceptable regardless of Owner's failure to discover such defects during construction; nor will inspection by the Engineer/Architect relieve Contractor from ensuring the quality of the Work as required by the Contract. No payment, whether partial or final, shall be construed as an acceptance of defective or unacceptable work or improper materials and equipment.

4.4.4 Approved Materials. Owner's Approved Materials List is found at www.cityofwpb.org/engineering/

4.4.5 Samples. Where samples are required, samples shall be submitted by and at the expense of Contractor. Materials represented by such samples shall not be manufactured, delivered to the site or incorporated into the Work without such review. At least fifteen (15) calendar days shall be allowed for Owner's review.

4.5 SUBSTITUTION.

4.5.1 Substitutions are changes in materials, equipment, methods or sequences of construction, design, structural systems, mechanical, electrical, or other requirements of the drawings or specifications. The naming of a specified product of specific manufacturers for equipment or materials in the specifications or Contract Documents shall be interpreted as establishing a minimum standard of quality and performance. It shall not be construed as eliminating the selection of other than the named equipment or materials equal to those specified, unless the equipment or materials are specifically designated as not permitting substitution. If Contractor objects to equipment or materials specifically designated as not permitting substitution as not being suitable for the Work, Contractor shall promptly notify Engineer/Architect in writing, absent which, Contractor shall be deemed to accept the suitability of such equipment or materials for the work. Contractor shall provide written justification and explanation of the objections. Upon receipt of a timely objection notice, Engineer/Architect shall review the objection and render a determination to Contractor of whether a substitute will be permitted.

4.5.2 Contractor may make substitutions only with the consent of Owner, after evaluation by the Engineer/Architect, and in accordance with a change order or construction change directive. The burden of proof that such an item offered is equal in all respects to that specified shall be Contractor's. By making a request for substitution, the Contractor represents:

- Contractor has investigated the proposed substitute item, material and/or process and determined that it is equal or superior in all respects to that specified;
- That such item will fit into the space allocated;
- That such item affords comparable ease of operation, maintenance and service;
- That the appearance, longevity and suitability for the climate are comparable;
- That by reason of costs savings, reduced construction time or similar demonstrable benefit, the substitution of such item will be in Owner's interest;
- There will be no detrimental impact to the project schedule;
- That the Contractor will provide the same or better warranty for the substitute item as the specified item;
- That the cost data presented at the time of request for review is complete and includes all related costs under the Contract, including costs for review by design professionals, and Contractor waives all other claims for additional costs related to the substitution that are not presented with the request.

4.5.3 All requests for substitutions shall be in writing, with supporting information, shall be submitted by and at the expense of Contractor. Contractor shall submit drawings, samples, data and additional information as may be required by Owner or Engineer/Architect. At least twenty (20) calendar days shall be allowed for Owner's review.

4.5.4 The above representations do not obligate Owner to consent to the substitution. Owner or its Engineer/Architect shall make the determination as to the acceptability of any substitution. Approval of a substitution shall not relieve Contractor from the responsibility for compliance with all requirements of the Contract. Contractor shall coordinate the change with all trades and bear the expense for any changes in other parts of the work caused by any substitution.

4.5.5 Contractor may make only two requests for substitution in the same category. Contractor shall be invoiced the expenses incurred by Owner for its design professionals in reviewing additional substitution requests or in modifying any of the Contract Documents to accommodate the substitution, unless otherwise approved by Owner.

4.6 QUALITY ASSURANCE

4.6.1 Contractor shall develop, implement and maintain a plan for the Work with quality assurance and management and control of the construction services. Contractor shall maintain a continuous presence at the Work site and an adequate inspection system and perform such inspections as will assure that the Work performed conforms to the requirement of the Contract Documents.

4.6.2 Contractor shall allow the Engineer/Architect full access to the Work for inspection of the Work. When requested by Engineer/Architect, the Contractor shall meet with Engineer/Architect at reasonable times and furnish all information requested. Neither Owner nor Engineer/Architect shall be liable to Contractor for compensation or claims for delay or interference on account of any such meeting, or the supply of information, or tests or inspections. The activities of the Owner and/or the Engineer/Architect in administration of the Contract or in performing tests or inspections shall not relieve the Contractor of its obligations to perform the Work in accordance with the Contract Documents.

4.6.3 Warranty. Contractor warrants to Owner that the Work will conform to the requirements of the Contract Documents and will be free from defects. Work, materials or equipment not conforming to these requirements may be considered defective. Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by Contractor or subcontractors, improper or insufficient maintenance, improper operation or normal wear and tear and normal usage. Warranty by the Contractor shall not be construed as a waiver by the Owner of any other remedy.

4.7 PERMITS AND FEES.

4.7.1 All permits or licenses necessary for the performance of the Work or required by law or ordinance, including building permits, shall be secured, maintained, and paid for by the Contractor, unless otherwise provided in the Contract Documents. Contractor shall be responsible for all governmental fees, including but not limited to utility fees and connection fees.

4.7.2 Building Construction. For construction of a building, Owner shall be responsible for all City of West Palm Beach construction plan and permit review fees

4.7.3 Surface and Subsurface Water. Contractor shall obtain all permits required from each applicable regulatory agency with respect to the control of surface and subsurface water by Contractor during the work, with copies submitted to Owner, unless otherwise provided for in Supplemental Conditions.

4.7.4 Inspection Fees. Contractor shall be responsible for all inspection fees charged by regulatory/governmental agencies.

4.7.5 Right-of-Way Permit. For street and utility construction and as otherwise applicable, Contractor shall obtain a City of West Palm Beach right-of-way permit for each required road closure. Contractor shall submit detailed Maintenance of Traffic (MOT) plans, signed and sealed by a professional engineer, for each phase of the Work. During the times Contractor is working in the project area, Contractor shall utilize flagmen, traffic control devices and variable message boards on a full time basis, where and when needed, to facilitate the movement of traffic along and around the project Work. All MOT plans shall be reviewed and approved by Owner prior to implementation of work by Contractor. Contractor shall not close or obstruct any highway, road or other property until the necessary permits have been obtained.

4.7.6 Contractor shall immediately remedy any permit violations and shall be responsible for any damages, remediation, fines or penalties assessed by such agencies for permit violations.

4.8 NOTICE TO PROCEED, SCHEDULE; DELAYS

4.8.1 Notice to Proceed. Contract times will commence to run on the date indicated in the Notice to Proceed issued by Owner, unless otherwise provided in the Contract Documents.

4.8.2 Commencement of Work. If a performance/payment bond(s) or public construction bond is required by the Contract Documents, Contractor may not commence any Work until Contractor has provided Owner with a certified copy of the performance/payment bond(s) evidencing that such bond(s) have been recorded with the Clerk of the Court in the Public Records of Palm Beach County.

4.8.3 Project Schedule. Within ten (10) calendar days after the date of the Owner's issuance of a Notice to Proceed, the Contractor shall prepare and submit to the Owner and to Engineer/Architect, for review and approval, a project schedule utilizing the Critical Path Method (CPM) graphically depicting the activities contemplated to occur as a necessary incident to performance of the work required to complete the project, showing the sequence in which the Contractor proposes for each such activity to occur and duration (dates of commencement and completion, respectively) of each such activity. The construction schedule shall be complete in all respects, covering approvals, mobilization and demobilization, construction and Owner occupancy, in addition to activities and interfaces with other contractors at the work site, offsite activities such as design, fabrication, allowance for weather delays (if appropriate), submittals, procurement and jobsite delivery of Contractor furnished material and equipment, and shall have a completion date that corresponds to the Contract Documents. By executing the Contract, Contractor confirms that it is capable of properly completing the Work within the completion date set forth in the Contract Documents. The time limit for the completion of the work as described in the Contract Documents is of the essence of the Contract.

4.8.4 Contractor shall take all actions necessary to remain on schedule, at Contractor's sole cost and expense, including but not limited to:

1. Increase manpower as necessary to eliminate work backlog.
2. Increase the number of working hours per shift, shifts per working day, working days per week, construction equipment, or any combination of the foregoing to recover the schedule.
3. Reschedule the work in conformance with specification requirements.

4.8.5 Testing & Inspections. Contractor must provide a minimum of five (5) calendar days prior notice for specified testing or inspections that are to be performed by Owner or separate contractors. Such notice, testing and inspections shall be included in the Contractor's schedule.

4.8.6 Monthly Construction Schedule. For Projects with schedules exceeding 160 calendar days, or where required by the Contract Documents for shorter duration projects, at the end of each calendar month, Contractor shall prepare a separate construction schedule, formatted to fit in a three-ring binder, to show the actual progress of the Work performed and the occurrence of all events which have affected the progress of performance of the Work already performed or will affect the progress of the performance of the Work yet to be performed, in contrast with the CPM schedule and planned progress of performance of such Work. Each such schedule shall be submitted to the Owner and Engineer/Architect. Failure of the Contractor to prepare and submit the monthly construction schedule(s) as aforesaid shall be sufficient grounds for the Owner to find the Contractor in material default and shall be sufficient cause to terminate the Contract or to withhold payment to the Contractor until a current monthly schedule is submitted.

4.8.7 Notice of Delay. The Contractor agrees that whenever it becomes apparent from the progress review meeting or CPM schedule that the contract completion date will not be met, the Contractor shall notify the Owner and Engineer/Architect of the delay, in writing, within five (5) calendar days of a commencement of delay or knowledge of a potential delay. The monthly construction schedule does not constitute notice of delay. A breach and default of contract shall result from Contractor's failure to provide the Owner and Engineer/Architect with notice of the delay and failure to take all remedial actions available to recover the project schedule.

4.8.8 Delay.

A. Contractor shall not be entitled to an adjustment in contract time or contract price for delays within the control of, or reasonably foreseeable by, Contractor. Delays attributable to and within the control of a subcontractor or supplier shall be deemed to be delays within the control of Contractor.

B. Contractor may request an extension of time to the project schedule if Contractor is delayed in the progress of the Work due to causes beyond the control of Contractor and not reasonably foreseeable, including but not limited to, fire, flood, epidemic, terrorist acts, abnormal weather conditions, acts of God, delays of utility owners, any act or neglect of Owner, or by any separate contractor employed by Owner or by any changes ordered in the Work. Abnormal weather conditions are a substantial variation from seasonal average weather conditions occurring for a significant period of time and operations were necessarily affected. Contractor shall support a claim of abnormal weather conditions with local US Weather Bureau climatological report for the period involved plus a report indicating the average weather conditions for the past 10 years from the nearest reporting station.

C. Contract time will not be adjusted for delay in delivery where the delivery was not properly scheduled or an order was not placed at an appropriate time to allow delivery or an order was improperly placed.

D. No time extension will be granted for delays resulting from improper scheduling of Contractor's forces or those of separate subcontractors.

E. No time extension will be granted to delays from failure to have shop drawings or samples submitted to the Engineer/Architect in ample time for a review, or from failure to schedule inspections or testing.

F. Delays caused by subcontractors will be considered for time extensions only under the same conditions applicable to Contractor.

4.8.9 Extension of Time. The project schedule may only be changed by an executed Change Order. In the event of a claim of delay in the work, by causes beyond Contractor's control and which could not reasonably be foreseen, Contractor must request an extension of the contract completion date in writing and must provide the following information to Engineer/Architect and Owner within five (5) calendar days of commencement of the delay:

1. Confirmation whether all schedule updates, submittals and other conditions of the Contract have been met;
2. Affirmative representation that the delay is beyond the control of Contractor and subcontractors and due to no direct or indirect fault of Contractor. Contractor shall include all documentation to justify the delay.
3. Nature of the delay.
4. Dates of commencement / anticipated end of delay.
5. Evidence that the delayed work results in a direct delay to the schedule critical path.
6. List of tasks/work affected by the delay.
7. Anticipated extent of delay.
8. Remedial actions taken to get back on schedule.
9. Recommended action to minimize delay.
10. Confirmation that Contractor has used all the float time available for the work involved in the delay request.
11. Such other supporting information as requested by Owner or Engineer/Architect.

Contractor acknowledges that the evaluation of time extensions will be based on the above information. Owner will not consider a claim for time extension which does not comply with the preceding requirements.

4.8.10 If Owner approves a Change Order extending the Contract time, such extension of Contract time shall extend the project construction schedule and completion date and substantial completion date for such reasonable time as Owner shall determine in the Change Order.

4.8.11 Contractor agrees to complete the Work and project in accordance with the agreed construction schedule, as amended by any approved and duly executed Change Orders.

4.8.12 Waiver. Contractor agrees that failure to timely request a time extension constitutes a waiver by Contractor of such claim for time extension.

4.8.13 Float. Neither the Owner nor the Contractor shall be considered to own the schedule "float" time.

4.8.14 No Damages for Delay; Exclusive Remedy. Contractor expressly agrees that a Change Order for an extension of the project completion date and substantial completion date constitutes its sole and exclusive remedies for efficiency or other related time or impact-based claims (hereinafter collectively "delay") or for delay attributable to any foreseen or unforeseen condition, or for delays claimed to be the result of active, intentional, knowing or passive interference by Owner, Engineer, or agents of either, and Contractor waives claims for any and all damages which it may suffer by reason of such claims, including but not limited to, lost profits, loss or impairment of bonding capacity, destruction of business, overhead, remobilization or demobilization costs, subcontractor delay claims, supervision, extended unabsorbed home office overhead, increase insurance costs, lost profits on alternate or unperformed contracts. Contractor hereby affirms that an extension of time is Contractor's sole and exclusive remedy. Apart from extension of time, no payment of claim for damages shall be made to Contractor as compensation for damages for any delays in the work, whether such delay is avoidable or unavoidable.

4.9 SURVEY; LINES, GRADES, LEVELS AND DIMENSIONS

4.9.1 The Contractor shall locate and lay out all work from datum and dimension points given on the Construction Drawings. Contractor shall establish and verify lines and grades, levels, elevations and dimensions, as required. Contractor shall take measurements and verify dimensions of existing and new work. Contractor is responsible for the preservation of all lines, points, and elevations furnished and shall bear the expense of resetting same if Contractor or any of its subcontractors move or destroy or render inaccurate any such lines, points and elevations. The Contractor shall provide five (5) calendar days written notice to the Engineer/Architect as to its needs for lines, levels, elevations or dimensions.

4.9.2 If the Contractor, in the course of the work finds any discrepancy between the Construction Drawings and the physical conditions of the site, or any errors or omissions in the specifications or in the layout as given, Contractor shall immediately inform the Engineer/Architect and the Owner, in writing, and the Engineer/Architect will review the same and provide corrective instructions, if any are necessary. Any work done after such discovery, until authorized, will be done at the Contractor's risk.

4.9.3 Survey. Where applicable to the Work, and unless otherwise specified, the Engineer/Architect shall furnish all land survey control points, base lines and benchmarks for the location of the Work. The Contractor shall be responsible for any necessary surveying services, including construction layout and final project record drawings. All survey work shall be performed by an independent, third party surveyor licensed to practice in the State of Florida, hired by Contractor and surveys shall be signed and sealed. All elevations shall be based on State Plane Coordinates NGVD-29.

4.9.4 For street, utility and other horizontal construction, where Contractor-supplied drawings are required for planning or performance of the Work, such drawings shall include, but not be limited to, matchmarks, erection diagrams and other details such as field connections for installation. Such drawings shall be submitted by and at the expense of Contractor. At least fifteen (15) calendar days shall be allowed for review by Owner. If drawings show variations from the Contract requirements, the Contractor shall describe such variations in writing at the time of submission. Review and permission to proceed by Owner does not constitute acceptance or approval of design details, calculations, analyses, test methods or materials developed or selected by the Contractor and does not relieve Contractor from full compliance with the Contract Documents.

4.10 RECORD DOCUMENTS:

4.10.1 Record Set. The Contractor shall maintain at the work site one (1) copy of all permitted Construction Drawings and specifications, marked and kept current, to indicate all field changes, and selections made during construction. Contractor shall at all times give the Owner, the Engineer/Architect and all trades performing at the project, access thereto. The record set shall include:

- a. Construction Drawings
- b. Specifications
- c. Addenda
- d. Change orders and other modifications to the Contract
- e. Approved shop drawings, product data, and samples
- f. Permits

4.10.2 The Record set and As-Built Construction Drawings shall neatly, correctly and accurately show all changes made during construction from the Contract Documents and shall reflect surveyed information. The indicated revisions shall be neat and legible.

4.10.3 Final As-Built Documents. Prior to final inspection, Contractor shall provide Owner with "Record" or final "as-built" Construction Drawings and specifications, including all documents listed above, and which comply with the following requirements:

- One complete set of mylar or paper marked-up as-built construction drawings with "RECORD" or "AS BUILT" clearly printed on each sheet and signed by Contractor;
- One complete paper set of marked-up specifications with "RECORD" or "AS-BUILT" clearly printed on the cover.
- One electronic copy of all documents, signed and sealed drawings and specifications in ".pdf" format;
- As-built survey, where applicable, prepared by an independent third party land surveyor registered with the State of Florida on State Plane Coordinates certifying the elevation and location of improvements;
- For street, utility and other horizontal construction, certified drawings showing horizontal and vertical locations, lines and grade of buried pipe line(s) four (4) inches or larger in diameter and exterior to buildings, and other buried facilities (e.g. valves, tanks, vaults, storm inlets, ducts, etc.) installed or discovered as a result of the Work and which comply with Owner's Final Record Drawing Requirements found at www.cityofwpb.org/engineering/.
- For street, utility and other outdoor horizontal construction, certified drawings showing building corners, sidewalks, paved areas and the location of all above ground structures within the project site.
- A list of each piece of equipment incorporated into the Work having an individual value of \$500 or greater. The list shall include, at a minimum, manufacturer, make and model number, catalog number, supplier, quantity installed, and value of equipment, and operation and maintenance manuals and warranties where appropriate for such equipment.

4.10.4 Final pay request and connections to any existing utility main will not be approved until final as-built drawings are reviewed and accepted by Engineer/Architect.

4.11 WORK SITE

4.11.1 Access. Contractor's access to the site and storage areas shall be as shown on the Construction Drawings and as designated by the Owner. Access routes may also be used by Owner and its employees and other contractors. No other access points shall be allowed unless approved by the Owner. All contractor traffic authorized to enter the site shall be experienced in the route or guided by contractor personnel. The Contractor is responsible for immediate cleanup of any debris deposited along the access route as a result of its construction traffic. In the event the Owner provides conditions or reasonable restrictions on the use or access to the lands upon which or adjacent to which the work is to be done, Contractor shall comply with all such conditions or restrictions. Any delay in the furnishing of

these lands by the Owner shall be deemed proper cause for an equitable adjustment in both Contract price and time of completion.

4.11.2 Owner Access. Owner, and its duly authorized employees, the Engineer/Architect, and representatives of all governmental agencies having jurisdiction over Work areas or any part thereof, shall, at all reasonable times, have access to such areas and the premises used by Contractor. Contractor shall also arrange for Owner and Engineer/Architect to have access at all reasonable times to all places where equipment or materials are being manufactured, produced or fabricated for use under the Contract.

4.11.3 Contractor Area; Staging Area; Storage. Contractor's work area on the job site will be assigned by Owner. Contractor shall confine its office, storage, assembly, equipment and parking, as appropriate, to the areas so assigned. The Contractor shall identify, at the pre-construction meeting, proposed locations for secure storage areas for materials, equipment, employee and subcontractor parking, and, where applicable, staging areas, construction trailers, etc. The use of private property shall be at the cost of the Contractor. Contractor shall provide evidence of the property owner's agreement to use said property to the Owner. As a condition of final payment, Contractor shall provide Owner with written release from the property owner advising that the property owner has no claims against Contractor arising out of Contractor's use of the private property.

4.11.4 Delivery Unloading & Storage. Contractor shall, at its expense, receive, unload, and store in a secure place, all materials, plant and equipment required for the performance of the Contract. Any material and equipment to be stored outside which are subject to degradation by outside exposure shall be stored in a weather-tight enclosure provided by Contractor at its expense. Where necessary, delivery of materials, plant or equipment from off-site storage to the work site shall be at Contractor's expense.

4.11.5 Utilities. Unless otherwise provided in the Contract Documents, Contractor shall, at its expense, arrange for, develop and maintain all utilities in work areas, including, but not limited to: construction power, water as required throughout construction, and telephone service, if needed. Prior to final acceptance of the work, Contractor shall, at its expense, remove all temporary utilities.

4.11.6 Sanitary Facilities. Where required by the work site, Contractor shall provide and maintain daily adequate sanitary facilities for the use by the Contractor's labor force.

4.11.7 Fire Protection. All necessary precautions to avoid and eliminate fire hazards shall be the responsibility of the Contractor. Contractor shall provide portable fire extinguishers, properly labeled, located and compatible with the hazard of each work area and shall instruct personnel in their use.

4.11.8 Illumination. When required, Contractor shall, at its expense, provide artificial light sufficient to permit work to be carried on satisfactorily and safely.

4.11.9 Dust Control. Contractor shall, at its expense, take measures to minimize the amount of dust created by construction activities. For street, utility and other horizontal construction, this requirement applies to all excavations, roads, plant sites, borrow areas and all other work areas. Code-required or industry-accepted methods of dust control suitable for the area involved and approved by Owner will be permitted.

4.11.10 Noise Control. The Contractor shall make every effort to minimize noises caused by Contractor's operations. Equipment shall be equipped with silencers or mufflers designed to operate with the least possible noise in compliance with Federal, State and local laws and regulations.

4.11.11 Pollution Control. Contractor shall, at its expense, perform its Work so as not to discharge from any source into the atmosphere, or any body of water, or the ground or groundwater, any source, smoke, dust or other contaminants in violation of the federal, state, and local pollution laws, rules, regulations and orders (collectively, the "discharge law"). Contractor shall, at its expense, provide

suitable facilities to prevent any such discharges. In the event of a discharge which results in contamination of the site or adjacent properties, Contractor shall immediately notify Owner and the appropriate governmental authority and shall take whatever action is necessary, required by discharge law or desirable to remediate the contamination at Contractor's sole expense. Contractor shall pay all fines, penalties and damages resulting from any such discharges. Contractor shall indemnify and hold harmless Owner from any expense, fine, penalty, obligation, action or liability resulting from such discharge and remedial actions.

4.11.12 Existing Utilities and Substructures. For street, utility and other horizontal construction, Contractor shall be responsible for locating existing utilities and facilities prior to commencement of work. Contractor shall contact all utility companies and call SUNSHINE at (800) 432-4770 at least 48 hours prior to commencement of construction work, so utilities can locate and protect facilities, if required by the utility company.

4.11.13 Florida Lumber. Whenever available, Contractor shall use lumber, timber and other forest products produced and manufactured in Florida provided the price, fitness and quality of such products are equal to substitute products. (F.S. 255.20(3)).

4.11.14 Cutting and Patching. Contractor is responsible for all cutting, drilling, patching, fastening or anchoring of all new and existing construction required to complete the Work. Contractor shall not damage any portion of the Work or existing construction or work of other contractors except with the written consent of Owner and any separate contractor. Contractor shall restore all area to the conditions existing prior to the cutting, drilling, patching, fastening or anchoring, unless otherwise required by the Contract Documents.

4.11.15 Cleaning Up. Upon completion of any portion of the Work, Contractor shall remove at its own expense from Owner's property all temporary structures, equipment and surplus materials not required for later stages of work, rubbish, and waste materials resulting from its operations. Contractor shall clean the site and shall remove stains, spills and other foreign deposits. Contractor shall not burn waste materials at the site, shall not bury debris or excess materials and shall not discharge volatile or other harmful or dangerous materials into the environment. Contractor shall remove temporary protection devices unless otherwise directed by Owner. For street, utility or other horizontal construction, Contractor shall sweep paved areas and rake clean landscaped areas. Any costs incurred by Owner as a result of Contractor's failure to clean up shall be deducted from the contract price.

4.11.16 Debris Disposal. All debris shall be legally disposed of at licensed disposal site(s). Contractor shall make its own arrangements, at its own cost, for the lawful disposal of rubbish and waste materials. If requested by Owner, Contractor shall provide evidence of proper disposal.

4.11.17 Salvage. Owner reserves the right to retain any surplus or salvage materials. Contractor shall store or re-locate any materials to be retained by Owner as directed by Owner.

4.11.18 Water Catchment Area. The City is the owner of the Water Catchment Area located in Palm Beach County, Florida (the "Water Catchment Area"). The Water Catchment Area serves as a natural surface water supply source for the City of West Palm Beach and has been designated as a Class I potable water supply pursuant to the Special Laws of the Florida Legislature, Ch. 67-2169, as amended, and is protected by State and Federal laws. Grassy Waters Preserve and the M-Canal are part of the City's Water Catchment Area. If the work site is within the Water Catchment Area, Contractor's work activities in the Water Catchment Area shall in no way be inconsistent with the Special Act or the laws and regulations governing water supply sources.

4.12 PROTECTION OF THE WORK AND PROPERTY.

4.12.1 The Contractor shall be solely responsible for initiating and continuously maintaining adequate protection of all work from damage, loss, theft or damage from whatever cause, and shall take all reasonable precautions to protect the property of the Owner and third parties from damage, theft,

injury or loss arising in connection with this Contract. Contractor shall comply with the requirements of the Owner and its insurance carriers and all applicable laws, codes and regulations with respect to prevention of damage.

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

4.12.3 For street, utility and other horizontal construction, Contractor shall preserve and protect all cultivated and planted areas and vegetation such as trees, plants, shrubs and grass on or adjacent to the site, which, as determined by Owner, do not reasonably interfere with the performance of the Work. Contractor shall be responsible for damage to any such areas and vegetation and for unauthorized cutting of trees and vegetation. Contractor shall leave all adjacent property in as good condition as it was prior to beginning of the Contract. Where practical, Contractor shall erect a temporary fence around the work site.

4.12.4 For street, utility and other horizontal construction, existing utilities and facilities shall be located prior to commencement of Work. Contractor shall video tape the existing surface conditions of the Work site and adjacent areas before commencing Work, after each discrete portion of the Work and when project is complete. Contractor shall submit two (2) copies of the video tape to the Engineer/Architect prior to submittal for final payment.

4.12.5. Risk of Loss. Commencing on the date of the Notice to Proceed and continuing until final acceptance of the Work by the Owner, the Contractor shall have full and complete charge and shall bear all risk of loss of, and injury or damage to, the Work performed under this Contract, or any portion thereof, including materials and equipment, and Owner-furnished supplies and equipment, from any cause whatsoever. Contractor shall rebuild, repair, restore and make good any damages, injury, or loss to the work and to the property of the Owner or third parties, except such as may be directly due to errors in the Contract Documents which the Contractor could not have discovered through due diligence, or caused by agents or employees of the Owner, unless such loss or damage would be covered by any policy of insurance maintained by the Contractor. All costs in connection with any repairs or restoration necessary or required as a result of damage shall be borne by Contractor.

4.13 CONCEALED OR UNKNOWN CONDITIONS.

4.13.1 If Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents, or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, or (3) are not observable prior to bidding or inferable by the type of construction, the Contractor shall promptly provide written notice to the Owner and Engineer/Architect before conditions are disturbed, and in no event more than three (3) calendar days after first observance of the conditions. The Engineer/Architect will promptly investigate such conditions and, if the Engineer/Architect determines that the conditions are a material difference which will cause an increase or decrease in the Contractor's costs or time required for performance of the Work, will recommend an equitable adjustment in the contract price or contract time, or both. Any such recommended adjustment must be approved by Owner through issuance of a Change Order to be effective. If the Engineer/Architect determines that the conditions do not materially differ from those indicated in the Contract Documents, or that no equitable adjustment is justified, the Engineer/Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Engineer/Architect's determination or recommendation, that party may proceed to mediation as provided in GC 17.7; however, the parties shall mutually agree on an independent third party professional engineer to serve as mediator.

4.13.2 Contractor shall not be entitled to any adjustment in the contract price or contract time if Contractor knew of the existence of such conditions at the time of submission of a bid or becoming bound under the Contract; or the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation or test of the site by Contractor, as indicated in the

Contract Documents, prior to making such commitment; or Contractor failed to give written notice as provided in GC 17.1.

4.13.3 If, in the course of the Work, Contractor encounters human remains or recognizes the existence of burial markers or archaeological sites not indicated in the Contract Documents, the Contractor shall immediately suspend any Work that would affect the remains or sites and shall notify the Owner and Engineer/Architect. The Owner shall take any action necessary to obtain the authorization required to resume Work. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner, but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the contract price or contract schedule arising from the existence of such remains or features may be made as provided in GC 8.2.

4.14 SAFETY

4.14.1 Commencing on the date of the Notice to Proceed and continuing until final acceptance of the Work by the Owner, Contractor shall take all necessary precautions for the protection of all persons involved in the Work, the public, and all employees or representatives of Owner. Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor will provide to each worker on the job site the proper safety equipment for the duties being performed by the worker and will not permit any worker on the job site who fails or refuses to use the safety equipment. All work and all equipment, machinery, materials and tools shall be in compliance with and conform to all applicable laws, ordinance, rules and regulations.

4.14.2 For Work impacting streets and public rights-of-way, Contractor shall provide and maintain flagmen, traffic control devices, barricades, signs and variable message boards on a full time basis, where and when needed, to facilitate the movement of traffic along and around the project Work. All MOT plans shall be reviewed and approved by Owner.

4.14.3 If Owner or Engineer/Architect observe an unsafe or hazardous condition at the Work site, such hazard or safety condition shall be brought to the Contractor's attention. Contractor shall stop Work until such hazard or safety condition is remedied by Contractor.

4.14.4 Hurricane Plan. If any Work is to be performed during hurricane season, Contractor shall provide Owner with Contractor's hurricane plan prior to the commencement of any Work. The hurricane plan shall describe the actions to be taken to secure the work site(s) in the event a named tropical storm or hurricane is predicted to affect the project work area. Contractor shall abide by Owner's requirements, Required Storm Preparation Process, found at www.cityofwpb.org/engineering/.

4.14.5 Explosives and Hazardous Materials. Contractor shall obtain all required federal, state and local permits and licenses and shall be responsible for the safe and proper handling, transportation, storage and use of any explosive or hazardous material brought onto or encountered within the site. The Contractor will notify the Owner immediately if explosive or hazardous materials are encountered on the site. Contractor shall maintain and post as necessary, Material Hazard Data Sheets for all applicable hazardous materials used in the course of the Work. In the event that hazardous material is improperly handled or stored by the Contractor or its sub-contractors, which results in contamination of the site, Contractor shall immediately notify the Owner and the appropriate governmental authority and shall take whatever action is necessary, required by law, regulation or order, or desirable to remediate the contamination at the Contractor's sole cost and expense. Contractor shall indemnify and hold harmless the Owner from any expense, fine, penalty or obligation, action or liability resulting from such contamination and remedial actions.

4.15 PROGRESS; REPORTING

4.15.1 Weekly Reporting: Copies of all daily reports prepared by the Contractor and his subcontractors shall be submitted to the Owner on a weekly basis for the preceding seven (7) calendar days.

4.15.2 Bi-Weekly Reporting: Contractor shall be required to submit to Owner, on a bi-weekly basis, two (2) copies of 8 1/2"x 11" color photographs indicating the progress of the Work over the preceding fourteen (14) days and identifying the dates that the Work shown was performed.

4.15.3 Progress Meetings. The Contractor shall, at its expense, attend any and all meetings called by the Owner to discuss the Work under the Contract. The Owner, or its Engineer/Architect, will distribute typed minutes of each meeting to all attendees. Failure of Contractor to promptly object to the typed minutes shall constitute Contractor's agreement with the content of the typed minutes.

4.15.4 If at any time Contractor's actual progress is inadequate to meet the completion time requirements of the Contract and this lack of progress is the sole fault of the Contractor, Owner may so notify Contractor who shall thereupon, at its expense, take such steps as may be necessary to improve its progress to meet the approved schedule. If within a reasonable period as determined by Owner, Owner determines that Contractor is not prosecuting its work with such diligence as will assure completion with the times scheduled and Contractor fails to take reasonable actions to timely cure, Owner may declare a default of the Contract.

4.16 SHOP DRAWINGS, SAMPLES AND SUBMITTALS

4.16.1 Contractor shall prepare and keep current for Engineer/Architect's approval, a schedule of submittals which is coordinated with the Contractor's construction schedule and allows the Engineer/Architect reasonable time to review submittals.

4.16.2 Contractor shall approve and submit to the Engineer/Architect those shop drawings, product data, samples and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of separate contractors. Contractor shall perform no portion of the Work for which shop drawings, product data, samples or other submittals are required by the Contract Documents until such submittal has been reviewed and approved by Engineer/Architect.

4.16.3 Contractor represents by submitting the shop drawings, product data, samples and similar submittals that Contractor has reviewed them for conformance to the Contract Documents, and verified the materials, measurements and field criteria related thereto.

4.16.4 Contractor shall not be relieved of responsibility for conformance to the Contract Documents by Engineer/Architect's approval of show drawings, product data, samples or similar submittal, unless Contractor has specifically informed Engineer/Architect of such variance or deviation at the time of submittal and either: (i) the Engineer/Architect has given written approval of the specific deviation as a minor change in the Work; or (ii) a Change Order or Constructive Change Directive authorizing the deviation has been issued. Engineer/Architect's approval does not relieve Contractor of responsibility for errors or omissions in shop drawings, product data, samples or similar submittals.

4.16.5 Contractor shall make any corrections to the submittal required by Engineer/Architect and shall resubmit revised submittals for review. Contractor shall direct specific attention, in writing, to any revisions other than the corrections called for by Engineer/Architect on previous submittals. In the absence of such written notice, Engineer/Architect's approval does not apply to such unidentified revisions.

GC 5 INSPECTION & TESTING

5.1 INSPECTION.

5.1.1 Access for Inspection. Owner, Engineer/Architect and their representatives shall at all times have access to the Work whenever it is in preparation or progress. Contractor shall give the Engineer/Architect timely notice of its readiness for inspection when the Contract Documents or

applicable laws, ordinances, or any public regulatory entity require any Work to be inspected by the Engineer/Architect.

5.1.2 Regulatory Inspection by City. Should Contractor require inspection by City staff, in its regulatory capacity, on days the City is closed for regular business or after 3:30 pm on regular work days, Contractor shall be required to reimburse the City for staff overtime or additional costs.

5.2 TESTING.

5.2.1 If the Contract Documents or applicable laws, ordinances, or any public regulatory entity require any Work to be specially tested or approved, Contractor shall make arrangements for such tests or inspections with an independent testing laboratory or entity acceptable to Owner and shall give the Engineer/Architect timely notice of the date fixed for such testing. Contractor shall be responsible for all costs of testing, inspections and approvals. Tests and inspections shall be made promptly to avoid delays in the Work.

5.2.2 Unless otherwise provided in the Contract Documents, shop testing of material, equipment or Work shall be performed by Contractor at its expense and in accordance with the technical specifications. Contractor shall furnish samples as requested and shall provide reasonable assistance and cooperation necessary to permit tests to be performed on materials or work in place, including reasonable stoppage of Work during testing.

5.2.3 If any Work should be covered up prior to any required inspection or test by Owner or Engineer/Architect, it must be uncovered for inspection and properly restored at Contractor's expense. If any Work not required to be inspected or tested is covered up and Engineer/Architect specifically requests to inspect such Work, Contractor shall uncover such Work. If such Work is in accordance with the Contract Documents, the costs of uncovering and replacing the Work shall be at Owner's expense, by appropriate Change Order. If such Work is not in accordance with the Contract Documents, the costs of uncovering and correction shall be at Contractor's expense.

5.2.4 Should tests in addition to those required by the Contract Documents be desired by Owner, Contractor will be advised in reasonable time to permit such additional testing at Owner's expense, unless additional tests are required due to Contractor's Work or materials having failed any initial test.

5.3. If inspection or testing reveal failure of portions of the Work to comply with the Contract Documents or applicable laws, all costs as a result of such failure, including those of repeated testings and compensation for Engineer/Architect's services and expenses shall be at Contractor's expense.

5.4 Required certificates of testing, inspection or approval shall be secured by Contractor and delivered promptly to Engineer/Architect, unless otherwise provided by the Contract Documents.

GC 6 CORRECTION OF WORK

6.1 DEFECTIVE MATERIAL, EQUIPMENT OR WORKMANSHIP. If any material, equipment or workmanship is determined by Owner or Architect/Engineer, either during performance of the Work, during final inspection or during the warranty period, to be defective or not in compliance with the Contract Documents, Owner shall notify Contractor in writing that such material, equipment or Work is rejected and Owner reserves the right to withhold payment on any such item. Contractor shall commence correction of the Work within seven (7) calendar days of written notice by Owner. Contractor shall, at its own expense, immediately remove and replace or correct such defective material, equipment or Work by making the same strictly comply with all requirements of the Contract Documents. All costs of correcting such rejected Work, including additional testing and inspections, uncovering and replacing, and compensation for Engineer/Architect's services and expenses, material, equipment, clean up, debris removal, and safety precautions, shall be at Contractor's expense. If correction of the Work requires

damaging work completed by other contractors, Contractor shall be responsible for the costs to replace such work.

6.2 WARRANTY. Contractor further agrees to correct all Work found by Owner to be defective or not in conformance with the Contract Documents for a period of one year from the final certificate of occupancy for the project (or if no certificate of occupancy to be issued, within one year of substantial completion) or for such longer periods of time as may be set forth with respect to specific warranties contained in the specifications. Owner or Engineer/Architect shall provide Contractor with written notice of non-conformance. If Contractor fails to correct non-conforming Work within a reasonable time after receipt of notice, the Owner may correct the Work.

6.3 ACCEPTANCE OF NON-CONFORMING WORK. If Owner deems it inexpedient to correct Work that has been damaged or that was not performed in accordance with the Contract Documents, Owner may accept such non-conforming work and an equitable deduction from the contract price shall be made for such work. Contractor shall warrant the accepted but non-conforming work in accordance with GC 6.2.

6.4 The Contract Documents and the obligation of Contractor to perform corrective Work survive final completion of the Work and final payment.

6.5 OWNER'S RIGHT TO CORRECT OR COMPLETE WORK. If Contractor should neglect to prosecute the Work diligently in accordance with the Contract Documents, or fail to correct defective or nonconforming Work, or fail to perform any provisions of the Contract Documents, Owner may, after ten (10) calendar days written notice to Contractor and opportunity to cure, make good these deficiencies and may deduct the cost thereof from payment due Contractor. A deductive Change Order shall be issued for the Owner's reasonable costs of correcting or completing the Work, including Owner's expenses and compensation for Engineer/Architect's services and expenses. The Change Order amount shall be subject to review and approval by Engineer/Architect. If payments due to Contractor are not sufficient to cover the Change Order, Contractor shall pay the difference to Owner. Owner's correction of the Work and acceptance of a deductive Change Order shall be without prejudice to any other remedies Owner may have.

GC 7 WORK BY OTHERS AT SITE

7.1 Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contract in connection with other portion of the Project or other construction or operations on the site.

7.2 Where the Owner is utilizing its own forces or multiple contracts for the Project, Contractor shall provide reasonable advance notice to Owner and other contractors regarding the Project Schedule and the portions for work to be performed by them. Contractor shall coordinate its construction and operations with Owners and other contractors performing work on the Project.

7.3 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Engineer/Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractors completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

7.4 Contractor shall reimburse the Owner for costs incurred by Owner payable to a separate contractor because of Contractor's delays, improperly timed activities, damage to the other contractor's work or defective construction. Owner shall be responsible to Contractor for costs incurred by Contractor because of a separate contractor's delays improperly timed activities, damage to Work or defective construction.

7.5 If a dispute arises among Contractor and other contractors on site as to the responsibility to maintain the premises, correct work, clean up or take any other action, Owner may take the necessary action and Engineer/Architect will assess the costs to those deemed responsible by Engineer/Architect.

GC 8 CHANGES IN THE WORK

8.1 Owner, without invalidating the Contract Documents may order written additions to or deductions from the Work, the contract price being adjusted accordingly.

8.2 REQUEST FOR CHANGE ORDER. If Contractor believes that a variation or change justifies a modification in the contract price, Contractor may submit a request for Change Order at its expense. If a request for Change Order is made, Contractor is not authorized to vary the Work unless a written Change Order is executed by Owner or written Construction Change Directive is issued by the Engineer/Architect and executed by Owner. No Change Order shall be valid unless executed by the authorized signatory of Owner.

8.3 NOTICE TO ENGINEER/ARCHITECT. Contractor shall notify the Engineer/Architect in writing within seven (7) calendar days of any occurrence which, in the opinion of Contractor, entitles it to claim an adjustment of the Contract price or a time extension, absent which notice, Contractor shall have waived such claim. The Engineer/Architect will provide a response to Contractor and Owner with respect to a request for change order within a reasonable amount of time after receipt of Contractor's notice and all necessary backup information required by Engineer/Architect to formulate a response.

8.4 The Engineer/Architect shall not be authorized to bind Owner to change in contract price or contract time.

8.5 CHANGE ORDER

8.5.1 Execution of any change order by the parties shall constitute a final settlement and release by Contractor of all matters relating to the claim or change in the Work which is the subject of the change order, including, but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the contract price and the contract time.

8.5.2 Any change order approved due to price change in materials shall not include a premium, profit or any other additional cost.

8.5.3 A bond rider from the surety shall be submitted to the Owner with each change order that increases the contract price.

8.5.4 The number of change orders to the Contract submitted by Contractor may be considered by Owner in considering other subsequent bids submitted by Contractor. Excessive change orders may also result in suspension from the Owner's future procurements. The determination of excessiveness shall be made solely by Owner considering the scope of work, schedule of bid items, contract price, unforeseen circumstances, and reasons for any change orders.

8.6 CONSTRUCTIVE CHANGE DIRECTIVE. If a change order is not yet approved or cannot be agreed upon, Contractor is authorized, upon issuance of a written construction change directive (CDD) prepared by the Engineer/Architect and approved by Owner, to proceed with such change. If a construction change directive provides for an adjustment to the contract price, the adjustment shall be calculated as follows:

- Unit prices as stated in the Contract Documents
- Labor at the prevailing hourly basic rates plus applicable multipliers for overtime, weekend and holidays, plus applicable taxes. Mark up on labor is not permitted. Labor shall not include supervision above the project manager.

- Net actual costs of materials including sales tax.
- Rental costs of machinery and equipment, excepting hand tools, including fuel.
- Reasonable overhead and profit, not exceeding fifteen percent (15%) inclusive of bond rider, permits, insurance, overhead and profit, supervision and general conditions.

Or by mutual acceptance of a lump sum properly itemized and supported;

Upon approval by Engineer/Architect and Owner as to any adjustments to the contract price and/or contract time for changes performed under a CDD, such approval shall be recorded by the preparation of a Change Order. Contractor shall not seek payment for work performed pursuant to a CDD until it has been converted to a Change Order. Each CDD shall have a separate change order.

8.7 Commencing Work without a written change order or Construction Change Directive executed by Owner in advance of commencement of work waives any claim by Contractor to an adjustment to the contract price and the contract time.

8.8 MINOR CHANGES IN WORK. Engineer/Architect shall have the authority to order minor changes in the Work, by written direction to Contractor, which do not involve adjustment to the contract price or contract time and which are not inconsistent with the intent of the Contract Documents. A subsequent Change Order shall be executed.

8.9 OWNER'S RIGHT. The Owner reserves the right to perform the requested changes in the Work with its own forces, or to contract with others to perform the changes.

GC 9 COMPLETION

9.1 REQUIREMENTS PRIOR TO SUBSTANTIAL COMPLETION. When Contractor considers the Work to be substantially complete, Contractor will submit to Engineer/Architect, the following items which shall be completed as a condition precedent to Substantial Completion and prior to notice by Contractor of Substantial Completion:

- A. All general construction completed and the project components shall be clean and all systems fully functional.
- B. All mechanical and electrical work substantially complete, fixtures in place, connected, cleaned, fully functional and ready for use.
- C. All electrical circuits shall be scheduled in panels and all panels and disconnect switches properly labeled.
- D. Project site shall be cleared of Contractor's excess equipment and/or supplies and material.
- E. Record drawings and specifications meeting the Owner's requirements shall be delivered to Engineer/Architect.

The above are also conditions for Final Completion.

9.2 NOTICE. Contractor shall notice Owner and Engineer/Architect when Contractor considers the Work, or a portion thereof which Owner agrees to accept separately, is substantially complete and shall request an inspection.

9.3 SUBSTANTIAL COMPLETION.

9.3.1 If after inspection, the Engineer/Architect finds that the Work is substantially complete, Engineer/Architect shall issue to Owner and Contractor a Certificate of Substantial Completion that shall establish the date of Substantial Completion.

9.3.2 If Substantial Completion is not obtained at the inspection called by Contractor, for reasons which are the fault of Contractor, any additional cost to Owner for the Engineer/Architect for any subsequent inspections for the purpose of determining Substantial Completion shall be the responsibility and expense of Contractor and shall be assessed against the final payment application.

9.4 INSPECTION AND PUNCH LIST. Within three (3) calendar days of Substantial Completion as determined by Engineer/Architect and Owner, a walkthrough with Contractor shall be scheduled.

- i. The purpose of this walkthrough is to develop a joint final punch list of items necessary to complete the Work.
- ii. Said punch list shall be prepared, signed by Engineer/Architect and Owner and delivered to Contractor not later than three (3) calendar days after the walkthrough. Engineer/Architect and Owner shall separately list each item of the punch list required for Final Completion.
- iii. Any dispute over punch list items shall be mediated between Owner and Contractor with Engineer/Architect acting as mediator to develop an agreed punch list signed by Owner, Contractor and Engineer/Architect no later than nine (9) days from the date of the walkthrough.
- iv. Agreed punch list items shall be corrected and a final inspection requested by Contractor within thirty (30) days from delivery of the agreed punch list, unless a greater time is provided in the contract. All agreed punch list items shall be corrected by Contractor prior to any request for final inspection and acceptance. If the Contract provides for a multi-phased or multi-structure project, a punch list may be developed for each phase or structure.
- v. In no event may the Contractor request payment of final retainage under Florida Statutes §218.735(7)(e) until the Contractor considers the final punch list to be 100% complete.
- vi. Contractor acknowledges and agrees that no item contained on the final punch list shall be considered a warranty item until such time as (a) the final punch list is 100% complete, and (b) Owner has been able to operate or utilize the affected punch list item for an additional period of fifteen (15) calendar days.
- vii. Contractor acknowledges and agrees that Engineer/Architect as representative of Owner may, at its option, during performance of the Work and prior to Substantial Completion, issue lists of identified non-conforming or corrective Work for the Contractor to address. The intent of any such Engineer/Architect generated lists prior to Substantial Completion is to attempt to streamline the punch list process upon achieving Substantial Completion, and to allow for the Contractor to address needed areas of corrective work as they may be observed by Engineer/Architect during performance of the Work.
- viii. Contractor acknowledges and agrees that in calculating 150% of the amount which may be withheld by Owner as to any final punch list item for which a good faith basis exists as to it being complete, as provided for by Florida Statutes §218.735(7)(e), Owner may include within such percentage calculation its total costs for completing such item of work, including its administrative costs as well as costs to address other services needed or areas of work which may be affected in order to achieve full completion of the final punch list item. Such percentage shall in no event relate to the schedule of value associated with such Work activity, but rather total costs are based upon the value (i.e. cost) of completing such Work activity based upon market conditions at the time of final punch list completion.

- ix. The failure to include any Work or pending items not yet completed on the punch list does not alter the responsibility of the Contractor to complete all the construction services and Work purchased under the Contract.

9.5. **PUNCH LIST RETAINAGE.** Following delivery of the punch list, Contractor shall list the estimated cost of completing each item each item of the punch list required for final completion, and submit the list of estimated costs to Owner for Owner's review and determination. Owner may retain a sum equal to 150% of the estimated cost of correcting and completing the unfinished punch list items, as determined by the Owner. Upon completion of all items on the punch list, Contractor may submit a payment request for all remaining retainage. If a good faith dispute, as determined by Owner, exists as to whether one or more items identified on the punch list have been completed pursuant to the Contract, Owner may continue to withhold up to 150% of the total costs to complete such items(s), as determined by Owner.

9.6 **REQUIREMENTS PRIOR TO FINAL INSPECTION.** The following items shall be completed as a condition precedent to a request by Contractor for final inspection:

1. Completion of all punch list items recorded from the Substantial Completion inspection.
2. Submittal of any items condition precedent to Substantial Completion that had not previously been submitted.
3. Issuance of all permits and certificates, test certificates, inspections, certificates of occupancy and other approvals and releases by governing authorities required for Owner's occupancy and use of the project.
4. All sets of operation and maintenance manuals and service agreements for all equipment shall have been submitted to Owner, as referenced in the technical specifications.
5. Manufacturers' certifications and warranties and any special guarantees or maintenance agreements shall be delivered to Owner.
6. A complete set of "RECORD" or "AS BUILT" drawings, meeting Owner's requirements. Contractor shall sign each final record drawing and note thereon that the final as-builts are complete and accurate.
7. A complete set of marked-up specifications with "RECORD" or "AS-BUILT" clearly printed on the cover. Contractor shall accurately and neatly transfer all deviations from project specifications to final as-builts.
8. A complete set of final shop drawings.
9. For street, utility and other horizontal construction, two copies of the video tape of surface conditions.
10. A signed and notarized affidavit indicating that no asbestos containing materials were used or installed during the course of the Work.
11. A list of each piece of equipment incorporated into the Work having an individual value of \$500 or greater. The list shall include, at a minimum, manufacturer, make and model number, catalog number, supplier, quantity installed, and value of equipment.
12. All required spare parts, as well as any special devices and tools and extra stock of materials shall be delivered to Owner.
13. Extra stock of materials or other items paid for by Owner.
14. A deductive change order for any uncommitted contingency or allowance funds has been prepared and submitted in draft.
15. All keys and blanks shall have been provided to Owner.

9.7 **FINAL INSPECTION.** Contractor shall certify to the Owner and Engineer/Architect in writing that all punch list items have been completed, all requirements for Substantial and Final Completion have been met, and the Work is ready for final inspection. The Engineer/Architect will schedule such inspection with Owner and Contractor. When Engineer finds the Work acceptable under the Contract Documents, completed and all requirements fully performed, Engineer/Architect shall issue a Final Certification to Owner. Should the Engineer consider that the Work is incomplete or defective, the Engineer/Architect will promptly notify the Contractor in writing, listing the incomplete or defective work. The Contractor will take immediate steps to remedy the stated deficiencies and send a second written certification to the Engineer/Architect when the Work is complete. The Engineer/Architect will re-inspect

the Work. Should the Engineer/Architect be required to perform re-inspections due to the failure of the Work to meet Contract requirements, the Owner may deduct the additional costs to Owner from the Contractor's final payment.

9.8 **OWNER'S RIGHTS.** In the event incomplete, incorrect or defective work is not completed to the Owner's satisfaction within twenty (20) calendar days of the Engineer/Architect's notice to Contractor that the Work is not acceptable, Owner may, after ten (10) calendar days written notice to Contractor and opportunity to cure, make good the deficiencies and may deduct the cost thereof from final payment due Contractor. If payments due to Contractor are not sufficient to cover the costs, Contractor shall pay the difference to Owner. Owner's correction of the Work shall be without prejudice to any other remedies Owner may have.

9.9 **FINAL AS BUILT DOCUMENTS.** Prior to final inspection, Contractor shall provide Owner with "Record" or "as-built" drawings, specifications and documents which comply and Owner's Final Record Drawing Requirements found at www.cityofwpb.org/engineering/.

9.10 **USE OF COMPLETED PORTIONS.** Owner shall have the right to take possession of and use any substantially completed portions of the Work. Such use by Owner shall not be construed as constituting final acceptance, and shall neither relieve Contractor of any of its responsibilities under the Contract, nor act as a waiver by Owner of any Contract Documents provisions; provided that Contractor shall not be liable for any repair or maintenance required due to ordinary wear and tear resulting from such use. However, if, in the opinion of Engineer/Architect, such use increases the cost or delays the completion of remaining portions of Work, Contractor shall be entitled to an equitable adjustment under the Contract.

GC 10 PAYMENT

10.1 **SCHEDULE OF VALUES.** Within ten (10) calendar days after the date of the Owner's issuance of a Notice to Proceed, Contractor shall submit for review and approval of Owner and Engineer/Architect, a schedule of values, by phases of work, to show a breakdown of the contract price for the various portions of the Work and 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. Any Change Orders shall be added as separate line items. This schedule, unless objected to by Engineer/Architect, shall be the basis for reviewing Contractor's applications for payment.

10.2 **TAXES.** Contractor shall pay all taxes, duties and assessments imposed by law and applicable to the Contract. Contractor is not entitled to Owner's tax exempt status and shall pay all sales taxes. The Contract price shall include all taxes.

10.3 **PAYMENT WHERE PERFORMANCE AND PAYMENT BONDS REQUIRED:** If the Contract requires Contractor to provide Performance and Payment Bonds, or a Public Construction Bond, no payment shall be made by Owner to Contractor until Contractor has provided Owner with a certified copy of the Performance and Payment Bonds, or a Public Construction Bond evidencing that said bond(s) have been recorded with the Clerk of the Courts in the public records of Palm Beach County.

10.4 **PAYMENT REQUESTS.** Payment requests shall be submitted on AIA Application for Payment forms and shall be signed and notarized by Contractor. Each payment request shall include the following information:

1. Bid Number
2. Contract Number
3. Project Number
4. Project Name
5. **Owner's representative/ project manager**
6. Detailed estimate and payment request on a standard AIA form, covering the percentage of the total amount of the work which has been completed from the

- start of the job up to and including the last day of the preceding month, together with quantity and unit prices of materials and equipment utilized.
7. The unit cost of such materials and equipment required in the permanent work as has been delivered to the site and suitably protected but not as yet incorporated in the work.
 8. Consent of Surety
 9. Verification that certified copy(s) of recorded performance/payment bonds provided to Owner
If no bonds are required:
 - i) Partial Release of Lien from Contractor
 - ii) Partial Releases of Lien from each sub-contractor on the payment request
 10. Subcontractor Utilization Report.
 11. Release from private property owner if Contractor utilized private property for storage or staging.
 12. Such other supporting evidence as may be required by Owner and/or the Engineer/Architect to support Contractor's payment application;

10.5 **INITIAL PAYMENT.** Prior to submittal of its initial payment request, Contractor shall have submitted the following items to the Engineer/Architect and Owner:

1. Certified copies of the Performance and Payment bonds, or Public Construction bond, recorded in the public records.
2. List of subcontractors and suppliers
3. Project schedule
4. Schedule of values
5. All current certificates of insurance
6. Designation of Contractor's Project Manager

The initial payment request will not be accepted unless all of the above items have been received by Engineer/Architect and Owner.

10.6 **PROGRESS PAYMENTS.** All payment requests are required to be submitted in draft form, at least ten (10) calendar days in advance and not more than once each month, via email to the Owner and Engineer/Architect or Owner's agent identified in the Contract or by other written notice.

If no payment bond is recorded, original partial releases of lien from Contractor and all subcontractors included in payment request shall accompany the payment request.

If payment bond is recorded, partial consent of surety for payment shall accompany the payment request.

After review and approval of the draft, Contractor shall prepare and submit an original payment request, in duplicate: one set to the Owner's agent/Engineer/Architect and one set to **City of West Palm Beach – Accounts Payable, PO Box 3366, West Palm Beach, FL 33402-3366.**

The Owner will not be responsible for any delay in payment by the City if Contractor submits his estimate and invoice to any other address. Payment will be made in accordance with the Local Government Prompt Payment Act. (F.S. 218.70).

10.7 **DECISION TO WITHHOLD CERTIFICATION OF PAYMENT REQUESTS.**

10.7.1 Engineer/Architect may withhold payment requests, in whole or in part, to the extent reasonably necessary to protect the Owner. If the Engineer/Architect is unable to certify payment in the amount of the application, the Engineer/Architect or Owner shall within twenty (20) calendar days advise Contractor of the reasons for withholding certification, in whole or in part, and the actions necessary to make the payment request proper. The Engineer/Architect will promptly certify payment of the amount which the Engineer/Architect can certify.

10.7.2 If Contractor takes action to make the rejected payment request proper and re-submits for approval of the whole or portion previously rejected, Engineer/Architect and Owner shall reject or accept the payment within ten (10) calendar days.

10.7.3 The Engineer/Architect may nullify, in whole or in part, any payment application previously certified to such extent as may be necessary, in the Engineer/Architect's opinion, to protect the Owner for loss for which the Contractor is responsible, including:

- Defective work not remedied;
- Failure of Contractor to make payments to subcontractors;
- Reasonable evidence that the Work cannot be completed for the unpaid balance of the contract price;
- Damage to the Owner or a separate contractor;
- Reasonable evidence that Owner will have a claim for liquidated damages and the unpaid balance of the contract price will not be adequate to cover liquidated damages or other amounts due to Owner from Contractor;
- Repeated failures to carry out the Work in accordance with the Contract Documents.

When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

10.8 RETAINAGE.

10.8.1 In accordance with the Local Government Prompt Payment Act, until the project is determined to have reached fifty percent completion, Owner shall withhold retainage of ten percent (10%) from each progress payment paid to Contractor based on Contractor's estimate and invoice as approved by the Engineer/Architect.

10.8.2 Upon 50% completion of the project the retainage withheld from each subsequent progress payment will be reduced to five percent (5%) as provided for by Florida Statute §218.735(8)(b). "Fifty percent completion" of the Work is defined as that point in time where 50% of the overall value of Work items incorporated and which will remain in place subsequent to final completion of the Work have been completed, based upon the schedule of values contained in the Contract. As such, and by way of example, the value of Contractors mobilization, general conditions, supervision or like items which do not involve permanent incorporation of Work do not apply to the determination of fifty percent completion of the Work for purposes of establishing entitlement to a reduction of retainage. It is agreed that the Engineer/Architect shall have the right to finally determine when fifty percent completion has been achieved. (F.S. 255.078).

10.8.3 After the project is determined to have reached fifty percent completion, and unless otherwise prohibited by the terms of any federal grant funding the project in whole or in part: i) Owner shall withhold retainage of five percent (5%) from each progress payment paid to Contractor based on Contractor's estimate and invoice as approved by the Engineer/Architect; and ii) Contractor may present to Owner a payment request for up to half (50%) of the retainage previously held by Owner (50% of the 50% retainage already withheld – Not 50% of total retainage). If Owner has grounds under Florida law to continue to retain all or a portion of the requested retainage, Owner may continue to hold all retainage. If the Work is not on schedule when request for payment of retainage is submitted, Owner may continue to hold all retainage.

10.9 PAYMENT TO SUBCONTRACTORS. Contractor shall pay its subcontractors within ten (10) calendar days of receipt of payment from Owner and shall not withhold payments to sub-contractors. Should this occur for any reason, Contractor shall immediately return such monies to Owner, adjusting pay requests and project bookkeeping as required.

10.10 FINAL PAYMENT. Upon completion of all requirements for substantial completion and final completion, issuance of a Final Certification by Engineer/Architect, compliance with all project closeout requirements and submittal of all of the following items, Contractor may submit its final payment request. The final payment request shall include the following items:

1. Final Certification by Engineer/Architect
2. Certified copy of punch list stating each item has been completed or otherwise resolved and accepted.
3. Final Statement of Accounting reflecting:
 - a. original contract price
 - b. each approved Change Order (with quantity and unit prices where applicable)
 - c. allowances, if applicable
 - d. deductions for uncorrected work
 - e. deductions for liquidated damages
 - f. deductions for re-inspection costs
 - g. deductions for re-testing costs due to failed tests
 - h. other adjustments
 - i. adjusted contract price
 - j. payments made
 - k. any pending payment requests
 - l. sum remaining due to Contractor
4. Final Change Order, if applicable, reflecting approved adjustments to the Contract price not previously made by Change Order.
5. Consent of surety for final payment.
6. If no payment bond is recorded, Lienor's Affidavit from Contractor that all payrolls, bills for material and equipment and other indebtedness connected with the Work have been paid or satisfied;
7. If no payment bond is recorded, original releases of lien from Contractor and all subcontractors
8. Certificate of Insurance evidencing continuation of any liability coverage on claims made basis, which shall remain effective for five (5) years after final payment.
9. Written release of claims from any private property owner for use of private property for storage or staging.
10. All pre-requisites for Substantial Completion and Final Completion have been met.

The making and acceptance of the final payment shall constitute a waiver and release of all claims by Contractor, except those previously made in writing and still unsettled.

If Contractor fails to submit all documents required for final payment within one year after Final Certification any amounts owed as final payment shall be forfeited. Owner shall provide written notice to Contractor at least sixty days prior to forfeiture. Forfeiture will not apply to documents that are the subject of existing claims or pending legal proceedings.

10.11 **FINAL PAYMENT TO SUBCONTRACTORS.** Final payment may be made to certain select subcontractors whose work is satisfactorily completed prior to the total completion of the Project but only upon receipt of advance written consent of Surety, or applicable releases if no performance/payment bonds.

10.12 **ALLOWANCES.** Contractor shall include in the contract price all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct.

10.13 **CONTINGENCY FUNDS.** ALL CONTINGENCY SUMS ARE OWNER'S CONTINGENCY AND REMAIN THE PROPERTY OF OWNER UNTIL EXPENSE IS APPROVED. The contract price shall not include any contingency amounts. If the Contract or schedule of values includes an agreed sum as a contingency, such amount is identified solely for budget purposes and remains the Owners' funds. Owner may approve use of contingency funds only for the purpose of defraying the expenses due to

unforeseen conditions, extra work, and circumstances relating to construction, unless otherwise agreed. Such contingency funds are not for use by Contractor to cover short falls in Contractor's bid amount, and not for use by Owner to increase the scope of work. Contractor shall obtain prior written approval from Owner prior to the expenditure of contingency funds and Contractor will be required to furnish documentation evidencing expenditures charged to contingency and/or allowances prior to the release of such funds by Owner. All uncommitted contingency funds remain the funds of the Owner.

10.14 WITHHELD PAYMENTS. Owner may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any certificate of payment to such extent as may be necessary to protect Owner if:

- a. Defective work or material is not remedied.
- b. Claims filed or reasonable evidence indicating public filing of claims by Owner or third parties against Contractor.
- c. Failure of Contractor to make payments to sub-contractors or for material or labor.
- d. Damage to another contractor.
- e. Contractor is in default of any Contract condition, including schedule.
- f. Contractor fails to submit information required by the Contract.
- g. Contractor consistently fails to perform work in accordance with the Contract Documents.
- h. Owner has reasonable doubt that Contract work can be completed within the schedule or for the balance of the Contract price which remains unpaid.
- i. Contractor's insurance coverage lapsed.
- j. Owner has a right to claim liquidated damages.

When the above grounds are removed or Contractor provides a Surety or Performance Bond satisfactory to Owner, which will protect Owner in the amount withheld, payment shall be made for amounts withheld because of them.

10.15 LOCAL GOVERNMENT PROMPT PAYMENT ACT. Payments shall be made in accordance with the provisions of the Local Government Prompt Payment Act, F.S. 218.70 et seq. Interest, if any, shall accrue as provided in said Act.

GC 11 BONDS

11.1 PERFORMANCE & PAYMENT BONDS (if required)

11.1.3 Public Construction Bond. In accordance with the provisions of F.S. 255.05, or if required by the Contract Documents, Contractor shall provide, on forms furnished by Owner, a public construction bond in an amount not less than the total contract price by a surety company acceptable to Owner. The bond shall incorporate by reference the terms of the Contract Documents in its entirety. Moreover, Contractor agrees that the following language shall be expressly included within the language of its bond:

"The Surety expressly agrees to be bound by all terms and conditions related to liquidated, delay and time or impact-related damages. Surety shall be bound by the warranty or warranties contained in the contract documents and shall be responsible for any and all warranty obligations or damages as a result of latent defects or deficiencies in the work performed under the contract. The Surety waives all rights against Owner and its agents and employees for damages or other causes of loss by the Surety's performance of its obligations under this Bond, including claims by Surety against Owner for costs it asserts were not warranted by the contract documents, excluding only such rights as the Surety shall have to proceeds of such insurance held by Owner as fiduciary."

The bond shall also cover payments to all claimants, as defined in Section 255.05(1), Fla. Stat., supplying Contractor with labor, materials, or supplies, used directly or indirectly in the Work provided for in the Contract.

11.1.3 Performance & Payment Bonds. Owner may, in its sole discretion, accept a performance bond and a payment bond, which include the terms and provisions set forth in this condition, in lieu of the public construction bond.

11.1.4 Recording of Bond. Within ten days of receipt of the fully executed contract, Contractor shall record its bond(s) in the public records of Palm Beach County and provide a certified copy of the recorded bond to Owner. Owner will not process payment requests unless Owner has received certified copy of recorded bond(s).

11.2 SURETY.

11.2.1 To be acceptable to Owner, a Surety Company shall comply with the following provisions:

- (1) The surety company shall have a currently valid Certificate of Authority, issued by the State of Florida Department of Insurance, authorizing it to write surety bonds in the State of Florida.
- (2) The surety company shall have a currently valid Certificate of Authority issued by the United States Department of Treasury under Sections 9304 to 9308 of Title 31 of the United States Code.
- (3) The surety company shall be in full compliance with the provisions of the Florida Insurance Code.
- (4) The surety company shall have at least twice the minimum surplus and capital required by the Florida Insurance Code at the time the invitation to bid/request for proposals is issued.
- (5) The surety company shall have at least the ratings of A-/Class V.
- (6) The surety company shall not expose itself to any loss on any one risk in an amount exceeding ten (10%) percent of its surplus to policyholders.

11.2.2 If at any time the Owner shall deem any of the sureties upon such bond(s) to be unsatisfactory, or if for any reason such bond shall cease to be adequate security for the Owner, Contractor shall, within five (5) days after notice from Owner, furnish a new or additional bond in full sum as shall be satisfactory to Owner. No payments shall be due nor made to Contractor unless and until such new or additional bond shall be furnished and approved. The premium for such new or additional bond shall be paid by Contractor.

GC 12 LIENS AND RELEASES OF LIENS. (if no recorded payment bond)

12.1. Where public construction bonds have not been recorded by the Contractor, neither the final payment nor any part of the retainage shall become due until Contractor shall deliver to Owner complete releases of all claims or liens arising out of the Contract Documents, or receipts in full in lieu thereof and, if required in either case, an affidavit that so far as he has knowledge or information the release and receipts include all the labor and materials for which a lien or claim could be filed. Contractor shall use Owner's forms for all releases of liens. All releases are required to have original signatures. All values on lien releases shall be consistent with the subcontracts.

12.2. Contractor may, if any sub-contractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to Owner, to indemnify Owner against any claim or lien (in cases where such payment is not already guaranteed by Surety or payment bond), along with a consent of surety to such payment.

12.3 In case of disputed indebtedness or liens, Contractor may submit in lieu of evidence of payment, a surety or bond satisfactory to Owner guaranteeing payment of all such disputed amounts when adjudicated in cases where such payment has not already been guaranteed by a surety or bond.

12.4. If any claim or lien remains unsatisfied after all payments are made, Contractor shall refund to Owner all moneys that Owner may be compelled to pay in discharging such a lien, including all costs and reasonable attorneys' fee.

GC 13 INSURANCE; INDEMNIFICATION

13.1 INSURANCE.

13.1.1 All Insurance Policies shall be issued by companies that (a) are authorized to transact business in the State of Florida, (b) have agents upon whom service of process may be made in Palm Beach County, Florida, and (c) have a best's rating of A- VI or better.

13.1.2 All Insurance Policies shall be endorsed to provide that:

- i. Contractor's Insurance is primary to any other Insurance available to the additional insured(s) with respect to claims covered under the policy and:
- ii. Contractor's insurance applies separately to each insured against who claims are made or suit is brought and that the inclusion of more than one insured shall not operate to increase the insurer's limit of liability. Self- insurance shall not be acceptable.

13.1.3 Additional Insured. All required insurance (except Worker's Compensation and Professional Liability) shall include an Additional Insured endorsement identifying Owner (City of West Palm Beach) and the City Commission and its officers, agents, employees as additional insureds.. Additional insureds are defended and indemnified for claims to the extent caused by the acts, actions, omissions or negligence of Contractor, its employees, agents, subcontractors, and representatives; but is not defended or indemnified for the additional insured's own acts, actions, omissions, negligence. No costs shall be paid by Owner for an additional insured endorsement.

13.1.4 Required Coverage: Contractor shall maintain following liability coverage, in the limits specified:

COMMERCIAL GENERAL LIABILITY: Contractor shall carry Commercial General Liability Insurance for all operations including but not limited to Contractual, Products and Completed Operations and Personal Injury with limits of not less than Three Million Dollars (\$3,000,000) (aggregate) and Two Million Dollars (\$2,000,000) per occurrence combined single limit for bodily injury and property damage. The insurance policy must include coverage that is no more restrictive than the latest edition of the commercial general liability policy, without restrictive endorsements and the policy must include coverage for premises and/or operations, independent contractors, products and/or completed operations for contracts, contractual liability, broad form contractual coverage, broad form property damage, products, completed operations, and personal injury. Personal injury coverage shall include coverage that has the employee and contractual exclusions removed.

BUSINESS AUTOMOBILE LIABILITY INSURANCE: Contractor shall carry business automobile liability insurance with minimum limits of Two Million Dollars (\$2,000,000) per occurrence, combined single limits bodily injury liability and property damage. The policy must be no more restrictive than

the latest edition of the business automobile liability policy without restrictive endorsements and must include owned vehicles and hired and non-owned vehicles.

WORKERS' COMPENSATION: Workers' Compensation and Employer's Liability Insurance with limits of Employer's Liability Insurance not less than \$1,000,000 "each accident," \$1,000,000 "disease policy limit," and \$1,000,000 "disease each employee."

UMBRELLA OR EXCESS LIABILITY INSURANCE: Contractor may satisfy the minimum liability limits required above under an Umbrella or Excess Liability policy. There is no minimum Per Occurrence limit of liability under the Umbrella or Excess Liability; however the Annual Aggregate limit shall not be less than the highest "Each Occurrence" limit for any of the policies noted above. Contractor agrees to name and endorse the City, and the City Commission and endorse the City, and the City Commission and their officers, agents, employees and City Commission members as additional insureds. Additional insured is defended and indemnified for claims to the extent caused by the acts, actions, omissions or negligence of Contractor, its employees, agents, subcontractors, and representatives; but is not defended or indemnified for the additional insured's own acts, actions, omissions, negligence.

BUILDERS RISK: Not less than the value of the Work under construction and facilities under the "custody and control" of Contractor. .

POLLUTION: Not less than \$3,000,000 IF hazardous materials, including lead, asbestos, PCBs or other pollutants may be present.(If required)

Any other or special insurance requirements will be addressed in the Contract Documents.

13.1.5 **Certificate of Insurance.** Contractor shall provide the City Risk Manager or the City Contract Manager with a copy of the Certificate of Insurance and endorsements evidencing the types of Insurance and coverage required by this article within three (3) calendar days of Contractor's receipt of Notice of Intent to Award the contract and, at any time thereafter, upon request by the City. It is the Contractor's responsibility to ensure that the Risk Manager and the Contract Manager both have a current Insurance Certificate and endorsements at all times.

13.1.6 **Notice.** Contractor's Insurance Policies shall be endorsed to provide The City with at least thirty (30) calendar days prior written notice of cancellation, non-renewal, restrictions, or reduction in coverage or limits. Notice shall be sent to:

City of West Palm Beach
Attn: Purchasing Division
401 Clematis Street
West Palm Beach, Florida 33401

13.1.7 **Coverage Period.**

- a. If Contractor's Insurance policy is a claims made policy, then Contractor shall maintain such Insurance Coverage for a period of five (5) years after the expiration or termination of the agreement or any extensions or renewals of the agreement. Applicable coverage may be met by keeping the policies in force, or by obtaining an extension of coverage commonly known as a reporting endorsement of tail coverage.
- b. In any of Contractor's Insurance policies includes a general aggregate limit and provides that claims investigation or legal defense costs are included in the general aggregate limit, the general aggregate limit that is required shall be no more than five (5) times the occurrence limits specified above in this article.

13.1.8 Renewal of Insurance: Contractor shall be responsible for assuring that the insurance certificate/ endorsements required in conjunction with this section remains in force for the duration of the contractual period. If the insurance certificate/endorsements are scheduled to expire during this period, Contractor shall be responsible for submitting a new or renewed insurance certificate/ endorsements to City at a minimum of thirty (30) calendar days in advance of such expiration. In the event that expired certificate/endorsements are not replaced with a new or renewed certificate which covers the contractual period, City shall suspend this Agreement until such time as the new or renewed certificate/endorsements are received by City.

13.1.9 Minimum Coverage: Insurance coverage in the minimum amounts set forth herein shall not be construed to relieve Contractor of liability in excess of such coverage, nor shall it preclude City from taking such other actions as is available to him under any other provisions of this Agreement or otherwise in law or equity.

13.1.10 Subcontractors. Contractor shall be entirely responsible for securing Certificates of Insurance coverage as set forth above from all subcontractors who are engaged in the Work.

13.1.11 The provisions of this General Condition shall survive the expiration or termination of the Contract.

13.2 INDEMNIFICATION.

Contractor shall indemnify and hold harmless the Owner, its commissioners, officers, employees and agents, from and against any and all claims, obligations, liability, expenses, losses and causes of action, including attorneys' fees and costs, to the extent the same are caused by: (i) an act, negligence, recklessness or intentional wrongful misconduct of Contractor or its subcontractors, or the commissioners, officers, employees or agents of either, while engaged in or about the performance of the Work; or while in or about the project site or premises; or (ii) arising from accident or any injury to Contractor or its subcontractors while engaged in or about the performance of the Work, or while in or about the project site or premises, not caused by act of Owner, Owner's agents, servants, or other contractors of Owner; or (iii) arising out of the violation of federal, state, county or municipal laws, ordinances or regulations by Contractor or its subcontractor; or (iv) arising from liens or claims for services rendered for labor or materials furnished in or for the performance of the Work. The extent of Contractor's indemnification shall be limited to one and one-half times the contract price or \$1 million per occurrence, whichever is greater. This paragraph shall not be construed to require Contractor to indemnify Owner for Owner's own negligence, or intentional acts of the Owner, its agents or employees. Nothing in this paragraph shall be construed as a contractual waiver by Owner of the limits of sovereign immunity under Sec 768.28, Florida Statutes. This paragraph shall survive the expiration or termination of the Contract. (725.06 F.S. and 768.28 F.S.)

GC 14 SUBCONTRACTORS AND SUPPLIERS

14.1 LIST OF SUBCONTRACTORS AND SUPPLIERS. Unless otherwise required to be specified in Contractor's Bid, within ten (10) days after the date of the Owner's issuance of a Notice to Proceed, the Contractor shall furnish to the Owner in writing the names of the persons or entities (including those who are to furnish materials or equipment fabricated to a special design) whom the Contractor will engage as sub-contractors or suppliers for the project. The Contractor shall not change such sub-contractors or suppliers without written notice to Owner, and shall not contract with a proposed person or entity to whom the Owner has made reasonable and timely objection in writing, after such notice. The Contractor understands and agrees that the Contractor alone is responsible to the Owner for all of the Work under the Contract and that any review of subcontractors, sub-subcontractors or suppliers by the Owner or Engineer/Architect will not in any way make the Owner responsible to any subcontractor or sub-subcontractor or suppliers.

14.2 WRITTEN SUBCONTRACTS. By appropriate written agreement, the Contractor shall require each subcontractor, to the extent of the work to be performed by the subcontractor, to be bound to the

Contractor by terms of the Contract and Contract Documents, including but not limited to the insurance requirements for workers' compensation and general liability coverage. The Owner shall be named as an intended Third Party Beneficiary in all subcontractor agreements provided such naming shall not create privity of contract between Owner and subcontractor. Each subcontract agreement shall preserve and protect the rights of the Owner under the Contract Documents with respect to the work to be performed by the subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with sub-subcontractors. The Contractor shall make available to each proposed subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the subcontractor will be bound, and, upon written request of the subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement which may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed sub-subcontractors. Contractor shall include in all subcontracts a provision requiring the subcontractor to consent to an assignment of the subcontract to the Owner. Contractor shall, upon request, provide copies of all subcontracts to Owner.

14.3 **REQUIRED WAIVER.** All subcontracts shall provide the following exact language:

"Sub-contractor expressly waives any claims for damages which it may suffer by reason of delay caused by events beyond its' control, including delays claimed to be caused by the Owner or its Engineer/Architect and agrees that its exclusive remedy shall be an extension of its contract time."

14.4 **CONTINGENT ASSIGNMENT OF SUBCONTRACTS.** Each subcontract agreement is assigned by the Contractor to the Owner, provided that the assignment is effective only after termination of the Contract by Owner for cause and only for those subcontract agreements that the Owner accepts by giving notice to the subcontractor and Contractor in writing; and subject to the prior right of the surety, if any.

14.5 **DISPUTES.** Any disputes which may arise between the Contractor and any subcontractor must be resolved between the parties concerned. The Owner will not undertake nor be in any way responsible for the resolution of such disputes between Contractor and its subcontractors.

GC 15 ENGINEER / ARCHIECT'S STATUS.

15.1 Engineer/Architect will provide observation of the Contractor's activities and progress of the Work. The Engineer/Architect will make inspections of all construction, draft change orders, and verify and certify partial and/or final payments due to the Contractor, as provided in the Contract Documents. The Engineer/Architect may, during the life of the Contract issue additional instructions, by means of drawings, minor change orders or otherwise, necessary to illustrate changes in the Work.

15.2 Engineer/Architect will review and take appropriate action regarding Contractor's submittals such as shop drawings and samples, but only for the limited purpose of checking for conformance with the Contract Documents. Review of such submittal is not conducted for the purpose of determining the accuracy and completeness of other details, such a dimensions and quantities of for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor pursuant to the Contract Documents. Engineer/Architect's review does not relieve Contractor of its obligations under the Contract Documents. Engineer/Architect's review does not constitute approval of, and Engineer/Architect shall not give directions regarding, any construction means, methods, techniques, sequences, procedures, assembly or safety precautions.

15.3 Engineer/Architect shall have authority to stop the Work whenever such stoppage may be necessary to insure the proper execution of the Contract or to protect the public and/or property. Engineer/Architect shall also have authority to reject all work, materials and equipment which do not conform to the Contract Documents and to decide questions raised by Contractor which arise in the execution of the Work.

15.4 Owner retains the sole authority to modify or extend the authority of the Engineer/Architect.

15.5 Engineer/Architect will make decisions in writing on all claims of the Contractor, and on all other matters relating to the execution and progress of the Work or the interpretation of the Contract Documents. All such decisions of the Engineer/Architect shall be final.

GC 16 TERMINATION OR SUSPENSION

16.1 OWNER'S RIGHT TO TERMINATE FOR CAUSE.

16.1.1 Owner may terminate the Contract for cause if Contractor:

- A. Fails to supply enough properly skilled workers or proper materials;
- B. Fails to cure deficiencies after notice as provided in the Contract Documents;
- C. Fails, except in cases for which extension of time is provided, to maintain an established schedule thirty (30) calendar days behind a critical path activity);
- D. Fails to make prompt payments to subcontractors or for material, equipment or labor;
- E. Repeatedly disregards applicable laws, codes, ordinances, regulations or permit requirements;
- F. Fails to perform the Work consistent with the requirements of the Contract Documents;
- G. Materially fails to comply with substantial and final completion dates as required in the Contract Documents;
- H. Abandons or refuses to perform any portion of the Work;
- I. Is otherwise in substantial breach of the Contract Documents;
- J. Files a bankruptcy petition or has a bankruptcy action commenced against it that is not discharged within thirty (30) calendar days, or make an assignment for the benefit of its creditors, or has a receiver appointed to manage Contractor's assets, or is otherwise becoming insolvent.

16.1.2 When any of the above reasons exist, Owner may, without prejudice to any other right or remedy, and after giving Contractor and its Surety seven (7) calendar days written notice, terminate the employment of Contractor and, subject to any prior right of the surety:

- (i) Exclude the Contractor from the site and take possession of the premises and of all materials, equipment, tools and appliances thereon owned by Contractor;
- (ii) Accept assignment of subcontract pursuant to GC 13.2 and
- (iii) Finish the Work by whatever reasonable means Owner deems expedient.

16.1.3 When Owner terminates for cause, Contractor shall not be relieved from any of its obligations under the Contract Documents, and shall not be entitled to receive any further payment until Owner's costs to complete the Work is determined. In no event shall Contractor receive any payment for Work finished by Owner.

16.1.4 Owner shall determine its costs incurred in completing the Work, including fees and charges to contractors, fees of Engineer/Architect, attorney and other professional fees, court costs and other damages incurred by Owner. Owner shall not be required to obtain the lowest price for the work to be performed, but the costs paid by Owner must be reasonable. If the unpaid balance of the contract price shall exceed the Owner's costs to finish the Work, the excess shall be paid to Contractor. If Owner's costs exceed the unpaid balance, Contractor shall pay the difference to Owner. This obligation for payment shall survive termination of the Contract and final payment.

16.1.5 Those Contract provisions which by their nature survive final acceptance shall remain in full force and effect

16.1.6 If Contractor's surety is directed or agrees to complete the Work, then all payments due after termination shall be made to the surety until the Work is complete and/or the Contract price has been expended. The surety shall then be responsible for all of the obligations and duties of Contractor under the Contract Documents and shall be bound by the conditions of the Contract Documents, this Contract and the Bond to fulfill all obligations of the Contract Documents for the contract price in effect as of termination. The surety may not assign those obligations without the written consent of Owner. The surety shall be responsible for the payment of all costs relating to the termination of the employment of Contractor. Contractor and its surety shall be jointly and severally liable for all costs in excess of the contract price for completion of the Work and for liquidated damages.

16.1.7 If, upon termination for cause it is determined that Contractor was not in default, the rights and obligations of the parties shall be as if the notice of termination has been issued for Owner's convenience.

16.2 SUSPENSION OR TERMINATION BY OWNER FOR CONVENIENCE.

16.2.1 Suspension for Owner's Convenience. Owner may, at any time, without cause, order Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as Owner may determine, for Owner's convenience. If Owner orders a suspension, the contract price and contract time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption. No adjustment shall be made to the extent that performance is, was or would have been so suspended, delayed or interrupted by another cause for which Contractor is responsible; or that an equitable adjustment is made or denied under another provision of the Contract.

16.2.2 Termination by Owner for Convenience. Owner may, at any time, without cause, order terminate all or a portion of the Contract for Owner's convenience. Upon such termination, the contract price earned to the date of termination shall be paid to Contractor, but Contractor waives any claim for damages, including loss of profits arising out of or related to the early termination. Contractor may not recover overhead or profit for work not performed. Those Contract provisions which by their nature survive final payment shall remain in full force and effect.

16.3 CONTRACTOR OBLIGATIONS UPON TERMINATION. Upon receipt of written notice from Owner of termination, Contractor shall: (i) cease operations as directed by Owner in the notice; (ii) take actions necessary, or that Owner may direct for the protection and preservation of the Work; (iii) except for Work directed to be performed prior to the effective date of termination stated in the notice, and if directed by Owner, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders; and (iv) turn over all marked up Construction Drawings and record set documents showing progress to date. Owner may assume and become liable at its sole discretion for obligations, commitments and unsettled contractual claims that Contractor has previously undertaken or incurred in good faith in connection with said project. Owner shall reimburse Contractor for any unpaid and earned cost of the project as of the date of termination, less damages or setoffs applicable under the Contract Documents. Contractor shall, as a condition of receiving the payments referred to herein, execute and deliver all such papers and take all such steps including the legal assignment of his contractual rights, as Owner may require for the purpose of fully vesting in him the rights and benefits of Contractor under such obligations or commitments.

16.4 TERMINATION BY CONTRACTOR. The Contractor may terminate this Contract if the Work is stopped for a period exceeding 30 consecutive days, through no fault of act of Contractor or subcontractor or their suppliers or other person or entities performing Work under direct or indirect contract with Contractor, if order of a court or other public authority having jurisdiction requires all Work to be stopped; or an act of government, such as declaration of emergency, requires all Work to be stopped.

GC 17 UNEXCUSED DELAY; LIQUIDATED DAMAGES

17.1 LIQUIDATED DAMAGES. If the actual completion date for substantial completion or final completion occurs later than the time indicated in the Contract Documents or later than the scheduled

completion date if a duly authorized change order for time is issued, liquidated damages in the amount(s) set forth in the Contract Documents shall be paid by Contractor for unexcused delay in performance of the Work. The reasonableness of the amount is agreed. No liquidated damages shall be charged for periods of authorized delay or suspension. Contractor agrees that Owner's actual damages in the event of unexcused delay are difficult to ascertain and therefore the parties agree that the sums established in the Contract Documents are reasonably related to what damages Owner may suffer and are enforceable liquidated damages and not penalties. Notwithstanding the above, Contractor agrees that liquidated damages do not include additional costs invoiced by Engineer/Architect to Owner for extended professional services arising out of an unexcused delay, and Contractor agrees to reimburse Owner for such actual costs incurred in addition to payment by Contractor of any liquidated damages. Owner is entitled to deduct any liquidated damages to which Owner is entitled from the final payment to Contractor. If the amount of liquidated damages due to Owner exceeds the final payment amount, Contractor shall pay the difference to Owner. This obligation for payment shall survive termination of the Contract and final payment. Owner does not waive any rights or other remedies under the Contract by the collection of liquidated damages. Liquidated damages will continue to be charged to the contract in the event of Contractor's default and continuation of the Work by Owner or surety. Owner may waive any portion or all of its claim for liquidated damages upon completion of the Work.

17.2 **NO DAMAGES FOR DELAY.** Contractor expressly agrees that a Change Order for an extension of the project completion date and substantial completion date constitutes its sole and exclusive remedies for efficiency or other related time or impact-based claims (hereinafter collectively "delay") or for delay attributable to any foreseen or unforeseen condition, or for delays claimed to be the result of active, intentional, knowing or passive interference by Owner, Engineer/Architect, or agents of either, and Contractor waives claims for any and all damages which it may suffer by reason of such claims, including but not limited to, lost profits, loss or impairment of bonding capacity, destruction of business, overhead, remobilization or demobilization costs, subcontractor delay claims, supervision, extended unabsorbed home office overhead, increase insurance costs, lost profits on alternate or unperformed contracts. Contractor hereby affirms that an extension of time is Contractor's sole and exclusive remedy. Apart from extension of time, no payment of claim for damages shall be made to Contractor as compensation for damages for any delays in the Work, whether such delay be avoidable or unavoidable.

GC 18 CLAIMS AND DISPUTES

18.1 **NOTICE OF CLAIMS OR DISPUTE.** Claims or disputes by the Contractor must be initiated by written notice to Owner with a copy sent to Engineer/Architect. Unless otherwise specifically provided by law, claims must be initiated within twenty-one (21) calendar days after occurrence of the event giving rise to such claim or within twenty-one (21) calendar days after the Contractor first recognizes the condition giving rise to the claim, whichever is later.

18.2 **CONTINUING PERFORMANCE.** In the event of any claim or dispute, Contractor shall continue to diligently make progress on all Work, unless otherwise directed by Owner, and Owner shall continue to make payments in accordance with the Contract Documents. If the dispute regards payment or money, Contractor shall be obligated to proceed with all Work without waiving its claims under dispute.

18.3 **DECISIONS ON CLAIMS.** Engineer/Architect will make decisions in writing on all claims of the Contractor regarding performance under and the requirements of the Contract Documents, and on all other matters relating to the execution and progress of the Work or the interpretation of the Contract Documents. The Engineer/Architect will review the claim and within fifteen (15) calendar days of receipt of the claim (or receipt of additional supporting information or data), take one or more of the following actions: (1) request additional information or supporting data from either party; (2) approve the claim; (3) reject the claim in whole or in part; (4) suggest a compromise; or (5) advise the parties that the Engineer/Architect is unable to resolve the claim if the Engineer/Architect lacks sufficient information to evaluate the claim, or if the Engineer/Architect concludes that it would be inappropriate for the Engineer/Architect to resolve the claim. If the Engineer/Architect requests a party to supply additional information, such party shall respond and provide any requested information within ten (10) calendar days. The Engineer/Architect's written decision shall notify the parties of any change in the Contract

Time or Contract Price or both. All such decisions of the Engineer/Architect shall be final and binding, but subject to mediation.

18.4 DECISIONS ON AESTHETICS. The Engineer/Architect's decision on matters relating aesthetic effect will be final if consistent with the intent of the Contract Documents and may not be appealed, mediated or litigated.

18.5 PAYMENT DISPUTES. With respect to disputes regarding payment requests, Owner shall review the payment application with Engineer/Architect and provide an opportunity for Contractor to state its claim within forty-five (45) calendar days after the date the rejected payment request was last received by Engineer/Architect. The final decision of Owner shall require approval by the City Administrator and be made within sixty (60) calendar days after the date the rejected payment request was last received by Engineer/Architect.

18.6 SUBCONTRACTOR DISPUTES. Any disputes which may arise between the Contractor and any subcontractor must be resolved between the parties concerned. The Owner will not undertake nor be in any way responsible for the resolution of such disputes between Contractor and its subcontractors.

18.7 MEDIATION. Notwithstanding any other provision, the parties agree that any unresolved dispute or claim shall be mediated. Any claim for mediation shall be made in writing within fifteen (15) calendar days of Engineer/Architect's written decision on the matter, or shall be waived. The Engineer/Architect shall serve as the mediator; however, with respect to disputes regarding the Work, the punch list or any other requirement for final completion, if the Engineer/Architect is an employee of Owner, the parties may mutually agree to have an independent professional engineer or professional construction mediator serve as the mediator. Notwithstanding, an initial decision by the Engineer/Architect shall be required as a condition precedent to mediation. The Owner and Contractor shall share the mediator's fee and any filing fees equally. The mediation shall be held in Palm Beach County. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

18.8 WAIVER OF ARBITRATION. Owner and Contractor agree and expressly waive any and all provisions regarding arbitration, including any and all provisions regarding arbitration as a condition precedent to litigation contained elsewhere in any Contract Documents.

18.9 LEGAL REMEDIES. Owner and Contractor may exercise those legal remedies in the District Court for Palm Beach County, Florida, as may be available to them with respect to any dispute arising out of the Contract Documents for which the Engineer/Architect's decision is not final and pursuant to the dispute resolution process described in the Contract Documents and which Owner and Contractor are unable to resolve through change order or mediation. An initial decision by the Engineer/Architect shall be required as a condition precedent to litigation.

18.10 Governing Law; Jurisdiction; Venue; Litigation. The Contract Documents shall be construed and interpreted, and the rights of the parties hereto determined, in accordance with Florida law without regard to conflicts of law provisions. Contractor and Owner submit to the jurisdiction of Florida courts and federal courts located in Florida. The parties agree that proper venue for any suit concerning this Agreement shall be Palm Beach County, Florida, or the Federal Southern District of Florida. Contractor agrees to waive all defenses to any suit filed in Florida based upon improper venue or *forum nonconveniens*. TO ENCOURAGE PROMPT AND EQUITABLE RESOLUTION OF ANY LITIGATION, EACH PARTY HEREBY WAIVES ITS RIGHTS TO A TRIAL BY JURY IN ANY LITIGATION RELATED TO THE CONTRACT DOCUMENTS.

GC 19 WARRANTY INSPECTION. Prior to expiration of the warranty period(s), Contractor shall conduct, at its expense, with Owner and Engineer/Architect, a warranty inspection. Additionally, upon receipt of notice from Owner of failure of any part of the guaranteed Work, equipment or materials during the guarantee period, the defective Work, equipment parts or materials shall be replaced promptly with new equipment parts (or new equipment) and materials by Contractor, at no expense to Owner. This provision shall survive expiration or termination of the Contract.

GC 20 ROYALTIES AND PATENTS. Contractor shall pay for all royalties and license fees. Contractor indemnifies and shall defend and hold Owner and Engineer/Architect harmless from and against all claims, obligations, losses, costs, damages and expenses, including attorney fees in connection with any claims or actions based upon infringement of any patent arising out of the use of any materials or equipment or processes furnished or employed by Contractor under the Contract, unless a particular design, process or product of a particular manufacturer is required by the Contract Documents or where copyright violations are contained in the Construction Drawings or specifications prepared by the Engineer/Architect or Owner. If Contractor has reason to believe any required design, process or product is an infringement of a copyright or patent, Contractor shall immediately provide notice to Engineer/Architect.

GC 21 LEGAL AND ETHICAL PROVISIONS

21.1 **NO VERBAL AGREEMENTS.** No verbal agreement or conversation with any officer, agent or employee of Owner either before or after execution of the Contract shall affect or modify any of the terms or obligations contained in any of the documents comprising said Contract. All Contract amendments or Change Orders shall be written and executed by both Owner and Contractor.

21.2 **COMPLIANCE WITH LAWS.** Contractor shall comply with all applicable City, State and Federal laws relating to the provision of services under this Contract, now or hereafter in effect. Contractor shall comply with all applicable City, State and Federal laws relating to wages, hours, and all other applicable laws relating to the employment or protection of employees, now or hereafter in effect. It shall not be grounds for a change order that Contractor failed to investigate the codes and regulations of all applicable government agencies with jurisdiction over the Work.

21.3 **SMALL BUSINESS REQUIREMENTS.** Contractor shall comply with the City of West Palm Beach's Small Business Ordinance set forth in Chapter 66 of the City Code, which is incorporated herein by reference. Contractor shall comply with the small business commitment contained in Contractor's Bid, or as approved by the Procurement Division. Contractor shall maintain all relevant records and information necessary to document compliance with the Small Business Ordinance and shall allow the Owner to inspect and audit such records.

21.4. **ETHICS; CONFLICTS OF INTEREST**

a. Contractor represents that it has not given or accepted a kickback in relation to the Contract and has not solicited the Contract by payment or acceptance of a gratuity or offer of employment.

b. Contractor represents that it has not solicited the Contract by payment of a gift or gratuity or offer of employment to any official, employee of the City or any City agency or selection committee.

c. Contractor represents that it does not employ, directly or indirectly, the mayor, members of the city commission or any official, department director, head of any City agency, or member of any board, committee or agency of the City.

d. Contractor represents that it has not knowingly given, directly or indirectly, any gift with a value greater than \$100 in the aggregate in any calendar year to the mayor, members of the city commission, any department director or head of any city agency, any employee of the city or any city agency, or any member of a board that provides regulation, oversight, management or policy-setting recommendations regarding the Contractor or its business.

e. Contractor represents that it presently has no interest and shall acquire no interest, either direct or indirect, which would conflict in any manner with its performance under the Contract.

f In the event Contractor is permitted to utilize subcontractors to perform any work under the Contract, Contractor agrees to prohibit such subcontractors, by written contract, from having any conflicts as within the meaning of this condition.

21.5. LOBBYING CERTIFICATION. Contractor certifies to the best of its knowledge and belief that no funds or other resources received from the state in connection with the Contract will be used directly or indirectly to influence legislation or any other official action by the Florida Legislature or any state agency.

21.6 NON-COLLUSION. Contractor certifies that it has not entered into any agreement to commit a fraudulent, deceitful, unlawful or wrongful act, or any act which may result in an unfair advantage over other bidders or contractors. (F.S. 838.22).

21.7 PUBLIC ENTITY CRIMES. By executing a Contract with Owner, Contractor certifies that Contractor, its affiliates, suppliers, subcontractors and consultants who will perform under the Contract have not been placed on the convicted vendor list maintained by the State of Florida Department of Management Services within the 36 months immediately preceding the date of the Invitation to Bid and that execution of the Contract will not violate the Public Entities Crimes Act (Sec. 287.133, Florida Statutes. Violation of this section may result in termination of this Agreement and recovery of all monies paid hereto, and may result in debarment from City's competitive procurement activities.

21.8 SCRUTINIZED COMPANIES. For Contracts over \$1 million, in accordance with Sec. 215.473 Fla. Stat., Contractor certifies that at the time of bid or contract, Contractor is not a Scrutinized Company on the Contractors with Activities in Sudan List or the Activities in the Iran Petroleum Energy Sector List and does not engage in business operations in Cuba or Syria. Violation of this section may result in termination of this Agreement and recovery of all monies paid hereto, and may result in debarment from City's competitive procurement activities.

21.9 UNAUTHORIZED ALIENS/PATRIOT'S ACT. The knowing employment by Contractor or its subcontractors of any alien not authorized to work by the immigration laws or the Attorney General of the United States is prohibited and shall be a default of the Contract. Contractor shall take all commercially reasonable precautions to ensure that it and its sub-contractors do not employ persons who are not authorized to work by the immigration laws or the Attorney General of the United States. Contractor further represents that it is not in violation of any laws relating to terrorism or money laundering, including Executive Order No. 13224 on Terrorist Financing and relating to Blocking Property and Prohibiting Transactions With Persons Who Commit, Threaten to Commit, or Support Terrorism (the "Executive Order") and/or the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001, as amended and reinstated (the "Patriot Act"). Contractor represents it is not a Prohibited Person under the Executive Order or Patriot Act.

21.10. NON-DISCRIMINATION. In performing under the Contract, Contractor shall not discriminate against any person because of race, color, religion, sex, gender identity or expression, genetic information, national origin, age, disability, familial status, marital status or sexual orientation.

21.11 APPRENTICES. If Contractor employs apprentices on the project, the behavior of Contractor and Owner shall be governed by the provisions of Chapter 446, Florida Statutes, and by applicable standards and policies governing apprentice programs and agreements established by the Division of Labor of the State of Florida Department of Labor and Employment Security. Contractor will include a provision similar to the foregoing sentence in each subcontract.

21.12 AVAILABILITY OF FUNDS. The Contract is expressly conditioned upon the availability of funds lawfully appropriated and available for the purposes set out herein as determined in the sole discretion of the Owner. If funding for the Contract is in multiple fiscal years, funds must be appropriated each year prior to costs being incurred. Nothing in this paragraph shall prevent the making of contracts with a term of more than one year, but any contract so made shall be executory only for the value of the work or services to be rendered or paid for in succeeding fiscal years. In the event funds to finance the Contract

become unavailable, Owner may terminate the Contract upon no less than twenty-four (24) hours notice to Contractor. The Owner shall be the sole and final authority as to the availability of funds.

21.13 RIGHT TO AUDIT. Contractor shall maintain adequate records of the services for at least five (5) years from project occupancy. Owner, during Contractor's business hours and with at least 24 hours prior notice to Contractor, shall have the right to audit Contractor's books and records, at Owner's expense, with regard to the accounts and services provided to or on behalf of Owner under this Contract to ensure that all aspects of the Contract are being met. Contractor shall allow the Owner or its representative to interview all current or former employees to discuss matters pertinent to the Contract. If an audit inspection in accordance with this condition discloses overpricing or overcharges (of any nature) by Contractor to Owner in excess of one-half of one percent (.5%) of the total contract billings, (1) the reasonable costs of the City's Internal Audit department shall be reimbursed to the City by the Contractor and (2) a 15% penalty of the overpricing or overcharges shall be assessed. Any adjustments and/or payments which must be made as a result of the audit inspection, including any interest, audit costs and penalties shall be made by the Contractor within 45 days from presentation of City's findings to Contractor. Failure by Contractor to permit such audit shall be cause for termination of this Contract by Owner. In addition to the foregoing, Contractor consents to the Owner requesting from the insurance carriers confirmation of all fees paid to Contractor arising out or related to the City's insurance coverages during the term of the Contract.

21.14 INSPECTOR GENERAL. Contractor is aware that the Inspector General of Palm Beach County has the authority to investigate and audit matters relating to the negotiation and performance of the Contract, and may demand and obtain records and testimony from the Contractor and its subcontractors and lower tier subcontractors. Contractor understands and agrees that in addition to all other remedies and consequences provided by law, the failure of Contractor or its subcontractor or lower tier subcontractors to fully cooperate with the Inspector General when requested may be deemed by the Owner to be a material breach of the Contract justifying its termination.

21.15 INDEPENDENT CONTRACTOR. Contractor represents that it is properly experienced, licensed, equipped and financed to perform the work. Contractor acknowledges and agrees that it is an independent contractor of Owner and is not an employee of Owner and shall maintain control over its employees, subcontractors and work methods. Contractor more specifically acknowledges that it: will not be eligible to participate in any employee benefit maintained by Owner; will not be covered by Owner's workers' compensation insurance; and will be solely and exclusively responsible for payment of all federal and state income, social security, unemployment and disability taxes due in respect of all compensation and/or other consideration paid by Owner to Contractor under the Contract.

21.16 LIENS. Contractor acknowledges that no liens may attach to the subject improvements and property as a public project. Nevertheless, Contractor agrees to keep the project, the buildings thereon and the property free of liens for or on account of any work done or materials furnished under the Contract. In the event any such lien is filed, Contractor shall, within five (5) days after written notice by Owner, discharge the lien(s) or cause a satisfaction of such lien(s) to be recorded in the Public Records of Palm Beach County, Florida, or post a bond sufficient to release the lien(s) and cause the Clerk of the Circuit Court of Palm Beach County to discharge such lien, as may be appropriate. In the event Contractor fails to so discharge or bond the lien(s), Owner shall have the right, but not the obligation, to discharge or bond the lien(s) and shall have the right to retain out of any payment then due or thereafter to become due to the Contractor, monies sufficient to discharge the amount of such lien(s) and Owner's costs and reasonable attorneys' fees incurred.

21.17 LITIGATION. In the event suit is filed to construe or enforce this Agreement, each party in such suit shall bear its own costs and expenses incurred in connection therewith, including, but not limited to, attorneys' fees and costs through trial and appeal. TO ENCOURAGE PROMPT AND EQUITABLE RESOLUTION OF ANY LITIGATION, EACH PARTY HEREBY WAIVES ITS RIGHTS TO A TRIAL BY JURY IN ANY LITIGATION RELATED TO THIS CONTRACT.

GC 22 MISCELLANEOUS

22.1 NOTICES. All written notices and other communications required or provided for under this Contract shall be sent by certified mail, return receipt requested, postage prepaid, in the case of mailing, or by overnight or same day courier, or hand delivered to the following address and person bearing the following title for each party hereto or such other addressee or person as shall be designated by a party in a written notice given in the manner required hereby:

to Owner: City of West Palm Beach
Attn.: Director of Engineering & Public Works
P.O. Box 3366
(401 Clematis Street (33401))
West Palm Beach, FL 33402-3366

to Contractor: [to Contractor at the address listed on the first page of this Contract to the attention of the Project Manager]

22.2 PUBLIC RECORDS. Contractor shall comply with Chapter 119, Florida Statutes, regarding access to public records. Failure of compliance may be cause for termination by Owner.

22.3 SPECIFIC WAIVER. Any waiver issued by Owner of any provision of the Contract Documents shall only be effective if issued in writing by Owner and shall be specific, shall apply only to the particular matter concerned, and shall not apply to other similar or dissimilar matters. Either party's failure to enforce strict performance of any covenant, term, condition, promise, agreement or undertaking set forth in the Contract shall not be construed as a waiver or relinquishment of any other covenant, term, condition, promise, agreement or undertaking set forth herein, or waiver or relinquishment of the same covenant, term, condition, promise, agreement or undertaking at any time in the future.

22.4 HEADINGS; INDEX. The headings and the table of contents or index contained in these General Conditions are provided for convenience only.

22.5 INTEGRATION. The Contract constitutes the entire agreement between Contractor and Owner and supersedes all prior verbal and written agreements, understandings, negotiations and discussions between the parties hereto. The Invitation to Bid and its terms and conditions are incorporated herein and made a part of this Contract. No verbal agreement or conversation with any officer, agent or employee of Owner either before or after execution of the Contract shall affect or modify any of the terms or obligations contained in any of the documents comprising said Contract.

22.6 SEVERABILITY. The invalidity, illegality or unenforceability of any provision of the Contract shall not affect the validity, legality or enforceability or any other provision of the Contract and the Contract shall be construed and enforced in all respects as if the invalid, illegal or unenforceable provision is not contained herein.

22.7 ASSIGNMENT. Contractor shall not assign the Contract as a whole or in part without the written consent of Owner, nor shall Contractor assign any monies due or to become due to it hereunder without the previous written consent of Owner and its surety. Assigning the Contract shall not relieve Contractor or his surety from any contract obligations.

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CITY OF WEST PALM BEACH, FLORIDA



TECHNICAL SPECIFICATIONS

ITB 13-14-129

PROJECT NO. VARIOUS

**CITY-WIDE CONTINUING CONTRACT FOR
LIFT STATION REPAIR & REHABILITATION**

**CITY-WIDE CONTINUING CONTRACT FOR
LIFT STATION REPAIR & REHABILITATION**

TECHNICAL SPECIFICATIONS

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END

SECTION 01010
SUMMARY OF WORK

PART 1 - GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

- A. The work covered by these specifications comprises, in general, the furnishing of all labor, equipment, materials, and performing all activities necessary to repair, replace or rehabilitate pipes, manholes, inlets, pumps, hatches, rails and other appurtenances at existing wastewater or stormwater facilities. Typically, work will be performed at pumping stations having a wet well with submersible pumps.
- B. The work also includes the removal and replacement of valves, pumps, pipes, sewer lines, stormwater pipes, manholes, hatches, vaults, electrical cables, miscellaneous utility line appurtenances, concrete structures and concrete slabs. The prime Contractor or a qualified sub-contractor shall have experience in the repair and installation of wastewater and stormwater utility lines in urban areas and be skilled in confined space entry.
- C. All work shall be in accordance with City of West Palm Beach Standards, City Specifications, the City Approved Materials List, Florida Administrative Code Section 62-604 and FDOT Standard Specifications for Road and Bridge Construction.
- D. The Contractor shall provide any and all sheeting, shoring and/or dewatering systems necessary to perform the work and to protect existing homes, driveways, walls, landscaping, roads or utilities from damage. Contractor is responsible for controlled excavation and trenching as well as post-construction repair to restore the roads, sidewalks, yards and driveways to pre-construction conditions.
- E. The Contractor shall be responsible for the costs of all labor (including costs for overtime, night and weekend work), materials, equipment, tools, supplies, transportation, delivery, disposal of waste and surplus material, appliances, fuel, power, light, water, sanitary facilities, temporary facilities and all other appurtenances and incidentals necessary for installation or repair work conducted at existing facilities.
- F. The Contractor is responsible for locating all existing underground utilities including irrigation lines, communication cables, electrical power lines, water lines, gravity mains, force mains, drain pipes and other underground utilities. The Contractor is responsible for maintaining and submittal of accurate record drawings depicting the location of all existing and new underground utilities installed or encountered during the performance of their work.
- G. The work shall cause minimal disruption and be performed in an expedited, highly coordinated manner by the Contractor. The Contractor must have adequate staffing at all work locations when activities are occurring so that the work proceeds promptly.
- H. Contractor shall be responsible for all maintenance and protection of vehicular and pedestrian traffic and access to existing properties at all times during construction, except when necessary for underground pipeline installation.
- I. The Contractor shall be responsible for control and bypassing of wastewater and stormwater flow by the use of mechanical pumps, piping, tankers or other temporary means as necessary to keep the existing system upstream of the work zone in service during repair or replacement activities. Backup bypass systems, pumps and tankers shall be readily available in the event of failure of the Contractors primary bypass methods or systems.

- J. The Contractor shall also be responsible for furnishing, providing, implementing and installing and maintaining all maintenance of traffic (MOT) signage and barricades that conform to all City standards. The Contractor shall prepare MOT plans and obtain permits for work in the roadway from the City of West Palm Beach.
- K. Except as specifically provided for in the Bid Form, the Contractor shall provide and pay for:
 - 1. Labor, materials, tools, construction equipment, and machinery.
 - 2. Water and utilities required for construction.
 - 3. All City, County and/or State right of way permits.
 - 4. Other facilities and services necessary for proper execution and completion of the work.

1.02 STORAGE OF MATERIALS

- A. Suitable storage facilities shall be furnished by the Contractor. All materials, supplies and equipment intended for use in the work shall be stored properly by the Contractor to prevent damage from exposure to the elements, contamination by foreign substances, vandalism or other causes. The Engineer will refuse to accept, or sample for testing, any materials, supplies or equipment that are damaged or have been improperly stored, as determined by the Engineer.
- B. Materials found unfit for use shall not be incorporated in the work and shall immediately be removed from the construction or storage site. Pipe and structures strung out along the line of construction will not be allowed unless the materials will be installed within one week from the time of unloading, or the pipe and structures are protected in a manner that protects them from damage and prevents the creation of a public safety hazard.

1.03 PROTECTION OF PUBLIC & PRIVATE PROPERTY

- A. The Contractor shall protect from damage all property along the line of the work, or which is in the vicinity of the work. Wherever such property is damaged due to the activities of the Contractor, it shall be restored to its original condition within a reasonable amount of time by the Contractor at no cost to the Owner.
- B. In case of failure on the part of the Contractor to restore such property, or make good such damage for injury, the Owner may, after 48 hours notice to the Contractor, proceed to repair, rebuild or otherwise restore such property as may be deemed necessary and the cost thereof will be deducted from any monies due or which may become due the Contractor under this contract.

1.04 CLEAN UP

- A. The Contractor shall keep the construction site free of rubbish and other materials and restore to their original conditions those portions of the site not designated for the alteration by the Contract Documents. Clean up and restoration shall be accomplished on a continuing basis throughout the contract period and in such a manner as to maintain a minimum of nuisance and interference to residents in the vicinity of the work.

1.05 PUBLIC SAFETY AND CONVENIENCE

- A. The Contractor shall at all times so conduct his work as to ensure the least possible obstruction to traffic, or inconvenience to the general public and residents in the vicinity of the work. No road or street shall be closed to the public, except with the permission of the Engineer. Fire hydrants on or adjacent to the work shall be kept accessible. Provisions shall be made by the Contractor to ensure public access to sidewalks, bus stops as well as the proper functioning of all gutters, sewer inlets, drainage ditches, and irrigation ditches.
- B. The Contractor shall prepare a Maintenance of Traffic (MOT) plan, obtain right of way permits to perform work in the public roadways and provide all personnel and materials required in the MOT.

1.06 SAFETY AND OSHA COMPLIANCE

- A. The Contractor shall comply in all respects with all Federal, State and Local safety and health regulations, including U.S. Department of Labor, Occupation Safety and Health Administration (OSHA).
- B. The Contractor shall comply in all respects with the Trench Safety Act.
- C. The contractor shall ensure that all waste material transporters possess all required federal, state and local regulations, including but without limitation, 40 CFR Part 263, "Standards Applicable to Transporters of Hazardous Waste" and Chapter 62-730.170, Florida Administrative Code.

PART 2 - PRODUCTS – NOT USED.

PART 3 - EXECUTION – NOT USED.

END OF SECTION

SECTION 01019

GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 EXISTING UTILITIES AND STRUCTURES:

Existing utilities and facilities will be provided to the Contractor from the Owner's and other records. Guaranties are not made that all existing facilities are shown or that those shown are entirely accurate. The Contractor will assure himself of any utilities, structures or facilities prior to performing any Work. Prior to the start of Work, the Contractor will request the Owner to advise him of the location of their facilities in the vicinity and will notify the Owner of any deviation between existing conditions and the drawings. The Contractor will assume liability for damages sustained or costs incurred because of his operations in the vicinity of existing utilities or structures. The Contractor will be solely responsible for the protection and maintenance of existing utilities to provide uninterrupted service to commercial and residential customers.

Existing utilities and facilities shall be located prior to commencement of each task.

It shall be the Contractor's responsibility to contact utility companies and call SUNSHINE at (800) 432-4770 at least 72 hours before starting construction so maintenance personnel can locate and protect facilities, if required by the utility company.

1.02 PRESERVING WATER QUALITY:

The Contractor will exercise extreme care to minimize degradation of water quality at the site. All necessary provisions will be taken to insure compliance with the water quality standards of the State of Florida.

The Contractor will take steps to collect and dispose of all sewage that leaks and/or spills during the performance of this contract. Any leakage or spillage will be cleaned up to the satisfaction of the Department of Environmental Protection.

1.03 PROTECTION OF EXISTING AND ADJACENT PROPERTIES:

Unless indicated otherwise, all shrubbery, paved streets and walks, fences and walls, adjacent structures and equipment will be fully protected against damage during each stage of the project. Any damage by the Contractor will be fully restored to original condition.

1.04 RESTORATION OF DAMAGED SURFACES, STRUCTURES AND PROPERTY:

Where pavement, trees, shrubbery, fences or other property or surface structures not designated as pay items, have been damaged, removed or disturbed by the Contractor, whether deliberately or through failure to carry out the requirements of the Contract Documents, state laws, municipal ordinances or the specific direction of the Engineer, or through failure to employ usual and reasonable safeguards, such property and surface structures will be replaced or repaired at the expense of the Contractor to a condition equal to that before Work began within a time frame approved by the Engineer.

1.05 SUBSTITUTIONS:

For substitution of products in place of those specified, Contractor must submit shop drawings and technical data for consideration of "an approved equal" by the City, except specified items followed by the words "no substitution".

Submit five copies of request for substitution. Include in request:

1. Complete Data substantiating compliance of proposed substitution with Contract Documents.
2. For Products:
 - a. Product identification, including manufacturer's name and address.
 - b. Manufacturers' literature:
 - 1) Product description.
 - 2) Performance and test data.
 - 3) Reference standards.
 - c. Samples.
 - d. Name and address of similar projects on which product was used, and date of installation.
3. For construction methods:
 - a. Detailed description of proposed method.
 - b. Drawings illustrating methods.
4. Itemized comparison of proposed substitution with product or method specified.
5. Accurate cost data on proposed substitution in comparison with product or method specified.

1.06 CONSTRUCTION WATER:

The Contractor will be responsible for making application for hydrant meters with backflow preventers. The City will install necessary connections and backflow preventers at locations needed by the Contractor. Maintenance of such is the responsibility of the Contractor. All associated fees will be paid from the appropriate pay item for "Allowance".

Construction water will be paid for by the Contractor. In an event that damage to these facilities occurs, the Contractor will be responsible for all costs associated with their replacement at the City's standard rate.

1.07 SANITARY FACILITIES:

If necessary, the Contractor shall provide temporary restroom facilities for field crews. Location of such facilities will be subject to the approval of the City. Existing City/Residence facilities are not available for use by the Contractor.

1.08 WORKING HOURS:

All work on this contract shall be conducted during normal working hours (7:00 A.M. to 4:30 P.M.) on weekdays. No work shall be performed at night, on weekends or on City observed holidays, unless approved in advance by the City where site specific conditions justify alternate days or hours. Inspection services needed beyond normal working hours will be paid for by the Contractor.

1.09 ASSEMBLIES OR UNITS:

Where the Contractor is required to furnish and install an assembly or unit, the Contractor shall furnish all component parts as required by the manufacturer of the unit.

1.10 WORK SITE REQUIREMENTS:

- A. The Contractor may use only the roads and/or easements designated by the Owner for access to the work locations. The Contractor shall be responsible for maintaining, protecting and restoring the routes to the satisfaction of the Owner and Engineer.
- B. The Contractor, at his own expense, shall provide space for storage of materials and equipment.

1.11 SECURITY:

The Contractor shall be fully responsible for the safety and security of the construction area including any temporary measures required to maintain its protection. The Contractor will be responsible for any damages or theft incurred to his tools, equipment, machinery, and new work in-place that has not yet been fully accepted by the City.

1.12 TRENCH SAFETY ACT:

All work shall conform to the Florida Trench Safety Act. Contractor shall include in his price the cost of conforming to the Trench Safety Act.

1.13 PRECONSTRUCTION CONFERENCE/PROJECT PROGRESS MEETING:

- A. Before the Contractor starts the work, a conference will be held to establish procedures for handling Shop Drawings and other submittals, and to establish procedures for processing Applications for Payment, to establish work schedule and any related facility shut-downs, and to establish a working understanding among the parties as to the scope of work for each party.
- B. At each project progress meeting, the Contractor shall submit a progress schedule and phasing plan including all activities of subcontractors, equipment vendors and suppliers. An updated schedule shall be submitted with each pay request.

1.14 TESTS:

Tests and analyses which are called for in the Specifications (backfill density, concrete, bacteriological, pressure and leakage, etc.) are to be performed in accordance with the Specifications or Standard City Details. A city staff member shall be present at each test.

1.15 REMOVAL OF ALL TEMPORARY FACILITIES & RESTORATION OF SITE:

Upon completion of the work, it shall be the responsibility of the Contractor to remove all temporary facilities including, but not limited to, pumps, fences, signs, temporary power, materials or other debris. The site, adjacent properties, and Owner facilities shall be restored to their original condition.

1.16 VIDEOTAPING:

If so directed by the Owner, and at least two (2) weeks prior to start of construction, the Contractor shall televise all areas where construction is to take place, including existing surface conditions within the project limits. Such video tapes shall be provided to the Owner before construction commences. The DVD shall serve as a record of the existing conditions for disputes arising from restoration, and should therefore be taken along the line of construction at sufficient detail as necessary to clearly depict details of existing conditions.

All DVD's shall be indexed and catalogued in such a manner that each photographed area is readily identifiable and shall also indicate the date and time (hour, minutes & seconds) on which the photograph was made. The Contractor shall also televise any unusual conditions encountered during construction that are not already a matter of photographic record. In any area where existing conditions cannot be determined by means of video tapes, the area shall be restored, as approved by the Engineer, at the Contractor's expense. All DVDs shall become the property of the Owner.

1.17 SALVAGED MATERIAL:

Any existing equipment or material which is removed or replaced as a result of construction under this project may be designated as salvage by the City and, if so, shall be removed, cleaned, and delivered to the site in a protected place specified by the City. Any equipment or material not worthy of salvaging, as directed by the City, shall be disposed of by the Contractor at a suitable location. Upon request of the Engineer, Contractor shall submit evidence of proper disposal.

1.18 PROVISION FOR THE CONTROL OF DUST:

The Contractor shall comply with the City Ordinances regarding control of dust. The Contractor shall take the necessary steps to prevent objectionable blowing or drifting of dust, sand, and other debris where the construction occurs in residential, commercial, or other developed areas.

Extreme precautions shall be taken during construction to minimize the amount of dust created. Wetting the site or other means, as directed by the City, may be required for control of dirt.

1.19 NOISE CONTROL:

The Contractor shall comply with the City Ordinances regarding noise control. The Contractor shall make every effort to minimize noises caused by his operations. Equipment shall be equipped with hospital-grade silencers or mufflers designed to operate with the least possible noise.

1.20 OBSTRUCTION:

A. The attention of the Contractor is drawn to the fact that during excavation at the project site, the possibility exists of the Contractor encountering various utilities (water, chemical, electrical, gas, or other) not shown on the drawings. The Contractor shall exercise extreme care before and during excavation to locate and flag these lines so as to avoid damage to the existing lines. Should damage occur to an existing line, the Contractor shall repair the line at no cost to the City.

B. It is the responsibility of the Contractor to ensure that all utility or other poles, the stability of which may be endangered by the close proximity of excavation, are temporarily stayed in position while the work proceeds in the vicinity of the pole and that the utility or other companies concerned be given reasonable advance notice of any such excavation by the Contractor.

1.21 CLEAN-UP:

The Contractor shall maintain the site of the work in a neat condition. The Contractor shall remove all excess materials, excess excavated materials and all debris resulting from his operations within a time frame approved by the Engineer.

1.22 VISITS TO SITE BY OWNER'S REPRESENTATIVE:

The Owner's representative will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed work and to determine, in general, if the work is proceeding in accordance with the Contract Documents.

The Owner's representative's efforts will be directed toward providing for the Owner a greater degree of confidence that the completed work will conform to the drawings and these specifications. On the basis of such visits and on-site observations, the Owner's representative will keep the Owner informed of the progress of the work and will endeavor to guard the Owner against defects and deficiencies in the work.

1.23 LIMITATIONS ON OWNER'S REPRESENTATIVE RESPONSIBILITIES:

- A. Neither the Owner's representative's authority to act under these specifications and drawings or elsewhere in other documents nor any decision made by the Owner's representative in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the Owner's representative to the Contractor, any sub-Contractor, any manufacturer, fabricator, supplier or distributor, or any of their agents or employees or any other person performing any of the work.
- B. The Owner's representative shall not be responsible to the Contractor's means, methods, techniques, sequences or procedures of construction, or safety precautions and programs incident thereto, and the Owner's representative shall not be responsible for the Contractor's failure to perform the work in accordance with the drawings and these specifications.
- C. The Owner's representative shall not be responsible for the acts or omissions of the Contractor or of any sub-Contractors, or of any other persons at the site or otherwise performing any of the work.

1.24 WARRANTY:

The Contractor shall be responsible for defects in materials (including latent defects) or workmanship for a period of one year after the date of final acceptance of the project by the Owner. Such defects include, but are not limited to, any settlement noted in backfill, fill, or in structures built over the backfill or fill during the warranty period in accordance with the GENERAL CONDITIONS and will be considered to be caused by improper compaction methods and shall be corrected by the Contractor at no cost to the Owner. Structures damaged by settlement shall be restored to their original condition by the Contractor at no cost to the Owner.

The Contractor shall furnish factory warranties on all equipment furnished for the performance and completion of the project against defects in materials and/or workmanship. The factory warranty shall become effective on the date of delivery and acceptance by the Owner. In the event of any defects in materials or workmanship, the Contractor shall replace said equipment at no cost to the Owner.

PART 2 - PRODUCTS

2.01 PRODUCTS AND MANUFACTURERS:

- A. Specified in each applicable Section of Specifications and the City's Approved Materials List (AML.)

PART 3 - EXECUTION

3.01 MANUFACTURERS INSTRUCTIONS:

A. INSTALLATION:

1. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions if not a part of Submittals, containers, or packaging to parties involved in the installation, including a copy to the City.
2. Maintain one complete set of instructions at the job site during installation and until completion.
3. Handle, install, connect, clean, condition, and adjust products in accordance with such instructions and in conformance with specified requirements. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Engineer for further instructions.
4. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents, or approved in writing by manufacturer and the City.
5. Accurately locate and align with other Work, and anchor Equipment and Materials securely in place except as required for proper movement and performance.
6. Clean and protect exposed surfaces as necessary to ensure freedom from damage and deterioration at time of acceptance.

END OF SECTION

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. The following explanation of Measurement and Payment for the bid items is provided; however, the omission of reference to any item shall not alter the intent of the Bid Form or relieve the Contractor of the necessity of constructing a complete project under this Contract.
- B. The quotations prepared by the Contractor for the various items of work are intended to establish a total price for completion of the work in its entirety. Should the contractor feel that the cost for any particular work item has not been established by the Schedule of Payment items or this section, the Contractor shall include the cost for such work in one of the bid items so the proposal for the project reflects the total cost to complete work in its entirety.
- C. The quantities set forth in the Bid Form (B3) are approximate, but are believed to be reasonably accurate. Quantities shown on the Bid Form are given to establish a uniform basis for the comparison of bids and to establish an approximate extent of work to be performed during the duration of the contract. The Owner reserves the right to increase or decrease the quantity of any item or portion of the work during the progress of construction in accordance with the terms of the Contract.
- D. In the event that the actual quantity of material installed exceeds the quantity shown, the Contractor shall be paid the unit price shown for the quantity actually installed. Similarly, a credit will be provided to the Owner by the Contractor for quantities less than those shown on the Bid Form.
- E. The Schedule of Values shall serve as a basis of developing additive or deductive Change Orders.
- F. Unit prices are used as a means for computing the bid, for Contract purposes, for periodic payments, for determining value of additions or deletions.
- G. Payment shall be made for the items listed on the Bid Form on the basis of the work actually performed and completed, such work including but not limited to, the furnishing of all necessary labor, materials, equipment, tools, transportation, delivery, disposal of waste and surplus material, restoration and all other appurtenances to complete the construction and installation of the work as shown on the drawings and described in the specifications.

1.02 SUBMITTALS

- A. Pay Requests
 - 1. Application for Payment – AIA Format
 - 2. Subcontractor Utilization Report
 - 3. Final Application for Payment
- B. Submittals shall be in accordance with Section 01300.
- C. The Contractor shall submit pay requests once a month in accordance with the Contract and General Conditions

1.03 NON-PAYMENT FOR REJECTED WORK

Contractor shall replace all Work, or portions of the Work, which do not conform to the Drawings or Technical Specifications, unless specifically approved otherwise by the Owner.

1.04 NON-PAYMENT FOR REJECTED WORK

A. Payment will not be made for any of the following:

1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from the transporting vehicle.
4. Products placed beyond the lines and levels of the required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling and disposing of rejected Products.
7. Used Products and Materials

PART 2 – PRODUCTS - Not used

PART 3 – EXECUTION

3.01 GENERAL CONDITIONS PAY ITEMS

A. MOBILIZATION / DEMOBILIZATION / GENERAL CONDITIONS

1. Method of Measurement: Payment under this Section shall be on a lump sum (LS) basis. The Contractor's lump sum price shall include full compensation for all work related to mobilization. This item also includes all costs for mobilization, scheduling, labor and equipment for preparatory work, temporary facilities, utilities, demobilization, including those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site, establishment of temporary provisions, controls, and utilities, permits that are required to be obtained by the contractor, compliance with permit conditions, site access control, adherence to state and local laws and regulations, utility protection and coordination, locating all existing utilities within the project area, supporting power poles, light poles, structures, underground structures, pipes, conduits and cables as may be required, maintaining service, repairing any utilities damaged by the construction, and attendance at public information meetings for the purpose of providing the general public with updates regarding the construction, and all other costs required to complete the work, tested and accepted, which are not included in other bid items, and any other related work, except for any work designated to be paid for separately or to be specifically included in the costs of other work shown within the Bid Form.
2. Basis of Payment: Payment shall be made at the Contract Lump Sum (LS) price and shall be paid in increments in proportion to the total work completed to date.

Payments for Mobilization and General Conditions shall be made in accordance with the following schedule:

| Construction Percent Complete | Allowable Percent of Lump Sum for Mobilization |
|-------------------------------|---|
| 10% | 50% |
| 50% | 75% |
| 100% | 100% |

B. BONDS & INSURANCE REQUIREMENTS

1. Method of Measurement: Payment under this Section shall be on a lump sum (LS) basis and shall include all compensation for providing and maintaining bonds and insurance for the project duration in accordance with the Contract documents and General Conditions.
2. Basis of Payment: Payment shall be made at the Contract Lump Sum Price upon submission of bonds and insurance documents required of the Contractor.

C. PROFESSIONAL VIDEOTAPING OF PRE & POST SITE CONDITIONS

1. Method of Measurement: Payment under this Section shall be on a lump sum (LS) basis for performing and providing video documentation of the existing site conditions, buildings, landscaping and above ground features and utilities, as well as video documentation of post-construction site conditions as directed by the Owner.
2. Basis of Payment: Payment shall be made at the Contract Lump Sum Price and shall be paid in increments in proportion to the total work completed to date.

D. TRENCH SAFETY COMPLIANCE

1. Method of Measurement: Payment under this Section shall be on a lump sum (LS) basis and shall include, but not be limited to, providing all OSHA required trench safety equipment, training and methods employed during the course of the project.
2. Basis of Payment: Payment shall be made at the Contract Lump Sum Price and shall be paid in increments in proportion to the total work completed to date.

3.02 MAINTENANCE OF TRAFFIC, SAFETY & ACCESS CONTROL

A. MAINTENANCE OF TRAFFIC (By type of roadway & lane closures)

1. Method of Measurement: Payment under this Section shall be on a per day (DA) basis which shall include full compensation for all work related to the maintenance of traffic per day of work and/or construction during which traffic control is required. Work includes, furnishing all materials, labor, and equipment required to install, maintain, and remove any and all required traffic control measures to control the flow of traffic through the work area within the public rights of way during the various phases of the project. Preparation and submittal of any Maintenance of Traffic (MOT) plans to required agencies as well as coordination with those parties shall also be included in this item. All work shall be in accordance with applicable local, state, and federal requirements.
2. Basis of Payment: Payment shall be made at the Contract Daily Price.

B. MAINTENANCE OF TRAFFIC DEVICES

1. Method of Measurement: Payment under this Section shall be on a per device per day (DA) based upon Florida Dept of Transportation, Standard Specifications for Road & Bridge Construction, Section 100. Pay items shall include full compensation for all work related to the maintenance of traffic item per day of work and/or construction during which traffic control is required. Work includes, furnishing all materials, labor, and equipment required to install, maintain, and remove any and all required traffic control measures to control the flow of traffic through the work area

within the public rights of way during the various phases of the project. Preparation and submittal of any Maintenance of Traffic (MOT) plans to required agencies as well as coordination with those parties shall also be included in this item. All work shall be in accordance with applicable local, state, and federal requirements.

2. Basis of Payment: Payment shall be made at the Contract Unit Price per day for each traffic control device.

C. TEMPORARY FENCING & ACCESS CONTROL

1. Method of Measurement: The quantity to be paid for under this Section shall be for the initial base unit of each (EA) protected area up to 100 linear feet long; and for fencing in excess of the initial 100 feet being paid for each linear foot (LF) thereafter, complete and accepted in order to secure the work areas from entry by unauthorized persons. The work includes portable chain link fence & posts, barricades and safety signage. The Contractor's price shall include full compensation for all work related to the safety of the public and the security of the work site during construction of the improvements shown on the plans, and any other related work. The work includes, but is not limited to, furnishing all materials, labor, and equipment required to install, maintain, and remove any and all required temporary fencing to prevent access to the work area during the various phases of the project.
2. Basis of Payment: Payment shall be at the Contract Unit Price for each Fenced Area up to the Initial Base Quantity, plus a per linear foot cost for fence beyond the initial Base quantity installed to the limits shown on the plans or as directed by the Engineer in the field during construction.

D. CONSTRUCTION ZONE & SECURITY FENCING

1. Method of Measurement: The quantity to be paid for under this Section shall be for the initial base unit of each (EA) protected area up to 100 linear feet long; and for fencing in excess of the initial 100 feet being paid for each linear foot (LF) thereafter, complete and accepted. Work shall include, but not be limited to, furnishing all materials, labor, and equipment required to install, maintain, replace and remove 36" high red plastic warning fence with wood or metal support posts at five feet on center around the active project areas.
2. Basis of Payment: Payment shall be at the Contract Unit Price for each Protected Area up to the Initial Base Quantity, plus a per linear foot cost for fence beyond the initial Base quantity to the limits shown on the plans or as directed by the Engineer in the field during construction.

E. STAKED EROSION CONTROL FABRIC FENCE

1. Method of Measurement: The quantity to be paid for under this Section shall be for the initial base unit of each (EA) control area up to 100 linear feet long; and for fencing in excess of the initial 100 feet being paid for each linear foot (LF) thereafter, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to install, maintain, replace and remove a 24" high geotextile fabric fence for erosion and sediment control, with wood or metal support posts at six feet on center.
2. Basis of Payment: Payment shall be at the Contract Unit Price for each Control Area up to the Initial Base Quantity, plus a per linear foot cost for fence beyond the initial Base quantity installed to the limits shown on the plans or as directed by the Engineer in the field during construction.

F. EROSION CONTROL – COIR LOGS, HAY BALES OR WATTLES

1. Method of Measurement: The quantity to be paid for under this Section shall be for each linear foot (LF), complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to install, maintain, replace and remove coir logs, hay bales or wattles for erosion and sediment control, with wood or metal stakes as needed to prevent floatation, or sand bags to control movement of the erosion control materials.
2. Basis of Payment: Payment shall be at the Contract Unit Price per linear foot for control materials installed to the limits shown on the plans or as directed by the Engineer in the field during construction.

G. STEEL PLATE ROAD COVERING

1. Method of Measurement: Payment under this Section shall be on a unit price per plate per day (DA) and will include all labor, materials to temporarily cover work areas to allow pedestrian or vehicular traffic to cross the active work area. Work includes leveling, placement and removal of structural steel plate with a H-20 wheel loading and safety signage. The Contractor's unit price shall include full compensation for all work related to the safety of the public and the security of the work site during construction of the improvements shown on the plans, and any other related work. The work includes, but is not limited to, furnishing all materials, labor, and equipment required to install, maintain, and remove any and all required temporary steel plate cover used as safety or security control measures during the various phases of the project.
2. Basis of Payment: Payment shall be made at the Contract Unit Price per Day.

H. LIGHT TOWER w/ GENERATOR

1. Method of Measurement: The quantity to be paid for under this Section shall be per each day (DA) a light tower is needed for night time work and shall include, but not be limited to, furnishing all materials, labor, and equipment for the light tower during the night time work duration.
2. Basis of Payment: Payment shall be at the Contract Unit Price per Tower per Day in use as directed by the Project Manager.

I. BYPASS PUMPING OF WASTEWATER (BY PUMP SIZE)

1. Method of Measurement: The quantity to be paid for under this Section shall be at a Unit Price for initial setup (EA) plus a per day (DA) unit cost for every day of operation. The price shall include full compensation for all labor, materials and equipment for providing a bypass pumping and piping system to maintain uninterrupted wastewater systems' service or temporary pumps, pipes and/or pumper trucks needed to support wastewater collection and/or transmission main construction or modifications. The Contractor's price shall include full compensation to maintain upstream wastewater flow during construction of the improvements shown on the plans.
2. Basis of Payment: Payment shall be at the Contract Unit Price for initial setup and each operating day for each location where bypass of wastewater flow is necessary. Work includes, but is not limited to, furnishing all labor, equipment, vehicles and materials related to the design, logistics, setup, operation and maintenance of

pumps, pipes, vacuum trucks, pumper trucks, tankers and other methods necessary required to maintain upstream flow of wastewater.

J. BYPASS OF WASTEWATER (BY TANKER OR HYDRO VACUUM TRUCK)

1. Method of Measurement: The quantity to be paid for under this Section shall be on a per Hour (HR) basis, The price shall include full compensation for all labor, materials and equipment for providing vacuum or pumper truck(s) to maintain un-interrupted wastewater systems' service. The Contractor's price shall include full compensation to maintain upstream wastewater flow during construction of the improvements shown on the plans.
2. Basis of Payment: Payment shall be at the Contract Unit Price per Hour for each vacuum or pumper truck required to provide bypass of wastewater flow. Work includes, but is not limited to, furnishing all labor, equipment, vehicles and materials related to the logistics, setup and operation of vacuum trucks, pumper trucks or tankers required to maintain upstream flow of wastewater.

3.03 FORCE MAIN BELOW GRADE

A. SANITARY SEWER EPOXY LINED FORCE MAIN (BY DIAMETER PIPE AND TYPE MATERIAL)

1. Method of Measurement: The quantity to be paid for under this Section shall be per linear foot (LF), to the nearest foot as measured along the horizontal center line of the pipe between the limits as shown on the drawings, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to remove all existing surface material and protruding objects, excavation of any type of material including rock, temporary shoring, existing utility support and protection, dewatering, removal of existing forcemain, installation of forcemain in accordance with City of West Palm Beach Standards including the additional piping required to account for the vertical change in elevation, layout, joint restraint, location tracing wire, identification painting, cleaning, flushing, pressure testing (including temporary caps/plugs for testing as may be required), trench backfilling, compaction, density testing, hauling and legal off-site disposal of debris and any other items required for a complete and functional system.
2. Basis of Payment: Payment shall be at the Contract Unit Price per linear foot of pipe installed.

B. FORCE MAIN EPOXY LINED FITTINGS (BY DIAMETER PIPE AND TYPE MATERIAL)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) force main fitting installed, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to install force main fittings as shown on the drawings including joint restraint, layout, identification painting, connection to the existing force main, and any other items required for a complete and functional system
2. Basis of Payment: Payment shall be at the Contract Unit Price per fitting installed.

C. RESTRAIN NEW OR EXISTING FORCE MAIN (BY DIAMETER PIPE)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) joint of existing force main requiring joint restraint, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to remove all existing surface material and protruding objects, excavation of any type of material including rock, legal off-site disposal of debris, temporary shoring, existing utility support, dewatering, installation of bell restraint fitting(s) as required, trench backfilling, compaction, density testing, asphalt, concrete, or other surface restoration as required and any other items required for a complete and functional system.
2. Basis of Payment: Payment shall be at the Contract Unit Price per joint restraint installed.

D. ECCENTRIC PLUG VALVE BELOW GROUND (BY DIAMETER)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) eccentric plug valve installed, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to install plug valve as shown on the drawings, including the valve, valve box, riser extensions, restrained joints, materials, layout, and any other items required for a complete and functional valve.
2. Basis of Payment: Payment shall be at the Contract Unit Price per valve installed.

E. ASPHALT PAVEMENT AND BASE REMOVAL

1. Method of Measurement: The quantity to be paid for under this Section shall be on a square yard (SY) basis. The Contractor's unit price shall include full compensation for all labor, materials and equipment required for removal of all existing pavement and base (asphalt pavement of varying thickness) within the project limits as indicated on the plans. This item includes all saw-cutting and joints at connections to existing pavement. The existing pavement shall be completely removed and shall be properly disposed of off-site at no additional cost to the Owner. Existing base material may be re-used as sub-grade or backfill material, provided that it meets the requirements for backfill, or be removed and properly disposed of off-site at no additional cost to the Owner.
2. Basis of Payment: Payment shall be at the Contract Unit Price per square yard of pavement and base removed to the limits shown on the plans or as directed by the Engineer in the field during construction.

F. CONCRETE CURB REMOVAL (ALL TYPES)

1. Method of Measurement: The quantity to be paid for under this Section shall be on a linear foot (LF) basis. The Contractor's unit price shall include full compensation for all labor, materials and equipment required for removal of all existing concrete curb (all types), within the limits of the project as indicated on the plans. This item includes all saw-cutting and joints at connections to existing curbs. The existing curb shall be completely removed and shall be properly disposed of off-site at no additional cost to the Owner.

2. Basis of Payment: Payment shall be at the Contract Unit Price per linear foot of curb removed to the limits shown on the plans or as directed by the Engineer in the field during construction.

G. CONCRETE PAVEMENT REMOVAL (ALL THICKNESSES)

1. Method of Measurement: The quantity to be paid for under this Section shall be on a square yard (SY) basis. The Contractor's unit price shall include full compensation for all labor, materials and equipment required for removal of all existing concrete (except curb and/or gutters), driveways and sidewalks (varying thickness), within the limits of the project as indicated on the plans. This item includes all saw-cutting and joints at connections to existing sidewalks. The existing sidewalks and driveways within the right-of-way as indicated on the plans or to facilitate construction of underground utilities shall be completely removed and shall be properly disposed of off-site at no additional cost to the Owner.
2. Basis of Payment: Payment shall be at the Contract Unit Price per square yard of concrete pavement removed to the limits shown on the plans or as directed by the Engineer in the field during construction.

H. IMPORT BACKFILL

1. Method of Measurement: The quantity to be paid for under this Section shall be on a loose volume cubic yard (CY) basis and shall include, but not be limited to purchasing, testing, transporting, spreading, grading and compacting clean imported fill material. Work includes laboratory sampling of the import material to verify compliance with specifications and in-place density testing after placement. No payment will be made for import fill placed outside the lines and grades shown on the plans.
2. Basis of Payment: Payment shall be made at the Contract Unit Price per cubic yard (CY) truck measure.

I. REMOVAL OF UNSUITABLE MATERIAL

1. Method of Measurement: The quantity to be paid for under this Section shall be on a cubic yard (CY) basis on a loose volume truck load basis. Work shall include, but not be limited to, excavation, transporting, and off-site disposal of all unsuitable material encountered during the construction of the Work.
2. Basis of Payment: Payment shall be made at the Contract Unit Price per cubic yard (CY) truck measure to the limits shown on the plans or as directed by the Engineer in the field during construction.

J. FLOWABLE FILL

1. Method of Measurement: The quantity to be paid for under this Section shall be on a cubic yard (CY) basis of placed flowable fill. The Contractor's unit price shall include full compensation for all labor, materials and equipment required for the placement of flowable fill where indicated on the plans or directed for use in the field during construction.
2. Basis of Payment: Payment shall be at the Contract Unit Price per cubic yard of flowable fill shown on the plans or as directed by the Engineer in the field during construction.

3. Exceptions: No payment shall be made for flowable fill placed by the Contractors for their convenience in reducing construction time or when permitted by the Engineer to meet backfill compaction density requirements.

K. 10" LIMEROCK BASE

1. Method of Measurement: The quantity to be paid for under this Section shall be per square yard (SY) for limerock base installed and accepted. The Contract Unit Price shall include compensation for all labor, materials, and equipment required to construct the new lime rock base, including prime coat in accordance with the plans and specifications. The contract unit price shall also include other miscellaneous work required to correct all defective surfaces and deficient thicknesses and to complete the work in accordance with Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition and the City of West Beach specifications. The Contractor may, at no additional cost to the City of West Palm Beach, substitute 10- inch crushed concrete in lieu of limerock provided that the minimum LBR 100 is achieved.
2. Basis of Payment: Payment shall be at the Contract Unit Price per square yard of limerock base installed to the limits shown on the plans or as directed by the Engineer in the field during construction.

L. 12" STABILIZED SUB-GRADE – LBR 40

1. Method of Measurement: The quantity to be paid for under this Section shall be per square yard (SY) of new stabilized sub grade (LBR 40 - 12" thick) and shall include all labor, material, and equipment required to construct the stabilized sub grade as shown on the detail drawings. The unit price shall include all excavation, preparation of sub grade, fine grading, placement of sub grade material, stabilization and compaction, rolling, brooming, and other miscellaneous work required to complete the work in accordance with Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition and the City of West Beach specifications.
2. Basis of Payment: Payment shall be at the Contract Unit Price per square yard of sub-grade installed to the limits shown on the plans or as directed by the Engineer in the field during construction.

M. MATERIAL TESTING (BY TYPE TEST)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each test location for materials sampling and testing performed in accordance with the current ASTM standards and as prescribed under FDOT standard specifications for in-place material testing. The testing shall include sampling, transportation to an approved laboratory facilities, sample preparation and testing and reporting on the values determined under the laboratory testing. All samples used in testing shall be stored by the testing laboratory until the City's PROJECT MANAGER provides written release to allow disposal of samples. The Contractor will be responsible to pay for all failed tests and for subsequent retesting to meet quality and standard conditions. Whenever, nonconformance is detected or determined by the City's PROJECT MANAGER as a result of the tests, the Contractor shall bear the full cost of additional tests which are ordered by the City's PROJECT MANAGER to ascertain that subsequent conformance is obtained with the contract documents.
2. Basis of Payment: Payment shall be made at the per test per location price, which includes test result report, at locations determined in the field during construction.

3.04 GRAVITY SANITARY SEWER

A. GRAVITY SANITARY SEWER (BY DIAMETER PIPE, DEPTH AND TYPE MATERIAL)

1. Method of Measurement: The quantity to be paid for under this Section shall be per linear foot (LF), to the nearest foot as measured along the horizontal center line of the pipe, placed at the depths and between the limits shown on the drawings, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to remove all existing surface material and protruding objects, excavation of any type of material including rock, hauling and legal off-site disposal of debris, layout, temporary shoring, support and protection of existing utilities, dewatering, installation of sanitary sewer main in accordance with City of West Palm Beach Standards, wye fittings as may be required, reconnection of existing laterals found in the field or connections to newly replaced laterals, trench backfilling, compaction, density testing, connection to other sanitary sewer pipes and manholes, bypass pumping as required, cleaning, flushing, pressure testing (including temporary caps/plugs for testing as may be required), closed circuit television recording (CCTV), and any other items required for a complete and functional system.
2. Basis of Payment: Payment shall be at the Contract Unit Price per linear foot of sewer pipe installed.

B. GRAVITY SEWER COUPLINGS (BY DIAMETER & TYPE COUPLING)

1. Method of Measurement: The quantity to be paid for under this Section shall be for each (EA) sewer coupling installed as shown on the drawings, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to remove all existing surface material and protruding objects, excavation of any type of material including rock, hauling and legal off-site disposal of debris, layout, temporary shoring, dewatering, installation of sewer coupling in accordance with City of West Palm Beach Standards, trench backfilling, compaction, density testing, and any other items required for a complete and functional system, including support of existing aboveground and below ground improvements to remain and be protected.
2. Basis of Payment: Payment shall be at the Contract Unit Price per coupling installed.

C. INSTALL SANITARY MANHOLE (BY SIZE AND DEPTH)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) sanitary structure installed, complete and accepted at the depths and dimensions as shown on the plans, and includes, but is not limited to, furnishing all materials, labor, and equipment required to remove all existing surface material and protruding objects, excavation of any type of material including rock, temporary shoring, dewatering, installation of new sanitary structure in accordance with City of West Palm Beach Standards, manhole ring and cover, proposed sanitary pipe connections, pipe stub-outs up to 3 LF in length as required, flexible couplings to connect to existing sanitary main to stubbed out piping as required, removal and disposal of existing piping for stub-out installation, existing utility support and protection, temporary shoring, hauling and legal off-site disposal of debris, trench backfilling, compaction, density testing, surface restoration, adjustment of ring and cover to be flush with finish surfaces and any other items required for a complete and functional system.

2. Basis of Payment: Payment shall be at the Contract Unit Price per sanitary manhole installed

D. INSTALL MANHOLE RING & COVER (BY SIZE)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) manhole ring and cover installed on an existing structure, as shown on the plans, and includes, but is not limited to, furnishing all materials, labor, and equipment required to remove any existing ring and cover, excavation of any type of surrounding material including asphalt, limerock, temporary shoring, dewatering, installation of new ring and cover in accordance with City of West Palm Beach Standards, removal and disposal of debris, trench backfilling, compaction, surface restoration, adjustment of ring and cover to be flush with finish surfaces and any other items required for a complete and functional system.
2. Basis of Payment: Payment shall be at the Contract Unit Price per ring and cover installed

E. PIPE BEDDING

1. Method of Measurement: The quantity to be paid for under this Section shall be on a cubic yard (CY) basis on a loose volume truck load basis. Work shall include, but not be limited to purchasing, transporting, spreading and grading imported pipe bedding material, #57 stone or approved equal.
2. Basis of Payment: Payment shall be made at the Contract Unit Price per cubic yard (CY) truck measure to the limits shown on the plans or as directed by the Engineer in the field during construction.
3. Exceptions: No payment shall be made for pipe bedding material placed by the Contractor for their convenience in reducing construction time or proper dewatering operation.

3.05 STORM SEWER INSTALLATION

A. STORMWATER PIPE (BY DIAMETER PIPE AND TYPE MATERIAL)

1. Method of Measurement: The quantity to be paid for under this Section shall be to the nearest linear foot (LF) along the horizontal center line of the pipe between the limits as shown on the drawings, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to remove all existing surface material and protruding objects, excavation of any type of material including rock, provision of suitable bedding, hauling and legal off-site disposal of debris, temporary shoring, dewatering, installation of stormwater pipe in accordance with City of West Palm Beach Standards, trench backfilling, compaction, density testing, connection of new storm drain piping to existing and proposed manholes/inlet and any other items required for a complete and functional system, including support of existing aboveground and below ground improvements to remain and be protected.
2. Basis of Payment: Payment shall be at the Contract Unit Price per linear foot of pipe installed.

B. STORMWATER INLET, MANHOLE, STRUCTURE (BY TYPE OF STRUCTURE)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) stormwater structure installed, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to remove all existing surface material and protruding objects, excavation of any type of material including rock, hauling, legal off-site disposal of debris, temporary shoring, dewatering, installation of new stormwater structure, installation of grate or ring and cover (as applicable), connections to existing piping, trench backfilling, compaction, density testing, additional fill, and any other items required for a complete and functional system.
2. Basis of Payment: Payment shall be at the Contract Unit Price per structure installed.

C. CONNECTION TO EXISTING STORMWATER STRUCTURE (BY DIAMETER PIPE)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) new stormwater piping connection to an existing stormwater structure, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to connect a new stormwater pipe to an existing stormwater structure as shown on the drawings, including coring and grouting the new opening, plugging other existing inverts, and any other items required for a complete and functional system.
2. Basis of Payment: Payment shall be made at the Contract Unit Price per proposed connection installed

D. PIPE BEDDING

1. Method of Measurement: The quantity to be paid for under this Section shall be on a cubic yard (CY) basis on a loose volume truck load basis. Work shall include, but not be limited to purchasing, transporting, spreading and grading imported pipe bedding material, #57 stone or approved equal.
2. Basis of Payment: Payment shall be made at the Contract Unit Price per cubic yard (CY) truck measure to the limits shown on the plans or as directed by the Engineer in the field during construction.
3. Exceptions: No payment shall be made for pipe bedding material placed by the Contractor for their convenience in reducing construction time or proper dewatering operation.

3.06 FORCE MAIN ABOVE GRADE

A. ABOVE GROUND EPOXY LINED FORCE MAIN (BY DIAMETER & TYPE MATERIAL)

3. Method of Measurement: The quantity to be paid for under this Section shall be per linear foot (LF), to the nearest foot as measured along the horizontal center line of the pipe between the limits as shown on the drawings, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to install above ground forcemain in accordance with City of West Palm Beach Standards including flange fittings, primer and finish painting, cleaning, flushing, pressure testing (including temporary caps/plugs for testing as may be required), neoprene sleeves where pipe passes thru slabs, any other items required for a complete and functional system.

2. Basis of Payment: Payment shall be at the Contract Unit Price per linear foot of pipe installed.

B. FORCE MAIN EPOXY LINED FITTINGS (BY DIAMETER & TYPE MATERIAL)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) force main fitting installed, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to install force main fittings as shown on the drawings including joint restraint, layout, identification painting, connection to the existing force main, and any other items required for a complete and functional system
2. Basis of Payment: Payment shall be at the Contract Unit Price per fitting installed.

C. PIPE SUPPORT STANDS (BY SIZE AND TYPE MATERIAL)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) pipe support stand installed, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to install pipe support stands as shown on the drawings including design, layout, support saddles, anchor plates, anchor bolts, galvanizing, and any other items required for a complete and functional system
2. Basis of Payment: Payment shall be at the Contract Unit Price per fitting installed.

D. PIPE BEDDING

1. Method of Measurement: The quantity to be paid for under this Section shall be on a cubic yard (CY) basis on a loose volume truck load basis. Work shall include, but not be limited to purchasing, transporting, spreading and grading imported pipe bedding material, #57 stone or approved equal.
2. Basis of Payment: Payment shall be made at the Contract Unit Price per cubic yard (CY) truck measure to the limits shown on the plans or as directed by the Engineer in the field during construction.
3. Exceptions: No payment shall be made for pipe bedding material placed by the Contractor for their convenience in reducing construction time or proper dewatering operation.

E. ECCENTRIC PLUG VALVE ABOVE GROUND (BY DIAMETER) (Item No. S-n)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) eccentric plug valve installed, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to install plug valve as shown on the drawings, including the valve, hand wheel, gearbox, support stands, two coats final paint, appurtenances and any other items required for a complete and functional valve.
2. Basis of Payment: Payment shall be at the Contract Unit Price per valve installed.

F. CHECK VALVE ABOVE GROUND (BY DIAMETER) (Item No. S-n)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) check valve installed, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to install check valve as shown on the drawings, including the valve, outside weight, support stands, two coats final paint, appurtenances and any other items required for a complete and functional valve.
2. Basis of Payment: Payment shall be at the Contract Unit Price per valve installed.

G. AIR RELEASE VALVE ABOVE GROUND (BY SIZE)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) Air Release Valve installed, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to perform the connection to the force main, installation of taps, fittings, valves, spool pieces, and pipe; flushing, pressure testing, any other items required for a complete and functional system including SCH 80 PVC discharge pipe for residual liquids released from the valve to a manhole, wetwell or French drain.
2. Basis of Payment: Payment shall be made at the Contract Unit Price for each air release valve installed.

3.07 WETWELL REPLACEMENT & REPAIR

A. LIFT STATION PUMP DISCHARGE PIPE RISER (BY DIAMETER & TYPE MATERIAL) REPLACEMENT

1. Method of Measurement: The quantity to be paid for under this Section shall be per vertical foot (VF) for new submersible pump discharge pipe riser complete, operational and accepted and shall include, but is not limited to, furnishing all materials, labor, and equipment required to remove and replace pump discharge pipe including reconnection at discharge plate, connectors, stiffeners, reducers and elbows.
2. Basis of Payment: Payment shall be at the Contract Unit Price per foot of discharge pipe.

B. LIFT STATION PUMP DISCHARGE PIPE FITTINGS (BY DIAMETER & TYPE MATERIAL)

1. Method of Measurement: The quantity to be paid for under this Section shall be per fitting for new submersible pump discharge flanged pipe fittings or adapters, complete, operational and accepted and shall include, but is not limited to, furnishing all materials, labor, and equipment required to remove and replace pump discharge pipe including reconnection at discharge plate, connectors, stiffeners, reducers and elbows.
2. Basis of Payment: Payment shall be at the Contract Unit Price per vertical foot of discharge pipe.

C. LIFT STATION DISCHARGE RISER PIPE SUPPORT BRACKETS (BY DIAMETER & TYPE MATERIAL)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) new stainless steel pump discharge pipe support bracket complete, operational and accepted and shall include, but is not limited to, furnishing all materials, labor, and equipment required to remove and replace pump discharge pipe support brackets including anchors, connectors, and concrete repair.
2. Basis of Payment: Payment shall be at the Contract Unit Price per each support bracket.

D. LIFT STATION PUMP GUIDERAIL (BY DIAMETER) REPLACEMENT

1. Method of Measurement: The quantity to be paid for under this Section shall be per vertical foot (VF) for new stainless steel submersible pump guiderail complete, operational and accepted and shall include, but is not limited to, furnishing all materials, labor, and equipment required to remove and replace pump guiderails including anchors, top rail guides and concrete repair.
2. Basis of Payment: Payment shall be at the Contract Unit Price per foot of guiderail, assuming two guiderails per pump.

E. LIFT STATION PUMP LIFTING CHAIN (BY SIZE) REPLACEMENT

1. Method of Measurement: The quantity to be paid for under this Section shall be per vertical foot (VF) for new stainless steel pump lifting chain complete, operational and accepted and shall include, but is not limited to, furnishing all materials, labor, and equipment required to remove and replace pump lifting chain pipe including reconnection at pump head, fasteners and connectors.
2. Basis of Payment: Payment shall be at the Contract Unit Price per foot of lifting chain.

F. LIFT STATION PUMP DISCHARGE BASEPLATE (BY DIAMETER) REPLACEMENT

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) new submersible pump discharge baseplate complete, operational and accepted and shall include, but is not limited to, furnishing all materials, labor, and equipment required to remove and replace pump discharge baseplate including anchors and concrete repair.
2. Basis of Payment: Payment shall be at the Contract Unit Price per each baseplate.

G. LIFT STATION PUMP CABLE HANGER BRACKET (BY NUMBER OF PUMPS) REPLACEMENT

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) new stainless steel cable hanger bracket complete, operational and accepted and shall include, but is not limited to, furnishing all materials, labor, and equipment required to remove and replace cable hanger bracket including anchors and concrete repair.
2. Basis of Payment: Payment shall be at the Contract Unit Price per each bracket.

H. LIFT STATION EMERGENCY PUMP CONNECTION (BY DIAMETER)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) for new lift station emergency pump connection assembly complete, operational and accepted and shall include, but is not limited to, furnishing all materials, labor, and equipment required to install above and below ground piping, flanges, interior and exterior coatings including cam lock connectors and caps, and concrete housekeeping pad.
2. Basis of Payment: Payment shall be at the Contract Unit Price per emergency pump connection.

I. SANITARY SEWER STRUCTURE INTERIOR BLASTING OR COATING (BY SIZE & TYPE MATERIAL)

1. Method of Measurement: The quantity to be paid for under this section shall per vertical foot (VF) OR per square foot of concrete structure blasted or coated to the extents or average mill thickness described, complete and accepted and shall include, but not be limited to, furnishing all labor, materials and equipment to blast or coat new and existing concrete structures including disposal of blast material, other surface preparation and cleaning, coating in multiple layers in accordance with manufacturers guidelines or specifications. The unit price shall also include all necessary labor, materials, and equipment to enter confined space to perform the work and any other tasks required to complete the work.
2. Basis of Payment: Payment shall be at the Contract Unit Price per vertical foot OR per square foot of structure.

J. HATCHES AND COVERS (BY SIZE)

1. Method of Measurement: The quantity to be paid for under this Section shall be on per each (EA) hatch or cover. The Contractor's unit price shall include full compensation for all labor, materials and equipment required for fabrication and installation of hatches, covers and frames for new or existing concrete structures, including frames, handles, lift bars, stop levers, anchors and hinges.
2. Basis of Payment: The amount to be paid shall be the Contract Unit Price, by size, for each hatch or cover installed.

3.08 SUPPORT EQUIPMENT

A. CCTV, JETTER, PUMPER OR VACCUM TRUCK

1. Method of Measurement: The quantity to be paid for under this Section shall be per DAY (DA) OR HOUR (HR) of on-site vehicle operation. The unit price shall include an operator, helper (if needed) fuel, lubricants, materials, preparation and other miscellaneous work or materials required for the vehicle to provide and perform its support operation.
2. Basis of Payment: Payment shall be at the Contract Unit Price per DAY OR HOUR of on-site vehicle operation.

B. PUMPS, WELLPOINTS, COMPRESSORS AND SHORING

1. Method of Measurement: The quantity to be paid for under this Section shall be per DAY (DA) OR HOUR (HR) of equipment operation. The unit price shall include transport to and from the site, an operator, fuel, lubricants, materials, preparation and other miscellaneous work or materials required for the equipment to provide and perform its support operation.
2. Basis of Payment: Payment shall be at the Contract Unit Price per DAY OR HOUR of on-site equipment operation.

C. DEWATERING OPERATION DURING EXCAVATION

1. Method of Measurement: The quantity to be paid for under this Section shall be made at the lump sum (LS) basis OR (per week (WK) OR per day (DA) OR per hour (HR) basis. The contract price shall include full compensation for providing a complete dewatering system and shall include all labor, equipment, and materials for the dewatering operation for the installation of the storm drain systems and appurtenances. This item includes a stilling basin, pump noise mitigation, providing and maintaining floating turbidity barriers at all storm sewer outfalls, and other required dewatering appurtenances. Dewatering pumps shall have mitigation measures to reduce the noise level to less than 60 dBA measured at the base of residential and/or commercial office building structures. The lump sum unit price of this item also includes installation and removal of temporary soil ramps over header pipes at driveways to allow access to properties at all times during construction.
2. Basis of Payment: Payment shall be made at the Contract Lump Sum Price and shall be paid in increments in proportion to the work completed OR shall be made based on the number of Weeks, Days, Hours of pumping operation, not including assembly, setup or disassembly.

D. SHEET PILING DURING EXCAVATION (BY DEPTH OF PANELS)

1. Method of Measurement: The quantity to be paid for under this Section shall be per linear foot (LF) length of shoring measured horizontally from the start of shoring to the end, driven and installed to the depths as indicated on the plans. The price for this item shall be full compensation of labor, equipment, and materials for all work required to furnish and install the shoring and sheeting and other approved trench safety measures and appurtenances. All shoring and sheeting calculations and drawings must be signed and sealed by a Professional Engineer registered in the State of Florida at no additional cost to the City. Also included is removal of the shoring upon completion of trenching activities.
2. Basis of Payment: Payment shall be at the Contract Unit Price per linear foot of shoring utilized during construction.

E. TRENCH BOX OR TEMPORARY PANEL SHORING DURING EXCAVATION (BY TYPE)

1. Method of Measurement: The quantity to be paid for under this Section shall be per day (DA) of on-site use of trench box or temporary shoring panels used to stabilize excavations. The price for this item shall be full compensation of labor, equipment, and materials for all work required to furnish and place boxes or panels.

2. Basis of Payment: Payment shall be at the Contract Unit Price per day based upon the size of the trench box utilized during construction.

F. CLEARING & DEMOLITION DUMPSTER (BY TYPE & SIZE)

1. Method of Measurement: The quantity to be paid for under this Section shall be per pull of the dumpster. The unit price shall include transport to and from the site, loading and off-site disposal and tipping fees.
2. Basis of Payment: Payment shall be at the Contract Unit Price per pull.

G. DUMP TRUCK, WHEEL LOADER, OTHER HEAVY EQUIPMENT (BY TYPE)

1. Method of Measurement: The quantity to be paid for under this Section shall be per hour (HR) of on-site motorized equipment operation. The unit price shall include transport to and from the site, a skilled operator, fuel, lubricants, filters, materials, preparation and other miscellaneous work or materials required for the vehicle to provide and perform its support operation.
2. Basis of Payment: Payment shall be at the Contract Unit Price per hour of on-site vehicle operation..

H. WORK CREWS (BY TYPE & NUMBER OF PERSONNEL)

1. Method of Measurement: The quantity to be paid for under this Section shall be per hour (HR) of on-site work crew production. The unit price shall include transport to and from the site, hand tools, small power tools, fuel, lubricants, filters, materials, preparation and other miscellaneous work or materials required for the vehicle to provide and perform its support operation.
2. Basis of Payment: Payment shall be at the Contract Unit Price per hour of on-site vehicle operation.

3.09 WET TAPS, SADDLES & VALVES, CONNECTIONS TO EXISTING PIPES & STRUCTURES

A. WET TAP, SLEEVE & VALVE (BY DIAMETER PIPE & DEPTH)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) tapping sleeve and valve installed, complete and accepted, and shall include but not be limited to, furnishing all materials, labor, and equipment required to remove all existing surface material and protruding objects, excavation of any type of material including rock, hauling and legal off-site disposal of debris, temporary shoring, existing utility support, dewatering, installation of the tapping sleeve and gate valve, valve box, housekeeping pad as may be required, pressure testing, trench backfilling, compaction, density testing, and any other items required for a complete and functional system.
2. Basis of Payment: Payment under this item shall be made at the Contract Unit Price, by size, for each tapping sleeve and valve.

B. CONNECT TO EXISTING VALVE, FITTING OR SEWER MAIN (BY DIAMETER PIPE)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) connection to an existing force or gravity main and shall be full compensation for furnishing all materials, labor, and equipment required to remove all existing surface material and protruding objects, excavation of any type of material including rock, hauling and legal off-site disposal of debris, temporary shoring, existing utility support, dewatering, removal of fittings, cutting existing pipe, installation of sleeves, wyes, restraints on existing joints, and includes the plug valve, valve box, housekeeping pad as may be required to connect the proposed force main to the existing force main. Also included is disposal of wastewater, pressure testing, trench backfilling, compaction, density testing, and any other items required for a complete and functional system.
2. Basis of Payment: Payment shall be at the Contract Unit Price per connection completed.

C. CONNECT TO EXISTING SANITARY STRUCTURE (BY DIAMETER & DEPTH)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) connection to an existing structure and shall be full compensation for furnishing all materials, labor, and equipment including excavation, dewatering, shoring, coring, cutting, adjusting, connecting, removing, and all other necessary activities required to connect the proposed sewer main improvements to the existing sewer structure pipes as indicated on the plans.
2. Basis of Payment: Payment shall be at the Contract Unit Price per each point of connection completed.

3.10 SITE WORK PAY ITEMS

A. CONCRETE SIDEWALK (BY THICKNESS)

1. Method of Measurement: The quantity to be paid for under this Section shall be per square yard (SY) of sidewalk installed and accepted. The contract unit price shall include compensation for all labor, material, and equipment required to install the sidewalk in accordance with the plans and specifications. The contract unit price shall also include rough grading, 6" subgrade compaction, forms, expansion joints, fibermesh or welded wire mesh, broom finish and all other miscellaneous work required to complete the work in accordance with the City of West Beach specifications.
2. Basis of Payment: Payment shall be at the Contract Unit Price per square yard of sidewalk installed to the limits shown on the plans or as directed by the Engineer in the field during construction.
3. Exceptions: Any sidewalk that is broken incidental to construction shall be replaced at the Contractor's expense

B. CONCRETE FLATWORK (BY THICKNESS)

1. Method of Measurement: The quantity to be paid for under this Section shall be per square yard (SY) of slab or other flatwork installed and accepted. The contract unit price shall include compensation for all labor, material, and equipment required to install the slab in accordance with the plans and specifications. The contract unit price shall also include rough grading, 10" subgrade compaction, forms, expansion joints, visqueen vapor barrier, fibermesh and steel reinforcing bars, broom finish and all other miscellaneous work required to complete the work in accordance with the City of West Beach specifications.
2. Basis of Payment: Payment shall be at the Contract Unit Price per square yard of flatwork installed to the limits shown on the plans or as directed by the Engineer in the field during construction.

C. SUBGRADE, BASE AND ASPHALT REMOVAL & REPAIR (BY DIAMETER OF PIPE)

1. Method of Measurement: The quantity to be paid for under this Section shall be per square yard (SY) of base and asphalt trench removal and repair placed and accepted. Specifically, this item shall be for all asphalt and base repair for the installation, removal, restraint or access to pipes, fittings, structures, and valves, except for any work designated to be paid for separately or to be specifically included in the costs of other work under the Contract. The Unit Price shall include full compensation for all labor, materials, and equipment necessary to perform base and asphalt trench removal and repair and shall include, but not be limited to, sawcutting, excavation, base placement, grading and compaction, density testing, asphalt placement in accordance with the plans and specifications and the City of West Palm Beach Standards, as applicable, as well as installation of temporary or permanent roadway and parking lot striping, as applicable.
2. Basis of Payment: Payment shall be at the Contract Unit Price per square yard of pavement removed to the limits shown on the plans or as directed by the Engineer in the field during construction.

D. OPEN CUT PAVEMENT REPAIR

1. Method of Measurement: The quantity to be paid for under this Section shall be per square yard (SY) and shall include compensation for multiple mobilizations, labor, materials, and equipment required to remove, replace and repair the pavement over the pipe trench, including straight sawcuts, tack coats and two 1" lifts of S-III asphaltic concrete. The contract unit price shall also include other miscellaneous work required to complete the work in accordance with the City of West Beach specifications.
2. Basis of Payment: Payment shall be at the Contract Unit Price per square yard of pavement and base removed to the limits shown on the plans or as directed by the Engineer in the field during construction.

E. ASPHALTIC CONCRETE PAVEMENT (BY THICKNESS) TYPE S-1, S-3 OR SUPREPAVE)

1. Method of Measurement: The quantity to be paid for under this Section shall be per square yard (SY) of asphalt surface course and shall include all labor, material, and equipment required to construct a final surface course. The unit prices shall include compensation for multiple mobilizations, labor, materials, and equipment required to construct the new asphalt concrete surface courses. The contract unit price shall also include other miscellaneous work required to complete the work in accordance with Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition and the City of West Beach specifications. This unit price shall also include all necessary labor, materials, and equipment to adjust the valve boxes, manholes, rims, inlets, or other fixtures to final grade, transitions to existing pavement, milling existing asphalt at tie-ins, tack coating, compaction, rolling, brooming, sawcutting and any other work required to complete the work.
2. Basis of Payment: Payment shall be at the Contract Unit Price per square yard of asphalt pavement installed to the limits shown on the plans or as directed by the Engineer in the field during construction.

F. CONCRETE CURB

1. Method of Measurement: The quantity to be paid for under this Section shall be on a linear foot (LF) basis for the concrete curb installed and accepted by the City. The contract unit price shall include all labor, materials, and equipment necessary to furnish and prepare the 12 inch deep sub-grade (LBR 100) curb pad and install the concrete curbs in accordance with the plans and specifications. The contract unit price shall also include other miscellaneous work required to complete the work in accordance with Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition and the City of West Beach specifications.
2. Basis of Payment: Payment shall be at the Contract Unit Price per linear foot of curb installed to the limits shown on the plans or as directed by the Engineer in the field during construction.

G. SOD – BAHIA

1. Method of Measurement: The quantity to be paid for under this Section shall be on a square yard (SY) basis. The unit price bid for this item shall be full compensation for all labor, materials and equipment required for soil preparation and sod placement in accordance with the drawings and specifications. The unit price bid for this item shall include all watering for planting and establishment of the sod during the contract and guarantee period.
2. Basis of Payment: Payment shall be at the Contract Unit Price per square yard of sodding established to the limits shown on the plans or as directed by the Engineer in the field during construction.

H. SOD - ST AUGUSTINE OR BERMUDA

1. Method of Measurement: The quantity to be paid for under this Section shall be on a square yard (SY) basis. The unit price bid for this item shall be full compensation

for all labor, materials and equipment required for soil preparation and sod placement in accordance with the drawings and specifications. The unit price bid for this item shall include all watering for planting and establishment of the sod during the contract and guarantee period.

2. Basis of Payment: Payment shall be at the Contract Unit Price per square yard of sodding established to the limits shown on the plans or as directed by the Engineer in the field during construction.

I. YARD GRADING w/ #57 STONE & GEOTEXTILE FILTER FABRIC (TYPE D-2, D-3, D-4)

1. Method of Measurement: The quantity to be paid for under this Section shall be on a square yard (SY) basis. This work shall include, but not be limited to, excavation, grading, stripping and placement of final cover.
2. Basis of Payment: Payment shall be at the Contract Unit Price per square yard of geotextile placed to the limits shown on the plans or as directed by the Engineer in the field during construction.

J. EXCAVATION AND BACKFILL

1. Method of Measurement: The quantity to be paid for under this Section shall be on a cubic yard (CY) basis calculated by the method of average end areas. Work shall include, but not be limited to, excavation, placement of embankment, transporting, spreading, grading and compacting soil within the site limits. No payment shall be made for excavation related to other work (ie pipe trenching, road base grading, curb placement, etc). No payment will be made for excavation or filling of areas outside the lines and grades shown on the plans.
2. Basis of Payment: Payment shall be made at the Contract Unit Price per cubic yard (CY) bank measure.

K. PRESSURE WASHING

1. Method of Measurement: The quantity to be paid for under this Section shall be on a square foot basis and shall include, but not be limited to, furnishing all materials, labor, and equipment required to pressure wash work zone, staging areas, sidewalks, curbs, driveways, including debris removal other restoration and/or clean up required for a complete project except for any work designated to be paid for separately or to be specifically included in the costs of other work under the Contract.
2. Basis of Payment: Payment shall be at the Contract Unit price per square foot.

L. REMOVAL OF EXISTING PIPE (BY DIAMETER AND DEPTH BURY)

1. Method of Measurement: The quantity to be paid for under this Section shall be per linear foot (LF) of pipe removed and shall include, but not be limited to, furnishing all materials, labor, and equipment required to remove all existing surface material and protruding objects, excavation of any type of material including rock, temporary shoring, dewatering, removal of pipe, hauling and legal off-site disposal of debris, trench backfilling, compaction, density testing, support of existing aboveground and below ground improvements to remain and be protected, and any other items required for a complete and functional system.

2. Basis of Payment: Payment shall be at the Contract Unit Price, by size and depth of bury, per linear foot of pipe removed

M. REMOVAL OF MANHOLES, INLETS OR VAULTS. (BY SIZE AND DEPTH OF BURY)

1. Method of Measurement: The quantity to be paid for under this Section shall be per each (EA) existing structure removed, complete and accepted and shall include, but not be limited to, furnishing all materials, labor, and equipment required to remove all existing surface material and protruding objects, excavation of any type of material including rock, temporary shoring, dewatering, removal of existing structures, hauling and legal off-site disposal of debris, trench backfilling, compaction, density testing, including support of existing aboveground and below ground improvements to remain and be protected, and any other items required for a complete and functional system.
2. Basis of Payment: Payment shall be at the Contract Unit Price per structure removed.

3.11 ALLOWANCE PAY ITEMS

A. PERMIT AND FEE ALLOWANCE

1. Method of Measurement: The quantity to be paid for under this Section shall be the actual permit and other fees charged by local governmental agencies, including, but not limited to, all license fees, business tax fees, permit fees, impact fees, or inspection fees, payable by the contractor to the unit of government that issued the bidding document for performance of the work elements. The amount to be paid under this allowance includes recording fees, parking meter fees, sign permits, building and right of way permits and inspection fees, except for re-inspection fees resulting from non-compliant work.
2. Basis of Payment: The amount to be paid under this allowance shall be the fees charged by approving agencies that are charged to, or required to be obtained by, the contractor. Receipts from local governmental agencies shall be submitted as proof of payment. All un-used allowance funds will be retained by the Owner.

B. MAINTENANCE OF TRAFFIC

1. Method of Measurement: The quantity to be paid for under this Section shall be based on actual costs. Only direct reimbursable costs from FDOT Certified Subcontractors for labor, equipment and materials, including rental of cones, barricades, directional and other signage will be paid for under this item. The Contractor's reimbursement shall include full compensation for all work related to the maintenance of traffic during the construction of the improvements shown on the plans, and any other related work, The work includes, but is not limited to, furnishing all materials, labor, and equipment required to install, maintain, and remove any and all required traffic control measures to control the flow of traffic through the work area within the public rights of way during the various phases of the project. Preparation and submittal of Maintenance of Traffic (MOT) plans for any required agencies as well as coordination with these parties shall also be included in this item. All work shall be in accordance with applicable local, state, and federal requirements.

2. **Basis of Payment:** Payment shall be made at actual costs and invoices submitted by qualified sub-contractors, plus 5% for Contractor's coordination. The City reserves the right to award any, all or none of the money associated with this allowance. All un-used allowance funds will be retained by the Owner.

C. GEOTECHNICAL TESTING (ALLOWANCE)

1. **Method of Measurement:** The quantity to be paid for under this Section shall be based on actual costs for materials sampling and testing performed in accordance with the current ASTM standards and as prescribed under FDOT testing specifications. Work shall include sampling, transportation to a City approved laboratory facilities, sample preparation and testing and reporting on the values determined under the laboratory testing. All samples used in testing shall be stored by the testing laboratory until the City's PROJECT MANAGER provides written release to allow disposal of samples. The Contractor will be responsible to pay for all failed tests and for subsequent retesting to meet quality and standard conditions. Whenever, nonconformance is detected or determined by the City's PROJECT MANAGER as a result of the tests, the Contractor shall bear the full cost of additional tests which are ordered by the City's PROJECT MANAGER to ascertain that subsequent conformance is obtained with the contract documents.
2. **Basis of Payment:** Payment shall be made at actual costs and invoices submitted by qualified sub-contractors, plus 5% for Contractor's coordination. The City reserves the right to award any, all or none of the money associated with this allowance. All un-used allowance funds will be retained by the Owner.

D. SOFT DIGS (ALLOWANCE)

1. **Method of Measurement:** The quantity to be paid for under this Section shall be based on actual costs. Under the direction of the Engineer, the Contractor is to verify location and elevation of all existing utility conflicts and crossings as needed by soft digging the locations using "GroundHound" or "InfraMap" or another similar licensed locating service in the project area before proceeding with construction.
2. **Basis of Payment:** Payment shall be made at actual costs and invoices submitted by qualified sub-contractors, plus 5% for Contractor's coordination. The City reserves the right to award any, all or none of the money associated with this allowance. All un-used allowance funds will be retained by the Owner.

E. MISCELLANEOUS FITTINGS, PARTS & MATERIAL (ALLOWANCE)

1. **Method of Measurement:** The quantity to be paid for under this Section shall be based on actual costs. When authorized by the Project Manager, the Contractor shall purchase site specific fittings, parts or other materials not listed elsewhere herein but necessary to complete the work. The Contractor shall verify the specific items and provide the Project Manager with a list of such items prior to acquisition.
2. **Basis of Payment:** Payment shall be made at actual costs and invoices submitted by the Contractor from establish parts houses or manufacturers, plus 10% for Contractor's coordination, ordering and handling. The City reserves the right to award any, all or none of the money associated with this allowance. All un-used allowance funds will be retained by the Owner.

END OF SECTION

SECTION 01110

ENVIRONMENTAL PROTECTION

PART 1 - GENERAL

1.01 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 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 of importance to human life; affect other species of importance to man; 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. 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 such as diversion channels, sedimentation or filtration systems, berms, staked hay bales, seeding, mulching or other special surface treatments as are required to prevent silting and muddying of streams, rivers, impoundments, lakes, etc. All erosion control measures shall be in place in an area prior to any construction activity in that area.
- D. These Specifications are intended to ensure that construction is achieved with a minimum of disturbance to the existing ecological balance between a water resource and its surroundings.

1.02 APPLICABLE REGULATIONS

- A. Comply with all applicable Federal, State and local laws and regulations concerning environmental pollution control and abatement.

1.03 NOTIFICATIONS

- A. The ENGINEER 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 ENGINEER, of any non-compliance with State or local requirements. The CONTRACTOR shall, after receipt of such notice from the ENGINEER or from the regulatory agency through the ENGINEER, immediately take corrective action. Such notice, when delivered to the CONTRACTOR or his 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 OWNER 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, meet with the ENGINEER to develop mutual understandings relative to compliance with this provision and administration of the environmental pollution control program.
- B. Remove temporary environmental control features, when approved by the ENGINEER and incorporate permanent control features into the project at the earliest practicable time.

PART 2 - PRODUCTS – Not used.

PART 3 - EXECUTION

3.01 EROSION CONTROL

- A. Provide positive means of erosion control such as shallow 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 areas shall also be used to carry away water resulting from dewatering of excavated areas. At the completion of the work, ditches shall be backfilled and the ground surface restored to its original condition.

3.02 PROTECTION OF SURFACE WATERS

- A. Care shall be taken to prevent, or reduce to a minimum, any damage to any surface water from pollution by debris, sediment or other material, or from the manipulation of equipment and/or materials in or near such surface waters. Water that has been used for washing or processing, or that contains oils or sediments that will reduce the quality of the surface water, shall not be directly returned to the surface water. Such waters will be diverted through a settling basin or filter before being directed into the surface waters.
- B. The CONTRACTOR shall not discharge water from testing operations directly into any surface water.
- C. All preventative measures shall be taken 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 OWNER. CONTRACTOR shall submit two copies of approved contingency plans to the ENGINEER

3.03 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. 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. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorage unless specifically authorized by the ENGINEER.

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 boards, planks, or poles 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. The ENGINEER will decide what method of restoration shall be used and whether damaged trees shall be treated and healed or removed and disposed of.
 - 1. All scars made on trees by equipment, construction operations, or by the removal of limbs larger than 1-inch in diameter shall be coated as soon as possible with an approved tree wound dressing. 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.
 - 2. Trees that are to remain, either within or outside established clearing limits, that are subsequently damaged by the CONTRACTOR and in the opinion of the ENGINEER cannot be saved, shall be immediately removed and replaced.
- E. The locations of the CONTRACTOR's storage and other construction buildings, required temporarily in the performance of the Work, shall be cleared as portions of the job site or areas to be cleared as shown on the Drawings and shall require written approval of the ENGINEER and shall not be within wetlands or floodplains. The preservation of the landscape shall be an imperative consideration in the selection of all sites and in the construction of buildings. Drawings showing storage facilities shall be submitted for approval of the ENGINEER.
- F. All debris and excess material will be disposed of outside wetland or floodplain areas in an environmentally sound manner.

3.04 PROTECTION OF AIR QUALITY

- A. Burning - The use of burning at the project site for the disposal of refuse and debris will not be permitted.
- B. Dust Control - The CONTRACTOR will be required to maintain all excavations, embankments, stockpiles, access roads, plant sites, 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 permitted to control dust. The use of petroleum products is prohibited. The use of chlorides may be permitted with approval from the ENGINEER.
- 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 ENGINEER.

3.05 MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION

- A. During the life of this Contract, 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.

3.06 NOISE CONTROL

- A. The CONTRACTOR shall make every effort to minimize noises caused by his/her operations. Equipment shall be equipped with silencers or mufflers designed to operate with the least possible noise in compliance with City Noise Ordinance.

END OF SECTION

SECTION 01570
MAINTENANCE OF TRAFFIC

PART 1 - GENERAL

1.01 DESCRIPTION:

- A. 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 laws and regulation and subject to approval and permits by City, Palm Beach County (if applicable), and F.D.O.T. (if applicable).

1.02 SUBMITTAL:

- A. Submit Traffic Control Plans and Construction Schedule to the City of West Palm Beach, Palm Beach County (if applicable), and the F.D.O.T. (If applicable) for review and approval at least 10 days prior to the start of construction.

1.03 SIGNS AND DEVICES:

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

1.04 CONSTRUCTION PARKING CONTROL:

- A. Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles and Owner's operations.

1.05 FLAGPERSONS:

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

1.06 LIGHTS:

- A. Use lighted barricades and/or lighted directional arrow signs during hours of low visibility to delineate traffic lanes and to guide traffic.

1.07 SPECIFICATIONS BY REFERENCE:

- A. State of Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Section 102, 2013 Edition.
- B. State of Florida Manual of Traffic Control and Safe Practices for Street and Highway Construction, Maintenance and Utility Operations.

1.08 SPECIFIC TRAFFIC CONTROL:

- A. Contractor shall maintain local resident/tenant access 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, unless specific conditions limit that ability. 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, Fire Department, Solid Waste Collection and Palm Tran transportation for whom the Contractor will provide satisfactory access at all times.
- D. Contractor shall maintain, at a minimum, one travel lane, each direction, when performing work within the public right-of-way.

PART 2 - PRODUCTS

2.01 TRAFFIC SIGNS AND DEVICES:

- A. All traffic control devices, signs and equipment needed to direct traffic and pedestrians through the construction zones shall comply with F.D.O.T. Roadway and Traffic Design Standards, 2013 Edition; Index No. 604.

PART 3 - EXECUTION

3.01 EXECUTION:

- A. The Contractor shall arrange his 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 contact the City for approval prior to completely blocking off the street.

END OF SECTION

SECTION 02050

DEMOLITION AND RENOVATION

PART 1 - GENERAL

1.01 SCOPE OF WORK:

- A. Furnish all labor, materials, equipment, and incidentals required for demolition, renovation, removal and disposal work as shown on the Contract Drawings and as specified herein.
- B. Included, but not limited to, are demolition and removals of existing materials, equipment, or work necessary to install the new work as shown on the Contract Drawings and as specified herein. Demolition includes structural concrete, foundations, walls, doors, windows, structural steel, metals, roofs, masonry, attachments, appurtenances, piping, electrical and mechanical equipment, paving, curbs, walks, fencing, and other existing facilities.
- C. Demolitions and removals which may be specified under other Sections shall conform to the requirements of this Section.
- D. Where applicable, these specifications call attention to certain activities necessary to maintain and facilitate continuous operation of existing facilities during and immediately following construction and do not necessarily cover all of the required activities. The CONTRACTOR shall exercise due concern for existing facilities operation and shall direct all his activities toward maintaining continuous operation and minimization of operation.

1.02 SUBMITTALS:

- A. Submit to the ENGINEER as per Section 01300 for approval, six copies of proposed schedule of intended operations for demolition of any existing facilities prior to the start of work. Include in the schedule the coordination of shutoff, capping and continuation of utility services as required.
- B. Provide a detailed sequence of demolition and removal work to ensure the uninterrupted operation of the Owner's facilities.
- C. Before the start of demolition work, all modifications necessary to bypass the affected structure will be completed. Actual work will not begin until the ENGINEER has inspected, reviewed, and authorized the start of the demolition work, in writing.
- D. The above procedure must be followed for each individual demolition operation.

1.03 CONDITION OF STRUCTURES:

- A. The OWNER and the ENGINEER assume no responsibility for the actual condition of any structures to be demolished or modified.
- B. Conditions existing at the time of inspection for bidding purposes will be maintained by the OWNER insofar as practicable. However, variations within a structure may occur prior to the start of demolition work.

1.04 RULES AND REGULATIONS:

- A. The CONTRACTOR shall determine the applicability and file notifications to the appropriate agencies with regard to demolition work that requires clearances for asbestos containing material (ACMs) handling or any other materials requiring special management. It should be noted that, in any demolition event, notifications must be filed in accordance with the National Emission Standards for Hazardous Air Pollutants (NESHAPS) as described in 40 CFR Part 61, Subpart M and Chapter 62-204 of the Florida Administrative Code (FAC).
- B. No building or structure, or any part thereof, shall be demolished until an application has been filed by the CONTRACTOR with the appropriate Building Department and a permit issued. Any fee for this permit shall be the CONTRACTOR'S responsibility.

1.05 DISPOSAL OF MATERIAL:

- A. Where directed by the ENGINEER, salvageable material and equipment shall become the property of the OWNER. The CONTRACTOR shall dismantle all such items to a size that can be readily handled, clean and store on or adjacent to the site in a protected place specified by the ENGINEER, or loaded onto trucks provided by the CONTRACTOR.
- B. The OWNER will select the material and items of equipment that shall remain the property of the OWNER and which shall be stored where directed.
- C. Materials and items of equipment not selected for retention by the OWNER shall become the CONTRACTOR'S property and must be removed from the site disposed of in accordance with State and Federal regulations.
- D. Concrete, concrete block and excess bricks shall be disposed of as specified below.
- E. The storage or sale of removed items will not be allowed on the site.

1.06 TRAFFIC AND ACCESS:

- A. Conduct demolition and the removal of equipment and debris to ensure minimum interference with occupied or used facilities.
- B. Special attention is directed towards maintaining safe and convenient access to any existing facilities by personnel and vehicles.
- C. Do not close or obstruct accesses to used facilities without permission from the ENGINEER. Provide alternate routes around closed or obstructed access ways.

1.07 PROTECTION:

- A. Conduct operations to minimize damage by falling debris or other causes to adjacent facilities. Provide interior and exterior shoring, bracing, or support to prevent the movement, settlement or collapse of structures to be demolished and adjacent facilities to remain.
- B. Exercise precautions for fire prevention. Acceptable fire extinguishing apparatus shall be available at all times in areas where demolition work is being performed using burning torches. Burning of demolition debris shall not be permitted on or near the site.

1.08 DAMAGE:

- A. Promptly repair damage caused to adjacent facilities by demolition operations as directed by the ENGINEER and at no cost to the OWNER. Repairs shall be made to a condition equal or better than that which existed prior to construction.

1.09 UTILITIES:

- A. Maintain existing utilities in service and protect against damage during demolition operations.
- B. Do not interrupt existing utilities serving occupied or used facilities, except when authorized by the ENGINEER. Provide temporary services acceptable to the ENGINEER during interruptions to existing utilities.
- C. The CONTRACTOR shall assist the OWNER in shutting off utilities required for the performance of demolition operations.
- D. The CONTRACTOR shall be solely responsible for making all necessary arrangements and for performing any necessary work involved in connection with the discontinuance or interruption of all utilities or services under the jurisdiction of the public and private utility companies.
- E. All utilities being abandoned shall be disconnected and terminated at the service mains in conformance with the requirements of the utility companies or the municipality owning or controlling them.

1.10 REMOVAL OF EXISTING PROCESS EQUIPMENT, PIPING AND APPURTENANCES:

- A. Subject to the constraints of maintaining the existing facilities in operation and prior to demolition, existing process equipment, non-buried valving, piping and appurtenances not necessary for the operation of the new facilities shall be removed.
- B. All equipment, piping and appurtenances shall be cleaned, flushed and drained. Equipment to be retained by the OWNER, as previously specified, shall be dismantled sufficiently and thoroughly cleaned and drained. All valves shall be left open. All discontinued piping shall be capped and sleeves and openings remaining after removal of the existing equipment, piping, and appurtenances shall be plugged and sealed as shown on the Drawings and as directed by the ENGINEER.

1.11 DEMOLITION:

- A. Demolition shall be performed to the limits shown on the Drawings or, if items to be demolished extend below or beyond said limits, then demolition shall be performed at no additional cost to the owner so as to satisfactorily achieve the intent of the drawings and specifications.
- B. Wet down work during demolition operations to prevent dust from arising. Provide protection from inclement weather for materials, equipment, and personnel located in partially dismantled structures.
- C. Existing, below grade slabs to be abandoned but not demolished shall have holes cut to allow for positive drainage and the prevention of flotation.

- D. Remove all existing work as indicated on the Drawings or as required and prepare adjoining areas for installation of the proposed work or for blocking up and filling in of existing openings.
- E. All demolition debris shall become the property of the CONTRACTOR and shall be removed from the site and disposed off the site in conformance with all applicable laws and regulations. Demolition debris shall not be used for fill or backfill.
- F. Blasting or the use of explosives will not be allowed for demolition work.
- G. CONTRACTOR shall remove from the site all debris resulting from the demolition operations as it accumulates. Upon completion of the work, all materials, equipment, waste and debris of every sort shall be removed and the premises shall be left clean, neat and orderly.

1.12 MISCELLANEOUS CONCRETE SLABS AND SIDEWALKS:

- A. Remove miscellaneous concrete slabs and sidewalks where shown on the Drawings or where necessary for the construction of new structures or modifications of existing structures. All concrete sidewalks and curbing not required after the new work is constructed shall be removed and disposed of as specified hereinbefore.

PART 2 - PRODUCTS - Not Used.

PART 3 - EXECUTION - Not Used.

END OF SECTION

SECTION 02225

EXCAVATION, BACKFILL, AND COMPACTION

PART 1 - GENERAL

1.01 SCOPE OF WORK:

- A. The extent of trenching, backfill and compacting is shown on the drawings and/or specified. This section includes furnishing equipment, labor and material, and performing all operations necessary and incidental to perform the required work.

1.02 APPLICABLE CODES, STANDARDS AND SPECIFICATIONS:

- A. American Association of State Highway and Transportation Officials (AASHTO).
- B. Florida Department of Transportation "Standard Specifications for Road and Bridge Construction," Sections 120 and 125, 2013 Edition.
- C. Florida Trench Safety Act (90-96), CS/HB 3183.
- D. Underground Facility Damage Prevention and Safety Act (FS556).

1.03 TRENCH SAFETY SYSTEM:

- A. The Contractor shall follow the provisions of the "Florida Trench Safety Act", which incorporates OSHA Standards 29CFR's 1926.650, Subpart P as the State's trench safety standards. Trench excavation exceeding 5 feet in depth shall have an adequate safety system consisting of sheeting and shoring, suitable trench box, or other suitable system meeting the requirements of the Act.
- B. Contact Sunshine at 1-800-432-4770 or 811.
- C. The Contractor shall be solely responsible for making all excavations in a safe manner. Provide appropriate measures to retain side slopes to ensure that persons working in or near the excavation are protected.

PART 2 - PRODUCTS

2.01 CONSTRUCTION WATER:

- A. Conform to Section 01019 GENERAL REQUIREMENTS.

PART 3 - EXECUTION

3.01 OBSTRUCTIONS:

- A. This item refers to obstructions which may be removed and do not require replacement. Remove obstructions within the trench area or adjacent thereto without additional compensation. Obstructions of such include, but are not limited to, tree roots, stumps, abandoned piling, buildings and concrete structures, logs, and debris of all types without additional compensation. The Engineer may, if requested, make changes in the trench alignment to avoid major obstructions, if such alignment changes can be made, within the easement or right-of-way without adversely affecting the intended function of the facility, at no additional cost to the Owner.

3.02 PROTECTION OF EXISTING UTILITIES AND STRUCTURES:

- A. Conform to Section 01019 GENERAL REQUIREMENTS.

3.03 TRENCH EXCAVATION:

- A. The Contractor shall perform all aspects of excavation, of every description, and of whatever substance encountered to the dimensions and depths indicated on the drawings or as necessary. Excavation shall be unclassified regardless of material encountered. Unless otherwise indicated, excavation shall be by open cut.

No separate payment for excavation as such shall be made. The cost thereof shall be included in the unit prices of pipe installation.

The Contractor shall make their own estimate of the kind and extent of the various materials which will be encountered in the excavation. Undercutting will not be permitted, except when ordered by the Engineer.

- B. Where it is necessary to trim branches for equipment clearance, all severed root ends or cuts to branches over 3" diameter shall be treated with an asphalt base pruning paint. Backfill over exposed roots as soon as possible.
- C. Except in rock-and-water-bearing earth, mechanical excavation shall be limited to four inches above the elevation of the pipe invert. All additional excavation shall be made manually. Excavation in rock shall be made by a method approved by the Engineer.

3.04 SHORING, SHEETING AND BRACING:

- A. The Contractor shall provide all trench and structural bracing, shoring, or sheeting necessary to construct and protect the excavation from damage to existing utilities of all types, roadways, structures, and private property, and as required for the safety of the public, and employees.
- B. Increase trench widths accordingly by the thickness of the sheeting. Maintain sheeting in place until the pipe has been placed and backfilled at the pipe zone.
- C. Sheeting shall be removed by the Contractor during backfilling operations in a manner that will not damage the pipe or permit voids in the backfill.

- D. If approved by the Engineer, sheeting can be left in place. The top of such sheeting left in place shall be cut off at a minimum elevation of 2.5 ft. below finished grade.
- E. All sheeting, shoring and bracing of trenches shall conform to the safety requirements of the Trench Safety Act and to the Federal, State or local public agency having jurisdiction.

3.05 DEWATERING:

- A. Conform to Section 02401 DEWATERING.

3.06 DISPOSAL OF REMOVED WATER:

- A. Water pumped from the trench or other excavation shall be disposed of in storm sewers having adequate capacity, canals or suitable disposal pits as approved by the Engineer. The Contractor is responsible for acquiring all permits required to discharge the water and shall protect waterways from turbidity during the dewatering operation. In areas where adequate disposal sites are not available, partially backfilled trenches may be used for water disposal only when the Contractor's plan for trench disposal is approved in writing by the Engineer. The Contractor's plan shall include temporary culverts, barricades and other protective measures to prevent damage to property or injury to any person or persons.
- B. Dispose of the water in a manner to prevent flooding of streets and damage to adjacent property. Drainage of trench water through the pipeline under construction is prohibited.
- C. Engines driving dewatering pumps shall be equipped with residential type mufflers.

3.07 TRENCH WIDTH:

- A. The minimum width of the trench shall be equal to the outside diameter of the pipe at the joint plus 12 in. each side of pipe for sheeted trench, with the maximum width of trench, measured at the top of the pipe, not to exceed the outside pipe diameter, plus the appropriate sloped trench wall to meet OSHA requirements, unless otherwise shown on the drawings.
- B. Confine trench widths to dedicated rights-of-way, unless construction easements have been obtained from the effected property Owners.
- C. Trench walls shall be maintained vertical from the bottom of the trench to a line measured at the top of the pipe. From the top of the pipe to the surface the trench walls shall be as vertical as possible under soil condition.

3.08 OPEN TRENCH:

- A. The extent of open trench shall be limited so that there is no more than 100 feet of open trench in advance of the pipe laying operation.
- B. Pipe trenches across roadways and driveways shall be backfilled as soon as pipe is installed. Where, in the opinion of the Engineer, adequate detour facilities are not available, no trench shall be left open across a roadway or commercial property driveway where adequate detour routes are not available for a period in excess of 30 minutes, or as directed by the governing authority.

- C. All open trenches shall be protected by the Contractor with barriers, warning devices and traffic control devices, which shall be kept in the correct position, properly directed and clearly visible at all times.
- D. All open trenches shall be backfilled at the end of the day and protected with appropriate signage, reflective tapes and devices. The barrier, warning and traffic control devices, as conformed to F.D.O.T. rules and regulations, shall be suitably lighted at all times.

3.09 LOCATION OF EXCAVATED MATERIALS:

- A. Excavated materials suitable for backfill shall be piled in an orderly manner at a sufficient distance from the trench to avoid overloading and to prevent slides or cave-ins.
- B. Place the excavated material only within the construction easement, right-of-way or approved working area. Do not obstruct any private driveways or public traveled roadways, streets, sidewalks, or driveways. Conform to all Federal, State and local codes governing the safe loading of all trenches with excavated material.

3.10 UNSTABLE SUBGRADE:

- A. All pipe and other structures shall be provided with a stable foundation; any material which, by reason of kind or condition, is not or cannot be made stable by drainage or compaction shall be removed or replaced.
- B. In the event that an unstable material is encountered at or below the excavation depth specified and/or shown on the drawings, the Engineer shall be notified. Such material shall be removed and replaced with suitable material.
- C. For the purpose of this specification, muck, peat, and other highly organic soils shall be considered to be unstable material. In addition, any soil which is or might become wet to such a degree that its moisture content is equal to or greater than 90% of its liquid limit will have to be specifically approved by the Engineer with regard to stability or shall be considered to be unstable material requiring removal and replacement.
- D. If muck is encountered, it shall be completely removed in accordance with F.D.O.T. Roadway and Traffic Design Standard Index 500.

3.11 OVERDEPTH EXCAVATION:

- A. Where unauthorized excavation occurs, the bottom of the excavation shall be brought up to the proper excavation elevation utilizing suitable and properly compacted backfill material at no additional expense to the Owner.

3.12 DISPOSAL OF EXCESS EXCAVATED MATERIAL AND DEBRIS:

- A. The Contractor, at his own expense, shall dispose of all excavated materials not suitable for backfill at an appropriate legal site.

3.13 OTHER STRUCTURES:

- A. Excavation shall be carried to the depths indicated and shall conform to the shape of the structure with sufficient allowance for setting forms, inspection, and proper performance of the work.

3.14 TRENCH BACKFILL:

A. MATERIAL:

1. Backfill material shall be excavated material, predominately sandy material and essentially free of rock, stones, organic material, asphaltic concrete, clay, concrete, boulders and other deleterious material.
 - a. Pipe Embedment:

The backfill material required for placement around the pipe and to a depth of 1 foot above the top of the pipe shall consist of clean, fine to medium sand or a mixture of sand, shell or crushed rock with a maximum size of 3/4" and not more than 10 percent passing the U.S. Standard Number 200 sieve, properly graded and mixed so that fine grain material from the side walls of the trench or backfill above the embedment will not migrate into the backfill material.
 - b. Above Pipe Embedment:

The backfill material used to bring the trench to final subgrade from a depth of 1 foot above the top of the pipe shall consist of sand or a mixture of clean mineral soils with no particle size larger than 3-1/2".
 - c. Additional Fill:

If sufficient suitable backfill material is not available from the excavation, additional fill meeting the above requirements shall be provided and paid for by the Contractor.

B. BACKFILL OPERATION:

1. Trench:
 - a. The pipe trench shall be backfilled immediately after the pipe is laid, unless other protection for the pipe line is provided. Backfill materials shall be selected, deposited and compacted so as to eliminate the possibility of lateral displacement of the pipe.
2. Under Pipe:
 - a. The bedding surface for the pipe shall provide a firm foundation of uniform density throughout the entire length of the pipe. The pipe shall be carefully bedded in soil foundation that has been accurately shaped and rounded to conform to the lowest 1/3 of the outside circular portion of the pipe for its entire length, and when necessary, shall be tamped to secure uniform, firm support.
 - b. Where bell and spigot pipe is used, the bell holes shall be deep enough to ensure that the bell does not bear on the bottom of the excavation, and shall not be excessively wide in the longitudinal direction of the pipe.
3. Over Pipe:
 - a. From the centerline of the pipe, fittings and appurtenances, to an elevation two feet above the top of the pipe, the trench shall be backfilled by hand or by approved mechanical methods.
 - b. Backfilling material shall be deposited in the trench for its full width on each side of the pipe and appurtenances. Backfilling shall be carried out simultaneously on both sides of the pipe.
 - c. Do not push backfill into the trench in such a way as to permit free fall of the material until at least 2 feet of cover is provided over the top of the

pipe. Under no circumstances allow sharp, heavy pieces of material to drop directly onto the pipe or the tamped material around the pipe.

C. COMPACTION EQUIPMENT:

1. Compaction equipment shall be of suitable type and adequate to obtain the amount of compaction specified. Compaction equipment shall be operated in strict accordance with the manufacturer's instructions and recommendations and shall be maintained in such condition that it will deliver the manufacturer's rated compactive effort.
2. Hydro-compaction (puddling) of the backfill material will not be permitted.

D. PLACING AND COMPACTION:

1. The backfill material placed around the pipe to final subgrade, shall be compacted to a density of not less than 98% the maximum dry density as determined by of AASHTO Method T-180.
2. The fill lift thickness shall be uniformly compacted and restricted to 8 inches maximum. Particular care shall be taken to insure that the backfill at the haunch is free from voids and is properly compacted.

E. COMPACTION TESTS:

1. The Engineer may at any time instruct the Contractor to partially excavate a previously backfilled trench or temporarily backfilling of a short section of the trench for the purpose of obtaining measurements of the density of the backfill.
2. The cost of the partial excavation and restoration of the backfill will be paid for by the Contractor.
3. The City will pay for the proctors and density tests. Any test failures will be paid by the Contractor.
4. Proctor and density tests shall be taken along the pipe, and at locations of manholes, inlets, and valves. The location, depth, and number of the tests shall be as selected by the Engineer. Maximum intervals between tests shall be 300 feet.

F. STRUCTURAL ELEMENTS:

1. Backfill adjacent to structural elements shall be placed, as far as practical, as the adjacent structural elements have been completed and accepted. Backfilling against concrete shall be done only when approved.
2. Compaction adjacent to structural elements shall be performed by the means of a self propelled, hand led vibratory compactor. The compactor shall impart a dynamic force of not less than 7000 pounds.

G. MISCELLANEOUS:

Backfilling and compacting around meter boxes, valve boxes, manholes, storm inlets, and other structures shall be accomplished in the same manner as the connected pipe. Extreme care shall be used in backfilling well point holes to prevent voids and settlement. If necessary, the holes should be plugged with a flowable fill, such plugging to be at the expense of the Contractor.

3.15 MAINTENANCE OF AREA UNDER CONSTRUCTION:

- A. As specified in this section, the Contractor shall keep the pipe laying operation as close to the excavation operation as possible during the execution of the work. Construction activity within this work area shall include all phases of the pipe laying operations including dewatering equipment, excavation, pipe laying, backfilling of trenches and the completion of the restored base construction as specified. No open trench will be left unprotected overnight or on weekends.
- B. This maintenance shall include, but not be limited to, the addition of crushed rock backfill material or temporary asphalt pavement in paved areas to keep the surface of backfilled trenches reasonably smooth, free from ruts and potholes and suitable for normal traffic flow.
- C. No additional payment will be made for the maintenance of the trench backfill prior to completion of the work outlined above.

3.16 RESTORATION OF SURFACE IMPROVEMENTS:

A. GENERAL:

- 1. All surface improvements on public or private property which have been damaged or removed during excavation or any of the other Contractor's operation or other various construction activities shall be restored to conditions equal to or better than conditions existing prior to beginning work.
- 2. These surface improvements include, but are not limited to, grass plots, sod, shrubbery, ornamental trees, signs, fences, mailboxes and other improvements on public or private property.
- 3. Road shoulders, alleys and driveways of shell, limerock, stabilized soil or gravel, where disturbed, shall be restored with like materials as removed. There shall be no mixing of unlike materials. The disturbed area shall be replaced with the appropriate materials to a minimum depth to restore it to a condition equal to or better than conditions existing prior to beginning work.
- 4. Roadways other than paved streets, where disturbed, shall be replaced with like materials to a minimum compacted thickness of twelve (12) inches. There shall be no mixing of unlike materials. These roadways shall be compacted to a minimum of 98% of the maximum dry density as determined by AASHTO Method T-180.
- 5. No additional cost for replacement of roadways other than paved streets will be allowed by the Owner.

B. PAVEMENT, CURB AND SIDEWALK REMOVAL:

- 1. Cut all bituminous and concrete pavements, regardless of the thickness, and all curbs and sidewalks, prior to excavation of the trenches with an approved pavement saw, hydro hammer, or approved pavement cutter. Unless otherwise indicated on the Plans, the width of the pavement cut shall be at least equal to the required width of the trench at ground surface.
- 2. Replacement concrete sidewalks shall be restored with a new modular panel, and the old panels shall be completely removed. No partial panels will be accepted.
- 3. Pavement and concrete materials removed shall be hauled from the site and not used for trench backfill.

4. The Contractor shall remove pavements as part of the trench excavation. The material from permanent pavement removal shall be carefully separated from trench excavation material and disposed of by the Contractor.

3.17 WARRANTY:

- A. In conformance with Section 01019 GENERAL REQUIREMENTS.

END OF SECTION

SECTION 02401

DEWATERING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The work to be performed under this section shall include furnishing all permits, equipment and labor necessary to remove storm or subsurface waters from excavation areas in accordance with the requirements set forth and as shown on the drawings.

1.02 APPLICABLE CODES, STANDARDS AND SPECIFICATIONS

- A. The dewatering of any excavation areas and the disposal of water shall be in strict accordance with the latest revision of all local and state government rules and regulations. The contractor shall obtain all dewatering permits.

1.03 RELATED REQUIREMENTS

- A. Section 02225 – Excavation, Backfill and Compaction
- B. Section 02610 – Pipe and Fittings

PART 2 - PRODUCTS - Not Used.

PART 3 - EXECUTION

3.01 PUMPING AND DRAINAGE

- A. The Contractor shall be responsible for determining all dewatering requirements and governmental regulations prior to commencement of work including, but not limited to, methods of drainage, removal of water, disposal of water and permitting.
- B. The Contractor shall bear all costs associated with dewatering, including costs of damage to property caused by dewatering.
- C. The Contractor shall provide and maintain all necessary facilities and equipment to remove all water entering excavations and shall keep such excavations dry so as to obtain a satisfactory undisturbed subgrade foundation condition until the fills, structures or pipes to be built thereon have been completed to such extent that they will not float or otherwise be damaged by allowing water levels to return to natural levels.
- D. Dewatering shall be conducted by a well point type system and in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at the proposed bottom of the excavation and to preserve the integrity of adjacent structures. Well point system installation shall be constructed with proper sand filters to prevent drawing of finer grained soil from the surrounding ground. Sump installation, over excavation of trenches, and rocking shall not be allowed as a method of dewatering.

- E. Upon removal of the wellpoints, the Contractor must protect the holes and fill with flowable fill within 24 hours. Flowable fill for backfill of wellpoints shall not be measured for payment and shall be included in the cost of dewatering.
- F. Water entering the excavation from surface runoff shall be collected in shallow ditches around the perimeter of the excavation, drained to sumps, and pumped from the excavation to maintain a bottom free from standing water.
- G. The Contractor shall take all additional precautions to prevent uplift of any structure during construction.
- H. The conveying of water in open ditches or trenches will not be allowed. Permission to use any storm sewers, or drains, for water disposal purposes shall be obtained from the authority having jurisdiction. Any requirements and costs for such use shall be the responsibility of the Contractor. However, the Contractor shall not cause flooding by overloading or blocking up the flow in the drainage facilities, and shall leave the facilities unrestricted and as clean as originally found. Any damage to facilities shall be repaired or restored as directed by the City's PROJECT MANAGER, or the authority having jurisdiction, at no cost to the Owner.
- I. Flotation shall be prevented by the Contractor by maintaining a positive and continuous operation of the dewatering system. The Contractor shall be fully responsible and liable for all damages, which may result from failure of this system.
- J. Removal of dewatering equipment shall be accomplished after the system is no longer required; the material and equipment constituting the system shall be removed by the Contractor.
- K. The Contractor shall take all necessary precautions to preclude the accidental discharge of fuel, oil, etc., in order to prevent adverse effects on groundwater quality.
- L. The Contractor shall provide for and be responsible for the prevention, control and abatement of erosion and water pollution until completion of the Project. The Contractor shall provide all temporary erosion control features necessary to prevent, control and abate erosion and water pollution. During the construction of the project, the Contractor shall comply with the Water Quality Standards of the State of Florida and applicable provisions of any NPDES permits in effect. Contractor shall procure any NPDES permits required by regulations as a result of the proposed Work.
- M. Prior to the release of any dewatering effluent, the Contractor shall sample turbidity levels in the final effluent to verify that turbidity levels do not exceed turbidity levels in the receiving water body by more than 29 NTU's (FAC 62-302 Surface Water Quality Standards) . If dewatering effluent initially discharges into a man-made drainage ditch that conveys stormwater runoff from urbanized areas, the receiving waters are deemed to be at the outfall of the drainage ditch and FDEP may approve a permit modification allowing for the drainage ditch to be used as a mixing zone.

END OF SECTION

SECTION 02610
PIPE AND FITTINGS

PART 1 - GENERAL

1.01 DESCRIPTION:

- A. Work under this section consists of furnishing all materials, supplies, equipment and labor in accordance with the requirements set forth herein and as shown on the drawings.

1.02 APPLICABLE CODES, STANDARDS AND SPECIFICATIONS:

The work under this Contract shall be in strict accordance with the following codes and standards.

- A. City of West Palm Beach Utility Standards.
- B. Florida Department of Environmental Protection.
- C. American Society for Testing and Materials (ASTM).
- D. American National Standards Institute (ANSI).
- E. American Water Works Association AWWA C600 Standard for Installation of Ductile-Iron Water Main and Their Appurtenances and AWWA C605 Standards for Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water

1.03 MATERIALS AND EQUIPMENT:

- A. Unless otherwise specified or shown on the drawings, materials and equipment shall be the standard product of a manufacturer and shall comply with the Contract Documents and applicable standards for such materials or equipment.
- B. Prior to the start of work, the Contractor shall submit to the Engineer a list of the manufacturers of all materials to be incorporated in the work that conform to a standard, code.

1.04 WORKMANSHIP:

- A. All materials and equipment shall be installed in accordance with the manufacturer's instructions and to these Contract Documents. The Contractor shall notify the Engineer when the manufacturer's instructions conflict with these specifications.

1.05 SITE MAINTENANCE:

- A. The Contractor shall take the necessary steps to prevent objectionable blowing or drifting of dust, sand or other debris where the construction occurs in residential, commercial or other developed areas.

1.06 DELIVERY, STORAGE AND HANDLING OF MATERIALS AND EQUIPMENT:

- A. Deliver pipe to the site in such a manner as to provide adequate protection for the pipe ends and pipe.
- B. The Contractor, at his own expense, shall provide space for storage of materials and equipment.
- C. If permitted by the City, pipe strung along roads and right-of-ways shall be placed in a manner that will not endanger or restrict pedestrian or vehicular traffic.
- D. Do not store PVC pipe in a place where it can be exposed to ultraviolet sunlight.

1.07 OPEN TRENCH:

- A. Conform to Section 02225 EXCAVATION, BACKFILL, AND COMPACTION.

PART 2 - PRODUCTS

2.01 PIPE, FITTINGS, AND APPURTENANCES:

- A. DUCTILE IRON PIPE AND FITTINGS FOR PRESSURED DISTRIBUTION MAINS - WATER OR SEWER APPLICATION:
 - 1. Pipe:
 - a. Ductile Iron Pipe and Joint Devices shall conform to the requirements of ANSI/AWWA C151/A21.51, ANSI/AWWA C111/A21.11-90, ANSI/AWWA C115/A21.15.
 - b. Sizes 3" to 12" diameter shall be Class 52.
 - c. Sizes 14" and above shall be Class 51.
 - 2. Fittings:
 - a. Fittings 4" through 24" shall conform to the requirements of ANSI/AWWA C153/A21.53 latest revision.
Fittings 30" and above shall conform to the requirements of ANSI/AWWA C110/A21.10 latest revision.
Pipe fittings shall be pressure rated at 350 psi. Coatings shall be the same as for the pipe.
 - b. Restrained joint fittings for 24" and smaller diameter shall be "Flex-Ring" as manufactured by American Cast Iron Pipe Company, "TR Flex" as manufactured by U.S. Pipe Company, "Super-Lock" as manufactured by Clow Corporation, or an "approved equal". Restrained joint fittings for 30" and larger diameter pipe shall be "Lok-Ring" as manufactured by American Cast Iron Pipe Company, "TR-Flex" as manufactured by U.S. Pipe Company, or an "approved equal". All bolts and hex nuts shall be U.S. Steel COR Ten or an "approved equal". The accessory package consisting of the restraining element and gaskets shall be packaged together as a complete unit noting the size on the outside of the sealed weather proof container. Mechanical joint fittings as specified in paragraph 2 © below may also be used at the Contractor's option.

- c. Mechanical Joint Fittings shall conform to the requirements stated in paragraph 2(a) above. Mechanical joint fittings shall be furnished with Megalug Retainer Glands as manufactured by EBBA Iron, Inc., Eastland, Texas (1-800-433-1716) or an "approved equal" unless otherwise noted. All bolts and hex nuts shall be U.S. Steel COR Ten or an "approved equal". The accessory package consisting of the retainer gland, bolts, nuts and gaskets shall be packaged together as a complete unit noting the size on the outside of the sealed weather proof container.
3. Coatings:
- a. Cement-mortar lining on the internal surface of ductile iron water distribution pipe and fittings shall conform to the requirements of ANSI/AWWA C104/A21.4 latest revision.
 - b. The internal surfaces of force main piping and fittings shall be epoxy lined in strict accordance with the manufacturer's recommendations. The following products are the only currently approved products which shall be utilized for internal use:
 - i. Protecto 401 Ceramic Epoxy Lining, 40 mils thick.
 - ii. Permax PCS-9043, Glass Flake Epoxy, 40 mils thick.
 - c. External surface of all buried ductile iron pipe and fittings shall be coated with a bituminous coating approximately one mil thick in accordance to AWWA C151/A21.51 latest revision.
 - d. External surface of non-buried portions of all ductile iron pipe and fittings shall be coated per Section 09900, except for the portions in the wetwell which shall be coated with an epoxy coating per 3(b) above.
4. Joints:
- a. Joints in pipe shall conform to the requirements of ANSI/AWWA C151 latest revision.
 - b. Joints in fittings shall conform to the requirements of ANSI/AWWA C111/A21 latest revision.
 - c. Slip-on joints and mechanical joints shall conform to the requirements of AWWA C-111.
 - d. Restrained joints shall be American Ductile Iron "Flex-Ring" Joint or "Fast-Grip" Gaskets, U.S. Pipe "TR Flex" Joint or "Field Lok" Gaskets, Clow "Super Lock" Joint, Mechanical Joint with Megalug Retainer Gland, or "approved equal".
 - e. All bolts and hex nuts shall be U.S. Steel COR Ten or an "approved equal", conforming to current provisions of American National Standard ANSI/AWWA C111/A21.11 for rubber gasket joints for ductile iron pipe and fittings, NSS Cor-Ten T-bolts, or an "approved equal".

B. DUCTILE IRON AND POLYVINYL CHLORIDE PIPE FOR GRAVITY WASTEWATER SYSTEM APPLICATION:

1. Pipe
 - a. Ductile Iron Pipe and Joint Devices shall conform to the requirements of ANSI/AWWA C151/A21.51, ANSI/AWWA C111/A21.11-90, ANSI/AWWA C115/A21.15.
 - b. Ductile Iron Pipe sizes 3" to 12" diameter shall be Class 52. Sizes 14" and above shall be Class 51.
 - c. Polyvinyl Chloride Pipe (PVC) shall conform to the requirements of ASTM D3034, SDR 26.
2. Fittings:
 - a. Fittings shall conform to the requirements of ANSI/AWWA C110/A21.10 latest revision.
3. Coatings:
 - a. Coating on the internal surface of ductile iron sewer pipe and fittings shall conform to Section 02610 Subsection 2.01 A.3.
 - b. External surface of all ductile iron pipe and fittings shall be coated with a bituminous coating approximately one mil thick.
4. Joints:
 - a. Joints in ductile iron fittings shall conform to the requirements of ANSI/AWWA C111/A21 latest revision.
 - b. Joints in PVC pipe shall conform to the requirements of ASTM D3212 with watertight rubber sealing ring and flexible seal.
 - 1.

C. REINFORCED CONCRETE PIPE AND POLYVINYL CHLORIDE PIPE FOR GRAVITY - STORM SEWER APPLICATION:

1. Pipe:
 - a. Reinforced concrete pipe (RCP) shall be in conformance to the requirements of the F.D.O.T.'s Standard Specifications for Road and Bridge Construction, latest edition, Section 941, Articles 941-1 through 941-2.
 - b. Polyvinyl Chloride Pipe (PVC) shall conform to the requirements of ASTM D3034, SDR 26.
2. Joints:
 - a. The pipe joints shall be the round rubber gasket type conforming to the F.D.O.T.'s Standard Specifications for Road and Bridge Construction, latest edition, Section 942, Article 942-1. Pipe joint installation otherwise shall be in accordance with the recommendations of the pipe manufacturer and the gasket manufacturer.
 - b. Pipe gaskets shall be in conformance with Section 942 of the F.D.O.T.'s Standard Specifications for Road and Bridge Construction, latest edition.

2.02 IDENTIFICATION AND COLOR CODING OF PIPE & FITTINGS:

A. POTABLE WATER MAINS

1. All water main pipe and fittings shall be color coded or marked using Safety Blue as a predominant color to differentiate drinking water from reclaimed or other water. Underground plastic pipe shall be solid-wall Blue pipe, shall have a co-extruded Blue external skin, or shall be white or black pipe with Blue stripes incorporated into, or applied to, the external pipe wall.
2. Underground metal or concrete pipe shall have Safety Blue stripes applied to the pipe wall. Pipe striped during manufacturing of the pipe shall have continuous stripes that run parallel to the axis of the pipe, that are located at no greater than 90-degree intervals around the pipe, and that will remain intact during and after installation of the pipe. If tape or paint is used to stripe pipe during installation of the pipe, the tape or paint shall be applied in a continuous line that runs parallel to the axis of the pipe and that is located along the top of the pipe. For pipes with an internal diameter of 24 inches or greater, tape or paint shall be applied in continuous lines along each side of the pipe as well as along the top of the pipe.
3. Aboveground pipe at drinking water treatment plants shall be color coded and labeled in accordance with subsection 62-555.320(10), F.A.C.
4. All aboveground potable water pipe shall be painted solid blue.
5. Blue Warning tape with WATER printed on the tape shall be placed in the trench during backfill of the water pipe, a vertical distance of 18" above the crown of the pipe.

B. WASTEWATER FORCE MAINS

1. All wastewater force main pipe and fittings shall be color coded or marked using Safety Green as a predominant color. Underground plastic pipe shall be solid-wall Green pipe, co-extruded Green external skin, or shall be white or black pipe with Green stripes incorporated into, or applied to, the external pipe wall.
2. Underground metal or concrete pipe shall have Safety Green stripes applied to the pipe wall. Pipe striped during manufacturing of the pipe shall have continuous stripes that run parallel to the axis of the pipe, that are located at no greater than 180-degree intervals around the pipe, and that will remain intact during and after installation of the pipe. If tape or paint is used to stripe pipe during installation of the pipe, the tape or paint shall be applied in a continuous line that runs parallel to the axis of the pipe and that is located along the top of the pipe. For pipes with an internal diameter of 24 inches or greater, tape or paint shall be applied in continuous lines run parallel to the axis of the pipe, that are located at no greater than 120-degree intervals around the pipe, and that will remain intact during and after installation of the pipe.
3. All aboveground wastewater force mains shall be painted solid Safety Green.
4. Green Warning tape with WASTEWATER printed on the tape shall be placed in the trench during backfill of the wastewater force main pipe, a vertical distance of 18" above the crown of the pipe.

C. WASTEWATER GRAVITY SEWERS

1. All gravity sewer lines and laterals within the public right of way shall be green in color.
2. Green Warning tape with WASTEWATER printed on the tape shall be placed in the trench during backfill of the wastewater laterals only, a vertical distance of 18"

above the crown of the pipe. No tape is required on collection lines between manholes.

D. RECLAIM (REUSE) MAINS

1. All reclaimed water valves and outlets shall be appropriately tagged or labeled (bearing the words in English and Spanish: "Do not drink" together with the equivalent standard international symbol) to warn the public and employees that the water is not intended for drinking. All piping, pipelines, valves, and outlets shall be color coded, or otherwise marked, to differentiate reclaimed water from domestic or other water. Underground piping which is not manufactured of metal or concrete, shall be color coded for reclaimed water distribution systems using Pantone Purple 522C using a light stable colorants.
2. Underground metal and concrete pipe shall be color coded or marked using purple as a predominant color. If tape or paint is used to mark the pipe, the tape or paint shall be permanently affixed to the top and each side of the pipe (three locations parallel to the axis of the pipe) and be applied in a continuous line that runs parallel to the axis of the pipe. For pipes less than 24 inches in diameter, a single tape or painted stripe may be used along the top of the pipe. Visible, above-ground portions of the reclaimed water distribution system shall be clearly color coded and marked.
3. It is recommended that meter boxes, distribution pipes and sprinkler mains located on private properties, including residential properties, be color coded using Pantone Purple 522C.
4. Purple Warning tape with RECLAIM printed on the tape shall be placed in the trench during backfill of the wastewater pipe, a vertical distance of 18" above the crown of the pipe.

E. STORMWATER & DRAINAGE SEWERS

1. No color coding or identification markings are required on the pipe.
2. Yellow or light brown Warning tape with STORMWATER printed on the tape shall be placed in the trench during backfill of the stormwater pipe, a vertical distance of 18" above the crown of the pipe. No tape is required on drainage lines between manholes or inlets.

PART 3 - EXECUTION

3.01 GENERAL:

Unless otherwise noted on the drawings or in other sections of this specification, the pipe shall be handled and installed in strict accordance with the manufacturer's instructions and with the applicable AWWA and/or ASTM Standards. If a conflict exists between the manufacturer's instructions and the AWWA and/or ASTM Standards, the manufacturer's instructions shall govern.

For pipe that is field cut, the internal lining system shall be repaired in strict accordance with the manufacturer's recommendations and be inspected by the Engineer or his representative.

- Ductile Iron Pipe - AWWA C-600 Cement-lined Class 52
- Ductile Iron Pipe - AWWA C-600 Epoxy-lined Class 52
- Ductile Iron Pipe - ASTM A-746 Epoxy-lined Class 50 (gravity mains)
- Polyvinyl Chloride Pipe - ASTM D3034 SDR 26 (gravity mains)

3.02 EXCAVATION:

Conform to Section 02225 EXCAVATION, BACKFILL AND COMPACTION.

3.03 PIPE INSTALLATION:

A. POTABLE WATER MAINS

1. Depth of Cover:
 - a. Unless otherwise shown on the drawings, or otherwise authorized by the Engineer, the pipe shall have a minimum cover depth of 36 in.
2. All underground piping, valves and fittings shall be provided with restrained joint fittings as required by the pressure and type of fitting. Length of restrained joint assembly shall be as shown on the construction plan detail. The use of thrust is not allowed unless specifically approved by the CITY.
3. All above-grade piping, valves and fittings shall be provided with aluminum or stainless steel support stands or brackets. Support stands shall be designed according to the requirements shown on the plans.
4. Hydrostatic acceptance tests, consisting of a pressure test and a leakage test, shall be performed on all sections of all water systems installed after the trench has been completely backfilled.
5. Testing shall not proceed until all restraining devices have been installed.
6. The pipeline section shall be filled slowly with water to prevent surge or water hammer. The Contractor shall utilize multiple points to allow the escape of air during filling of the pipeline test section, and in particular the ends of the test section, with additional corp stops provided as required. Once full, the pipeline shall be flushed and pigged to thoroughly clean the pipeline and remove any foreign matter.
7. It is recommended that preliminary, low pressure hydrostatic tests be performed prior to backfilling and/or paving in order to check fittings and gaskets for improper installation or faulty materials. Provisions shall be made to relieve air trapped at high points in the system through adjacent hydrants or through taps and corporation stops installed for this purpose by the Contractor
8. Acceptance of the system shall be based on hydrostatic tests run on the finished system after the line has been completely backfilled.
9. Prior to the final pressure test, the system shall be pressure tested by pressurizing to a minimum of one hundred and fifty five (155) pounds per square inch, or one and one-half times the working pressure whichever is greater, based upon the elevation of the lowest point in the section under test and corrected to the elevation of the test gauge. After this pressure has been maintained successfully for one (1) hour, with nominal pumping to maintain pressure, the Contractor may schedule a final leakage test.
10. The Contractor shall conduct all testing in the presence of representatives from the City's Utility Department and the Design Engineer, with 48 hours advance notice provided.
11. The final hydrostatic test for each pipeline segment shall be performed under a minimum test pressure of one hundred and fifty-five (155) pounds per square inch, or one and one-half times the working pressure whichever is greater, based upon the elevation of the lowest point of the section under test and corrected to the elevation of the gauge.

12. The test section should be that segment of the pipeline between valves. Test sections should not exceed 1,200 feet in length, unless approved otherwise in advance by the City. The leakage test duration shall be a minimum of two (2) hours duration after pressure drop has stabilized. A loss of 5 psi or more during test, regardless of the amount of leakage, shall be considered a failing test. Fire hydrants within the test section may be tested against the foot valve.
13. The contractor shall furnish the necessary labor, water, pumps, gauges and all other items required to conduct the required water distribution system testing and perform necessary repairs. All water for tests shall be furnished and disposed of by the Contractor at his own expense. Only potable water may be utilized for filling, flushing and testing of new water distribution mains. Source and/or quality of the water which the Contractor proposes to use in flushing and testing other lines shall be as determined acceptable to the Engineer and City.
14. No leakage is allowable from polyethylene pipelines - only leakage from the valves or fittings of dissimilar materials located on polyethylene pipelines is to be calculated.
15. Testing of PVC pipe shall be in accordance with the applicable provisions as set forth in AWWA Standard C605-05, Section 7. The allowable rate of leakage shall be less than the number of gallons per hour determined by the following formula:
- $$Q = \frac{LD \sqrt{P}}{148,000}$$
- Q = allowable leakage in gallons per hour
 L = length of pipe to be tested in feet
 D = nominal diameter of the pipe in inches
 P = average test pressure maintained during the leakage test in pounds per square inch gauge
16. Testing of ductile iron pipe shall be in accordance with the applicable provisions as set forth in AWWA Standard C600-05, Section 5. The allowable rate of leakage shall be less than the number of gallons per hour determined by the following formula:
- $$L = \frac{SD \sqrt{P}}{148,000}$$
- L = allowable leakage in gallons per hour
 S = length of pipe to be tested in feet
 D = nominal diameter of the pipe in inches
 P = average test pressure maintained during the leakage test in pounds per square inch gauge
17. The testing procedures shall include the continued application of the specified pressure to the test system, for the two hour period, by way of a hose taking supply from a container suitable for measuring water loss. The amount of loss shall be determined by measuring the volume displaced from this container. Should the test fail, the Contractor shall identify the reason for the failure and perform necessary repairs prior to the City allowing a re-test to be scheduled.

18. **Biological Testing:**
 - a. The Contractor shall construct sample points at the locations shown on Plans.
 - b. Sample points shall be left running so that samples may be collected by the testing laboratory and continue running until satisfactory bacteriological tests have been obtained.
 - c. Should samples be unsatisfactory, the Contractor shall rechlorinate the pipe lines, reflush, and set up additional sampling with the testing laboratory until accepted by the Engineer.
19. **Connections to Existing Mains:**
 - a. The Contractor shall make connections to existing mains as shown on the drawings. The connections of new water main to existing water main shall be made only after the new water mains have passed their pressure and leakage test and completed the disinfection and bacteriological clearance procedures as mandated by the Palm Beach County Health Department, and shall be under the Owner's immediate supervision.

B. WASTEWATER FORCE MAINS:

1. **Depth of Cover:**
 - a. Unless otherwise shown on the drawings, or otherwise authorized by the Engineer, the pipe shall have a minimum cover depth of 36 in.
2. All underground piping, valves and fittings shall be provided with restrained joint fittings as required by the pressure and type of fitting. Length of restrained joint assembly shall be as shown on the construction plan detail. The use of thrust is not allowed unless specifically approved by the CITY.
3. All above-grade piping, valves and fittings shall be provided with aluminum or stainless steel support stands or brackets. Support stands shall be designed according to the requirements shown on the plans.
4. **Pressure and Leakage Tests:**
 - a. Pressure and leakage tests shall be conducted in the presence of the Engineer, or his representative. All pressured mains, fittings, water services, and appurtenances shall undergo pressure and leakage tests.
 - b. The Contractor will provide all necessary apparatus including a suitable pressure gauge, pump, measuring device, piping connections and fittings and the necessary labor to conduct the test. The test shall be of two hour duration. During the test, the pipe being tested shall be maintained at a pressure of not less than 100 psi and with not more than 5 psi pressure loss in accordance to AWWA Standards. Leakage is defined as the quantity of water added to the pipe being tested during the test period.
 - c. No pipe installation will be accepted if the leakage exceeds the quantities specified in AWWA C-600, Section 4.2. The Contractor shall submit to the Engineer the testing pattern he proposes to follow prior to testing for the Engineer's approval.
 - d. Unless approved by the Engineer, the Contractor shall not test more than 1,500 feet of pipe in a single test.

5. Flushing of Completed Pipelines:
 - a. Each section of the pressured main will be thoroughly cleaned with two (2) polyurethane foam pigs as manufactured by Girard Poly-Pig Inc. or an "approved equal". The Contractor must insure that there will be no contaminated water re-entering the main where the pig is flushed out, or it will be re-pigged at the Contractor's expense. Each pig will run through the line prior to running the second pig.
 - b. On short runs (100 feet or less), or small lines (less than 4"), cleaning shall be accomplished by flushing with a minimum velocity of 2.5 feet per second. Disposal of flushing water shall be in accordance with the Palm Beach County Health Department.

C. GRAVITY SANITARY SEWER MAINS:

1. Manufacturer's Instructions:
 - a. Gravity Sewer pipe shall be handled, stored and installed in strict accordance with the pipe manufacturer's instructions. A copy of the manufacturer's instructions shall be kept at the site of the work at all times by the Contractor.
2. Pipe Installation:
 - a. It is the responsibility of the Contractor to install the sewer pipe as shown on the plans.
 - b. The Contractor shall survey the newly installed line before backfilling to determine the actual invert elevations of the pipe. If the calculated slope is below the minimum acceptable requirements, the Contractor shall remove and relay the sewer pipe at his own expense before further installation continues.
 - c. Upon completion of construction and prior to release of Final Payment, the Contractor shall submit the as-built information to the Engineer.
 - d. The gravity sanitary sewer pipe shall be installed at shown elevation on the drawings with 0.004 foot per foot minimum slope, unless otherwise shown on the drawings.
 - e. The trench shall be excavated as specified and the bottom of the trench shall be shaped to give sufficient uniform circumferential support to the lower one-third of each pipe. Each pipe shall be laid true to line and grade. As the work progresses, the interior of the pipe shall be cleaned of all dirt and superfluous materials.
 - f. The gravity sanitary pipe shall be installed starting from the downstream end of the system. Provide sewage by-pass pumping to the downstream manhole of the pipe segment (between manholes) to prevent any spillage of raw sewage within the trench bed or on the ground.
3. Joints:
 - a. The bell and spigot surfaces shall be wiped free of dust, dirt, gravel or other foreign materials before the application of the lubricant sealer. The spigot end shall then be centered on grade into the bell end of the last downstream pipe length and shoved home and properly seated with the application of a moderate force by a pry or lever device. The pipes shall be jointed not later than five minutes after the application of the lubricant sealer. Jointing for connections with existing mains, or other special joints, shall be approved by the Engineer before use.

- b. The Contractor shall submit his jointing schedule, including materials and methods proposed, to the Engineer for approval prior to starting work.

4. Cleaning:

- a. Where cleaning of the pipe after laying is difficult because of the small diameter, the Contractor shall keep a suitable swab or drag in the pipe and shall pull the swab forward past each joint immediately after the jointing operation. At all times when the work is not in progress on the sewer lines, the Contractor shall securely seal the open ends of all pipes in order to prevent the entrance of foreign matter. Manufactured stoppers shall be installed in the ends of all services.
- b. In the event that it is necessary to clean the pipe by flushing with water, no water or debris shall be permitted to enter an existing or previously approved sewer. Under no conditions shall the water and debris be removed with lift station pumps or discharged into or through force mains.

5. Lamping Completed Pipelines:

- a. The Contractor shall perform testing of all sanitary gravity sewers as set forth in the following and shall conduct such tests in the presence of the Engineer and other authorized agencies, with five days advance written notice provided.
- b. The installed sewers shall be visually inspected by "lamping" between manholes, or other structures in order to ascertain that they are clear and to correct alignment. The concentricity of the lamp image received shall be such that the diameter of said image shall have no vertical or horizontal reduction from that of the pipe inside diameter.
- c. Clear, clean water shall be flushed through the pipe prior to lamping to insure that any dips or humps are seen. All dips and humps shall be physically removed prior to any further inspection or testing on the section of pipe that the defects are found in.

6. Televising:

- a. Upon complete installation of the sanitary sewer system and prior to coating of sanitary manholes, T.V. inspection of sanitary piping shall be performed by the Contractor in the presence of the Engineer. A mandrel shall be pulled through the pipe prior to T.V. inspection.

D. STORM SEWER:

1. General:

- a. Piping and appurtenances for sewers shall be of the type and material specified in the applicable sections of the Detailed Specifications. All pipe, fittings, jointing, materials, grates, manhole frames and covers, and other appurtenances shall be new material to be included in the work and, if not specifically described in these specifications, shall be of the best quality and entirely suitable for the services intended. All such material shall be approved by the Engineer prior to installation.

2. Laying Pipe:

- a. Pipe shall be protected during storage and handling against impact shocks or free fall. Pipe shall be kept clean at all times and no pipe shall be used that does not conform fully with the standards or specifications hereinafter described.

- b. Each pipe section shall be laid in strict conformance with the line and grade given by the Engineer and in the presence of the inspector. The laying of pipe in finished trenches shall commence at the lowest point, with the bell end laid up-grade.
 - c. Pipe shall be set firmly according to the lines and grade; and preparatory to making joints for concrete pipe, all surfaces of the portion of pipe to be jointed shall be thoroughly cleaned. The pipe shall be laid with the groove upstream. A shallow excavation shall be made underneath the pipe at the joint.
 - d. Immediately prior to installation, the entire interior of the groove of the pipe already installed and the rubber gasket of the pipe to be installed shall be coated with an approved vegetable soap lubricant. The groove and spigot ends shall be cleaned prior to application of the lubricant. The pipe shall then be aligned with the previously installed pipe and the joint forced together.
 - e. The choice of method and type of equipment will depend on trench conditions, type and size of pipe, and its ability to properly seat the gasket. If, while making the joint, the gasket becomes loose and can be seen through the exterior joint recess when the joint is pulled up to within one inch of closure, the pipe shall be removed and the joint remade to the satisfaction of the Engineer.
3. Exfiltration/Infiltration Tests:
- a. Storm sewers shall be tested within sections as previously approved by the Engineer. Testing shall not proceed until all facilities are complete, in place and the concrete is cured. All piping shall be thoroughly cleaned prior to testing to clear the lines of all foreign matter.
 - b. The watertightness of a sewer which has a crown lying below ground water level shall be tested by measuring the infiltration. The watertightness of sewers having a crown 1-inch or more above groundwater level shall be tested by filling the pipe with water to produce a hydrostatic head of 2-feet or more above the crown of the sewer at the upper end of the test section or the water table outside of the sewer, whichever is higher, and then measuring the exfiltration. No infiltration or exfiltration shall be allowed.
 - c. Testing shall proceed for a continuous period of eight hours with exfiltration or infiltration amounts measured by methods approved by the Engineer. Upon application of internal hydrostatic pressure for exfiltration testing, care shall be taken to preclude unseating the joint gaskets for a specific type of pipe by exceeding the pressure capability thereof.
 - d. Should the test fail, necessary repairs shall be accomplished by the Contractor and the test repeated until within the established limits. The Contractor shall furnish the necessary labor, water and all other items required to conduct the required testing and shall perform the necessary system repairs required to comply with the specified test.
 - e. The allowable infiltration or exfiltration shall be 0.6 gallons/inch of diameter/hour for 1000 feet of pipe when field tested by actual infiltration conditions. If exfiltration testing is required, an allowance of an additional 2-foot head over a basic 2-foot minimum internal head is allowed.

E. SELECTED BASE MATERIAL FOR MINIMUM COVER REQUIREMENTS:

1. Where minimum cover of pipe is insufficient (less than 30 inches), provide extra base material or excavatable flowable fill over pipe as shown on the Plans. No additional payment will be made for furnishing additional pipe cover.

3.04 CONSTRUCTION CONSTRAINTS:

The Contractor shall give special considerations to accommodate the business owners and residents in minimizing downtime and disruption of water and sewer services during the entire construction period.

- A. The Contractor will be required to submit as-builts, including laboratory results, to the City after the completion of each phase for preparation of Request for Partial Release and submission to the Palm Beach County Health Department.
- B. The Contractor shall prepare (City's standard) Boil Water Notices in notifying service interruption, and deliver those to concerned business owners/residents at least 48 hours prior to any service interruption. The Contractor shall comply with the following limitations:
 1. Each service interruption required for transferring (relocating) an existing water service will be limited to a maximum of two hours;
 2. Each service interruption required for connecting new water service to water meter will be limited to a maximum of one hour;
 3. Each service interruption required for tie-in of new main to existing distribution system will be limited to a maximum of four hours.
- C. It is the responsibility of the Contractor to prevent any sewage spills and sewage back ups during the construction of the new sewer main and laterals.

In the event of a spill, it will be the contractor's responsibility to clean up in an approved manner by governing authority and to report the event to the Palm Beach County Health Department.

In the event of a sewage back up, the Contractor will absorb all costs associated with the clean up, repair and replacement of properties.

3.05 WATER SERVICES AND MISCELLANEOUS:

- A. Service Saddles:
 1. No saddles shall be used on ductile iron pipe. Taps shall be direct. Tap threads shall be AWWA taper.
 2. Service saddles for PVC pipe shall be brass or bronze and shall be double strap. Straps shall be brass, bronze, or stainless steel designed for C-900 PVC.
- B. Copper Tubing shall conform to ASTM B88 for "Seamless Copper Water Tube" Type K, annealed temper (soft) when furnished in coils, drawn temper (hard) when furnished in straight lengths.

All water service lines shall be 1" or 2" in size.
- C. Brass with IPT for extension of water services shall conform to ASTM B43 for "Seamless Red Brass Pipe", standard sizes, regular weight, annealed condition.

Threaded Pipe Nipples shall be short lengths unless otherwise required. Close lengths shall not be used except with special permission of the Engineer. Nipple stock shall be of same material used in connecting pipe and shall conform with the material specifications.

D. Corporate Stops - for 1" or 2":

1. All components of the corporation stop shall be made from Copper Alloy No. C83600, in accordance with the requirements of ASTM B62 or ASTM B584 in conformance to AWWA C-800-84, Materials, Section 2, Paragraph 2.1., and as manufactured by the Ford Meter Box Company, Model No. FB1000-4 (1"), FB1000-67 (1-1/2" x 2"), or an "approved equal".
2. Shall be of the ball valve type. Ball shall be teflon coated and shall be held in position by and sealed off against seats of Buna-N rubber that are held securely in place with epoxy adhesive.
3. Inlet threads shall conform to AWWA C-800-84, Detailed Design, Section 4, Paragraph 4.1.
4. The outlet connection shall be Pack Joint (compression) for copper tube utilizing a totally confined gasket (ASTM P2000).
5. Connection shall be watertight at a pressure rating up to 160 psi.

E. Curb Stops - for 1" or 2":

1. All components of the curb stop shall be made from Copper Alloy No. C83600, in accordance with the requirements of ASTM B62 or ASTM B584 in conformance to AWWA C-800-84, Materials, Section 2, Paragraph 2.1, and as manufactured by the Ford Meter Box Company, Model No. KB43-454W (1"), FV43-77W (2"), or an "approved equal". Use meter bushing as required to make the connection with the existing water meter.
2. Shall be of the angle meter valve type.
3. The inlet connection shall be Pack Joint (compression) type. Outlet connections of the angle meter valve shall be female flanged for 1-1/2" and 2" meters and conform to AWWA C700-90 Detailed Section 4, Paragraph 4.2.2.2 and 4.2.2.3.
4. Angle stops shall have padlock wings to allow the use of standard padlock to seal the valve in the closed position. The angle stop shall turn easily.
5. Angle stops shall be watertight at a pressure rating up to 160 psi.

F. Pack Joint Nut shall be as manufactured by Mueller Co., Ford, or an "approved equal".

G. Meter Boxes/Covers shall be 11" W x 18" L x 12" D and made of fiberglass for 1" meters, 17" W x 30" L x 12" D for 2" meter, as manufactured by CDR System, Inc., or an "approved equal". Mouse holes shall not be allowed.

H. Brass Fittings: Brass fittings shall be compression Mueller or Ford.

I. Dresser Couplings: Compression couplings shall be epoxy-coated as manufactured by Rockwell or Dresser. Unless otherwise indicated, couplings 2" and smaller shall be brass Mueller or Ford. Couplings over 2" shall be ductile iron.

3.06 DEWATERING:

- A. Conform to Section 02225 EXCAVATION, BACKFILL, AND COMPACTION.

3.07 RESTORATION OF DAMAGED SURFACES, STRUCTURES AND PROPERTY:

- A. Conform to Section 01019 GENERAL REQUIREMENTS.

3.08 PROTECTION:

- A. At the end of each workday, the mains under construction shall be plugged to prevent the entry of small animals or rodents. Temporary plugs shall be provided for this purpose.

3.09 CLEANUP:

- A. Conform to Section 01019 GENERAL REQUIREMENTS.

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SECTION 02620

HIGH DENSITY POLYETHYLENE PIPE AND FITTINGS

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall furnish all labor, materials, equipment, and incidentals required to install High Density Polyethylene (HDPE) pressure pipe, fittings, and appurtenances as shown on the Drawings and specified in the Contract Documents.

1.02 REFERENCED STANDARDS

- A. All standard specifications, i.e., Federal, ANSI, ASTM, etc., made a portion of these Specifications by reference, shall be the latest edition and revision thereof.

1.03 QUALIFICATIONS

- A. All HDPE pipe, fittings, and appurtenances shall be furnished by a single manufacturer who is fully experienced, reputable and qualified in the manufacture of the items to be furnished.

1.04 SUBMITTALS

- A. The Contractor shall submit to the Engineer, a list of materials to be furnished, the names of the suppliers, and the appropriate shop drawings for all HDPE pipe and fittings.
- B. The Contractor shall submit the pipe manufacturer's certification of compliance with the applicable sections of the Specifications.
- C. The Contractor shall submit shop drawings showing installation method and the proposed method and specialized equipment to be used.

1.05 INSPECTIONS AND TESTS

- A. All work shall be inspected by an Authorized Representative of the Owner who shall have the authority to halt construction if, in his opinion, these specifications or standard construction practices are not being followed. Whenever any portion of these specifications is violated, the Engineer or his authorized representative, shall, by written notice, order further construction to cease until all deficiencies are corrected.

1.06 WARRANTY AND ACCEPTANCE

- A. The Contractor shall warrant all work to be free from defects in workmanship and materials for a period of one year from the date of completion of all construction. If work meets these specifications, a letter of acceptance, subject to the one year warranty period, shall be given at the time of completion. A final acceptance letter shall be given upon final inspection at the end of the one year warranty period, provided the work still complies with these specifications. In the event deficiencies are discovered during the warranty period, they shall be corrected by the Contractor without additional charge to the owner before final acceptance. During the warranty period, the Engineer shall determine if warranty repairs or replacement work shall be performed by the Contractor. The decision of the Engineer shall be binding upon the Contractor.

PART 2 - PRODUCTS

2.01 POLYETHYLENE PIPE AND FITTINGS

- A. Polyethylene pressure pipe shall be manufactured from PE3408 polyethylene and shall meet AWWA C906 standards. When specified by the Engineer on the construction drawings, as an alternate to PVC, HDPE (ductile iron pipe sized) piping can be used for buried applications. Iron pipe sized (IPS) HDPE piping can be used for above-ground applications. HDPE (IPS) Hydrostatic Design Bases (HDB) piping shall be used for the riser pipes from the pump discharge and manifold as shown on the drawings. All HDPE pipe shall be DR -11 unless specified otherwise on the plans.
- B. Where HDPE pipe is joined to HDPE pipe, it shall be by thermal butt fusion. Thermal fusion shall be accomplished in accordance with the pipe manufacturer and fusion equipment supplier specifications. The Contractor installing thermal butt fused HDPE pipe shall have a minimum of five years experience performing this type of work.
- C. Qualification of Manufacturer. The Manufacturer shall have manufacturing and quality control facilities capable of producing and assuring the quality of the pipe and fittings required by these specifications. The Manufacturer's production facilities shall be open for inspection by the Owner or his authorized representative. Qualified manufacturers shall be approved by the Engineer.
- D. Approved Manufacturer. Manufacturers that are qualified and approved by the Engineer are listed below.

PLEXCO Division of Chevron Chemical Company

- E. Materials. Materials used for the manufacture of polyethylene pipe and fittings shall be PE3408 high density polyethylene meeting cell classification 345434C or 345434E per ASTM D 3350; and meeting Type III, Class B or Class C, Category 5, Grade P34 per ASTM D 1248; and shall be listed in the name of the pipe and fitting manufacturer in PPI (Plastics Pipe Institute) TR-4, Recommended Hydrostatic Strengths and Design Stresses for Thermoplastic Pipe and Fittings Compounds, with a standard grade rating of 1600 psi at 73°F. The Manufacturer shall certify that the materials used to manufacture pipe and fittings meet these requirements.
- F. Interchangeability of Pipe and Fittings. Polyethylene pipe and fittings shall be produced by the same Approved Manufacturer. Products made by sub-Contractors or Manufacturer's distributor are not acceptable. Pipe and fittings from different Approved Manufacturers shall not be interchanged.
- G. Polyethylene Pipe. Polyethylene pipe shall be manufactured in accordance with ASTM F 714, Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter or ASTM D 3035, Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter and shall be so marked. Each production lot of pipe shall be tested for (from material or pipe) melt index, density, % carbon, (from pipe) dimensions and either quick burst or ring tensile strength (equipment permitting).
- H. Color Identification. When specified by the Engineer and indicated on the drawings, permanent identification of piping service shall be provided by adhering to the following colors.

- Yellow – gaseous fuels
- Blue – potable water
- Green – non-potable water, wastewater, sewage
- Red – Fire main

- I. Polyethylene Fittings & Custom Fabrications. Polyethylene fittings and custom fabrications shall be molded or fabricated by the pipe manufacturer. Butt fusion outlets shall be made to the same outside diameter, wall thickness, and tolerances as the mating pipe. All fittings and custom fabrications shall be fully rated for the same internal pressure as the mating pipe. Pressure de-rated fabricated fittings are prohibited.
- J. Molded Fittings. Molded fittings shall be manufactured in accordance with ASTM D 3261, Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing, and shall be so marked. Each production lot of molded fittings shall be subjected to the tests required under ASTM D 3261.
- K. X-Ray Inspection. The Manufacturer shall submit samples from each molded fittings production lot to x-ray inspection for voids, and shall certify that voids were not found.
- L. Fabricated Fittings. Fabricated fittings shall be made by heat fusion joining specially machined shapes cut from pipe, polyethylene sheet stock, or molded fittings. Fabricated fittings shall be rated for internal pressure service equivalent to the full service pressure rating of the mating pipe. Directional fittings 16" IPS and larger such as elbows, tees, crosses, etc., shall have a plain end inlet for butt fusion and flanged directional outlets. Part drawings shall be submitted for the approval of the Engineer.
- M. Polyethylene Flange Adapters. Flange adapters shall be made with sufficient through-bore length to be clamped in a butt fusion joining machine without the use of a stub-end holder. The sealing surface of the flange adapter shall be machined with a series of small v-shaped grooves to provide gasketless sealing, or to restrain the gasket against blow-out.
- N. Back-up Rings & Flange Bolts. Flange adapters shall be fitted with lap joint flanges pressure rated equal to or greater than the mating pipe. The lap joint flange bore shall be chamfered or radiused to provide clearance to the flange adapter radius. Flange bolts and nuts shall be Grade 2 or higher.

2.02 MANUFACTURER'S QUALITY CONTROL

- A. The pipe and fitting manufacturer shall have an established quality control program responsible for inspecting incoming and outgoing materials. Incoming polyethylene materials shall be inspected for density, melt flow rate, & contamination. Outgoing materials shall be checked for:
- Outside diameter, wall thickness, and eccentricity as per ASTM D2122 at a frequency of at least once/hour or once/coil, whichever is less frequent.
 - Out of Roundness at frequency of at least once/hour or once/coil, whichever is less frequent.
 - Straightness, inside and outside surface finish, markings and end cuts shall be visually inspected as per ASTM F714 on every length of pipe.

Quality Control shall verify production checks and test for:

- Density as per ASTM D1505 at a frequency of at least once per extrusion lot.
- Melt Index as per ASTM D1238 at a frequency of at least once per extrusion lot.
- Carbon content as per ASTM D1603 at a frequency of at least once per day per extrusion line.
- Quick burst pressure (sizes thru 4") as per ASTM D1599 at a frequency of at least once per day per line.
- Ring Tensile Strength (sizes above 4" equipment permitting) as per ASTM D2290 at a frequency of at least once per day per line.
- ESCR (size permitting) as per ASTM F1248 at a frequency of at least once per extrusion lot.

X-ray inspection shall be used to inspect molded fittings for voids, and knit line strength shall be tested. All fabricated fittings shall be inspected for joint quality and alignment.

2.03 COMPLIANCE TESTS

- A. In case of conflict with Manufacturer's certifications, the Contractor, Engineer, or Owner may request retesting by the manufacturer or have retests performed by an outside testing service. All retesting shall be at the requestor's expense, and shall be performed in accordance with the Specifications.
- B. Installation shall be in accordance with Manufacturer's recommendations and this specification. All necessary precautions shall be taken to ensure a safe working environment in accordance with the applicable codes and standards.

PART 3 - EXECUTION

3.01 INSTALLATION OF HIGH DENSITY POLYETHYLENE PRESSURE PIPE AND FITTINGS

- A. All high density polyethylene (HDPE) pressure pipe shall be installed by direct bury, directional bore, or a method approved by the Owner/Engineer prior to construction. If directional bore is used, or if directed by the Owner/Engineer, the entire area of construction shall be surrounded by silt barriers during construction.

Installation shall be in accordance with Manufacturer's recommendations, and this specification. All necessary precautions shall be taken to ensure a safe working environment in accordance with the applicable codes and standards.

3.02 HEAT FUSION JOINING

- A. Joints between plain end pipes and fittings shall be made by butt fusion, and joints between the main and saddle branch fittings shall be made using saddle fusion using only procedures that are recommended by the pipe and fitting Manufacturer. The Contractor shall ensure that persons making heat fusion joints have received training and certification for heat fusion in the Manufacturer's recommended procedure. The Contractor shall maintain records of trained personnel, and shall certify that training was received not more than 12 months before commencing construction. External and internal beads shall not be removed.

3.03 MECHANICAL JOINING

- A. Polyethylene pipe and fittings may be joined together or to other materials by means of flanged connections (flange adapters and back-up rings) or mechanical couplings designed for joining polyethylene pipe or for joining polyethylene pipe to another material. Mechanical couplings shall be fully pressure rated and fully thrust restrained such that when installed in accordance with manufacturer's recommendations, a longitudinal load applied to the mechanical coupling will cause the pipe to yield before the mechanical coupling disjoins. External joint restraints shall not be used in lieu of fully restrained mechanical couplings.

3.04 BRANCH CONNECTIONS

- A. Branch connections to the main shall be made with saddle fittings or tees. Polyethylene saddle fittings shall be saddle fused to the main pipe.

3.05 EXCAVATION

- A. Trench excavations shall conform to this specification, the plans and drawings, as otherwise authorized in writing by the Engineer or his approved representative, and in accordance with all applicable codes. Excess groundwater shall be removed by the Contractor. Where necessary, trench walls shall be shored or reinforced.

3.06 LARGE DIAMETER FABRICATED FITTINGS

- A. Fabricated directional fittings 16" IPS and larger shall be butt fused to the end of a pipe. The flanged directional outlet connections shall be made up in the trench.

3.07 MECHANICAL JOINT & FLANGE INSTALLATION

- A. Mechanical joints and flange connections shall be installed in accordance with the Manufacturer's recommended procedure. Flange faces shall be centered and aligned to each other before assembling and tightening bolts. In no case shall the flange bolts be used to draw the flanges into alignment. Bolt threads shall be lubricated, and flat washers shall be fitted under the flange nuts. Bolts shall be evenly tightened according to the tightening pattern and torque step recommendations of the Manufacturer. At least one hour after initial assembly, flange connections shall be re-tightened following the tightening pattern and torque step recommendations of the Manufacturer. The final tightening torque shall be 100 ft-lbs or less as recommended by the Manufacturer.

3.08 FOUNDATION & BEDDING

- A. Pipe shall be laid on grade and on a stable foundation. Unstable or mucky trench bottom soils shall be removed, and a 6" foundation or bedding of compacted Class I material shall be installed to pipe bottom grade. Excess groundwater shall be removed from the trench before laying the foundation or bedding and the pipe. A trench cut in rock or stony soil shall be excavated to 6" below pipe bottom grade, and brought back to grade with compacted Class I bedding. All ledge rock, boulders, and large stones shall be removed.

3.09 PIPE HANDLING

- A. When lifting with slings, only wide fabric choker slings shall be used to lift, move, or lower pipe and fittings. Wire rope or chain shall not be used. Slings shall be of sufficient capacity for the load, and shall be inspected before use. Worn or defective equipment shall not be used.

3.10 BACKFILLING

- A. Pipe embedment backfill shall be Class I or II material placed and compacted to at least 90% Standard Proctor Density in 6" lifts to at least 6" above the pipe crown.

3.11 FINAL BACKFILLING

- A. Final backfill shall be placed and compacted to finished grade. Native soils without debris, stones, boulders, clumps, frozen clods or the like larger than 8" in their largest dimension may be used.

3.12 TESTING

- A. Butt Fusion Testing. On every day butt fusions are to be made, the first fusion of the day shall be a trial fusion. The trial fusion shall be allowed to cool completely, then fusion test straps shall be cut out. The test strap shall be 12" (min) or 30 times the wall thickness in length with the fusion in the center, and 1" (min) or 1.5 times the wall thickness in width. Bend the test strap until the ends of the strap touch. If the fusion fails at the joint, a new trial fusion shall be made, cooled completely, and tested. Butt fusion of pipe to be installed shall not commence until a trial fusion has passed the bent strap test.

The Contractor shall perform all butt fusion joints in the presence of the Engineer or his representative. The Contractor shall record the temperature and corresponding time for each fusion joint.

- B. Hydrostatic Pressure Testing. HDPE pipes shall be pressure tested in a similar manner as for PVC force main in accordance with Section 02610, Part 3.03.

END OF SECTION

SECTION 09900

PAINTS & COATINGS

PART I GENERAL

1.01 SCOPE OF WORK:

- A. The work of this section consists of furnishing all materials, labor, equipment and incidentals required and performing all the painting necessary to complete this Contract in its entirety.
- B. It is the intent of these Specifications to paint all exposed structural ferrous metal, pipe, fittings, supports, masonry, concrete, and all other work required to be painted unless otherwise specified.

1.02 REFERENCES:

Steel Structures Painting Council (SSPC)

- | | | |
|----|-----------|---|
| 1. | SSPC-SP-1 | Surface Preparation Specification - Solvent Cleaning |
| 2. | SSPC-SP-2 | Surface Preparation Specification - Hand Tool Cleaning |
| 3. | SSPC-SP-3 | Surface Preparation Specification - Power Tool Cleaning |
| 4. | SSPC-SP-6 | Surface Preparation Specification - Commercial Blast Cleaning |

1.03 PAINTING NOT INCLUDED:

- A. The following categories of work are not included as part of the field-applied finish work, or are included in other sections of these specifications.
- B. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer finishing is specified for such items as finished electrical equipment including light fixtures, switchgear, and distribution cabinets. Pumps and motors are not included in this exception.
- C. Finished Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, and bronze materials will not require finish painting, unless otherwise indicated.
- D. Operating Parts and Labels: Moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts will not require finish painting, unless otherwise indicated.

Do not paint over any code-required labels, such as Underwriters= Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

1.04 SUBMITTALS:

- A. Submit to the Engineer for review; shop drawings, working drawings, product data including Manufacturer's specifications and data on the proposed paint systems and detailed surface preparation, application procedures, dry film thickness, including paint label analysis and application instruction for each material proposed for use.
- B. Submit to the Engineer for review; color and texture cards, including standard and special colors, for initial color selections. Compliance with all other requirements is the exclusive responsibility of the Contractor. Provide a listing of the material and application for each coat of each finish sample. Samples of available colors shall be submitted to the Engineer for selection as per Section 01300.

1.05 DELIVERY AND STORAGE:

- A. Store paint products in a clean orderly manner in a dry, ventilated space; no smoking sign shall be posted in the storage area.
- B. Deliver all materials to the job site in original, new and unopened packages and containers bearing Manufacturer=s name and label, and the following information:

- Name or title of material.
- Fed. Spec. number, if applicable.
- Manufacturer=s stock number and date of manufacture.
- Manufacturer=s name.
- Contents by volume, for major pigment and vehicle constituents.
- Thinning instructions.
- Application instructions.
- Color name and number.
- Manufacturer=s product safety sheet (MDS).

1.06 JOB CONDITIONS:

- A. Apply water-base paints only when the temperature of surfaces to be painted and the surrounding air temperatures are between 50 degrees F and 90 degrees F, unless otherwise permitted by the paint Manufacturer=s printed instructions.
- B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and the surrounding air temperatures are between 45 degrees F and 95 degrees F, unless otherwise permitted by the paint Manufacturer=s printed instructions.
- C. Do not apply paint in rain, fog, or mist; or when the relative humidity exceeds 95 degrees; or to damp or wet surfaces; unless otherwise permitted by the paint Manufacturer=s printed instructions.
- D. Painting may be continued during inclement weather only if the areas and surfaces to be painted are enclosed and heated within the temperature limits specified by the paint Manufacturer during application and drying periods.

PART II PRODUCTS

2.01 MATERIALS:

- A. All painting materials shall be fully equal to those manufactured by the Tnemec Company Inc., Sherwin-Williams, Porter Paint Company or M-A-B Paints and Coatings. The painting schedule has been prepared on the basis of Tnemec, Porter and Koppers products and recommendations for applications. No brand other than those named will be considered for approval unless the brand and type of paint proposed for each item in the following schedule together with sufficient data substantiated by certified tests conducted at no expense to the Owner, to demonstrate its equality to the paint(s) named, is submitted in writing to the Engineer for approval within 30 days after the signing of the Notice to Proceed.
The type and number of tests performed shall be subject to the Engineer's approval.
- B. All painting materials shall be delivered to the mixing room in unbroken containers, bearing the Manufacturer's brand, date of manufacture and name. They shall be used without adulteration and mixed, thinned and applied in strict accordance with Manufacturer's directions for the applicable materials and surface and with the Engineer's approval before using.

2.02 PAINTING SYSTEMS:

- A. All colors will be selected by the Engineer from color charts submitted by the Contractor.
- B. The following surfaces shall have the types of paint scheduled below applied at the dry film thickness (DFT) in mils per coat noted or per manufacturer=s recommendations for various application. Some colors will require an additional coat from what is listed to get the proper color coverage.
1. Concrete (nonsubmerged or subject to splashing) and precast concrete walls and ceilings (for dry pits, air release valve manholes, etc):
 - a. Tnemec - 2 Coats: 66-Color Hi-Build Epoxoline (6 D.F.T. per coat)
 - b. Porter - 2 Coats: M.C.R. 65 High Solids Epoxy (6 D.F.T. per coat)
 - c. M.A.B - 2 Coats: 520 High Build Epoxy, 031 Line (6 D.F.T. per coat)
 2. Submerged Concrete (except in wastewater facilities):
 - a. Tnemec - 2 Coats: 139-AA90 High Solids Catalyzed Epoxy (6 D.F.T. per coat)
 - b. Porter - 2 Coats: M.C.R. 65 High Solids Epoxy (6 D.F.T. per coat)
 - c. M.A.B. - 2 Coats: Ply-Mastic 101 High Solid Epoxy, 044 Line (7 D.F.T. per coat)
 3. Concrete submerged or subject to splashing in all wastewater structures or precast manhole and valve vault structures.

If required, surfacer shall be applied to properly prepared concrete surfaces in sufficient number of coats to fill all holes and voids leaving a smooth, pin hole free surface prior to application of topcoats.

 - a. Quadex, Inc.- Quadex Hyperform and Quadex QM-1s Restore
 - b. Spectrum- 4 step coatings of Epoxy Primer, 1st moisture barrier, surfacer and final barrier coat
 - c. M.A.B. - Ply-Tile 520-W-45, Epoxy Primer Hippo Epoxy, Series 52, Polyamine Epoxy
 - d. Lafarge Aluminates - SewperCoat PG
 - e. Madewell- Mainstay ML72 with DS-5
 4. Exterior surfaces of Manholes, Wetwells, and Valve Vaults (wastewater application):
 - c. Koppers - 2 Coats: Bitumastic 300 M (8 D.F.T. per coat)
 - d. M.A.B. - 2 Coats: Ply-Tile Epoxy Coal Tar (8 D.F.T. per coat)
- C. Any surfaces not specifically named in the Schedule and not specifically excepted shall be prepared, primed and painted in the manner and with materials consistent with these Specifications. The Engineer shall select which of the Manufacturer's products, whether the type is indicated herein or not, shall be used for such unnamed surfaces. No extra payment shall be made for this painting.

PART III EXECUTION

3.01 INSPECTION:

- A. Applicator and paint Manufacturer's representative must examine the areas and conditions under which painting work is to be applied and notify the Contractor and Engineer in writing of conditions of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Applicator.
- B. Starting of painting work will be construed as acceptance of the surfaces and conditions within any particular area.
- C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces such as loose concrete or semi-dry concrete filler, or conditions otherwise detrimental to the information of a durable paint film.

3.02 PREPARATION OF SURFACES:

- A. General: Perform preparation and cleaning procedures in strict accordance with the paint Manufacturer's instructions and as herein specified, for each particular substrate condition. When the specified and recommended Manufacturer's surface preparation system differ, use the system which in the Engineer's opinion is the more restrictive (conservative). Tar stops shall not be applied to items with bitumastic coatings. The bitumastic coating shall be sandblasted off. All surfaces to be painted shall be prepared as specified herein and shall be dry and clean before painting.
- B. Carefully remove all hardware, hardware accessories, machine surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove if necessary, for the complete painting of the items and adjacent surfaces. Following completion of painting of each space or area, reinstall the removed items by workmen skilled in the trades involved.
- C. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program the cleaning and painting so that contaminants from the cleaning process will not fall onto wet, newly-painted surfaces.
- D. All metal welds, blisters, etc., shall be ground and sanded smooth in accordance with SSPC-SP-3, or in difficult and otherwise inaccessible areas, by hand cleaning in accordance with SSPC-SP2. All pits and dents shall be filled and all imperfections shall be corrected so as to provide a smooth surface for painting. All rust, loose scale, oil, grease and dirt shall be removed by use of approved solvents, wire brushing or sanding.
- E. Primed or Previously Painted Surfaces and Nonferrous Surfaces: All coated surfaces shall be cleaned prior to application of successive coats. Highly corroded surfaces shall be sand blasted in accordance with SSPC-SP-6. All nonferrous metals not to be coated shall be cleaned. This cleaning shall be done in accordance with SSPC-SP-1, Solvent Cleaning.
- F. Cementitious Materials:
 - 1. Prepare cementitious surfaces of concrete and concrete block to be painted by removing all efflorescence, chalk, dust, dirt, grease, oils, and by roughening as required to remove glaze.
 - 2. Determine the alkalinity and moisture content of the surfaces to be painted by performing appropriate tests. If the surfaces are found to be sufficiently alkaline to cause blistering and burning of the finish paint, correct this condition before application of paint. Do not paint over surfaces where the moisture content exceeds that permitted in the Manufacturer's printed directions.

- G. Shop-Finished Surfaces: All shop-coated surfaces shall be protected from damage and corrosion before and after installation by treating damaged areas immediately upon detection. Abraded or corroded spots on shop-coated surfaces shall be "Hand Cleaned" and then touched up with the same materials as the shop coat. All shop coated surfaces which are faded, discolored, or which require more than minor touch-up in the opinion of the Engineer shall receive new surface preparation before being repainted. Cut edges of galvanized sheets and exposed threads and cut ends of galvanized piping, electrical conduit, and metal pipe sleeves, that are not to be finished painted, shall be "Solvent Cleaned" and primed with zinc dust-zinc oxide metal primer.
- H. Galvanized and Zinc-Copper Alloy Surfaces: Where these surfaces are specified to be painted they shall be "Solvent Cleaned" and/or sand blasted as shown on the plans and treated as hereinafter specified. Such surfaces not to be painted shall be "Solvent Cleaned".
- I. Aluminum embedded or in contact with concrete must be painted with one shop coat of zinc chromate followed by one heavy coat of aluminum pigmented asphalt paint.

3.03 WORKMANSHIP:

A. General:

1. Primer (spot) and paint used for a particular surface shall, in general, be as scheduled for that type of new surface. Confirm with the paint Manufacturer that the paint proposed for a particular repaint condition will be compatible with the existing painted surface. Sample repainted areas on the actual site will be required to ensure this compatibility. Finished repainted areas shall be covered by the same guarantee specified for remainder of work.
2. At the request of the Engineer, samples of the finished work prepared in strict accordance with these Specifications shall be furnished and all painting shall be equal in quality to the approved samples. Finished areas shall be adequate for the purpose of determining the quality of workmanship. Experimentation with color tints shall be furnished to the satisfaction of the Engineer where standard chart colors are not satisfactory.
3. Protection of movable objects, equipment, fittings and accessories shall be provided throughout the painting operations. Dripped or spattered paint shall be promptly removed. Lay drop cloths in all areas where painting is being done to adequately protect flooring and other work from all damage during the operation and until the finished job is accepted.
4. On metal surfaces apply each coat of paint at the rate specified by the Manufacturer to achieve the minimum dry mil thickness required. If material has thickened or must be diluted for application by spray gun, the coating shall be built up to the same film thickness achieved with undiluted material. One gallon of paint as originally furnished by the Manufacturer shall not cover a greater area when applied by spray gun than when applied unthinned by brush. Deficiencies in film thickness shall be corrected by the application of an additional coat(s). On masonry, application rates will vary according to surface texture, however, in no case shall the Manufacturer's stated coverage rate be exceeded. On porous surfaces, it shall be the painter's responsibility to achieve a protective and decorative finish either by decreasing the coverage rate or by applying additional coats of paint.
5. Paints shall be mixed in proper containers of adequate capacity. All paints shall be thoroughly stirred before use and shall be kept stirred while using. No unauthorized thinners or other materials shall be added to any paint.

6. Only skilled painters shall be used on the work and specialists shall be employed where required.

B. Field Priming:

1. Steel members, metal castings, mechanical and electrical equipment and other metals which are shop primed before delivery at the site will not require a prime coat on the job. All piping and other bare metals to be painted shall receive one coat of primer before exposure to the weather, and this prime coat shall be the first coat as specified in the painting schedule.
2. Equipment which is customarily shipped with a baked-on enamel finish or with a standard factory finish shall not normally be field painted unless the prefinished equipment is specifically color selected and unless the finish has not been damaged in transit or during installation. Surfaces that have been shop painted and have been damaged, or where the shop coats or coats of paint have deteriorated, shall be properly cleaned and retouched before any successive painting is done on them in the field. All such field painting shall match as nearly as possible the original finish.

C. Field Painting:

1. All painting at the site shall be designated as Field Painting.
2. All paint shall be at room temperature before applying, and no painting shall be done when the temperature is below 50 degrees F., in dust-laden air, when rain or snow is falling, or until all traces of moisture have completely disappeared from the surface to be painted.
3. Successive coats of paint shall be tinted so as to make each coat easily distinguishable from each other with the final undercoat tinted to the approximate shade of the finished coat.
4. Finish surfaces shall not show brush marks or other irregularities. Undercoats shall be thoroughly and uniformly sanded with No. 00 sandpaper or equal to remove defects and provide a smooth even surface. Top and bottom edges of doors shall be painted and all exterior trim shall be back-primed before installation.
5. Painting shall be continuous and shall be accomplished in an orderly manner so as to facilitate inspection. All exterior concrete and masonry paint shall be performed at one continuous manner structure by structure. Materials subject to weathering shall be prime coated as quickly as possible. Surfaces of exposed members that will be inaccessible after erection shall be cleaned and painted before erection.
6. All materials shall be brush painted unless spray painting is specifically approved by the Engineer. Any sprayed painted areas must be backrolled to provide "pinhole free" coating surface. The Contractor shall be responsible for all damage caused by overspray or drifting.
7. All surfaces to be painted as well as the atmosphere in which painting is to be done shall be kept warm and dry by heating and ventilation, if necessary, until each coat of paint has hardened. Any defective paint shall be scraped off and repainted in accordance with the Engineer's directions.
8. All painted surfaces shall be "pinhole free" after coating system cures.
9. Before final acceptance of the work, all damaged surfaces of paint shall be cleaned and repainted as directed by the Engineer.

10. Any pipe scheduled to be painted and having received a coating of a tar or asphalt-compound shall be painted with two coats of Koppers Inertol Tar Stop, Porters Tarsol Standard 7000 or equal before successive coats are applied per the schedule. Themec recommends using 66 Hi-Build Epoxoline over tar, but a test patch must be run initially to test the paint's compatibility with the tar.

3.04 QUALITY CONTROL:

- A. The finished surfaces shall be free from runs, ridges, voids, drips, waves, laps, and variation in color, texture and finish. Painting found defective shall be scraped or sandblasted off and repainted as directed by the Engineer. Before final acceptance of the work, damaged surfaces of paint shall be cleaned and repainted or touched up as directed by the Engineer.
- B. Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.
- C. At the completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.
- D. Successive coats of paints shall completely cover the previous coat so it cannot be seen. Each coat shall be tinted to make the various coats distinguishable. Successive coats shall be applied after a minimum 24 hour drying period unless otherwise recommended by the Manufacturer.

3.05 TESTING:

The Contractor shall have available at the site a Tooke thickness gauge and an elcometer or Micro-Test magnetic dry mil gauge for the determination of coating thicknesses. No intermediate or finish coats shall be applied until the Engineer has accepted the previous coat.

3.06 PROTECTION:

Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to the Engineer.

3.07 TOUCH-UP:

The Contractor shall supply the Owner with one quart of each coating and color used on this project. Cans shall be unopened and properly identified.

3.08 CLEANUP:

- A. The premises shall at all times be kept free from accumulation of waste material and rubbish caused by employees or work. At the completion of the painting remove all tools, scaffolding, surplus materials and all rubbish from and about the buildings and leave work "broom clean" unless more exactly specified.
- B. Upon completion, remove all paint where it has been spilled, splashed, or splattered on all surfaces, including floors, fixtures, equipment, furniture, etc., leaving the work ready for inspection.

3.09 PAINT COLOR:

All colors shall be as selected by the Engineer from Color Cards to be submitted by the Contractor.

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SECTION 15110

WASTEWATER VALVES AND APPURTENANCES

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and install complete and ready for operation all valves and appurtenances as shown on the Drawings and as specified herein.
- B. The equipment shall include, but not be limited to, the following:
 - 1. Eccentric Plug Valves
 - 2. Check Valves
 - 3. Pinch Check Valves
 - 4. Vacuum Breakers
 - 5. Air Release Valves
 - 6. Curb stops & Corporation Stops
 - 7. Flange Adapter Couplings and Flexible Couplings
 - 8. Diaphragm Seals, Unions and Mechanical Type Seals
 - 9. Hose bibbs and pressure Gauges

1.2 DESCRIPTION OF SYSTEMS

- A. All of the equipment and materials specified herein are intended to be standard for use in controlling the flow of wastewater and reclaimed water.

1.3 QUALIFICATIONS

- A. All of the types of valves and appurtenances shall be products of well established reputable firms who are fully experienced, reputable and qualified in the manufacture of the particular equipment to be furnished. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these specifications as applicable.

1.4 SUBMITTALS

- A. Submit within 30 days after execution of the contract a list of materials to be furnished, the names of the suppliers and the date of delivery of materials to the site.
- B. Complete shop drawings of all valves and appurtenances shall be submitted to the Engineer for approval in accordance with the requirements of Section 01300.

1.5 TOOLS

- A. Special tools, if required for normal operation and maintenance shall be supplied with the equipment.

PART 2 PRODUCTS

A. General:

1. All valves and appurtenances shall be of the size shown on the Drawings. Unless approved otherwise by the Engineer, all valves of the same type shall be from the same manufacturer.
2. All valves and appurtenances shall have the name of the manufacturer and the working pressure for which they are designed cast in raised letters upon some appropriate part of the body.
3. Valve exterior to be painted Phenolic Primer Red Oxide for high resistance to corrosion.
4. For corrosion protection, the interior ferrous surfaces of all check valves used in sewage applications shall be coated with a factory applied, two-part epoxy coating to a minimum of 20 mils thick.

B. Eccentric Plug Valves

1. All valves shall be eccentric plug valves unless otherwise specified. Valves shall be as manufactured by DeZurik, Milliken, Valmatic or approved equal.
2. Plug valves shall be tested in accordance with AWWA C504 Section 5. Each valve shall be performance tested in accordance with AWWA C504 Section 5.2 and shall be given a leakage test and hydrostatic test as described in AWWA C504 Paragraphs 5.3 and 5.4. The leakage test shall be applied to the face of the plug tending to unseat the valve. The Manufacturer shall furnish certified copies of reports covering proof of design testing as described in AWWA C504 Section 5.5.
3. Plug valves shall be of the tight closing, resilient faced, non-lubricating variety and shall be of eccentric design such that the valve's pressure member (plug) rises off the body seat contact area immediately upon shaft rotation during the opening movement.
4. Valve pressure ratings shall be established by hydrostatic tests as specified by ANSI B16.1-1967. Pressure ratings shall be as follow: Valves shall be drip-tight in both directions (bi-directional) at rated pressure, 175 psi for 12-inch diameter and smaller; 150 psi for 14-inch diameter and larger. The valve shall be provided with a 2-inch square operating nut.
5. The valve body shall be constructed of cast iron ASTM A126, Class B. Body ends shall be mechanical joint to meet the requirements of AWWA C111/ANSI A21.11 or single gasket push-on type.
6. The valve plug shall be constructed of cast iron or ductile iron and shall have a conical seating surface which is eccentrically offset from the center of the plug shafts. The plug and shafts shall be integral. The entire plug face shall be totally encapsulated with Buna N (Nitrile) rubber in all valve sizes. The rubber to metal bond must withstand 75 lbs. pull under test procedure ASTM D-429-73, Method B. When the plug is in full open position, plug geometry and body waterway contours must provide a passageway that allows flow capacity equal to 100% of the adjacent pipe area.
7. Valve seat mating surface shall be constructed of a welded-in overlay of not less than 90% nickel or be a one-piece 304 stainless steel ring. Seat ring contour must be precision machined.

8. A mechanical "brake" shall be supplied on all valves and shall be capable of "locking" the valve in any intermediate position between full-open and full-closed.
9. Valves shall have multiple V-type packing and packing glands and shall be capable of being field adjusted or repacked without the bonnet or plug being removed from the valve with the valve under the full rated pressure. Valves shall have a port position indicator.
10. Valve shaft seals shall be adjustable and comply with AWWA C507 Section 10 and with AWWA C507 Section 11.
11. Manual valves shall have lever or gear actuators and tee wrenches, extension stems, floorstands, etc. as indicated on the plans. All valves 6" and larger shall be equipped with gear actuators and handwheels.
12. All gearing shall be enclosed in a semi-steel housing and be suitable for running in a lubricant with seals provided on all shafts to prevent entry of dirt and water into the actuator. All actuator shafts shall be supported on permanently lubricated bronze bearings. Actuators shall clearly indicate valve position and an adjustable stop shall be provided to set closing torque. All adjustable stop shall be provided to set closing torque.
13. All exposed nuts, bolts, and washers shall be zinc or cadmium plated. Valve packing adjustment shall be accessible without disassembly of the actuator.
14. Valves and gear actuators for submerged service shall have seals on all shafts and gaskets on the valve and actuator covers to prevent entry of water. Actuator mounting brackets for buried or submerged service shall be totally enclosed and shall have gasket seals. All exposed nuts, bolts, springs and washers shall be stainless steel.
15. Three-way plug valves shall be non-lubricated gear oriented. Valve bodies shall be ASTM A-126 Class, and be semi-steel with 125 lb. ANSI standard flanges. Plugs shall be resilient faced. Three-way valves shall be 3-way, 3 port 270 degree turn.
16. Plug valves installed such that actuators are 6 feet or more above the floor shall have chain wheels.
17. Where shown on the Drawings, plug valves shall be installed with extended shafts and actuators. Actuators for extended shafts shall be mounted on floor stands where indicated on the drawings or shall be removable handwheels where floor stands are not called for. Six-inch sleeves shall be provided for extended shafts in all floors; where necessary covers shall be provided. Shafts shall be of adequate strength to operate the valve and shall be 304 stainless steel where submerged and carbon steel elsewhere. Floor stands and covers, where called for shall be cast iron. Floor stands shall be equipped with valve position indicators. Where shown on the drawings, plug valves shall be furnished with extended bonnets, equal to DeZurik Figure 640.
18. All buried plug valves shall have a remote position indicator in the valve box showing position of the valve. A stainless steel centering and I.D. plate shall be provided showing direction of opening and number of turns to open for each valve.

C. Valves for Buried Service

1. Valves for buried service shall meet all the requirements as specified herein for interior except that buried valves shall have mechanical joint ends.
2. All buried valves shall have cast-iron three piece valve boxes, valve boxes shall be provided with suitable heavy bonnets to extend to such elevation at the finished grade surface as directed by the Engineer. The barrel shall be two-piece, screw type, having 5 " shaft. The upper section shall have a flange at the bottom having sufficient bearing area to prevent settling, shall be designed so as to prevent the transmission of surface loads directly to the valve or piping. Valve boxes shall be manufactured by CLOW, OPELIKA FOUNDRY, TYLER PIPE, or approved equal.
3. Valve boxes shall have cast iron covers, unless shown otherwise on the plans as specialty covers in sidewalks or landscape areas. Covers shall have "SEWER" cast into the top. The covers shall be so constructed as to prevent tipping or rattling.
4. One tee-handled gatwrench of suitable length shall be furnished.
5. Where valves are located out of pavement, the boxes shall be adjusted to finished grade and a concrete slab two feet square and six inches thick shall be poured around the box.
6. Valve boxes shall be of the heavy duty, traffic bearing cast iron, adjustable screw type with a drop cover. The valve box assembly shall consist of a bottom section, top section and cover which is cast from gray iron, formulated to ASTM specification A-48 latest revision, class 30 minimum and shall be free from blowholes, shrinkage or other imperfections not true to pattern. The shaft size shall be 5 1/4" and the adjustable length shall be from 18" to 24". The wall thickness shall be 3/16" \pm 1/16". The weight of the assembly shall be 61 pounds \pm 2 pounds, with the cover weight being a minimum of 12 pounds.
7. The name of the manufacturer and foundry of origin shall be cast into each of the components of the assembly in legible form. The assembly shall be suitable for highway traffic wheel loads of 16,000 pounds and shall withstand a proof load test of 25,000 pounds without failure or permanent deflection, as per Federal Specification RR-F-621-C, latest revision. The valve box shall be cast, machined, assembled, and packaged within the United States and shall fully comply with the Buy American provisions of Public Law 102-240, enacted 12/18/91.

D. Check Valves

1. Check valves shall absolutely prevent the return of water back through the valve when the inlet pressure decreases below the delivery pressure. The valve must be full opening, tight seating and its seat shall be replaceable. The valve disc shall be suspended from a non-corrosive shaft which will pass through a stuffing box.
2. Check valves shall be as manufactured by M&H, Pratt, DeZurik, or approved equal.
3. Check valves shall be outside-weighted arm, swing type and shall meet the material requirements of AWWA C508. The valves shall be iron body, with bronze mounted, Buna N faced single disc, 150 psi working water pressure, nonshock, and hydrostatically tested at 300 psi. Ends shall be 125 pound ANSI B16.1 flanges. Additional weights shall be added if necessary to prevent slamming.

4. When there is no flow through the line the disc shall hang lightly against its seat in practically a vertical position. When open, the disc shall swing clear of the waterway.
 5. Check valves shall have bronze seat and body rings, extended bronze hinge pins and stainless steel nuts on the bolts of bolted covers.
 6. Valves shall be so constructed that disc and body seat may easily be removed and replaced without removing the valve from the line. Valves shall be fitted with an extended hinge arm with outside lever and weight. If pump design head exceeds 77 feet, then an air cushioned assembly shall be installed.
- E. Pinch Check Valves
1. Pinch check valves smaller than 10 cm (4") shall be Red Valves Series 2633 Buna N in a Stainless Steel body with Stainless Steel end connectors or approved equal.
 2. Pinch check valves 10 cm (4") and larger shall be Red Valves Series 33 Buna N in an aluminum body or approved equal.
- F. Air Release Valves
1. Air release valves (ARV) used on sewer force mains shall be of the automatic type designed for wastewater applications. The valve body shall be cast iron construction, ASTM A126, Class B, and all internal working parts shall be 316 Series stainless steel, and BUNA-N orifice button. The venting orifice shall be a minimum of 2.54 cm (1") in diameter. The inlet openings shall be sized per manufacturer's recommendation but no less than 5 cm (2") NPT screwed connection. ARVs shall be manufactured by Vent-o-mat Series RGX 316 Series stainless steel, or Bermad Flow Control Accessories 300 Series stainless steel air release valves ARI-5-022.
 2. The Bermad Flow Control Accessories model ARI D-40 combination valve shall be installed to release air from the discharge piping at the pump station. Working pressure shall be 200 psi minimum and shall have a 2-inch threaded connection. Air discharged from this valve shall be released through connecting 2 inch PVC or HDPE pipe back into the wetwell.
- G. Corporation Stops
1. Corporation stops for connections to ductile iron or steel piping shall be all brass or bronze suitable for 150 psi test pressure and similar to Mueller Co. H-15029 or equal by Clow Corp.
- H. Flange Adapter Couplings
1. Flange adapter couplings shall be of the size and pressure rating required for each installation and shall be suitable for use on either cast iron or ductile iron pipe. They shall be similar or equal to Dresser Company, Style 128. All couplings shall have a sufficient number of factory installed anchor studs to meet or exceed the test pressure rating for this project, 100 psi minimum.

I. Flexible Couplings:

1. Flexible couplings shall be either the split type or the sleeve type as shown on the Drawings.
 - a. Split type coupling shall be either the split type or the sleeve type as shown on the Drawings. The couplings shall be mechanical type for radius groove piping. The couplings shall mechanically engage and lock grooved pipe ends in a positive coupling and allow for angular deflection and contraction and expansion.
 - b. Couplings shall consist of malleable iron, ASTM Specification A47, Grade 32510 housing clamps in two or more parts, a single chlorinated butyl composition sealing gasket with a "C" shaped cross-section and internal sealing lips projecting diagonally inward, and two or more oval track head type bolts with hexagonal heavy nuts conforming to ASTM Specification A183 and A194 to assemble the housing clamps. Bolts and nuts shall be Series 300 stainless steel.
 - c. Victaulic type couplings and fittings may be used in lieu of flanged joints. Pipes shall be radius grooved as specified for use with the Victaulic couplings. Flanged adapter connections at fittings, valves, and equipment shall be Victaulic Vic Flange Style 741, equal by Gustin-Bacon Group, Division of Certain-Teed Products, Kansas City, Kansas, or equal.
 - d. Sleeve type couplings shall be used with all buried piping. The couplings shall be of steel and shall be Dresser Style 38, Smith Blair Style 413, Baker Allsteel, or equal. The coupling shall be provided with stainless steel bolts and nuts unless indicated otherwise.
 - e. All couplings shall be furnished with the pipe stop removed.
 - f. Couplings shall be provided with gaskets of a composition suitable for exposure to the liquid within the pipe.
 - g. If the Contractor decides to use victaulic couplings in lieu of flanged joints, he shall be responsible for supplying supports for the joints.

J. Diaphragm Seals:

1. Diaphragm seals shall be installed on pressure gauge connection to all lines where shown on the Drawings, to protect pressure switches used to monitor excessive pressures on pipe lines. The diaphragm shall be "thread attached" to both piping and pressure switches. Diaphragm seals shall be constructed of cadmium plated carbon steel, except for the lower housing which shall be specifically chosen according to the fluid pressure being monitored.
2. Diaphragm seals shall have a flushing connection and be Type SB Mansfield and Green; No. 877 Trefice; Ashcroft; or equal.

K. Unions

1. Unions on ferrous pipe 2" in diameter and smaller shall be 150 pounds malleable iron, zinc-coated. Unions on water piping 2 " in diameter and larger shall be flange pattern, 125 pound class, zinc-coated. Gaskets for flanged unions shall be of the best quality fiber, plastic, or leather. Unions shall not be concealed in walls, ceilings, or partitions.

L. Mechanical Type Seals

1. Mechanical type seals shall consist of an adjustable modular bolted, synthetic rubber and plastic sealing element. The sealing element shall be Link-Seal LS-300-C as manufactured by Thunderline Corp., Inkster, Michigan or approved equal.

M. Hose End Faucets

1. Hose end faucets for potable water supply at submersible stations shall be Zurn Model Z-1385. Faucet shall be furnished with removable key and shall be lockable.

N. Pressure Gauges

1. Each pressure gauge shall be direct mounted, cast aluminum case, with a 4 " diameter dial and furnished with a clear glass crystal window, 3/8" shut-off valve, and a bronze pressure snubber. Provide diaphragm seals between shut-off valve and pressure gauge on all sludge and lines with nonclear matter in suspension of solution. All gauges shall be weatherproofed. The face dial shall be white finished aluminum with jet black graduations and figures. The face dial shall indicate the units of pressure being measured (e.g., feet, inches, etc.) or be dual scale.
2. If shown on the drawings, each pump discharge line shall be furnished with gauges sized 0-100 psi.

PART 3 EXECUTION

3.1 INSTALLATION

- A. All valves and appurtenances shall be installed in the locations shown, true to alignment and rigidly supported. Any damage to the above items shall be repaired to the satisfaction of the Engineer before they are installed.
- B. Valves shall be carefully inspected, opened wide and then tightly closed and the various nuts and bolts shall be tested for tightness. Special care shall be taken to prevent any foreign matter from becoming lodged in the valve seat. Valves, unless shown otherwise shall be set with their operator shaft vertically. Any valve that does not operate correctly shall be removed and replaced.
- C. Valve boxes shall be carefully centered over the operating nuts of the valves so as to permit a valve wrench or key to be fitted easily to the operating nut. Valve boxes shall be set to conform to the level of the finished surface and held in position by a ring of concrete placed under the support flange. The valve box shall not transmit surface loads to the pipe or valve. Care shall be taken to prevent earth and other material from entering the valve box. Any valve box which is out of alignment or whose top does not conform to the finished ground surface shall be dug out and reset.
- D. Before final acceptance of the work, all valve boxes shall be adjusted to finish grade. Valve operating risers shall be installed to ensure that the operating nut is 30-inches or less from the ground surface and to ensure that the valve box is true and aligned with the operating nut.
- E. After installation, all valves and appurtenances shall be tested at least 1 hour at the working pressure corresponding to the class of pipe, unless a different test pressure is specified. If any joint proves to be defective, it shall be repaired to the satisfaction of the Engineer.

- F. Install all floor boxes, brackets, extension rods, guides, the various types of operators and appurtenances as shown on the Drawings that are in masonry floors or walls, and install concrete inserts for hangers and supports as soon as forms are erected and before concrete is poured. Before setting these items, check all plans and figures which have a direct bearing on their location and he shall be responsible for the proper location of these valves and appurtenances during the construction of the structures.
- G. Pipe for use with flexible couplings shall have plain ends as specified in the respective pipe sections in Division 15.
- H. Buried flanged or mechanical joints shall be made with Series 300, stainless steel bolts. All exposed bolts shall be made with Series 300 stainless steel bolts.
- I. Prior to assembly of split couplings, the grooves as well as other parts shall be thoroughly cleaned. The ends of the pipes and outside of the gaskets shall be moderately coated with petroleum jelly, cup grease, soft soap or graphite paste, and the gasket shall be slipped over one pipe end. After the other pipe has been brought to the correct position, the gasket shall be centered properly over the pipe ends with the lips against the pipes. The housing sections then shall be placed. After the bolts have been inserted, the nuts shall be tightened until the housing sections are firmly in contact, metal-to-metal, without excessive bolt tension.
- J. Prior to the installation of sleeve-type couplings, the pipe ends shall be cleaned thoroughly for a distance of 8". Soapy water may be used as a gasket lubricant. A follower and gasket, in that order, shall be slipped over each pipe to a distance of about 6" from the end, and the middle ring shall be placed on the already laid pipe end until it is properly centered over the joint. The other pipe end shall be inserted into the middle ring and brought to proper position in relation to the pipe already laid. The gaskets and followers shall then be pressed evenly and firmly into the middle ring flares. After the bolts have been inserted and all nuts have been made up finger-tight, diametrically opposite nuts shall be progressively and uniformly tightened all around the joint, preferably by use of a torque wrench of the appropriate size and torque for the bolts.

3.2 SHOP PAINTING

- A. Ferrous surfaces of valves and appurtenances shall receive a coating of rust-inhibitive primer. All pipe connection openings shall be capped to prevent the entry of foreign matter prior to installation.

3.3 FIELD PAINTING

- A. All metal valves and appurtenances specified herein and installed in valve and meter pits will be painted as specified in Section 09900.

3.4 INSPECTION AND TESTING

- A. Completed pipe shall be subjected to hydrostatic pressure test for hours at full working pressure. All leaks shall be repaired and line retested as approved by the Engineer. Prior to testing, the gravity pipelines shall be supported in an approved manner to prevent movement during tests.

END OF SECTION



City of West Palm Beach
SCHEDULE OF BID ITEMS

ITB 13-14-129

Project Title: CITY-WIDE CONTRACT FOR LIFT STATION REPAIRS AND REHABILITATION

| Item No. | Item Description | Unit | Quantity | Unit Price | Total Price |
|---|---|-------|----------|-------------|-------------|
| <u>GENERAL CONDITIONS</u> | | | | | |
| 1 | MOBILIZATION & GENERAL CONDITIONS - ORDERS UNDER \$15,000 (per site) | LS | 1 | \$ 4,500.00 | \$ 4,500.00 |
| 2 | MOBILIZATION & GENERAL CONDITIONS- ORDERS \$15,001-\$40,000 (per site) | LS | 1 | \$ 3,500.00 | \$ 3,500.00 |
| 3 | MOBILIZATION & GENERAL CONDITIONS - ORDERS GREATER THAN \$40,001 (per site) | LS | 1 | \$ 300.00 | \$ 300.00 |
| 4 | INSURANCE PER CONTRACT (One time pay item each year of contract) | LS | 1 | \$ 500.00 | \$ 500.00 |
| 5 | PUBLIC CONSTRUCTION BOND (UP TO \$250,000) IF REQUIRED (per year) | LS | 1 | \$ 6,000.00 | \$ 6,000.00 |
| 6 | VIDEO RECORDING, PRE-CONSTRUCTION (per site, up to 500 feet of roadway) | LS | 1 | \$ 700.00 | \$ 700.00 |
| 7 | VIDEO RECORDING, POST-CONSTRUCTION (per site, up to 500 feet of roadway) | LS | 1 | \$ 1,100.00 | \$ 1,100.00 |
| 8 | TRENCH SAFETY AND CONFINED SPACE ENTRY COMPLIANCE (per site) | LS | 1 | \$ 500.00 | \$ 500.00 |
| <u>MAINTENANCE OF TRAFFIC, SAFETY & ACCESS CONTROL</u> | | | | | |
| 9 | MINOR M.O.T. DESIGN & SETUP (per site, no lane closure, City right of way) | DAY | 1 | \$ 100.00 | \$ 100.00 |
| 10 | INTERMEDIATE M.O.T. DESIGN & SETUP (per site, single lane closure, City right of way) | DAY | 1 | \$ 150.00 | \$ 150.00 |
| 11 | BARRICADE TYPE I or II w/ WARNING LIGHT | DAY | 1 | \$ 2.00 | \$ 2.00 |
| 12 | BARRICADE TYPE III w/ WARNING LIGHT | DAY | 1 | \$ 2.00 | \$ 2.00 |
| 13 | M.O.T. WARNING SIGNS | DAY | 1 | \$ 3.00 | \$ 3.00 |
| 14 | STATIC ARROW BOARDS, DETOUR SIGNS | DAY | 1 | \$ 25.00 | \$ 25.00 |
| 15 | DYNAMIC ARROW FLASHING SIGN | DAY | 1 | \$ 50.00 | \$ 50.00 |
| 16 | VARIABLE MESSAGE TRAILER | DAY | 1 | \$ 95.00 | \$ 95.00 |
| 17 | TRAFFIC CONES | DAY | 1 | \$ 2.00 | \$ 2.00 |
| 18 | FLAGMAN | HR | 1 | \$ 40.00 | \$ 40.00 |
| 19 | CONSTRUCTION WARNING FENCE (includes up to 100 lineal feet) | DAY | 1 | \$ 100.00 | \$ 100.00 |
| 20 | CONSTRUCTION WARNING FENCE (per lineal foot in excess of 100 feet) | LF DA | 1 | \$ 4.00 | \$ 4.00 |
| 21 | TEMPORARY CHAIN LINK SECURITY FENCE, 6' HEIGHT (includes up to 100 lineal feet) | DAY | 1 | \$ 40.00 | \$ 40.00 |
| 22 | TEMPORARY CHAIN LINK SECURITY FENCE, 6' HEIGHT (per lineal feet beyond 100 ft) | LF DA | 1 | \$ 3.00 | \$ 3.00 |
| 23 | TRAFFIC BARRIER, WATER OR SAND FILLED (includes up to 100 feet) | DAY | 1 | \$ 60.00 | \$ 60.00 |
| 24 | TRAFFIC SAFETY BARRIER, WATER OR SAND FILLED (per lineal feet beyond 100 ft) | LF DA | 1 | \$ 5.00 | \$ 5.00 |
| 25 | STAKED EROSION CONTROL FABRIC (includes up to 100 lineal feet) | DAY | 1 | \$ 200.00 | \$ 200.00 |
| 26 | STAKED EROSION CONTROL FABRIC (per lineal foot in excess of 100 feet) | LF DA | 1 | \$ 2.00 | \$ 2.00 |

| Item No. | Item Description | Unit | Quantity | Unit Price | Total Price |
|---|--|-------|----------|-------------|-------------|
| 27 | HAY BALES OR WATTLES | LF | 1 | \$ 8.00 | \$ 8.00 |
| 28 | STEEL PLATE (32 sq ft per plate) | DAY | 1 | \$ 50.00 | \$ 50.00 |
| 29 | LIGHT TOWER w/ GENERATOR | DAY | 1 | \$ 140.00 | \$ 140.00 |
| 30 | 4" BY-PASS PUMPING INITIAL SETUP (includes 100 feet of temporary piping) | EA | 1 | \$ 750.00 | \$ 750.00 |
| 31 | 4" BY-PASS PUMPING OPERATION | DAY | 1 | \$ 100.00 | \$ 100.00 |
| 32 | 4" BYPASS PUMPING BEYOND THE INTIAL 100 FEET | LF | 1 | \$ 4.00 | \$ 4.00 |
| 33 | 6" BY-PASS PUMPING INITIAL SETUP (includes 100 feet of temporary piping) | EA | 1 | \$ 750.00 | \$ 750.00 |
| 34 | 6" BY-PASS PUMPING OPERATION | DAY * | 1 | \$ 125.00 | \$ 125.00 |
| 35 | 6" BYPASS PUMPING BEYOND THE INTIAL 100 FEET | LF | 1 | \$ 5.00 | \$ 5.00 |
| 36 | 12" BY-PASS PUMPING INITIAL SETUP (includes 100 feet of temporary piping) | EA | 1 | \$ 2,000.00 | \$ 2,000.00 |
| 37 | 12" BY-PASS PUMPING OPERATION | DAY | 1 | \$ 1,500.00 | \$ 1,500.00 |
| 38 | 12" BYPASS PUMPING BEYOND THE INTIAL 100 FEET | LF | 1 | \$ 15.00 | \$ 15.00 |
| 39 | BYPASS PUMPING VIA 3,500 GALLON PUMPER TRUCK | HR | 1 | \$ 700.00 | \$ 700.00 |
| 40 | BYPASS PUMPING VIA VAC-CON PUMPER | HR | 1 | \$ 700.00 | \$ 700.00 |
| <u>FORCE MAIN INSTALLATION BELOW GRADE</u> | | | | | |
| 41 | 4" DIP, EPOXY LINED, CLASS 52, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 70.00 | \$ 70.00 |
| 42 | 6" DIP, EPOXY LINED, CLASS 52, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 71.00 | \$ 71.00 |
| 43 | 8" DIP, EPOXY LINED, CLASS 52, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 88.00 | \$ 88.00 |
| 44 | 10" DIP, EPOXY LINED, CLASS 52, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 107.00 | \$ 107.00 |
| 45 | 12" DIP, EPOXY LINED, CLASS 52, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 124.00 | \$ 124.00 |
| 46 | 16" DIP, EPOXY LINED, CLASS 52, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 164.00 | \$ 164.00 |
| 47 | ADDITIONAL EXCAVATION 6'-8' DEPTH | LF | 1 | \$ 18.00 | \$ 18.00 |
| 48 | ADDITIONAL EXCAVATION 8'-10' DEPTH | LF | 1 | \$ 27.00 | \$ 27.00 |
| 49 | ADDITIONAL EXCAVATION 10'-12' DEPTH | LF | 1 | \$ 65.00 | \$ 65.00 |
| 50 | 4" MEGA-LUG JOINT RESTRAINTS | EA | 1 | \$ 70.00 | \$ 70.00 |
| 51 | 6" MEGA-LUG JOINT RESTRAINTS | EA | 1 | \$ 80.00 | \$ 80.00 |
| 52 | 8" MEGA-LUG JOINT RESTRAINTS | EA | 1 | \$ 105.00 | \$ 105.00 |
| 53 | 10" MEGA-LUG JOINT RESTRAINTS | EA | 1 | \$ 155.00 | \$ 155.00 |
| 54 | 12" MEGA-LUG JOINT RESTRAINTS | EA | 1 | \$ 210.00 | \$ 210.00 |
| 55 | 16" MEGA-LUG JOINT RESTRAINTS | EA | 1 | \$ 375.00 | \$ 375.00 |
| 56 | 4" PLUG VALVE & VALVE BOX | EA | 1 | \$ 1,162.00 | \$ 1,162.00 |
| 57 | 6" PLUG VALVE & VALVE BOX | EA | 1 | \$ 1,511.00 | \$ 1,511.00 |

| Item No. | Item Description | Unit | Quantity | Unit Price | Total Price |
|--|--|------|----------|-------------|-------------|
| 58 | 8" PLUG VALVE & VALVE BOX | EA | 1 | \$ 1,890.00 | \$ 1,890.00 |
| 59 | 10" PLUG VALVE & VALVE BOX | EA | 1 | \$ 2,569.00 | \$ 2,569.00 |
| 60 | 12" PLUG VALVE & VALVE BOX | EA | 1 | \$ 3,113.00 | \$ 3,113.00 |
| 61 | 16" PLUG VALVE & VALVE BOX | EA | 1 | \$ 5,391.00 | \$ 5,391.00 |
| 62 | EXCAVATION & DISPOSAL OF ASPHALT PAVEMENT | SY | 1 | \$ 8.00 | \$ 8.00 |
| 63 | EXCAVATION & DISPOSAL OF CONCRETE SIDEWALKS, DRIVEWAYS & FLATWORK | SY | 1 | \$ 8.00 | \$ 8.00 |
| 64 | EXCAVATION & DISPOSAL OF CONCRETE CURB | LF | 1 | \$ 9.00 | \$ 9.00 |
| 65 | EXCAVATION & DISPOSAL OF UNSUITABLE SOIL | CY | 1 | \$ 11.00 | \$ 11.00 |
| 66 | CLEAN IMPORT SAND BACKFILL | CY | 1 | \$ 35.00 | \$ 35.00 |
| 67 | FLOWABLE FILL - EXCAVATABLE (per Section 121 FDOT spec) | CY | 1 | \$ 200.00 | \$ 200.00 |
| 68 | LIMEROCK STABILIZED BASE MATERIAL | CY | 1 | \$ 46.00 | \$ 46.00 |
| 69 | IN PLACE MATERIAL TESTING - LIMEROCK BEARING RATIO - ASTM | EA | 1 | \$ 200.00 | \$ 200.00 |
| 70 | IN PLACE MATERIAL TESTING - MODIFIED PROCTOR TEST, AASHTO T-180 | EA | 1 | \$ 110.00 | \$ 110.00 |
| GRAVITY SANITARY SEWER INSTALLATION | | | | | \$ - |
| 71 | 6" DIP, EPOXY LINED, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 71.00 | \$ 71.00 |
| 72 | 8" DIP, EPOXY LINED, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 88.00 | \$ 88.00 |
| 73 | 10" DIP, EPOXY LINED, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 105.00 | \$ 105.00 |
| 74 | 12" DIP, EPOXY LINED, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 124.00 | \$ 124.00 |
| 75 | 15" DIP, EPOXY LINED, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 164.00 | \$ 164.00 |
| 76 | 6" PVC, DR 26, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 37.00 | \$ 37.00 |
| 77 | 8" PVC, DR 26, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 41.00 | \$ 41.00 |
| 78 | 10" PVC, DR 26, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 55.00 | \$ 55.00 |
| 79 | 12" PVC, DR 26, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 64.00 | \$ 64.00 |
| 80 | 15" PVC, DR 26, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 75.00 | \$ 75.00 |
| 81 | 8" PVC, DR 18, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 43.00 | \$ 43.00 |
| 82 | 10" PVC, DR 18, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 61.00 | \$ 61.00 |
| 83 | 12" PVC, DR 18, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 71.00 | \$ 71.00 |
| 84 | 15" PVC, DR 18, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 88.00 | \$ 88.00 |
| 85 | 4" FERNCO COUPLING w/ SHEAR RINGS | EA | 1 | \$ 30.00 | \$ 30.00 |
| 86 | 6" FERNCO COUPLING w/ SHEAR RINGS | EA | 1 | \$ 50.00 | \$ 50.00 |
| 87 | 8" FERNCO COUPLING w/ SHEAR RINGS | EA | 1 | \$ 65.00 | \$ 65.00 |
| 88 | 10" FERNCO COUPLING w/ SHEAR RINGS | EA | 1 | \$ 90.00 | \$ 90.00 |

| Item No. | Item Description | Unit | Quantity | Unit Price | Total Price |
|--|--|------|----------|-------------|-------------|
| 89 | 12" FERNCO COUPLING w/ SHEAR RINGS | EA | 1 | \$ 110.00 | \$ 110.00 |
| 90 | 15" FERNCO COUPLING w/ SHEAR RINGS | EA | 1 | \$ 270.00 | \$ 270.00 |
| 91 | ADDITIONAL EXCAVATION 6'-8' DEPTH | LF | 1 | \$ 4.00 | \$ 4.00 |
| 92 | ADDITIONAL EXCAVATION 8'-10' DEPTH | LF | 1 | \$ 12.00 | \$ 12.00 |
| 93 | ADDITIONAL EXCAVATION 10'-12' DEPTH | LF | 1 | \$ 20.00 | \$ 20.00 |
| 94 | ADDITIONAL EXCAVATION 12'-15' DEPTH | LF | 1 | \$ 30.00 | \$ 30.00 |
| 95 | ADDITIONAL EXCAVATION 15'-18' DEPTH | LF | 1 | \$ 35.00 | \$ 35.00 |
| 96 | ADDITIONAL EXCAVATION 18'-24' DEPTH | LF | 1 | \$ 50.00 | \$ 50.00 |
| 97 | PIPE BEDDING - #57 STONE | CY | 1 | \$ 40.00 | \$ 40.00 |
| STORM SEWER INSTALLATION | | | | | |
| 98 | 12" RCP, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 45.00 | \$ 45.00 |
| 99 | 12" HDPE, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 39.00 | \$ 39.00 |
| 100 | 12" PVC, DR 26, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 42.00 | \$ 42.00 |
| 101 | 15" RCP, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 54.00 | \$ 54.00 |
| 102 | 15" HPDE, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 51.00 | \$ 51.00 |
| 103 | 15" PVC, DR 26, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 50.00 | \$ 50.00 |
| 104 | 18" RCP, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 62.00 | \$ 62.00 |
| 105 | 24" RCP, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 70.00 | \$ 70.00 |
| 106 | 30" RCP, 0'-6' DEPTH (includes excavation, backfill & compaction) | LF | 1 | \$ 83.00 | \$ 83.00 |
| 107 | ADDITIONAL EXCAVATION 6'-8' DEPTH | LF | 1 | \$ 4.00 | \$ 4.00 |
| 108 | ADDITIONAL EXCAVATION 8'-10' DEPTH | LF | 1 | \$ 20.00 | \$ 20.00 |
| 109 | ADDITIONAL EXCAVATION 10'-12' DEPTH | LF | 1 | \$ 35.00 | \$ 35.00 |
| 110 | PIPE BEDDING - #57 STONE | CY | 1 | \$ 67.00 | \$ 67.00 |
| FORCE MAIN INSTALLATION ABOVE GRADE | | | | | |
| | | | | | \$ - |
| 111 | 4" DIP PIPE, EPOXY LINED CLASS 52, FLANGED JOINT | LF | 1 | \$ 187.00 | \$ 187.00 |
| 112 | 6" DIP PIPE, EPOXY LINED CLASS 52, FLANGED JOINT | LF | 1 | \$ 200.00 | \$ 200.00 |
| 113 | 8" DIP PIPE, EPOXY LINED CLASS 52, FLANGED JOINT | LF | 1 | \$ 257.00 | \$ 257.00 |
| 114 | 10" DIP PIPE, EPOXY LINED CLASS 52, FLANGED JOINT | LF | 1 | \$ 336.00 | \$ 336.00 |
| 115 | 12" DIP PIPE, EPOXY LINED CLASS 52, FLANGED JOINT | LF | 1 | \$ 355.00 | \$ 355.00 |
| 116 | 4" CHECK VALVE, OUTSIDE WEIGHT, FLANGED JOINT | EA | 1 | \$ 1,780.00 | \$ 1,780.00 |
| 117 | 6" CHECK VALVE, OUTSIDE WEIGHT, FLANGED JOINT | EA | 1 | \$ 2,338.00 | \$ 2,338.00 |
| 118 | 8" CHECK VALVE, OUTSIDE WEIGHT, FLANGED JOINT | EA | 1 | \$ 3,526.00 | \$ 3,526.00 |
| 119 | 10" CHECK VALVE, OUTSIDE WEIGHT, FLANGED JOINT | EA | 1 | \$ 5,526.00 | \$ 5,526.00 |

| Item No. | Item Description | Unit | Quantity | Unit Price | Total Price |
|--|--|------|----------|-------------|-------------|
| 120 | 12" CHECK VALVE, OUTSIDE WEIGHT, FLANGED JOINT | EA | 1 | \$ 7,847.00 | \$ 7,847.00 |
| 121 | 4" DIP FITTINGS, EPOXY LINED CLASS 52, FLANGED JOINT | EA | 1 | \$ 508.00 | \$ 508.00 |
| 122 | 6" DIP FITTINGS, EPOXY LINED CLASS 52, FLANGED JOINT | EA | 1 | \$ 592.00 | \$ 592.00 |
| 123 | 8" DIP FITTINGS, EPOXY LINED CLASS 52, FLANGED JOINT | EA | 1 | \$ 870.00 | \$ 870.00 |
| 124 | 10" DIP FITTINGS, EPOXY LINED CLASS 52, FLANGED JOINT | EA | 1 | \$ 1,221.00 | \$ 1,221.00 |
| 125 | 12" DIP FITTINGS, EPOXY LINED CLASS 52, FLANGED JOINT | EA | 1 | \$ 1,660.00 | \$ 1,660.00 |
| 126 | 4" PLUG VALVE, LEVER OPERATED, FLANGED JOINT | EA | 1 | \$ 1,006.00 | \$ 1,006.00 |
| 127 | 6" PLUG VALVE, HAND WHEEL, FLANGED JOINT | EA | 1 | \$ 1,222.00 | \$ 1,222.00 |
| 128 | 8" PLUG VALVE, HAND WHEEL, FLANGED JOINT | EA | 1 | \$ 1,568.00 | \$ 1,568.00 |
| 129 | 10" PLUG VALVE, HAND WHEEL, FLANGED JOINT | EA | 1 | \$ 2,278.00 | \$ 2,278.00 |
| 130 | 12" PLUG VALVE, HAND WHEEL, FLANGED JOINT | EA | 1 | \$ 2,754.00 | \$ 2,754.00 |
| 131 | STAINLESS STEEL 3" PRESSURE GAUGE & TAP | EA | 1 | \$ 395.00 | \$ 395.00 |
| 132 | 2" ARI D-040 AIR RELEASE VALVE ASSEMBLY & BRASS CORP STOP & TAPPING SADDLE | EA | 1 | \$ 1,200.00 | \$ 1,200.00 |
| 133 | ARI D-025 AIR RELEASE EPOXY COATED STEEL & BRASS CORP STOP & TAPPING SADDLE | EA | 1 | \$ 1,720.00 | \$ 1,720.00 |
| 134 | BRASS CORP STOP & TAPPING SADDLE | EA | 1 | \$ 748.00 | \$ 748.00 |
| 135 | 2" DIA H.D. ALUM PIPE SUPPORT STANDS w/ ST STL ANCHORS (max 36" height) | EA | 1 | \$ 335.00 | \$ 335.00 |
| 136 | 3" DIA H.D. ALUM PIPE SUPPORT STANDS w/ ST STL ANCHORS (max 36" height) | EA | 1 | \$ 335.00 | \$ 335.00 |
| 137 | 4" DIA H.D. ALUM PIPE SUPPORT STANDS w/ ST STL ANCHORS (max 36" height) | EA | 1 | \$ 440.00 | \$ 440.00 |
| 138 | 6" CAMLOCK EMERGENCY PUMP CONNECTION & CAP | EA | 1 | \$ 300.00 | \$ 2,754.00 |
| 139 | 8" CAMLOCK EMERGENCY PUMP CONNECTION & CAP | EA | 1 | \$ 450.00 | \$ 395.00 |
| WET WELL & MANHOLE REPLACEMENT & REPAIR | | | | | |
| 140 | 4" DIP EPOXY COATED & LINED, VERTICAL DISCHARGE PIPING (up to 15 lineal feet) | EA | 1 | \$ 2,242.00 | \$ 2,242.00 |
| 141 | 4" DIP EPOXY COATED & LINED DISCHARGE PIPING (per foot in excess of 15 lineal feet) | LF | 1 | \$ 128.00 | \$ 128.00 |
| 142 | 6" DIP EPOXY COATED & LINED VERTICAL DISCHARGE PIPING (up to 15 lineal feet) | EA | 1 | \$ 2,391.00 | \$ 2,391.00 |
| 143 | 6" DIP EPOXY COATED & LINED DISCHARGE PIPING (per foot in excess of 15 lineal feet) | LF | 1 | \$ 132.00 | \$ 132.00 |
| 144 | 8" DIP EPOXY COATED & LINED VERTICAL DISCHARGE PIPING (up to 15 lineal feet) | EA | 1 | \$ 2,857.00 | \$ 2,857.00 |
| 145 | 8" DIP EPOXY COATED & LINED DISCHARGE PIPING (per foot in excess of 15 lineal feet) | LF | 1 | \$ 166.00 | \$ 166.00 |
| 146 | 10" DIP EPOXY COATED & LINED VERTICAL DISCHARGE PIPING (up to 15 lineal feet) | EA | 1 | \$ 2,869.00 | \$ 2,869.00 |
| 147 | 10" DIP EPOXY COATED & LINED DISCHARGE PIPING (per foot in excess of 15 lineal feet) | LF | 1 | \$ 201.00 | \$ 201.00 |
| 148 | 12" DIP EPOXY COATED & LINED VERTICAL DISCHARGE PIPING (up to 15 lineal feet) | EA | 1 | \$ 3,405.00 | \$ 3,405.00 |
| 149 | 12" DIP EPOXY COATED & LINED DISCHARGE PIPING (per foot in excess of 15 lineal feet) | LF | 1 | \$ 240.00 | \$ 240.00 |
| 150 | 4" DIP EPOXY COATED & LINED FITTINGS w/ ST STL NUTS & BOLTS | EA | 1 | \$ 498.00 | \$ 498.00 |

| Item No. | Item Description | Unit | Quantity | Unit Price | Total Price |
|----------|--|------|----------|-------------|-------------|
| 151 | 6" DIP EPOXY COATED & LINED FITTINGS w/ ST STL NUTS & BOLTS | EA | 1 | \$ 952.00 | \$ 952.00 |
| 152 | 8" DIP EPOXY COATED & LINED FITTINGS w/ ST STL NUTS & BOLTS | EA | 1 | \$ 1,489.00 | \$ 1,489.00 |
| 153 | 10" DIP EPOXY COATED & LINED FITTINGS w/ ST STL NUTS & BOLTS | EA | 1 | \$ 1,967.00 | \$ 1,967.00 |
| 154 | 12" DIP EPOXY COATED & LINED FITTINGS w/ ST STL NUTS & BOLTS | EA | 1 | \$ 2,300.00 | \$ 2,300.00 |
| 155 | 4" HDPE VERTICAL DISCHARGE PIPING (up to 15 lineal feet) | EA | 1 | \$ 1,692.00 | \$ 1,692.00 |
| 156 | 4" HDPE DISCHARGE PIPING (per foot in excess of 15 lineal feet) | LF | 1 | \$ 83.00 | \$ 83.00 |
| 157 | 316 ST STL HORIZ SUPPORT BRACKET FOR 4" DISCHARGE PIPING | EA | 1 | \$ 317.00 | \$ 317.00 |
| 158 | 6" HDPE VERTICAL DISCHARGE PIPING (up to 15 lineal feet) | EA | 1 | \$ 2,041.00 | \$ 2,041.00 |
| 159 | 6" HDPE DISCHARGE PIPING (per foot in excess of 15 lineal feet) | LF | 1 | \$ 107.00 | \$ 107.00 |
| 160 | 316 ST STL HORIZ SUPPORT BRACKET FOR 6" DISCHARGE PIPING | EA | 1 | \$ 317.00 | \$ 317.00 |
| 161 | 8" HDPE VERTICAL DISCHARGE PIPING (up to 15 lineal feet) | EA | 1 | \$ 2,620.00 | \$ 2,620.00 |
| 162 | 8" HDPE DISCHARGE PIPING (per foot in excess of 15 lineal feet) | LF | 1 | \$ 149.00 | \$ 149.00 |
| 163 | 316 ST STL HORIZ SUPPORT BRACKET FOR 8" DISCHARGE PIPING | EA | 1 | \$ 527.00 | \$ 527.00 |
| 164 | 10" HDPE VERTICAL DISCHARGE PIPING (up to 15 lineal feet) | EA | 1 | \$ 3,378.00 | \$ 3,378.00 |
| 165 | 10" HDPE DISCHARGE PIPING (per foot in excess of 15 lineal feet) | LF | 1 | \$ 203.00 | \$ 203.00 |
| 166 | 316 ST STL HORIZ SUPPORT BRACKET FOR 10" DISCHARGE PIPING | EA | 1 | \$ 527.00 | \$ 527.00 |
| 167 | 12" HDPE VERTICAL DISCHARGE PIPING (up to 15 lineal feet) | EA | 1 | \$ 5,853.00 | \$ 5,853.00 |
| 168 | 12" HDPE DISCHARGE PIPING (per foot in excess of 15 lineal feet) | LF | 1 | \$ 307.00 | \$ 307.00 |
| 169 | 316 ST STL HORIZ SUPPORT BRACKET FOR 12" DISCHARGE PIPING | EA | 1 | \$ 667.00 | \$ 667.00 |
| 170 | 4" HDPE DISCHARGE FITTINGS & FLANGE ADAPTERS | EA | 1 | \$ 246.00 | \$ 246.00 |
| 171 | 6" HDPE DISCHARGE FITTINGS & FLANGE ADAPTERS | EA | 1 | \$ 342.00 | \$ 342.00 |
| 172 | 8" HDPE DISCHARGE FITTINGS & FLANGE ADAPTERS | EA | 1 | \$ 538.00 | \$ 538.00 |
| 173 | 10" HDPE DISCHARGE FITTINGS & FLANGE ADAPTERS | EA | 1 | \$ 737.00 | \$ 737.00 |
| 174 | 12" HDPE DISCHARGE FITTINGS & FLANGE ADAPTERS | EA | 1 | \$ 1,762.00 | \$ 1,762.00 |
| 175 | 4" PUMP DISCHARGE BASE, INCLUDING ANCHORS & 304 ST STL BASE PLATE | EA | 1 | \$ 2,665.00 | \$ 2,665.00 |
| 176 | 6" PUMP DISCHARGE BASE, INCLUDING ANCHORS & 304 ST STL BASE PLATE | EA | 1 | \$ 3,438.00 | \$ 3,438.00 |
| 177 | 8" PUMP DISCHARGE BASE, INCLUDING ANCHORS & 304 ST STL BASE PLATE | EA | 1 | \$ 6,422.00 | \$ 6,422.00 |
| 178 | 10" PUMP DISCHARGE BASE, INCLUDING ANCHORS & 304 ST STL BASE PLATE | EA | 1 | \$ 7,012.00 | \$ 7,012.00 |
| 179 | 4" X 6" EPOXY COATED & LINED ECCENTRIC REDUCER | EA | 1 | \$ 444.00 | \$ 444.00 |
| 180 | 6" X 8" EPOXY COATED & LINED ECCENTRIC REDUCER | EA | 1 | \$ 619.00 | \$ 619.00 |

| Item No. | Item Description | Unit | Quantity | Unit Price | Total Price |
|----------|--|------|----------|------------|-------------|
| 181 | 2" - 316 STAINLESS STEEL SCH 40 PUMP GUIDE RAILS | VF | 1 | \$ 80.00 | \$ 80.00 |
| 182 | 3" - 316 STAINLESS STEEL SCH 40 PUMP GUIDE RAILS | VF | 1 | \$ 99.00 | \$ 99.00 |
| 183 | 2" - 316 STAINLESS STEEL GUIDE RAIL UPPER SUPPORT BRACKETS w/ HOOK | EA | 1 | \$ 373.00 | \$ 373.00 |
| 184 | 3" - 316 STAINLESS STEEL GUIDE RAIL UPPER SUPPORT BRACKETS w/ HOOK | EA | 1 | \$ 475.00 | \$ 475.00 |
| 185 | 2" - 316 STAINLESS STEEL GUIDE RAIL INTERMEDIATE SUPPORT BRACKETS | EA | 1 | \$ 576.00 | \$ 576.00 |
| 186 | 3" - 316 STAINLESS STEEL GUIDE RAIL INTERMEDIATE SUPPORT BRACKETS | EA | 1 | \$ 926.00 | \$ 926.00 |
| 187 | 3/8" - 316 STAINLESS STEEL LIFTING CHAIN | LF | 1 | \$ 59.00 | \$ 59.00 |
| 188 | 1/2" - 316 STAINLESS STEEL LIFTING CHAIN | LF | 1 | \$ 74.00 | \$ 74.00 |
| 189 | 5/8" - 316 STAINLESS STEEL LIFTING CHAIN | LF | 1 | \$ 111.00 | \$ 111.00 |
| 190 | 3/4" - 316 STAINLESS STEEL LIFTING CHAIN | LF | 1 | \$ 419.00 | \$ 419.00 |
| 191 | 4 HOOK - 316 STAINLESS STEEL CABLE HANGER BRACKETS | EA | 1 | \$ 194.00 | \$ 194.00 |
| 192 | 6 HOOK - 316 STAINLESS STEEL CABLE HANGER BRACKETS | EA | 1 | \$ 214.00 | \$ 214.00 |
| 193 | 4' - 5' DIA MANHOLE, HYDROBLAST INTERIOR SURFACES (per vert foot) | VF | 1 | \$ 81.00 | \$ 81.00 |
| 194 | 6' DIA WET WELL, HYDROBLAST INTERIOR SURFACES (per vert foot) | VF | 1 | \$ 50.00 | \$ 50.00 |
| 195 | 8' DIA WET WELL, HYDROBLAST INTERIOR SURFACES (per vert foot) | VF | 1 | \$ 60.00 | \$ 60.00 |
| 196 | 10' DIA WET WELL, HYDROBLAST INTERIOR SURFACES (per vert foot) | VF | 1 | \$ 65.00 | \$ 65.00 |
| 197 | 12' DIA WET WELL, HYDROBLAST INTERIOR SURFACES (per vert foot) | VF | 1 | \$ 70.00 | \$ 70.00 |
| 198 | VALVE VAULT, HYDROBLAST INTERIOR SURFACES (per square foot) | SF | 1 | \$ 14.00 | \$ 14.00 |
| 199 | 4' - 5' DIA MANHOLE, COAL SLAG BLAST INTERIOR SURFACES (per vert foot) | VF | 1 | \$ 8.00 | \$ 8.00 |
| 200 | 6' DIA WET WELL, COAL SLAG BLAST INTERIOR SURFACES (per vert foot) | VF | 1 | \$ 122.00 | \$ 122.00 |
| 201 | 8' DIA WET WELL, COAL SLAG BLAST INTERIOR SURFACES (per vert foot) | VF | 1 | \$ 173.00 | \$ 173.00 |
| 202 | 10' DIA WET WELL, COAL SLAG BLAST INTERIOR SURFACES (per vert foot) | VF | 1 | \$ 221.00 | \$ 221.00 |
| 203 | 12' DIA WET WELL, COAL SLAG BLAST INTERIOR SURFACES (per vert foot) | VF | 1 | \$ 237.00 | \$ 237.00 |
| 204 | VALVE VAULT, COAL SLAG BLAST INTERIOR SURFACES (per vert foot) | SF | 1 | \$ 14.00 | \$ 14.00 |
| 205 | VALVE VAULT, BITUMASTIC COATING (2 layers Carboline 300M or equal, per square foot) | SF | 1 | \$ 8.00 | \$ 8.00 |
| 206 | 4' - 5' DIA MANHOLE, CALCIUM ALUMINATE COATING (Sewper-Coat or equal, per vert foot) | VF | 1 | \$ 230.00 | \$ 230.00 |
| 207 | 6' DIA WET WELL, CALCIUM ALUMINATE COATING (Sewper-Coat or equal, per vert foot) | VF | 1 | \$ 390.00 | \$ 390.00 |
| 208 | 8' DIA WET WELL, CALCIUM ALUMINATE COATING (Sewper-Coat or equal, per vert foot) | VF | 1 | \$ 477.00 | \$ 477.00 |
| 209 | 10' DIA WET WELL, CALCIUM ALUMINATE COATING (Sewper-Coat or equal, per vert foot) | VF | 1 | \$ 617.00 | \$ 617.00 |
| 210 | 12' DIA WET WELL, CALCIUM ALUMINATE COATING (Sewper-Coat or equal, per vert foot) | VF | 1 | \$ 785.00 | \$ 785.00 |

| Item No. | Item Description | Unit | Quantity | Unit Price | Total Price |
|----------|---|------|----------|-------------|-------------|
| 211 | VALVE VAULT, CALCIUM ALUMINATE COATING (Sewper-Coat or equal, per square foot) | SF | 1 | \$ 18.00 | \$ 18.00 |
| 212 | 4' - 5' DIA MANHOLE, SPECTRA SHIELD COATING (4 layer system, per vert foot) | VF | 1 | \$ 260.00 | \$ 260.00 |
| 213 | 6' DIA WET WELL, SPECTRA SHIELD COATING (4 layer system, per vert foot) | VF | 1 | \$ 529.00 | \$ 529.00 |
| 214 | 8' DIA WET WELL, SPECTRA SHIELD COATING (4 layer system, per vert foot) | VF | 1 | \$ 704.00 | \$ 704.00 |
| 215 | 10' DIA WET WELL, SPECTRA SHIELD COATING (4 layer system, per vert foot) | VF | 1 | \$ 880.00 | \$ 880.00 |
| 216 | 12' DIA WET WELL, SPECTRA SHIELD COATING (4 layer system, per vert foot) | VF | 1 | \$ 1,057.00 | \$ 1,057.00 |
| 217 | 4' - 5' DIA MANHOLE, IET SYSTEM 3 COATING (prime, intermediate & finish, per vert foot) | VF | 1 | \$ 265.00 | \$ 265.00 |
| 218 | 6' DIA WET WELL, IET SYSTEM 3 COATING (prime, intermediate & finish, per vert foot) | VF | 1 | \$ 397.00 | \$ 397.00 |
| 219 | 8' DIA WET WELL, IET SYSTEM 3 COATING (prime, intermediate & finish, per vert foot) | VF | 1 | \$ 529.00 | \$ 529.00 |
| 220 | 10' DIA WET WELL, IET SYSTEM 3 COATING (prime, intermediate & finish, per vert foot) | VF | 1 | \$ 660.00 | \$ 660.00 |
| 221 | 12' DIA WET WELL, IET SYSTEM 3 COATING (prime, intermediate & finish, per vert foot) | VF | 1 | \$ 792.00 | \$ 792.00 |
| 222 | CAST IN PLACE CONCRETE - REPAIR EXIST STRUCTURE EXTERIOR (max 6' depth) | CF | 1 | \$ 300.00 | \$ 300.00 |
| 223 | CAST IN PLACE CONCRETE - REPAIR EXIST STRUCTURE INTERIOR (max 25' depth) | CF | 1 | \$ 151.00 | \$ 151.00 |
| 223 | FORM WORK FOR CAST IN PLACE CONCRETE REPAIR | SF | 1 | \$ 1,102.00 | \$ 1,102.00 |
| 224 | REINFORCING STEEL FOR CAST IN PLACE CONCRETE REPAIR | LB | 1 | \$ 7.00 | \$ 7.00 |
| 225 | HYDRAULIC CEMENT GROUTING & REPAIR - EXISTING STRUCTURE | LB | 1 | \$ 42.00 | \$ 42.00 |
| 226 | 36" x 48" ALUMINIUM HATCH COVER & FRAME, H20 LOAD w/ 316 ST STL HARDWARE | EA | 1 | \$ 2,318.00 | \$ 2,318.00 |
| 227 | 48" x 60" ALUMINIUM HATCH COVER & FRAME, H20 LOAD w/ 316 ST STL HARDWARE | EA | 1 | \$ 3,920.00 | \$ 3,920.00 |
| 228 | 48" x 72" ALUMINIUM HATCH COVER & FRAME, H20 LOAD w/ 316 ST STL HARDWARE | EA | 1 | \$ 4,749.00 | \$ 4,749.00 |
| 229 | 54" x 60" ALUMINIUM HATCH COVER & FRAME, H20 LOAD w/ 316 ST STL HARDWARE | EA | 1 | \$ 4,641.00 | \$ 4,641.00 |
| 230 | 54" x 72" ALUMINIUM HATCH COVER & FRAME, H20 LOAD w/ 316 ST STL HARDWARE | EA | 1 | \$ 5,628.00 | \$ 5,628.00 |
| 231 | 60" x 72" ALUMINIUM HATCH COVER & FRAME, H20 LOAD w/ 316 ST STL HARDWARE | EA | 1 | \$ 6,652.00 | \$ 6,652.00 |
| 232 | 72" x 84" ALUMINIUM HATCH COVER & FRAME, H20 LOAD w/ 316 ST STL HARDWARE | EA | 1 | \$ 9,303.00 | \$ 9,303.00 |
| 233 | 4" DIP J- VENT w/ RISER & ST STL BUG SCREEN | EA | 1 | \$ 607.00 | \$ 607.00 |
| 234 | 4" PVC J- VENT w/ RISER & ST STL BUG SCREEN | EA | 1 | \$ 410.00 | \$ 410.00 |
| 235 | JOSAM 26700 VENT HOOD w/ DIP RISER | EA | 1 | \$ 1,200.00 | \$ 1,200.00 |
| 236 | FURNISH & INSTALL 4' INSIDE DIA MANHOLE, 0-6' DEEP | EA | 1 | \$ 2,934.00 | \$ 2,934.00 |
| 237 | ADDITIONAL 4' I.D. MANHOLE & EXCAVATION 6'-10' DEPTH | LF | 1 | \$ 506.00 | \$ 506.00 |
| 238 | ADDITIONAL 4' I.D. EXCAVATION 10'-14' DEPTH | LF | 1 | \$ 688.00 | \$ 688.00 |
| 239 | ADDITIONAL 4' I.D. EXCAVATION 14'-18' DEPTH | LF | 1 | \$ 1,237.00 | \$ 1,237.00 |
| 240 | FURNISH & INSTALL 5' INSIDE DIA MANHOLE, 0-6' DEEP | EA | 1 | \$ 3,354.00 | \$ 3,354.00 |

| Item No. | Item Description | Unit | Quantity | Unit Price | Total Price |
|---|--|------|----------|-------------|-------------|
| 241 | ADDITIONAL 5' I.D. MANHOLE & EXCAVATION 6'-10' DEPTH | LF | 1 | \$ 506.00 | \$ 506.00 |
| 242 | ADDITIONAL 5' I.D. EXCAVATION 10'-14' DEPTH | LF | 1 | \$ 688.00 | \$ 688.00 |
| 243 | ADDITIONAL 5' I.D. EXCAVATION 14'-18' DEPTH | LF | 1 | \$ 1,237.00 | \$ 1,237.00 |
| 244 | 4" - 8" RELINER INSIDE DROP CONNECTION w/ ST STL MOUNTING HARDWARE | EA | 1 | \$ 798.00 | \$ 798.00 |
| 245 | 10" - 15" RELINER INSIDE DROP CONNECTION w/ ST STL MOUNTING HARDWARE | EA | 1 | \$ 1,367.00 | \$ 1,367.00 |
| 246 | 32" DIA USF 240 MANHOLE RING, FRAME & LID | EA | 1 | \$ 2,007.00 | \$ 2,007.00 |
| 247 | 36" DIA USF 420 MANHOLE RING, FRAME & LID | EA | 1 | \$ 2,147.00 | \$ 2,147.00 |
| 248 | 50" DIA USF 690-AH-M MANHOLE RING, FRAME & LID | EA | 1 | \$ 3,387.00 | \$ 3,387.00 |
| <u>SUPPORT EQUIPMENT & LABOR</u> | | | | | \$ - |
| 249 | JETTER, PUMPER OR VACUUM TRUCK | HR | 1 | \$ 275.00 | \$ 275.00 |
| 250 | SEWER VIDEO CCTV | HR | 1 | \$ 310.00 | \$ 310.00 |
| 251 | 150 CFM COMPRESSOR & ACCESSORIES | DAY | 1 | \$ 303.00 | \$ 303.00 |
| 252 | DEWATERING PUMP & WELLPOINT INITIAL SETUP (up to 20 points) | EA | 1 | \$ 5,900.00 | \$ 5,900.00 |
| 253 | ADDITIONAL WELLPOINT & HEADER (per point in excess of initial 20 point header) | EA | 1 | \$ 11.00 | \$ 11.00 |
| 254 | DEWATERING PUMP & WELLPOINT OPERATION & MAINTENANCE | DAY | 1 | \$ 4,500.00 | \$ 4,500.00 |
| 255 | ADDITIONAL WELLPOINT OPERATION & MAINTENANCE (per foot per day) | DAY | 1 | \$ 500.00 | \$ 500.00 |
| 256 | DIAPHRAGM PUMP & PIPING (up to 30 feet suction hose and 60 feet discharge hose) | DAY | 1 | \$ 100.00 | \$ 100.00 |
| 257 | ADDED DIAPHRAGM PUMP PIPING (per foot beyond 30 foot suction or 60 foot discharge) | DAY | 1 | \$ 50.00 | \$ 50.00 |
| 258 | DRIVEN METAL SHEET PILING (up to 10' depth) | LF | 1 | \$ 1,520.00 | \$ 1,520.00 |
| 259 | DRIVEN METAL SHEET PILING (up to 20' depth) | LF | 1 | \$ 1,800.00 | \$ 1,800.00 |
| 260 | TRENCH SHORING BOX (min 4' x 12') | DAY | 1 | \$ 200.00 | \$ 200.00 |
| 261 | TRENCH SHORING BOX (min 6' x 12') | DAY | 1 | \$ 274.00 | \$ 274.00 |
| 262 | TRENCH SHORING BOX (min 8' x 12') | DAY | 1 | \$ 330.00 | \$ 330.00 |
| 263 | TWO MAN LANDSCAPE CLEARING CREW | HR | 1 | \$ 274.00 | \$ 274.00 |
| 264 | TWO MAN HAND EXCAVATION CREW | HR | 1 | \$ 274.00 | \$ 274.00 |
| 265 | THREE MAN PIPE EXCAVATION & REPAIR CREW | HR | 1 | \$ 366.00 | \$ 366.00 |
| 266 | DUMP TRUCK & DRIVER, 8-12 CU YD | HR | 1 | \$ 60.00 | \$ 60.00 |
| 267 | DUMP TRUCK & DRIVER 15-18 CU YD | HR | 1 | \$ 95.00 | \$ 95.00 |
| 268 | 20 CU YD CLEARING & DEMOLITION DUMPSTER | PULL | 1 | \$ 2,896.00 | \$ 2,896.00 |
| 269 | 8 CU YD CLEARING & DEMOLITION DUMPSTER | PULL | 1 | \$ 2,217.00 | \$ 2,217.00 |
| 270 | SKID STEER LOADER & OPERATOR | HR | 1 | \$ 90.00 | \$ 90.00 |

| Item No. | Item Description | Unit | Quantity | Unit Price | Total Price |
|--|---|------|----------|--------------|--------------|
| 271 | WHEEL LOADER & OPERATOR (Cat Class 057-006) | HR | 1 | \$ 130.00 | \$ 130.00 |
| 272 | RUBBER TIRE TRACTOR & OPERATOR (Cat Class 053-0210) | HR | 1 | \$ 80.00 | \$ 80.00 |
| 273 | HYDRAULIC EXCAVATOR & OPERATOR (Cat Class 054-0210) | HR | 1 | \$ 350.00 | \$ 350.00 |
| <u>WET TAPS, SADDLES & VALVES, CONNECTIONS TO EXISTING FITTINGS, CORE BORES</u> | | | | | \$ - |
| 274 | 4" ON 6" OR 8" TAPPING SLEEVE & VALVE, UP TO 5' DEPTH | EA | 1 | \$ 3,236.00 | \$ 3,236.00 |
| 275 | 4" ON 10" OR 12" TAPPING SLEEVE & VALVE, UP TO 5' DEPTH | EA | 1 | \$ 4,284.00 | \$ 4,284.00 |
| 276 | 6" ON 8" OR 10" TAPPING SLEEVE & VALVE, UP TO 5' DEPTH | EA | 1 | \$ 5,441.00 | \$ 5,441.00 |
| 277 | 6" ON 12" OR 16" TAPPING SLEEVE & VALVE, UP TO 5' DEPTH | EA | 1 | \$ 5,746.00 | \$ 5,746.00 |
| 278 | 8" ON 10" OR 12" TAPPING SLEEVE & VALVE, UP TO 5' DEPTH | EA | 1 | \$ 7,473.00 | \$ 7,473.00 |
| 279 | 8" ON 16" TAPPING SLEEVE & VALVE, UP TO 5' DEPTH | EA | 1 | \$ 10,175.00 | \$ 10,175.00 |
| 280 | CONNECT TO EXISTING VALVE OR FITTING, UP TO 5' DEPTH | EA | 1 | \$ 366.00 | \$ 366.00 |
| 281 | TAP OR CONNECTION AT ADDITIONAL EXCAVATION 6'-8' DEPTH | EA | 1 | \$ 56.00 | \$ 56.00 |
| 282 | TAP OR CONNECTION AT ADDITIONAL EXCAVATION 8'-10' DEPTH | EA | 1 | \$ 997.00 | \$ 997.00 |
| 283 | TAP OR CONNECTION AT ADDITIONAL EXCAVATION 10'-12' DEPTH | EA | 1 | \$ 1,787.00 | \$ 1,787.00 |
| 284 | 4" OR 6" DIA CORE BORE OF REINF CONC STRUCTURE, UP TO 5' DEPTH | EA | 1 | \$ 1,291.00 | \$ 1,291.00 |
| 285 | 8" OR 10" DIA CORE BORE OF REINF CONC STRUCTURE, UP TO 5' DEPTH | EA | 1 | \$ 1,791.00 | \$ 1,791.00 |
| <u>SITE WORK</u> | | | | | \$ - |
| 286 | 4" CONCRETE SIDEWALK OR SLAB w/ FIBER MESH (up to 150 sq ft) | EA | 1 | \$ 4,204.00 | \$ 4,204.00 |
| 287 | 4" CONCRETE SIDEWALK OR SLAB (per sq ft in excess of 150 sq ft at a site) | SF | 1 | \$ 30.00 | \$ 30.00 |
| 288 | 6" CONCRETE SIDEWALK OR SLAB w/ FIBER MESH (up to 150 sq ft) | EA | 1 | \$ 4,904.00 | \$ 4,904.00 |
| 289 | 6" CONCRETE SIDEWALK OR SLAB (per sq ft in excess of 150 sq ft at a site) | SF | 1 | \$ 37.00 | \$ 37.00 |
| 290 | 12" STABILIZED SUBGRADE AND 10" LIMEROCK BASE REPAIR | SY | 1 | \$ 35.00 | \$ 35.00 |
| 291 | 2" ASPHALT SURFACE COURSE REPAIR | SY | 1 | \$ 35.00 | \$ 35.00 |
| 292 | CONCRETE CURB | LF | 1 | \$ 35.00 | \$ 35.00 |
| 293 | YARD GRADING #57 STONE w/ TYPAR GEOTEXTILE (up to 200 sq ft) | EA | 1 | \$ 2,735.00 | \$ 2,735.00 |
| 294 | YARD GRADING #57 STONE w/ TYPAR GEOTEXTILE (per sq ft in excess of 200 sq ft) | SF | 1 | \$ 41.00 | \$ 41.00 |
| 295 | BAHIA SOD | SY | 1 | \$ 7.00 | \$ 7.00 |
| 296 | ST AUGUSTINE OR BERMUDA SOD | SY | 1 | \$ 9.00 | \$ 9.00 |
| 297 | PRESSURE WASHING | SF | 1 | \$ 4.00 | \$ 4.00 |
| 298 | REMOVE & DISPOSE OF EXISTING MANHOLE, UP TO 6' DEPTH | EA | 1 | \$ 548.00 | \$ 548.00 |
| 299 | ADDITIONAL MANHOLE REMOVAL, 6'-10' DEPTH | VF | 1 | \$ 219.00 | \$ 219.00 |
| 300 | ADDITIONAL MANHOLE REMOVAL, 10'-14' DEPTH | VF | 1 | \$ 274.00 | \$ 274.00 |

| Item No. | Item Description | Unit | Quantity | Unit Price | Total Price |
|-------------------|--|------|----------|--------------|--------------|
| 301 | ADDITIONAL MANHOLE REMOVAL, 14'-18" DEPTH | VF | 1 | \$ 548.00 | \$ 548.00 |
| 302 | DUPLEX VALVE VAULT REMOVAL | EA | 1 | \$ 1,071.00 | \$ 1,071.00 |
| 303 | REMOVE & DISPOSE OF EXIST PIPES, UP TO 48" DEEP & UP TO 4" DIA (non-hazardous) | LF | 1 | \$ 7.00 | \$ 7.00 |
| 304 | REMOVE & DISPOSE OF EXIST PIPES, UP TO 48" DEEP & 4.5" - 6" DIA (non-hazardous) | LF | 1 | \$ 9.00 | \$ 9.00 |
| 305 | REMOVE & DISPOSE OF EXIST PIPES, UP TO 60" DEEP & 6.5" - 10" DIA (non-hazardous) | LF | 1 | \$ 9.00 | \$ 9.00 |
| 306 | REMOVE & DISPOSE OF EXIST PIPES, UP TO 60" DEEP & 10.5" - 16" DIA (non-hazardous) | LF | 1 | \$ 11.00 | \$ 11.00 |
| ALLOWANCE: | | | | | 0 |
| 307 | FEE & PERMIT ALLOWANCE - PERMITS, HYDRANT METER APPLICATION, HYDRANT METER USAGE TO BE REIMBURSED AT ACTUAL COST | LS | 1 | \$ 5,000.00 | \$ 5,000.00 |
| 308 | MAJOR MAINT OF TRAFFIC - DESIGN, PERMITS & OPERATION BY SUB-CONTRACTOR TO BE REIMBURSED AT ACTUAL COST | LS | 1 | \$ 7,500.00 | \$ 7,500.00 |
| 309 | GEO TECHNICAL TESTING OR DRILLING ALLOWANCE TO VERIFY EXIST CONDITIONS SHALL BE REIMBURSED AT ACTUAL COST PLUS 5% | LS | 1 | \$ 5,000.00 | \$ 5,000.00 |
| 310 | SUBSURFACE UTILITY EXPLORATION ALLOWANCE. SOFT DIGS TO VERIFY EXIST CONDITIONS SHALL BE REIMBURSED AT ACTUAL COST PLUS 5% | LS | 1 | \$ 5,000.00 | \$ 5,000.00 |
| 311 | ALLOWANCE FOR MISC FITTINGS & PARTS. ITEMS NOT LISTED ABOVE SHALL BE SUPPLIED AT NO MORE THAN 10% OVER ACTUAL INVOICE COST. ORIGINAL INVOICES SHALL BE SUBMITTED TO CITY | LS | 1 | \$ 15,000.00 | \$ 15,000.00 |

Bidder Company Name: T.V. Diversified, Inc.
Thomas V. Vitale Jr.
Signature of Official authorized to bind Bidder.
Print Name: Thomas V. Vitale Jr.
Title: President
Date: 08/05/2014

Failure to fully complete and sign this Bid Form may result in rejection of the Bid.

END SCHEDULE OF BID ITEMS

***BIDDERS: THE CITY HAS PROVIDED AN ELECTRONIC SPREADSHEET FOR BID ITEM TABULATION. IT IS MANDATORY THAT ALL BIDDERS PROVIDE BOTH A SIGNED PAPER BID TABULATION AND ELECTRONIC BID TABULATION. THE ELECTRONIC BID TABULATION SHALL BE SUBMITTED WITH THE PAPER BID TABULATION BY MEANS OF COMPACT DISK, FLASH DRIVE, OR OTHER DIGITAL DATA STORAGE DEVICE. PAPER BID TABULATION AND ELECTRONIC BID TABULATION SHALL BE MATERIALLY CONSISTENT AND CONTAIN THE SAME INFORMATION. IN CASE OF DISCREPANCY, THE SIGNED PAPER BID TABULATION SHALL PREVAIL. FAILURE TO SUBMIT AN ELECTRONIC COPY/VERSION OF THE PROVIDED BID TABULATION MAY BE CAUSE FOR REJECTION OF THE BID.**



CERTIFICATE OF LIABILITY INSURANCE

TVDIV-1

OP ID: DO

DATE (MM/DD/YYYY)

10/28/2014

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

| | | |
|--|---|------------------------------------|
| PRODUCER Southern States Insurance Service Center P.O. Box 1117 Douglasville, GA 30133 Mike Garver | CONTACT NAME: Mike Garver PHONE (A/C, No, Ext): 678-715-9513 E-MAIL ADDRESS: | FAX (A/C, No): 770-447-0704 |
| | INSURER(S) AFFORDING COVERAGE | |
| INSURED TV Diversified, Inc. Tammie Alloe 6397 Shadow Creek Village Circ Lake Worth, FL 33463 | INSURER A: Admiral Insurance Company | |
| | INSURER B: | |
| | INSURER C: | |
| | INSURER D: | |
| | INSURER E: | |
| | INSURER F: | |

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS | |
|-------------------------------------|--|-----------|----------|----------------|-------------------------|-------------------------|---|--------------|
| <input checked="" type="checkbox"/> | COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER: | | | CA000019146-01 | 04/01/2014 | 04/01/2015 | EACH OCCURRENCE | \$ 1,000,000 |
| | | | | | | | DAMAGE TO RENTED PREMISES (Ea occurrence) | \$ 100,000 |
| | | | | | | | MED EXP (Any one person) | \$ 5,000 |
| | | | | | | | PERSONAL & ADV INJURY | \$ 1,000,000 |
| | | | | | | | GENERAL AGGREGATE | \$ 2,000,000 |
| | | | | | | | PRODUCTS - COMP/OP AGG | \$ 2,000,000 |
| | | | | | | | | \$ |
| | AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS | | | | | | COMBINED SINGLE LIMIT (Ea accident) | \$ |
| | | | | | | | BODILY INJURY (Per person) | \$ |
| | | | | | | | BODILY INJURY (Per accident) | \$ |
| | | | | | | | PROPERTY DAMAGE (Per accident) | \$ |
| | | | | | | | | \$ |
| | <input checked="" type="checkbox"/> EXCESS LIAB <input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS-MADE DED: RETENTION \$ | | | EX000014161-01 | 04/01/2014 | 04/01/2015 | EACH OCCURRENCE | \$ 2,000,000 |
| | | | | | | | AGGREGATE | \$ |
| | | | | | | | | \$ |
| | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below | | | | | | PER STATUTE | OTH-ER |
| | | | | | | | E.L. EACH ACCIDENT | \$ |
| | | | | | | | E.L. DISEASE - EA EMPLOYEE | \$ |
| | | | | | | | E.L. DISEASE - POLICY LIMIT | \$ |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
 Project: ITB No.13-14-129, Contract No. 14949 Lift Station Repairs & Rehabilitation

City of West Palm Beach is named as an additional insured in regards to General Liability coverage per written contract.

CERTIFICATE HOLDER**CANCELLATION**

CITYWP1

City of West Palm Beach
 401 Clematis St
 West Palm Beach, FL 33401

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

11/04/2014

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

| | | |
|---|------------------------------------|-----------------------------|
| PRODUCER Evergreen Insurance Agency 583 105th Avenue N, Ste 2 Royal Palm Beach, FL 33411 | CONTACT NAME: | |
| | PHONE (A/C, No, Ext): 561-966-8883 | FAX (A/C, No): 561-964-8885 |
| E-MAIL ADDRESS: | | |
| INSURER(S) AFFORDING COVERAGE | | NAIC # |
| INSURER A : Travelers | | 10647 |
| INSURER B : Fla. Citrus, Bus. & Industries | | |
| INSURER C : Mid-Continent Group | | 23418 |
| INSURER D : | | |
| INSURER E : | | |
| INSURER F : | | |

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

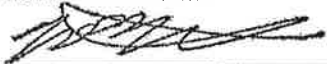
THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS |
|----------|--|-----------|----------|--------------------|-------------------------|-------------------------|--|
| | COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOG OTHER: | | | | | | EACH OCCURRENCE \$ DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ PRODUCTS - COMP/OP AGG \$ \$ |
| A | AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO ALL OWNED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS | | | BA4E607651 | 04/01/2014 | 04/01/2015 | COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$ |
| | UMBRELLA LIAB EXCESS LIAB OCCUR CLAIMS-MADE DED RETENTION \$ | | | | | | EACH OCCURRENCE \$ AGGREGATE \$ \$ |
| B | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory In NH) If yes, describe under DESCRIPTION OF OPERATIONS below | Y/N | N/A | 10642308 | 04/01/2014 | 04/01/2015 | PER STATUTE OTH-ER E.L EACH ACCIDENT \$ 1,000,000 E.L DISEASE - EA EMPLOYEE \$ 1,000,000 E.L DISEASE - POLICY LIMIT \$ 1,000,000 |
| A | Equipment Floater | | | QT6606942X61ATIL14 | 04/01/2014 | 04/01/2015 | Leased/re 250,000 |
| C | Inst. Floater | | | 04IM52145 | 07/10/2014 | 07/10/2015 | 100,000 |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Project: ITB No.13-14-129, Contract No. 14949 Lift Station Repairs & Rehabilitation.
 City of West Palm Beach, its commissioners, officers, employees and agents are listed as additional insured with respects to the Auto Liability.

CERTIFICATE HOLDER CANCELLATION

| | |
|---|--|
| City of West Palm Beach 401 Clematis Street West Palm Beach, FL 33401 | CITWE03 SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE  |
|---|--|



City of West Palm Beach

(B9)

DRUG FREE WORKPLACE CERTIFICATION

The undersigned Bidder, in accordance with Florida Statute 287.087 hereby certifies that

T.V. Diversified, Inc. does:
(Name of Business)

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violation of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business' policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under this bid a copy of the statement specified in subsection (1).
4. In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities, or contractual services that are under bid, the employee will abide by the terms of the statement, and will notify the employer of any conviction of, or plea of guilty, or *nolo contendere* to any violation of Chapter 1893, or of any controlled substance law of the United States, or any State, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance, or rehabilitation program, if such is available in the employee's community, by any employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

Thomas V. Vitale Jr
Authorized Signature
Thomas V. Vitale Jr
Print Name
08/05/2014
Date

The
City
of
West Palm Beach



ENGINEERING & PUBLIC WORKS
401 Clematis Street, 4th Floor
West Palm Beach, FL 33401
TEL: (561) 494-1040
FAX: (561) 494-1116

"The Capital City of the Palm Beaches"

November 17, 2014

T.V. Diversified, Inc.
Attn: Thomas V. Vitale, Jr., President
6397 Shadow Creek Village
Lake Worth, FL 33463

Subject: Contract #14949 - Master Contract for Lift Station Repairs and Rehabilitation

Dear Mr. Vitale:

Attached is an original of the above-referenced Contract that has been duly executed by the authorized officials of the City of West Palm Beach for your files.

Please sign below that you received this document and return this original letter to me for my files.

Sincerely,

Barbara Callwood
Contract Specialist

/bvc

Attachment

Copies to: Jeremy Covey, Project Manager
File

Received this 20th day of November, 2014 by:
Thomas V. Vitale TV Diversified, Inc
Thomas V. Vitale Jr. (Company Name)
(Print) (Signature)

"An Equal Opportunity Employer"

