

CITY OF WEST PALM BEACH, FLORIDA



TECHNICAL SPECIFICATIONS AND DRAWINGS

**ITB No. 11/12-104
PROJECT No. 10400006**

**GAINES PARK YOUTH EMPOWERMENT CENTER ROOF REPAIR
AND HVAC SYSTEM REPLACEMENT**

CITY OF WEST PALM BEACH, FLORIDA

**GAINES PARK YOUTH EMPOWERMENT CENTER ROOF REPAIR AND HVAC SYSTEM
REPLACEMENT**

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SUMMARY OF WORK

PART 1 GENERAL

1.01 LOCATION OF WORK:

All of the work is located in the City of West Palm Beach, Palm Beach County, Florida, as shown of the Project Drawings.

1.02 PROJECT DESCRIPTION

- A. This contract is intended to procure the services of a General Contractor to oversee the replacement of a 20 Ton RTU and roof deck.
- B. The Contractor shall perform the work complete, in place, perform tests where applicable and ready for continuous services and shall include repairs, replacements and restoration required as a result of damages caused during this construction.
- C. The Contractor shall furnish and install all materials, equipment and labor which is reasonably and properly inferable and necessary for the proper completion of the Work, whether specifically indicated in the Contract Documents or not.
- D. The City will require warranties for all work that is completed. The Contractor shall be capable of providing the requested manufacturers warranties or work will be given to alternate contractor.

1.03 REFERENCES:

- A. Whenever reference is made to the furnishing of materials or testing thereof to conform to the standards of any technical society, organization or body, it shall be construed to mean the latest standard, code, specifications or tentative specifications adopted and published at the date of advertisement for bids, even though reference has been made to an earlier standard. The following list of specifications is hereby made a part of the Contract, the same as if herein repeated in full. In the event of any conflict between any of these specifications, standards, codes or tentative specifications and the specifications, the latter shall govern. In the event that one of the following conflicts with another, the decision as to which shall govern will be decided by the Engineer-of-Record, whose judgment will be final.
- B. When no reference is made to a code, standard, or specification, the standard specifications of ASTM (American Society of Testing Materials), the ANSI (American National Standard Institute), the ASME (American Society of Mechanical Engineers), the IEEE (Institute of Electrical and Electronics Engineers, Inc.), or the NEMA (National Electrical Manufacturers Association) shall govern.
- C. Items specified by manufacturer's name are intended to establish the level of quality and not as a closed specification. Items of equal or higher quality to those specified may be submitted to the Owner for review and possible approval no later than eight (8) work days prior to bid opening. All primary roofing materials and air condition unit, as well as those submitted for substitution, must be supplied from a single manufacturer.

END OF SECTION

SECTION 01019

GENERAL REQUIREMENTS

1.01 EXISTING UTILITIES AND STRUCTURES:

The existing utilities and facilities shown have been located 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 Engineer 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.

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, bidder must submit shop drawings and technical data at least eight (8) calendar days prior to the Bid Opening date to substantiate "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. Data relating to changes in construction schedule.
6. Relation to separate contracts.
7. 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 and approved by the Engineer. Maintenance of such is the responsibility of the Contractor. All associated fees including construction water will be paid for by the Contractor, see attached fee schedule. In an event that damage to these facilities occurs, the Contractor will be responsible for all costs associated with their replacement by 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 water and sewer work on this contract shall be conducted during normal working hours (7:00 A.M. to 3:30 P.M.) on weekdays. No work shall be performed on weekends or City observed holidays. 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 ACCESS TO THE WORK SITE:

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.

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 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 submittal, and for processing Applications for Payment, and to establish a working understanding among the parties as to the work.
- B. At each project progress meeting, the Contractor shall develop and submit for approval a progress schedule and phasing plan demonstrating complete fulfillment of all contract requirements including all activities of subcontractors, equipment vendors and suppliers. An updated schedule shall be submitted with each pay request.

1.14 TESTS:

All tests and analyses, which are called for in the Specifications and/or Drawings (geotechnical, concrete, bacteriological, pressure and leakage, etc.) are to be performed by an Independent Testing Laboratory, and shall be at the Contractor's expense.

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 DIGITAL VIDEO-RECORDING

- A. At least one (1) week prior to start of construction, the Contractor shall video record all areas where construction is to take place. Digital video records shall be provided to the Engineer before construction commences. The digital videos 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. The video shall be in color and provide on standard CD/DVD media. The Contractor shall be responsible for providing the necessary equipment for the viewing of the videos at the Engineer's office for the duration of the project. All video material shall be indexed and catalogued in such a manner that each recorded area is readily identifiable and shall also indicate the date and time (hour, minutes & seconds) on which the video was made. The Contractor shall also have video taken of 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, the area shall be restored as approved by the Engineer at the Contractor's expense. All video records shall become the property of the Owner.

1.17 RECORD DOCUMENTS:

- A. The Contractor shall maintain on site one set of the following record documents for use to record actual revision to the Work:
 - a. Construction Drawings
 - b. Specifications
 - c. Addenda
 - d. Change Orders and other modifications to the Contract
 - e. Approved Shop Drawings, product data, and samples

- B. The Contractor shall provide record drawings for partial releases and final release submittals. With each submittal provide survey data, signed and sealed by the Contractor's Surveyor, to support elevation information depicted on the record drawings.

The record drawings shall correctly and accurately show all changes made during construction from the Contract Documents and shall reflect surveyed information which shall be performed, signed and sealed by a professional land surveyor registered in the State of Florida. The drawings shall be neat and legible. All elevations shall be based on State Plane Coordinates NGVD-29 Datum. Record Drawings, at the minimum shall show the following information:

1. Piping - Record drawings shall show the following field information:
 - a. Materials used to construct lines, including invert elevations.
 - b. Station, offset, and top of pipe and roadway elevation at 100 foot intervals, at each change of grade, valves, fittings, and at the point of utility crossings. Show all variations in required cover over pipe.
 - c. Station and offset of water services, valves, fittings, hydrants, terminal ends, blow-off points, sampling points, etc.
 - d. Station, offset, and length of all sleeves and casing pipes.
 - e. Detailed sketch for each tie-in point, and utility crossings.
 - f. Location and/or clearances of utilities (gas main, electrical and communication conduits, telephone conduit/duct bank, tv cables, etc.) and miscellaneous structures crossed or otherwise exposed during construction.
 2. Structures - Record drawings shall show the following information:
 - a. Station, offset, top of grate, and invert elevation of structures including structure dimensions and wall thickness.
 - b. Influent and effluent pipe inverts.
 3. Roadway – Record drawings shall show the following information, if applicable:
 - a. Station, offset of all newly constructed curb features (mediam elements).
- C. Upon completion of the project, final record drawings will be provided to the City on CD-Rom, Autocad Release 2000 DWG format, along with one set of blueprint, and one set mylar, signed and sealed by a professional Land Surveyor registered in the state of Florida.
- D. Engineer-of-Record/Owner (City) reserves the right to review Contractor's As-Built drawings during course of construction.
- E. Final pay and connections to any existing utility main will not be approved until Record Drawings are approved and accepted by Engineer-of-Record/Owner (City).

1.18 PROVISION FOR THE 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 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 water, chemical, electrical, gas,

or other lines 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 occurs 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.

1.20 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.

1.21 DESIGN PROFESSIONALS REPRESENTING OWNER:

Various Design Professionals (i.e. Civil, Mechanical, Electrical, Groundwater Hydrologists, etc.) as consultants to the Owner prepared the drawings and specifications for the project. The Owner may have the various Design Professionals provide services to the Owner during construction phase of the project. The Design Professionals will be representatives of the Owner and visits to the site by the Design Professionals will be on the basis of paragraph 1.22 of this section. Also paragraph 1.23 of this section includes the various Design Professionals for this project.

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 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 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 warranty 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. Should any defects in materials or workmanship, the Contractor shall replace at no cost to the Owner.

END OF SECTION

SECTION 01020

MAINTENANCE AND PROTECTION OF PROPERTIES

PART 1 - GENERAL

1.01 EXISTING UTILITY AND STRUCTURES PROTECTION

- A. Existing utilities and facilities shall be located prior to commencement of each task.
- B. The existing utilities and facilities, as shown on the Contract Drawings, have been located from the best available City records. There is no guaranty that all existing facilities are shown or that those shown are entirely accurate. The Contractor shall undertake the work necessary to assure of the location of any utilities, structures or facilities prior to performing any Work. As a minimum, prior to the start of Work, the Contractor shall contact the appropriate authorities to locate existing facilities in the vicinity, as outlined in the General Notes on the contract drawings. The City and the Engineer will assume no liability for damages sustained or costs incurred because of the Contractor's operations in the vicinity of existing utilities or structures. The Contractor shall immediately notify the Engineer of any deviation between existing conditions and the drawings.
- C. Video Records:
 - 1. At least one (1) week prior to start of construction, the contractor shall have digital videos taken of all areas where construction is to take place, including all work to be performed on private property. Such video shall be provided to the Engineer before construction commences. These video 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. It is recommended that walls, driveways and homes exhibiting cracks or other damage be recorded as well.
 - 2. Videos shall be limited to one video per street or a maximum of 2,000 linear feet of roadway per tape.
 - 3. The video records shall be in color and on standard CD/DVD media. The label shall also indicate the date and time on which the photograph was made.
 - 4. Label and catalog by street name and beginning and ending intersections.
 - 5. All video records shall become the property of the Owner.

1.02 MAINTENANCE OF AREA UNDER CONSTRUCTION

- A. The Contractor should use the following as a guideline to plan and control the areas under construction.
 - 1. No trench shall be open at the end of each workday.
 - 2. Restrict the length of open excavation (down to pipe zone) to a maximum of 100-LF.
 - 3. Contractor shall be responsible to restore local traffic access at end of each workday whenever necessary or applicable.
 - 4. Contractor shall coordinate with the City to insure detour routes will be clear.

5. Contractor shall provide bridging or temporary backfill of an open trench within a reasonable time period when requested to allow access to residential and commercial driveways throughout the duration of work. All driveways shall be open and accessible each night at the end of work.
- B. All closed trenches shall receive a temporary rock surface in order to accommodate local vehicular and pedestrian traffic each night. Temporary surface shall be a minimum of four inches road base material, compacted, graded and maintained by the Contractor.
- C. The Contractor shall perform his construction activities within the following time periods. Within 3 days after acceptance of the trench backfill, the base shall be restored including priming and/or sealing and shall be open for traffic. The asphalt wearing surface shall be replaced no earlier than 1 week after completion of the base course with complete surface restoration within the ROW including grassing, sodding and all concrete work within 2 weeks after completion of restoration of the base course. Any restoration or repair work required to be completed on private property must be completed within either 48 hours of completion of work or in the case of repair to construction damage, following notification for the need for such repair.

1.03 EXISTING UTILITIES COORDINATION

A. Watermain

The Contractor shall coordinate with the City prior to constructing, testing, or tying into existing watermain.

B. Power Supply for Electric Dewatering Pumps (if overnight, dewatering will be necessary).

1. The Contractor shall arrange for the service drops with Florida Power and Light Company.
2. All costs associated with obtaining, maintaining and removal of these temporary service drops shall be included in the bid price for potable water pipeline.

C. Underground Communications and Power Utilities

The Contractor shall be responsible for verifying locations of all existing utilities, (including but not limited to AT&T, BellSouth, FPL, Cable TV, City of West Palm Beach and Florida Public Utilities (gas)) within the limits of the project prior to beginning construction in accordance with the General Notes. Contractor shall immediately notify the Engineer of any conflicts.

1.04 PROTECTION OF EXISTING AND ADJACENT PROPERTIES:

- A. All shrubbery, paved streets and walks, driveways, fences and walls, adjacent structures and equipment shall be fully protected against damage during each stage of the project. Any damage by the Contractor shall be fully restored to original condition unless indicated otherwise on the drawings or by City officials.
- B. The use of heavy vibratory rollers in compacting the fill has the potential to cause some movement of any nearby structures founded on shallow mats/footings. For these reasons, the use of heavy vibratory drum rollers is not recommended in residential and commercial areas. Trench backfill should be compacted using walk behind vibratory equipment. As part of the pre-construction activities, the contractor is

required to perform a condition survey of buildings adjacent to the roadways as a basis for establishing preconstruction building assessments for defense or verification of construction damage claims. It will be necessary for the Contractor to provide a vibration monitoring plan as part of his construction activities. Ground particle velocities at buildings adjacent to work activities should not exceed 0.25 inch per second.

- C. Contractor shall protect all property that may be affected by his work or operations. The location and extent of underground and covered facilities are not guaranteed and the Contractor is cautioned to proceed with care in order to prevent the undermining or damage to existing structures, piping, or facilities.
- D. In the event any of the Contractor's activities were to disrupt or endanger any facilities, he shall at his own expense make all necessary repairs or replacements necessary to correct the situation to the satisfaction of the Engineer. Such work shall progress continuously to completion on a 24-hour per day, seven workday basis. The Contractor shall be responsible for the services of repair crews on call 24 hours per day for emergencies that arise involving work under this Contract.

1.05 SITE CONDITIONS

A. Site Investigation and Representation

1. The Contractor acknowledges satisfaction as to the general nature and location of the work, the general and local conditions, particularly those bearing upon availability of transportation, availability of labor, water, electric power, roads, and uncertainties of weather, or similar physical conditions, the character of equipment and facilities needed preliminary to and during the prosecution of the work, and all other matters which can in any way affect the work or the cost thereof under this contract.
2. Failure by the Contractor to become acquainted with the physical conditions and all the available information will not relieve the Contractor from responsibility for properly estimating the difficulty or cost of successfully performing the work.
3. The Contractor warrants that as a result of examination and investigation of all the aforesaid data, the Contractor can perform the work in a good and workmanlike manner and to the satisfaction of the Owner. The Owner assumes no responsibility for any representations made by any of its officers or agents during or prior to the execution of this Contract, unless (1) such representations are expressly stated in the Contract, and (2) the Contract expressly provides that the responsibility therefore is assumed by the Owner.

B. Information on Site Conditions

1. Any information obtained by the Engineer regarding site conditions, subsurface information, groundwater elevations, existing construction of site facilities as applicable, and similar data will be available for inspection at the office of the Engineer upon request. Such information is offered as supplementary information only. Neither the Engineer nor the Owner assumes any responsibility for the completeness or interpretation of such supplementary information.
2. For convenience, soil boring data is provided in the Appendix B.
3. Subsurface Investigations

(a) The Contractor shall be responsible for having determined to his satisfaction, prior to the submission of his bid, the nature and location of the work, the conformation of the ground, the character and quality of the substrata, the types and quantity of materials to be encountered, the nature of the groundwater condition, the character of equipment and facilities required preliminary to and during the performance of the work, the general and local conditions and all other matters which can in any way affect the work under this Contract. The prices established for the work to be done shall reflect all costs pertaining to the work. Any claims for extras based on the substrata or ground water table conditions will be disallowed.

(b) The Contractor further acknowledges that he assumes all risk contingent upon the nature of the subsurface conditions actually encountered by him in performing the work covered by the Contract, even though such actual conditions may result in the Contractor performing more or less work than he originally anticipated.

C. Utilities

1. The Contractor shall be responsible for determining, at his cost, the locations of all utilities within the project area, and shall be responsible for contacting each utility for location and notification prior to commencing work.

1.06 PROTECTION OF EXISTING UTILITIES

A. Contractor's Responsibility for Utility Properties and Service

1. Where the Contractor's operations could cause damage or inconvenience to telephone, television, power, water, or sewer systems, the operations shall be suspended until all arrangements necessary for the protection of these utilities and services have been made by the Contractor with the owner of the utility affected.
2. Notify all utility offices which are affected by the construction operation at least 48 hours in advance. Under no circumstances expose any utility without first obtaining permission from the appropriate agency. Once permission has been granted, locate, expose, and provide temporary support for all existing underground utilities.
3. The Contractor shall be solely and directly responsible to the Owner and operators of such properties for any damage, injury, expense, loss, inconvenience, delay, suits, actions, or claims of any character brought because of any injuries or damage which may result from the construction operations under this Contract.
4. Neither the Owner nor its officers or agents shall be responsible to the Contractor for damages as a result of the Contractor's failure to protect utilities encountered in the work.
5. In the event of interruption to domestic water, sewer, storm drain, or other utility services as a result of accidental breakage due to construction operations, promptly notify the proper authority. Cooperate with said authority in restoration of service as promptly as possible and bear all costs of repair. In no case shall interruption of any water or utility service be allowed to exist outside working hours unless prior approval is granted.

6. In the event the Contractor encounters sanitary service or water service lines that interfere with trenching, he may, by obtaining prior approval of the property owner, City or Fire Department as applicable, and the Engineer, cut the service, dig through, and restore the service with similar and equal materials at the Contractor's expense.
7. The Contractor shall replace in kind, at his own expense, all existing utilities or structures removed or damaged during construction, unless otherwise provided for in these Contract documents or ordered by the Engineer.

B. Interfering Structures

1. Take necessary precautions to prevent damage to existing structures whether on the surface, aboveground, or underground.
2. Protect underground and aboveground existing structures from damage, whether or not they lie within the limits of the easements obtained by the Owner. Where such existing fences, gates, driveways, sheds, buildings, or any other structure must be removed in order to properly carry out the construction, or are damaged during construction, restore to their original condition to the satisfaction of the property owner involved at the Contractor's own expense. Notify the Engineer of any damaged underground structure, and make repairs or replacements before backfilling.
3. Without additional compensation, the Contractor may remove and replace in a condition as good as or better than original, such small miscellaneous structures as fences, mailboxes, and signposts that interfere with the Contractor's operations.

C. Field Relocation

1. During the progress of construction, it is expected that minor relocations of the work will be necessary. Such relocations shall be made only by direction of the Engineer. If existing structures are encountered which prevent the construction, and which are not properly shown on any Contract Drawings, notify the Engineer before continuing with the construction in order that the Engineer may make such field revisions as necessary to avoid conflict with the existing structures. If the Contractor shall fail to so notify the Engineer and proceeds with the construction despite this interference when an existing structure is encountered, he shall do so at his own risk.

D. Easements

1. Limits of the existing utility easements are to be assumed to be the paved road rights-of-way unless otherwise noted on the plans. If new work is to be done beyond the horizontal limits of the paved rights-of-way, the Contractor must request such deviation from the plans from the Engineer.

1.07 PRESERVATION, RESTORATION, AND CLEANUP

A. Site Restoration and Cleanup

1. At all times during the work, keep the premises clean and orderly, and upon completion of the work, repair all damage caused by equipment and leave the project free of rubbish or excess materials of any kind.

2. Stockpile excavated materials in a manner that will cause the least damage to adjacent lawns, grassed areas, gardens, shrubbery, or fences, regardless of whether these are on private property, or on state, county, or city rights-of-way. Remove all excavated materials from grassed and planted areas and leave these surfaces in a condition equivalent to their original condition.
 3. All existing drainage ditches and culverts shall be reopened and graded and natural drainage restored. Restore culverts broken or damaged to their original condition and location.
 4. Upon completion of pipe laying and backfilling operations, clean all former grassed and planted areas, leaving all disturbed areas free from rocks, gravel, clay, or any other foreign material. The finished surface shall conform to the original surface, and shall be free-draining and free from holes, ruts, rough spots, or other surface features detrimental to a seeded area.
- B. Finishing of Site, Borrow, and Storage Areas
1. Upon completion of the project, all areas used by the Contractor shall be properly cleared of all temporary structures, rubbish, and waste materials and properly graded to drain and blend in with the abutting property. Areas used for the deposit of waste materials shall be finished to properly drain and blend with the surrounding terrain.
- C. Street Cleanup During Construction
1. Thoroughly clean all spilled dirt, gravel, or other foreign material caused by the construction operations from all streets and roads at the conclusion of each day's operation. Sidewalks, unless under construction, shall be kept clear of material, and available for pedestrian use at all times.
- D. Dust Prevention
1. Give all unpaved streets, roads, detours, haul roads or disturbed areas used in the construction area an approved dust-preventive treatment or periodically water to prevent dust. Applicable environmental regulations for dust prevention shall be strictly enforced.
- E. Preservation of Irrigation and Drainage Ditches
1. After backfilling of the trenches, restore all irrigation and storm drain ditches destroyed, damaged, or otherwise modified during construction to a condition equivalent, in the opinion of the Engineer, to the condition of the ditch before construction. Ditches so reconstructed shall be built in their original locations.

END OF SECTION

SECTION 01022

CONTRACTOR'S ACTIVITIES AND TEMPORARY FACILITIES

PART 1 - GENERAL

1.01 PRESERVING WATER QUALITY:

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

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

1.02 SECURITY:

The Contractor shall be fully responsible for the safety and security of the work area. Any temporary measures required to maintain the security of the area shall be the Contractor's responsibility.

1.03 CONSTRUCTION CONSIDERATIONS

A. Hydraulic Uplift

The Contractor shall be completely responsible for any pipelines, manholes, foundations, or similar structures that may become buoyant during the construction operations due to the ground water or floods and before the item is put into operation. Should there be any possibility of buoyancy of an item, the Contractor shall take the necessary steps to prevent its buoyancy. Damage to any items due to floating or flooding shall be repaired or the items replaced at the Contractor's expense.

B. Cutting and Patching

The Contractor shall perform all cutting and patching of his work that may be required to make its several parts come together properly and fit it to receive or be received by such other work. The Contractor shall not endanger any work of others by cutting, excavating or otherwise altering their work and shall only cut or alter work with the written consent of the Engineer and of the other contractors whose work will be affected.

C. Weather Conditions

Work that may be affected by inclement weather shall be suspended until proper conditions prevail. In the event of impending storms the Contractor shall take necessary precautions to protect all work, materials and equipment from exposure. The Owner reserves the right, through the opinion of the Engineer, to order that additional protection measures over and beyond those proposed by the Contractor, be taken to safeguard all components of the project. The Contractor shall not claim any compensation for such precautionary measures so ordered, nor claim any compensation from the Owner for damage to the work from the elements of weather.

D. Hurricane Preparedness Plan

Within 30 days prior to beginning construction, the Contractor shall submit to the Engineer and Owner a Hurricane Preparedness Plan. The plan should outline the necessary measures, which the Contractor proposes to perform. Such services shall be provided at no additional cost to the Owner.

E. Local ordinances to be observed during progression of Work

1. Noise: Minimize noise to as great as extent as practicable at all times. Air compressing plants shall be equipped with silencers and the exhaust of all gasoline motors or other power equipment shall be provided with mufflers. In the vicinity of hospitals and schools, special care shall be used to avoid noise or other nuisances. Strictly observe Chapter 42, Article V of the Town of Palm Beach Code of Ordinances and all other local regulations and ordinances covering noise control.
2. Dust Prevention: Applicable environmental regulations for dust prevention including Chapter 42, Article IV of the Town of Palm Beach Code of Ordinances shall be strictly enforced.

1.04 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 stored on or adjacent to the site in a protected place specified by the City or loaded onto trucks provided 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.

1.05 TEMPORARY FACILITIES

A. GENERAL

The Contractor shall provide all temporary facilities necessary for the proper completion of the work, as necessary and as specified. These shall include electrical power, water, ventilation, sanitary facilities and telephone service. The Contractor shall furnish, install and maintain all temporary utilities during the contract period including removal upon completion of the work. Such facilities shall comply with regulations and requirements of the National Electrical Code, OSHA, Florida Power and Light, and applicable Federal, State and local codes, etc.

B. CONSTRUCTION WATER

The City will install necessary connections for backflow preventers and meters, but only at such locations and in such manner as may be approved by the City. The Contractor will be responsible for applying for the backflow preventers and meters. Maintenance of such is the responsibility of the Contractor. All associated fees including construction water will be paid for by the Contractor. Contact the City for current fee schedule. In an event that damage to these facilities occurs, the Contractor will be responsible for all costs associated with their replacement in accordance to the City's standard rate.

C. SANITARY FACILITIES:

The Contractor shall provide temporary restroom facilities for field crews. Existing facilities are not available for use by the Contractor.

1.06 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 pipes, pumps, fences, signs, temporary power, materials or other debris. The site, adjacent properties and City and Town facilities, shall be restored to their original condition.

1.07 SYSTEM CONNECTIONS AND TEMPORARY WATER SERVICE

- A. The water distribution system to be replaced in this contract is active and fully functional.

The Contractor shall develop a plan to provide temporary service to all properties during the construction period. Specific temporary service plans shall be submitted for each street where service will be disrupted. Temporary service plans shall be submitted no later than 30 days prior to work on any street. The temporary service plan shall include:

1. Locations of temporary tie-ins.
2. Temporary pipe configurations.
3. Testing and disinfection procedures.
4. Notification of property owners.
5. Inventory of fittings and equipment to be on hand or used in the temporary service plan.
6. Procedures for restoring full service and removing temporary connections.

These plans shall be coordinated with the project schedule, and be revised as necessary for the weekly progress meetings.

- B. Temporary water service shall not be supplied from a hydrant, but shall be through an approved system tap on an active water main. The tap shall be fully accessible to the City for inspection and latter plugging. The Contractor shall provide a meter box or manhole at each tapping location for this purpose.
- C. Temporary water service shall be a minimum 2-inch diameter for up to five (5) properties and three (3) inch diameter for five (5) to ten (10) properties. No more than ten (10) properties shall be served from a temporary service.
- D. Twelve (12) inches of cover is required on temporary piping at driveways and intersections.

END OF SECTION

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 DESCRIPTION:

Measurement and payment will be based upon Work completed and accepted in accordance with the Contract Documents. No separate payment will be made for excavation, trenching, backfilling, leakage tests, surveying, bacteriological tests, density tests, or other incidental items of Work not shown in the Agreement.

Contractor must notify the Owner in writing when 80% of contract amount has been reached.

1.02 SECTION INCLUDES

- A. Measurement and payment criteria applicable to the Work performed under a lump sum payment method with a schedule of bid values for specific portions of the work.
- B. Defect assessment and non-payment for rejected work.

1.03 EQUIPMENT AND MATERIALS IN STORAGE:

Partial payment for materials and equipment in proper storage at the site of the Work will be made for those items for which the Contractor has submitted paid invoices to the Engineer. Paid invoices are defined as follows:

- a. Contractor has paid supplier 90% of invoice.
- b. Contractor has provided a copy of a check or check number in an amount totaling 90% of the invoice.
- c. Supplier has received a check for 90% of the invoice.
- d. Contractor acknowledges that Owner will make a partial payment in the amount of 90% of the invoice, less retainage for as long as the item is in storage.

1.04 PAYMENT:

Payment will be made at the respective unit price or lump sum price for each item shown in the Agreement, installed and accepted, which price and payment shall include the providing of all costs required for the complete installation labor, including social security, insurance, and other fringe benefits, workman's compensation insurance; bond premiums; rental of equipment and machinery; taxes; testing; surveys and other incidental expenses; and supervision. No separate payment will be made for the preparation of record drawings.

1.05 PAYMENT SCHEDULE:

To assure prompt payment, pay applications must be received by the Engineer-of-Record twenty (20) days prior to the 15th or 30th of the payment date (i.e. for receipt of payment on or about the 30th of the month invoices must be received by the 10th of the same month).

1.06 PAY ESTIMATE FORMS:

The Engineer will accept A1A Form G702 and 703 for submittal. The Contractor shall make copies to be used for submittal of the following pay estimates. Failure of the Contractor to sign the pay estimate or attach appropriate documentation shall be grounds for returning the pay estimate with no action by the Owner or Engineer. The Contractor shall submit six (6) copies of the pay request each month. Pay requests without updated progress schedules shall be returned with no action taken.

1.07 CONTRACT ADJUSTMENTS:

Contract Sum adjustments will be by Change Order on basis of net accumulative change for each unit price category.

- A. Except as otherwise specified, unit prices shall apply to both deductive and additive variations of quantities.
- B. Unit prices in the Agreement shall remain in effect until date of final completion of the entire Work.

1.08 DEFECT ASSESSMENT:

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.

1.09 NON-PAYMENT FOR REJECTED PRODUCTS:

- 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 II PRODUCTS

Not Used.

PART III EXECUTION

3.01 MEASUREMENT:

- A. Each project shall be paid on a lump sum basis. This includes all work as shown on the plans and specified herein. Contractor shall submit schedule of values of each project for payment application processing.
- B. Building Permit Fees shall be calculated using the formula of paragraph 3.02.
- C. Mobilization: Lump sum amount to include costs for mobilization.

3.02 BUILDING PERMIT FEES:

Bidder shall be responsible for payment of all Building Permit Fees associated with the Work. The Building Permit Fees shall be calculated per the schedule attached and shall be based on the entire project, including both base bid items and all Additive Alternates. The Building Permit Fees shall be included as part of the Total Base Bid.

Percentage of Valuation	x	Unit Value
2%		the first \$50,000 (minimum of \$50)
1%		the remainder

Other Permit Fees:

Demolition		Value as above
Moving buildings		Value as above
Driveways and sidewalks		Value as above
Approach		\$51.00
Underground fuel tanks: Value as above plus fire inspection fee Fee Schedule		Value as above
Re-inspection fee:		Building, plumbing, gas, electrical, mechanical permits, etc.-----\$50.00
Penalty for commencing work: without first securing permit		300 percent of the usual permit fee in addition to the required permit fees.
<i>Unscheduled inspection</i> by special request of any party to a permit or by special request of the property owner		\$30.00 per inspector/inspection

After hours or weekend inspections: Upon written request **three (3)** days in advance, payment of appropriate fees, and Contingent upon availability of inspections, inspections outside normal work hours are possible. On weekdays, a **two-hour minimum at \$50 per hour** is charged. On weekends, a **four-hour minimum at \$50 per hour** is charged. These minimum fees must be paid at time of request, and are refundable if no inspector is available to perform the required inspection. This time-frame includes one hour travel time for the inspector.

Administrative Fees:

Fee for *transfer of building permit* (in addition to original permit fee paid):

a)	One location to another - same permit holder	\$100.00
b)	Change contractor - same location	\$100.00 plus \$50 per sub-contractor
c)	Duplicate Permit	\$ 25.00
d)	Revision Fee (commercial/Residential): one and two family building model same lot	\$50.00 plus \$10.00 per plan page
e)	Resubmittal Fee: One resubmittal review at no charge Each additional resubmittal	10% of original permit fee \$50.00 minimum

Fire Department Plan Review Fee

In addition to the above referenced fees, charges and expenses, the City shall charge a fee of ten percent (10%) of the appropriate permit fee according to the above schedule or ten dollars (\$10.00), whichever is greater, for the inspection of construction provided by the City to determine compliance with the Florida Fire Prevention Code and NFPA 1 as adopted by State Statute.

Permit/Plan Filing Fee:

ALL PERMIT FEES MUST BE PAID IN FULL AT THE TIME OF PERMIT APPLICATION.

For work having an estimated value greater than two hundred thousand dollars (\$200,000.00), an application may be filed with payment of thirty percent (30%) of the estimated fees for plan review purposes. The balance of the permit fee shall be paid in full prior to issuance of the permit. These payments shall be non-refundable.

Major Working Drawing Review Fee:

An owner, architect, or their representative may file complete working drawings for review without applying for a permit therefore for a fee of two hundred fifty dollars (\$250.00) plus twenty dollars (\$20.00) per page. The review fee will not be applied to the permit fee and is not refundable. This plan review provides only one checklist. Any further reviews resulting in additional checklists shall be charged at the rate of one hundred dollars (\$100.00) plus ten dollars (\$10.00) per page per review.

Certification Maintenance Fee:

Pursuant to the provisions of Sections 468.631 and 166.201, Florida Statutes, the Building Official shall collect a surcharge at the rate of one-half cent (\$0.005) per square foot of under-roof floor space permitted, including new construction, renovations, alterations and additions, relative to the above building permit fees. Ten percent (10%) of such fees collected shall be retained by the City to fund projects and activities intended to improve the quality of building code enforcement, and the remaining ninety percent (90%) shall be remitted to the State of Florida in accordance with Sec. 468.631, Florida Statutes.

Radon Surcharge:

Pursuant to the provisions of Sections 404.056 and 166.021, Florida Statutes, a surcharge is assessed at the rate of one-half cent (\$0.005) per square foot under-roof floor space permitted for new construction. For additions, alterations, or renovations to existing buildings, the square footage shall be computed on the basis of the square footage being added, altered, or renovated. Five percent (5%) of such fees shall be retained by the City to cover the costs associated with the collection and remittance of such remaining surcharge of ninety-five percent (95%) to the State of Florida in accordance with Sec. 404.056, Florida Statutes.

Training Surcharge:

In addition to the above permit fees, a training surcharge of one percent (1%) of the permit fee shall be charged, with a minimum charge of one dollar (\$1.00) per permit issued, and be reserved to fund the cost of educational materials, seminars and conferences, and training of such building personnel required to be certified in accordance with Chapter 468, Florida Statutes.

Refund of Permit Fees:

After payment in full of permit fees, and prior to commencement of construction, a refund of seventy percent (70%) of such fees may be requested. Any request must be in writing, addressed to the Building Official, and must be notarized. Thirty percent (30%) or fifty-one dollars (\$51.00), whichever is greater, will be retained by the City. There will be no refund of fees after construction begins.

3.03 RESTORATION OF DAMAGED SURFACES, STRUCTURES, AND PROPERTY:

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

END OF SECTION

SECTION 01068

DEFINITIONS AND STANDARDS

PART I GENERAL

1.01 DEFINITIONS:

- A. Except as specifically defined otherwise, the following definitions supplement definitions of the Contract, General Conditions, Supplementary Conditions, and other general contract documents, and apply to the work.
1. Owner: **City of West Palm Beach**
 2. General Requirements: Provision of Division 1 sections of these specifications.
 3. Indicated: Shown on drawings by notes, graphics or schedules, or written into other portions of Contract Documents. Terms such as shown, noted, Scheduled, and Specified, have same meaning as indicated, and are used to assist the reader in locating particular information.
 4. Directed, Requested, Approved, Accepted, etc.: These terms imply by the Engineer, unless otherwise indicated.
 5. Approved by the Engineer: In no case releases Contractor from responsibility to fulfill requirements of Contract Documents.
 6. Project Site: Space available to Contractor at location of project, either exclusively or to be shared with separate contractors, for performance of the work.
 7. Furnish: Supply and deliver to project site, ready for unloading, unpacking, assembly, installation, and similar subsequent requirements.
 8. Install: Operations at project site, including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar requirements.
 9. Provide: Furnish and install, complete and ready for intended use.
 10. Engineer: Design Consultant
 11. Installer: Entity (firm or person) engaged to install work, by Contractor, subcontractor, or sub-subcontractor. Installers are required to be skilled in work they are engaged to install.
 12. Specification Text Format: Underscoring facilitates scan reading, or other meaning. Imperative language is directed at contractor, unless otherwise noted.
 13. Overlapping/Conflicting Requirements: Most stringent (generally) language written directly into Contract Documents is to be used. Overlapping/conflicting requirements do not indicate that a less stringent requirement might be acceptable. Refer uncertainties to Engineer for decision before proceeding.
 14. Where optional requirements are specified in a parallel manner option is intended to be Contractor's unless otherwise indicated.

15. Minimum Requirements: Indicated requirements are for a specific minimum acceptable level of quality/quantity, as recognized in the industry. Actual work must comply (within specified tolerances), or may exceed minimums within reasonable limits. Refer uncertainties to Architect/Engineer before proceeding.
16. Abbreviations, Plural Words: Abbreviations, where not defined in Contract Documents, will be interpreted to mean the normal construction industry terminology, determined by recognized grammatical rules, by the Engineer. Plural words will be interpreted as singular and singular words will be interpreted as plural where applicable for context of Contract Documents.
17. Testing Laboratory: An independent entity engaged for the project to provide inspections, tests, interpretations, reports, and similar services.

1.02 STANDARDS AND REGULATIONS:

- A. Industry Standards: Applicable standards of construction industry have same force and effect on performance of the work as if copied directly into Contract Documents or bound and published herewith. Standards referenced in Contract Documents or in governing regulations have precedence over non-referenced standards, insofar as different standards may contain overlapping or conflicting requirements. Comply with standards in effect as of date of Contract Documents, unless otherwise indicated.
- B. Abbreviations: Where abbreviations or acronym are used in Contract Documents, they mean the well-recognized name of entity in building construction industry. Refer uncertainties to Engineer before proceeding.
- C. Trade Union Jurisdictions: Maintain current information on jurisdiction matters, regulations, actions, and pending actions; and administer/supervise performance of work in a manner which will minimize possibility of dispute, conflicts, delays, claims, or losses.
- D. Trades: Except as otherwise indicated, the use of titles such as carpentry, in specification text, implies neither that the work must be performed by an accredited or unionized trades person of corresponding generic name (such as carpenter), nor that specified requirement apply exclusively to work by trades person of that corresponding generic name.

END OF SECTION

SECTION 01210

SAFETY AND CONVENIENCE

PART 1 – GENERAL

1.01 SAFETY EQUIPMENT

- A. The Contractor shall do all work necessary to protect the general public from hazards, including, but not limited to, surface irregularities or unramped grade changes in pedestrian sidewalk or walkway, and trenches or excavations in roadway. Barricades, lanterns, and proper signs shall be furnished in sufficient amount to safeguard the public and the work. All barricades and signs shall be clean and serviceable, in the opinion of the Engineer.
- B. During construction, the Contractor shall construct and at all times maintain satisfactory and substantial temporary chain link fencing, solid fencing, railing, barricades or steel plates, as applicable, at all openings, obstructions, or other hazards in streets, sidewalks, floor, roofs, and walkways. All such barriers shall have adequate warning lights as necessary, or required, for safety. All lights shall be regularly maintained, and in a fully operational state at all times.
- C. All work shall conform to the Trench Safety Act. Contractor shall include in his price the cost of conforming to the Trench Safety Act.

1.02 ACCIDENT REPORTS

- A. In addition, the Contractor must promptly report in writing to the Engineer all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses. If death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to the Engineer.
- B. If a claim is made by anyone against the contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing to the Engineer, giving full details of the claim.

1.03 PROTECTION AND ACCESS TO PRIVATE PROPERTY

- A. Protect stored materials located adjacent to the proposed work. Notify property owners affected by the construction at least 24 hours in advance of the time construction begins. During construction operations, construct and maintain such facilities as may be required to provide access by all property owners to their property. No person shall be cut off from vehicular access to his residence or place of business for a period exceeding 2 hours, unless the Contractor has made special arrangements with the affected persons.
- B. The Contractor shall conduct his work zone in such a manner as to reasonably exclude all personnel not employed by him, the Engineer, and the Owner.

1.04 FIRE PREVENTION AND PROTECTION

- A. The Contractor shall perform all work in a fire-safe manner. He shall supply and maintain on the site adequate fire-fighting equipment capable of extinguishing incipient fires. The Contractor shall comply with applicable federal, state and local fire-prevention regulations. Where these regulations do not apply, applicable parts of the National Fire Prevention Standard for Safeguarding Building Construction Operations (NFPA No. 241) shall be followed.

1.05 ACCESS FOR POLICE, FIRE, AND POSTAL SERVICE

- A. Notify the fire department and police department before closing any street or portion thereof. No closing shall be made without the Owner's approval. Notify said departments when the streets are again passable for emergency vehicles. Do not block off emergency vehicle access to consecutive arterial crossings or dead-end streets, in excess of 30 linear feet, without special written permission from the fire department. Conduct operations with the least interference to fire equipment access, and at no time prevent such access.
- B. The Contractor shall leave a night emergency telephone number or numbers with the police department, the Engineer, and the Owner, so that contact may be made easily at all times in case of barricade and flare trouble or other emergencies.
- C. Maintain postal service facilities in accordance with the requirements of the U.S. Postal Service. Move mailboxes to temporary locations designated by the U.S. Postal Service, and at the completion of the work in each area, replace them in their original location and in a condition satisfactory to the U.S. Postal Service.

END OF SECTION

SECTION 01300

SUBMITTALS

1.01 DESCRIPTION OF REQUIREMENTS:

The types of submittals controlled by these general requirements include shop drawings, procedure manuals, samples and miscellaneous work-related submittals. The individual submittal requirements are specified herein and in applicable sections for each unit of work.

1.02 GENERAL SUBMITTAL REQUIREMENTS:

A. Coordination and Sequencing:

The Contractor shall coordinate preparation and processing of submittals with performance of the work so that the work will not be delayed by submittals. The Contractor shall coordinate and sequence different categories of submittals for the same work, and for interfacing units of work, so that one will not be delayed for coordination with another. No extension of time will be allowed because of failure to properly coordinate and sequence submittals.

B. Preparation of Submittal:

Provide permanent marking on each submittal to identify project, date, Contractor, subcontractor, submittal name and similar information to distinguish it from other submittals. Each submittal shall clearly state where the item is to be installed. Package each submittal appropriately for transmittal and handling. Submittals which are received from sources other than through Contractor's office will be returned without action. All results of testing by independent labs or agencies shall be submitted to the Engineer. This shall include both passing and failing tests.

1.03 SPECIFIC CATEGORY SUBMITTAL REQUIREMENTS:

Except as otherwise indicated in individual work sections, comply with general requirements specified herein for each indicated category of submittal.

A. Contingency sewage disposal plan for by-pass pumping, per Section 01450, 3.01C.

1.04 SHOP DRAWINGS AND SAMPLES:

As soon as practicable and within thirty (30) days after the date of execution of the Contract, the Contractor, in conformance with the conditions of the contract, shall submit to the Engineer for approval, six (6) copies (in addition to those copies necessary for his own requirements) of the shop drawings.

Shop drawings submitted to the Engineer for his review, shall first be checked and approved by the Contractor, as indicated by a "Checked" stamp marked "Approved" on each copy of the shop drawing.

Shop drawings received without the Contractor's "Checked and Approved" stamp will be returned without further action.

Shop drawings shall be submitted, but not be limited to, the following:

1. Pipe and Fittings (all types & materials)
2. Concrete Mix Design
3. Maintenance of Traffic Plan
4. Asphalt Design
5. Testing Lab and Procedures
6. Precast Manholes & Inlets

7. Coating Systems
8. Grating, and Manhole Covers
9. Valves (all types & materials)
10. Street Light Poles, Fixtures, and Conduits
11. Decorative Pavers and Split Face Blocks

Product Data:

Collect required data into one submittal for each unit of work or system; and mark each copy to show which choices and options are applicable to the project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked, and special coordination requirements. Maintain one set of product data for each submittal at the project site, available for reference by the Engineer. For purposes of this submittal, manufacturer's fabrication drawings shall be synonymous with shop drawings.

The Contractor shall not submit product data or allow its use on the project, until compliance with requirements of the Contract Documents has been confirmed. Submittal is for information and record only, unless otherwise indicated.

1.05 DOCUMENTS:

Maintain at the job site one copy of all drawings, specifications; addenda; approved shop drawings; change orders; field orders; other contract modifications; and other approved documents submitted by the Contractor in compliance with various sections of the specifications. Each of these Project Record Documents shall be clearly marked "Project Record Copy" and maintained in good condition; available at all times for review by the Engineer and not used for construction purposes.

1.06 BOND AND COMPLETED OPERATION INSURANCE:

Prior to final payment, the Contractor shall submit proof that bonds and completed operations insurance are in effect as required by the GENERAL CONDITIONS.

END OF SECTION

SECTION 01310

CONSTRUCTION SCHEDULES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Promptly after award of the Contract and within ten (10) days after the effective date of the Agreement, prepare and submit to the ENGINEER estimated construction progress schedules for the Work, with subschedules of related activities which are essential to its progress.
- B. Submit revised progress schedules on a monthly basis.
- C. No partial payments shall be approved by the ENGINEER until there is an approved construction progress schedule on hand.
- D. The CONTRACTOR shall designate an authorized representative of his firm who shall be responsible for development and maintenance of the schedule and of progress and payment reports. This representative of the CONTRACTOR shall have direct project control and complete authority to act on behalf of the CONTRACTOR in fulfilling the commitments of the CONTRACTOR's schedule.

1.02 RELATED REQUIREMENTS

- A. Section 00700: Standard General Conditions of the Construction Contract.
- B. Section 01010: Summary of Work.
- C. Section 01200: Project Meetings.
- D. Section 01340: Submittals.

1.03 FORM OF SCHEDULES

- A. Prepare schedules in the form of a horizontal bar chart or critical path method.
 - 1. Provide separate horizontal bar for each trade or operation within each structure or item.
 - 2. Horizontal time scale: In weeks from start of construction and identify the first work day of each month.
 - 3. Scale and spacing: To allow space for notations and future revisions.
 - 4. Minimum sheet size: 24 x 36 inches.
- B. Format of listings: The chronological order of the start of each item of work for each structure.
- C. Identification of listings: By major specification section numbers as applicable and structure.

1.04 CONTENT OF SCHEDULES

- A. Construction Progress Schedule:
 - 1. Show the complete sequence of construction by activity.
 - 2. Show the dates for the beginning of, and completion of, each major element of construction in no more than a two-week increment scale.
 - 3. Show projected percentage of completion for each item, as of the first day of each month.
 - 4. Show projected dollar cash flow requirements for each month of construction.

- B. Submittals Schedule for Shop Drawings, and Samples in accordance with Section 01340. Show:
 - 1. The dates for CONTRACTOR's submittals.
 - 2. The dates submittals will be required for OWNER-furnished products, if applicable.
 - 3. The dates approved submittals will be required from the ENGINEER.
- C. A typewritten list of all long lead items (equipment, materials, etc.)

1.05 PROGRESS REVISIONS

- A. Indicate progress of each activity to date of submission.
- B. Show changes occurring since previous submission of schedule:
 - 1. Major changes in scope.
 - 2. Activities modified since previous submission.
 - 3. Revised projections of progress and completion.
 - 4. Other identifiable changes.
- C. Provide a narrative report as needed to define:
 - 1. Problem areas, anticipated delays, and the impact on the schedule.
 - 2. Corrective action recommended, and its effect.
 - 3. The effect of changes on schedules of other prime CONTRACTORS.

1.06 SUBMISSIONS

- A. Submit initial schedules to the ENGINEER within 10 days after the effective date of the Agreement.
 - 1. The ENGINEER will review schedules and return review copy within 21 days after receipt.
 - 2. If required, resubmit within 7 days after return of review copy.
- B. Submit revised monthly progress schedules with that month's application for payment.
- C. Submit one reproducible transparency and five opaque reproductions.

1.07 DISTRIBUTION

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 RESPONSIBILITY FOR SCHEDULE COMPLIANCE

- A. The CONTRACTOR agrees that whenever it becomes apparent from the current monthly schedule that delays to the critical path have resulted, and hence, that the contract completion date will not be met or when so directed by the ENGINEER, he will take some or all of the following actions at no additional cost to the OWNER, submitting to the ENGINEER for approval, a written statement of the steps he intends to take to remove or arrest the delay to the critical path in the approved schedule.

1. Increased construction manpower in such quantities and crafts as will substantially eliminate, in the judgment of the ENGINEER, the backlog of work.
2. Increase the number of working hours per shift, shifts per working days per week, the amount of construction equipment, or any combination of the foregoing, sufficiently to substantially eliminate, in the judgment of the ENGINEER, the backlog of work.
3. Reschedule activities to achieve maximum practical concurrency of accomplishment of activities, and comply with the revised schedule.
4. Costs incurred by the OWNER arising from such lengthening of hours, including furnishing of Inspectors, shall be the CONTRACTOR's responsibility and shall be deducted from monies due him. Failure of the CONTRACTOR to comply with the requirements of the ENGINEER may be grounds for determination by the OWNER that the CONTRACTOR is not proceeding at such rates as will ensure completion within the specified time and may result in the termination of the right of the CONTRACTOR to continue the work.

3.02 ADJUSTMENT OF CONTRACT SCHEDULE AND COMPLETION TIME

- A. If the CONTRACTOR desires to make changes in his method of operating which affect the approved schedule, he shall notify the ENGINEER in writing stating what changes are proposed and the reason for the change. If the ENGINEER approves these changes, the CONTRACTOR shall revise and submit for approval, without additional cost to the OWNER, all of the affected portion of the schedule. The schedule shall be adjusted by the CONTRACTOR only after prior approval of his proposed changes by the ENGINEER.
- B. Adjustments may consist of changing portions of the activity sequence and/or activity durations, division of approved activities, or other adjustments as may be approved by the ENGINEER. The addition of extraneous, non-working activities and/or activities which add unapproved restraints to the schedule shall not be approved.
- C. If the completion of any activity, whether or not critical, falls more than 100 percent behind its approved duration, the CONTRACTOR shall submit for approval a schedule adjustment showing each such activity divided into two activities reflecting completed versus uncompleted work.
- D. Shop drawings which are not approved on the first submittal or within the scheduled time shall be immediately rescheduled, as well as pipelines and tanks which do not pass leak tests.
- E. The contract completion time will be adjusted only for causes specified in this contract. In the event the CONTRACTOR requests an extension of any contract completion date, he shall furnish such justification and supporting evidence as the ENGINEER may deem necessary for a determination as to whether the CONTRACTOR is entitled to an extension of time under the provisions of this contract. ENGINEER will, after receipt of such justification and supporting evidence make findings of fact and will advise the CONTRACTOR in writing thereof. If the ENGINEER finds that the CONTRACTOR is entitled to any extension of any contract completion date under the provisions of this contract, the ENGINEER's determination as to the total number of days extension shall be based upon the currently approved schedule and on all data relevant to the extension. Such data shall be included in the next monthly updating of the schedule. The CONTRACTOR acknowledges and agrees that actual delays in activities which, according to the schedule, do not affect any contract completion date shown by the critical path in the schedule do not have any effect on the contract completion date or dates, and therefore, will not be the basis for a change therein.
- F. From time to time it may be necessary for the contract schedule and/or completion time to be adjusted by the ENGINEER to reflect the effects of job conditions, weather, technical difficulties, strikes, unavoidable delays on the part of the OWNER or his representatives, and other unforeseeable conditions which may indicate schedule adjustments and/or completion time extension. Under such conditions, the CONTRACTOR shall reschedule the work and/or contract completion time to reflect the changed conditions, and the CONTRACTOR shall revise his schedule accordingly. No additional compensation shall be made to the CONTRACTOR for such schedule changes except for unavoidable overall contract time extensions beyond the actual completion of all unaffected work in the contract, in which case the CONTRACTOR shall take all possible action to minimize any time

extension and any additional cost to the OWNER. It is specifically pointed out that the use of available float time in the schedule may be used by the OWNER as defined by the ENGINEER, as well as by the CONTRACTOR. Float time is defined as the amount of time between the early start date, and the late start date, or the early finish date and the late finish date, of any of the activities in the schedule.

- G. The OWNER controls the float time in the approved schedule and, therefore, without obligation to extend either the overall completion date or any intermediate completion dates set out in the schedule, the OWNER may initiate changes to the contract work that absorb float time only. OWNER-initiated changes that affect the critical path on the approved schedule shall be the sole grounds for extending (or contracting) said completion dates. CONTRACTOR initiated changes that encroach on the float time identified in the approved schedule may be accomplished with the OWNER's concurrence. Such changes, however, shall give way to OWNER-initiated changes competing for the same float time.

3.03 COORDINATING SCHEDULES WITH OTHER CONTRACT SCHEDULES

- A. Where work is to be performed under this contract concurrently with and/or contingent upon work performed on the same facilities or area under other contracts, the CONTRACTOR's schedule shall be coordinated with the schedules of the other contracts. The CONTRACTOR shall obtain the schedules of the other appropriate contracts from the ENGINEER for the preparation and updating of his schedule and shall make the required changes in his schedule when indicated by changes in corresponding schedules.

END OF SECTION

SECTION 01400

GENERAL QUALITY CONTROL

PART 1 GENERAL

1.01 DESCRIPTION OF REQUIREMENTS:

Definitions: Specific quality control requirements for the work are indicated throughout the contract documents and are not repeated herein. The requirements for this section are primarily to performances of the work beyond furnishing of manufactured products. The term "Quality Control" includes, but is not necessarily limited to, inspection and testing and associated requirements. This section does not specify or modify Engineer's duties relating to quality control and Contract enforcement.

1.02 RESPONSIBILITY FOR INSPECTIONS AND TESTS:

Unless otherwise noted, all testing and inspections required by these specifications shall be performed by a properly certified entity. All costs associated with the testing and inspections shall be the Contractor's responsibility. The Contractor shall also be responsible for all tests or inspections required by any entity having jurisdictional control over the work.

The costs for those required services by independent testing laboratories are recognized to be included in the contract sum.

No failure of test agencies, whether engaged by Owner or Contractor, to perform adequate inspections or tests or to properly analyze or report results, shall relieve the Contractor of responsibility for fulfillment of the requirements of the contract documents.

1.03 QUALITY ASSURANCE:

General Workmanship Standards: Except as more definitively specified, the Contractor shall comply with recognized workmanship quality standards within the industry as applicable to each unit of work, including ANSI, ASTM and AWWA standards where applicable. It is a requirement that each category of tradesperson or installer performing the work be pre-qualified, to the extent of being familiar with applicable and recognized quality standards for that category of work, and of being capable of workmanship complying with those standards.

1.04 PRODUCT DELIVERY-STORAGE-HANDLING:

General: Handle, store and protect materials and products, including fabricated components, by methods and means which will prevent damages, deterioration and losses, including theft (and resulting delays), thereby insuring highest quality results as the performance of the work progresses. Control delivery schedules so as to minimize unnecessary long-term storage at the project site prior to installation. Contractor shall provide covered, inside storage for all new equipment on the site, which is not intended for outside installation. Electrical, hydraulic and pneumatic connections on all equipment shall be protected from the elements. Contractor shall store all material on the project site unless specifically authorized otherwise by the Owner.

PART 2 PRODUCTS (not applicable)

PART 3 EXECUTION

3.01 PREPARATION FOR INSTALLATION:

Installer's Inspection of Conditions: The Contractor shall require the manufacturer's representative and installer of each major unit of work to inspect substrate to receive the work, and conditions under which the work will be performed and to report (in writing to the Contractor and the Engineer) conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the fabricator, installer, and engineer.

3.02 INSTALLATION QUALITY CONTROL:

- A. Manufacturer's Instructions: Where installations include manufactured products, comply with manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in the contract documents.

The Contractor shall inspect each item of material or equipment immediately prior to installation and reject damaged and defective items.

Provide attachment and connection devices and methods for securing work as it is installed; true to line and level, and within recognized industry tolerances if not otherwise indicated.

The Contractor shall recheck measurements and dimensions of the work as an integral step of starting each installation.

Install work during conditions of temperature, humidity, exposure, forecasted weather and status of project completion, which will ensure best possible results for each unit of work, in coordination with entire work. Isolate each unit of work from non-compatible work as required, to prevent deterioration.

- B. Mounting Heights: Except as otherwise noted, mount individual units of work at industry-recognized standard mounting heights, for applications indicated. Refer questionable mounting height choices to the Engineer for final decision.
- C. Adjust, clean, and restore marred finishes and protect newly installed work, to ensure that it will remain without damage or deterioration during the remainder of the construction period.
- D. Manufacturer's representative shall test and approve pump performance, generator performance, and electrical gear, including VFD's.

3.03 QUALITY CONTROL REQUIREMENTS:

- A. All construction work in the City Right-of-Way or City owned property must be inspected **before** and **after** placing or installing any other improvements.
- B. All inspections must be scheduled with the Engineering Services Construction Coordinator 24-hours in advance.
- C. Pre-inspections will be conducted every business day.
- D. Post-inspections will be conducted once per business day.

- E. No material shall be installed without pre-inspection by the Construction Coordinator
- F. No work will be accepted by the City of West Palm Beach without prior inspection.
- G. Contractor shall correct the rejected work, prior to proceeding the project work.
- H. Streets and sidewalks shall be cleaned and swept free of debris daily, without exception.
- I. All construction debris, excess and other material shall be removed from site daily.
- J. All work area shall be protected by the Contractor, provide barricades, and safety devices as necessary.
- K. Contractor will remedy any and all damage to property by acts of omission, or vandalism which occur as a result of their work.
- L. The contractor shall at all times enforce strict discipline and good order among their employees and shall not employ on the work any unfit person or anyone not skilled in the task assigned to them.
- M. The contractor shall have an English-speaking supervisor/representative on the work site at all times, who shall be thoroughly knowledgeable of all plans, specifications, and other contract documents and has the authority to act in the contractor's behalf.

END OF SECTION

SECTION 01501

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES:

- A. Temporary Utilities: Electricity, lighting, telephone service and sanitary facilities.
- B. Temporary Controls: Barriers, enclosures and fencing, protection of the Work and water control.
- C. Construction Facilities: Access roads, parking, progress cleaning, project signage and temporary buildings.

1.02 RELATED SECTIONS:

- A. Section 01570 -Traffic Regulation.

1.03 TEMPORARY ELECTRICITY:

- A. Cost: By Contractor; provide and pay for any required temporary power service.

1.04 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES:

- A. Provide and maintain lighting for construction operations as necessary.

1.05 TEMPORARY VENTILATION:

- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity and to prevent accumulation of dust, fumes, vapors or gases.

1.06 TELEPHONE SERVICE:

- A. Provide, maintain and pay for telephone service to field office at time of project mobilization.

1.07 TEMPORARY SANITARY FACILITIES:

- A. Provide and maintain required temporary restroom facilities and enclosures for field crews.

1.08 BARRIERS:

- A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations maintaining access to public rights-of-way and existing buildings and driveways. Maintain access to fire hydrants.
- B. Provide protection for vegetation designated to remain. Replace damaged plant life.
- C. Protect vehicular traffic, stored materials, site and structures from damage.

1.09 FENCING:

- A. Construction: Contractor shall construct temporary fence six (6) feet high as requested by the Engineer.

1.10 WATER CONTROL:

- A. Grade site to drain. Maintain excavations free of water. Provide, operate and maintain pumping equipment. Contractor responsible for obtaining any required South Florida Water Management District dewatering permits.
- B. Protect site from puddling or running water.

1.11 TEMPORARY BYPASSING FACILITIES:

- A. Contractor to provide all pumps, labor and materials required to bypass the flow of sewage during sewer main replacement, manhole work, and lift station modifications.

1.12 PROTECTION OF INSTALLED WORK:

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to prevent damage.

1.13. SECURITY:

- A. Provide security and facilities to protect Work, existing facilities and Owner's operations from unauthorized entry, vandalism or theft.

1.14 PROGRESS CLEANING AND WASTE REMOVAL:

- A. Maintain areas free of waste materials, debris and rubbish. Maintain site in a clean and orderly condition.
- B. Collect and remove waste materials, debris and rubbish from site daily and dispose off-site.

1.15 REMOVAL OF UTILITIES, FACILITIES AND CONTROLS:

- A. Remove temporary utilities, equipment, facilities and materials prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing (and permanent) facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

1.16 TEMPORARY WATER SERVICES:

See Section 01019-2, Paragraph 1.06.

PART 2 PRODUCTS

NOT APPLICABLE

PART 3 EXECUTION

NOT APPLICABLE

END OF SECTION

SECTION 01540

SECURITY AND PROTECTION

PART 1 GENERAL

1.01 DESCRIPTION:

- A. Requirements: This section specified minimum requirements of temporary provisions for security and protection is the Contractor's sole responsibility, and is not limited to the minimums established by the requirements hereof. Except as otherwise indicated, the use of alternative security and protection methods of facilities, equivalent to those specified in the Contractor's option. The work of this section is defined to exclude required insurance coverage, performance/payment bonds, first aid requirements, general supervision, quality control, damage surveys, enclosure of completed work and stored materials, inspections and test of the work, instruction to Owner's personnel and similar recognized protection/security provision, which are, nevertheless, specified in other parts of the contract documents, if required.
- B. The types of security and protection facilities and services required for the entire project include, but are not limited to, the following:
1. Barricades, warning signs, lights.
 2. Security enclosure and lockup of work.
 3. Personnel security program.
 4. Environmental protection.

1.02 QUALITY ASSURANCE:

Regulations: Comply with governing regulations for the installation and operation of security and protection facilities, including the rules and recommendations of fire and building departments, police, rescue squad's watchman services and similar local organizations and companies.

1.03 JOB CONDITIONS:

- A. Scheduled Uses: Provide security and protection at the times first needed t the site; and maintain, expand and modify the facilities as needed throughout the construction period.
- B. Conditions of Use: Use security and protection facilities and services in a safe, sanitary, lawful and publicly acceptable manner, which will not interfere unduly with performance of the work nor result in other deleterious effects.

1.04 MATERIALS OF SECURITY AND PROTECTION FACILITIES:

General: For use in security and protection facilities, provide either new or used materials and equipment, which are in substantially undamaged and serviceable conditions. Provide types and quality levels which are recognized in the construction industry as suitable for the intended use in each application.

1.05 INSTALLATION OF SECURITY/PROTECTION FACILITIES:

General: Use qualified tradesmen for the installation of security and protection facilities. Locate facilities where they will serve the total project construction work adequately, and result in a minimum interference with performance of the work. Relocate, modify and extend facilities as required during the course of the work, to properly accommodate the entire work of the project. Provide and maintain a reasonably neat and uniform appearance in security and protection facilities, acceptable to the Owner.

1.06 BARRICADES, WARNING SIGNS AND LIGHTS:

- A. General: Comply with recognized standards and code requirements for the erection of substantial and structurally adequate barricades wherever needed to prevent accidents and losses. Paint with appropriate colors, graphics and warning signs and inform personnel at the site, and the general public where exposure exists of the hazard being projected. Provide lighting where appropriate and needed for the recognition of the facility, including flashing red lights where appropriate.
- B. Storage: Where materials and equipment must be temporally stored, prior to and during construction, and are of substantial value or attractive for possible theft, provide secure lockup and enforce strict discipline in connection with the timing of installation and release of materials, so that the opportunity for theft and vandalism is minimized.

1.07 ENVIRONMENTAL PROTECTION:

General: Provide protection facilities, operate temporary facilities, conduct construction activities and enforce strict discipline for personnel at the project site in ways and by methods which comply with environmental protection regulations, and which will minimize the possibility that the air, waterways and subsoil might be contaminated or polluted, or that other undesirable and deleterious effects might result from performance of the work at the project site. Avoid the use of tools and equipment which produce harmful noise; and restrict the use of noise-making tools and equipment to the hours of use which will minimize noise complaints by persons or residents near the project.

1.08 TERMINATION AND REMOVAL:

General: Maintain protection and security facilities and services in good operating condition through the time and use and until the completion and use of permanent work makes each temporary service unnecessary, or until the Owner's occupancy has replaced the need for the service or until its discontinuation has been otherwise authorized. Remove each facility promptly after its use has been terminated. Complete or restore permanent work which may have been delayed or otherwise affected by the temporary facility. Replace work which cannot be satisfactorily restored. Except as otherwise indicated, the materials and equipment of temporary security and protection facilities remain the property of the Contractor

END OF SECTION

SECTION 01600

MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.1 DEFINITIONS

A. Productions:

1. New items for incorporation in the Work, whether purchased by CONTRACTOR or OWNER for the Project, or taken from previously purchased stock and may also include existing materials or components required for reuse.
2. Includes the terms material, equipment, machinery, components, subsystem, system, hardware, software, and terms of similar intent and is not intended to change the meaning of such other terms used in the Contract Documents as those terms are self-explanatory and have well recognized meanings in the construction industry.
3. Items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published project literature, that is current as of the date of the Contract Documents.

1.2 SUBMITTALS

A. Administrative Submittals:

1. List of all proposed substitute or "equal" items/methods.
2. Schedule of factory tests required by Contract Documents. Identify Tests for which ENGINEER's presence has been specified.

B. Quality Control Submittals:

1. Factory Tests: As specified in the individual Specifications.
 - a. Procedures: Preliminary outlines.
 - 1) Final Accepted Procedures: Prior to start of factory testing.
 - b. Test Documentation: Results of successful testing, including certification of procedures and results.

1.3 PREPARATION FOR SHIPMENT

- A. When practical, factory assemble products. Matchmark or tag separate parts and assemblies to facilitate field assembly. Cover machined and unpainted parts that may be damaged by the elements with a strippable protective coating.
- B. Package products to facilitate handling and protect from damage during shipping, handling, and storage. Mark or tag outside of each package or crate to indicate its purchase order number, bill of lading number, contents by name, name of Project and CONTRACTOR, equipment number, and approximate weight. Include complete packing lists and bills of materials with each shipment.

- C. Spare Parts, Special Tools, Test Equipment, Expendables, and Maintenance Materials:
1. Furnish as required by the Specifications prior to (i) starting functional testing or (ii) operation of the equipment by the OWNER, or (iii) 75 percent Project completion, whichever occurs first.
 2. Properly package to avoid damage, in original cartons insofar as possible. Replace parts damaged or otherwise inoperable.
 3. Firmly fix to, and prominently display on, each package.
 - a. Minimum 3-inch by 6-inch manila shipping tag with the following information printed clearly:
 - 1) Manufacturer's part description and number.
 - 2) Applicable equipment description.
 - 3) Quantity of parts in package.
 - 4) Equipment manufacturer.
 - 5) Applicable Specification section.
 - 6) Name of CONTRACTOR
 - 7) Project name.
 4. Deliver materials to site.
- D. Protect equipment from exposure to the elements and keep thoroughly dry and dustfree at all times. Protect painted surfaces against impact, abrasion, discoloration, or other damage. Grease or oil all bearings and similar items.

1.4 DELIVERY AND INSPECTION

- A. Deliver products in accordance with the accepted current progress schedule and coordinate to avoid conflict with Work and conditions at the site. Deliver anchor bolts and templates sufficiently early to permit setting prior to placement of structural concrete.
- B. Deliver products in undamaged condition, in manufacturer's original container or packaging, with identifying labels intact and legible. Include on label date of manufacture and shelf life, where applicable. Include UL labels on products so specified.
- C. Unload products in accordance with manufacturer's instructions for unloading, or as specified. Record the receipt of products at the site. Inspect for completeness and evidence of damage during shipment.
- D. Remove damaged products from the site and expedite delivery of identical new undamaged products and remedy incomplete or lost products to provide that specified, so as not to delay the progress of the Work.

1.5 HANDLING, STORAGE, AND PROTECTION

- A. Handle products in accordance with the manufacturer's written instructions, and in a manner to prevent damage. Store products, upon delivery, in accordance with manufacturer's instructions, with labels intact and legible, in approved storage yards or sheds provided in accordance with Section 01500, CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS. Provide manufacturer's recommended maintenance during storage, installation, and until products are accepted for use by OWNER.

- B. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration. Keep running account of products in storage to facilitate inspection and to estimate progress payments for products delivered but not installed in the Work.
- C. Store electrical, instrumentation, and control products, and equipment with bearings in weathertight structures maintained above 60 degrees F. Protect electrical, instrumentation and control products, and insulation against moisture, water, and dust damage. Connect and operate continuously all space heaters furnished in electrical equipment.
- D. Store fabricated products aboveground, on blocking or skids, and prevent soiling or staining. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter. Cover products that are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.
- E. Store finished products that are ready for installation in dry and well ventilated areas. Do not subject to extreme changes in temperature or humidity.
- F. Hazardous Materials: Prevent contamination of personnel, the storage building, and the site. Meet the requirements of the product specifications, codes, and manufacturer's instructions.

1.6 SUBSTITUTE AND /OR EQUAL PRODUCTS

- A. Meet the requirements in the General Conditions, the Specification sections, and as set forth herein.
- B. Listing of proposed substitute and/or "equal" items or methods.
 1. With consideration of the additional evaluation time necessary for ENGINEER's review of such items, indicate for each item the review status (either substitute or "equal") and estimated submission date.
 2. CONTRACTOR, in indicating the review status of the proposed items, acknowledges that the time shown for ENGINEER's review on the current accepted schedule is sufficient only to allow ENGINEER to accomplish review for the status indicated and not sufficient to perform both a review for or "equal" status and a subsequent review for substitute status on the same product.
 3. ENGINEER may return unreviewed those submissions (i) not shown on the current accepted schedule, (ii) for which the review status differs from that indicated on the accepted list unless previously approved in writing by ENGINEER, (iii) not in accordance with the General Conditions and as specified herein, (iv) which are incomplete, or (v) which are uncertified, in which case CONTRACTOR shall provide the specified product.
- C. Submit seven copies of proposed substitute or "equal" item/method, to include all supporting data to allow ENGINEER's review. Complete, sign, and transmit with each proposed substitute or "equal" item/method submission.
- D. Disposition of Or "Equal" Item: In accordance with Article SHOP DRAWINGS in Section 01300, SUBMITTALS, or in accordance with following paragraph.

- E. Disposition of Substitute Item/Method:
1. Accepted: ENGINEER will evidence such acceptance by recommendation of a Change Order for CONTRACTOR and OWNER execution. Such Change Order will accompany ENGINEER's evaluation and acceptance of CONTRACTOR's proposed substitute.
 2. Rejected:
 - a. One copy retained by ENGINEER.
 - b. One copy returned to CONTRACTOR with a commentary by ENGINEER.
 - c. Remaining copies will be destroyed.
 - d. CONTRACTOR shall provide item specified in Contract Documents

PART 2 PRODUCTS

2.1 GENERAL

- A. Provide manufacturer's standard materials suitable for service conditions unless otherwise specified in the individual Specifications.
- B. Where product specifications include a named manufacturer, with or without model number, and also include performance requirements, named manufacturer's products must meet the performance specifications.
- C. Like items of products furnished and installed in the Work shall be end products of one manufacturer and of the same series or family of models to achieve standardization for appearance, operation and maintenance, spare parts and replacement, and manufacturer's services and implement same or similar process instrumentation and control functions in same or similar manner.
- D. Equipment, Components, Systems, Subsystems: Design and manufacture with due regard for health and safety of operation, maintenance, and accessibility, durability of parts, and shall comply with applicable OSHA, state, and local health and safety regulations.
- E. Safety Guards: Provide for all belt or chain drives, fan blades, couplings, or other moving or rotary parts. Cover rotating part on all sides. Design for easy installation and removal. Use 16-gauge or heavier; galvanized steel, aluminum coated steel, or galvanized or aluminum coated 1/2-inch mesh expanded steel. Provide galvanized steel accessories and supports, including bolts. For outdoors application, prevent entrance of rain and dripping water.
- F. Provide materials and equipment listed by UL wherever standards have been established by that agency.
- G. Equipment Finish: Provide manufacturer's standard finish and color, except where specific color is indicated.

2.2 FABRICATION AND MANUFACTURE

- A. General:
 1. Manufacture parts to U.S.A. standard sizes and gauges.

2. Two or more items of the same type shall be identical, by the same manufacturer, and interchangeable.
 3. Design structural members for anticipated shock and vibratory loads.
 4. Use 1/4-inch minimum thickness for steel that will be submerged, wholly or partially, during normal operation.
 5. Modify standard products as necessary to meet performance Specifications.
- B. Lubrication System:
1. Require no more than weekly attention during continuous operation.
 2. Convenient and accessible. Oil drains with bronze or stainless steel valves and fill plugs easily accessible from the normal operating area or platform. Locate drains to allow convenient collection of oil during oil changes without removing equipment from its installed position.
 3. Provide constant-level oilers or oil level indicators for oil lubrication systems.
 4. For grease type bearings, which are not easily accessible, provide and install stainless steel tubing; protect and extend tubing to convenient location with suitable grease fitting.

PART 3 EXECUTION

3.1 INSPECTION

- A. Inspect materials and equipment for signs of pitting, rust decay, or other deleterious effects of storage. Do not install material or equipment showing such effects. Remove damaged material or equipment from the site and expedite delivery of identical new material or equipment. Delays to the Work resulting from material or equipment damage which necessitates procurement of new products will be considered delays within CONTRACTOR's control.

3.2 INSTALLATION

- A. Equipment Drawings show general locations of equipment, devices, and raceway, unless specifically dimensioned.
- B. Install equipment on concrete bases 4 inches above grade minimum (unless otherwise specified) and a minimum of 3 inches wider and longer than equipment baseplate, or as otherwise shown, with anchor bolts accurately placed using templates. Fill all spaces between baseplate and concrete with grout.
- C. Repaint painted surfaces that are damaged prior to equipment acceptance.
- D. Handle, install, connect, clean, condition, and adjust products in accordance with manufacturer's instructions and as may be specified. Retain a copy of manufacturer's instruction at site, available for review at all times.
- E. For material and equipment specifically indicated or specified to be reused in the Work:
1. Use special care in removal, handling, storage, and reinstallation to assure proper function in the complete Work.

2. Arrange for transportation, storage, and handling of products that require offsite storage, restoration, or renovation. Include costs for such Work in the Contract Price.

3.3 FIELD FINISHING

- A. In accordance with individual Specifications sections.

3.4 ADJUSTMENT AND CLEANING

- A. Perform required adjustments, tests, operation checks, and other startup activities.

3.5 LUBRICANTS

- A. Fill lubricant reservoirs and replace consumption during testing, startup, and operation prior to acceptance of equipment by OWNER.

END OF SECTION

SECTION 01610

DELIVERY, STORAGE AND HANDLING

PART 1 - GENERAL

1.01 GENERAL:

- A. This Section specifies the general requirements for the delivery, handling, storage and protection for all items required in the construction of the work. Specific requirements, if any, are specified with the related item.

1.02 TRANSPORTATION AND DELIVERY:

- A. Transport and handle items in accordance with manufacturer's instructions.
- B. Schedule delivery to reduce long-term on-site storage prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one month prior to installation without written authorization from the Engineer.
- C. Coordinate delivery with installation to ensure minimum holding time for items that are hazardous, flammable, easily damaged or sensitive to deterioration.
- D. Deliver products to the site in manufacturer's original sealed containers or other packing systems, complete with instructions for handling, storing, unpacking, protecting and installing.
- E. All items delivered to the site shall be unloaded and placed in a manner which will not hamper the Contractor's normal construction operation or those of subcontractors and other contractors and will not interfere with the flow of necessary traffic.
- F. Provide necessary equipment and personnel to unload all items delivered to the site.
- G. Promptly inspect shipment to assure that products comply with requirements, quantities are correct, and items are undamaged. For items furnished by others (i.e. Owner, other Contractors), perform inspection in the presence of the Engineer or Engineer's representative. Notify Engineer verbally, and in writing, of any problems.

1.03 STORAGE AND PROTECTION:

- A. Store and protect products in accordance with the manufacturer's instructions, with seals and labels intact and legible. Storage instruction shall be studied by the Contractor and reviewed with the engineer by him. Instruction shall be carefully followed and a written record of this kept by the Contractor. Arrange storage to permit access for inspection.
- B. Store loose granular materials on solid flat surface in a well-drained area. Prevent mixing with foreign matter.
- C. Cement and lime shall be stored under a roof and off the ground and shall be kept completely dry at all times. All structural, miscellaneous and reinforcing steel shall be stored off the ground or otherwise to prevent accumulation of dirt or grease, and in a position to prevent accumulations of standing water and to minimize rusting. Beams shall be stored with the webs vertical. Pre-cast concrete shall be handled and stored in a manner to prevent accumulations of dirt, standing water, staining, chipping or cracking. Brick, block and similar masonry products shall be handled and stored in a manner to reduce breakage, cracking and spalling to a minimum.

END OF SECTION

SECTION 01640

PRODUCTS AND SUBSTITUTIONS

PART 1- GENERAL

1.01 PRODUCTS' LIST:

- A. Within 10 days after commencement date of Contract, submit to Engineer two copies of a complete list of all products proposed to be used, with name of the manufacturer and the installing subcontractor. Tabulate list by each specification section.
- B. For products specified under reference standards, include with listing of each product:
 - 1. Name and address of manufacturer.
 - 2. Trade name.
 - 3. Model or catalog designation.
 - 4. Manufacturer's data:
 - a. Performance and test data.
 - b. Reference standards.
- C. Contractor's Option: For products specified only by reference standards, select any product meeting that standard. For products specified by naming several products or manufacturers, select any one of the products or manufacturers names, which complies with the specifications.

1.02 SUBSTITUTIONS:

- A. For a period of 10 days after commencement date of Contract, Engineer may consider written requests from Contractor for substitution of approved products.
- B. Conditions: Refer to Supplementary Conditions. Requests by Contractor will be considered when reasonable, timely, fully documented and qualifying under one or more of the following circumstances:
 - 1. Related to an "or equal" or similar provision in contract documents.
 - 2. Required product cannot be supplied in time for compliance with Contract Time Requirements.
 - 3. Required product is not acceptable to governing authority, or determined to be non-compatible, or cannot be properly coordinated, warranted or insured or has other recognized disability as certified by Contractor.
 - 4. Substantial advantage is offered Owner after deducting offsetting disadvantages including delays, additional compensation to Engineer for redesign, investigation, evaluation and other necessary services and similar considerations.

- C. Submit a separate request for each product, three copies of each submittal, to include the following:
1. Complete data substantiating compliance of proposed substitution with Contract Documents.
 - a. Product identification, including manufacturer name and address.
 - b. Manufacturer's literature including product description, performance and test data and reference standards.
 - c. Samples where appropriate and/or requested.
 - d. Name and address of two similar projects on which product was used successfully in a similar application.
 - e. Detailed description of proposed construction method.
 - f. Drawings illustrating construction method.
 2. Itemized comparison of proposed substitution with product or method specified.
 3. Date relating to changes in construction schedule; any change in the contract time; effect on other trades.
 4. Accurate cost data on proposed substitution in comparison with product or method specified, including a proposal of the net change in the contract sum.
- D. The Engineer will be the sole judge of the acceptability of the proposed substitution.
- E. In making request for substitution Contractor represents:
1. He has personally investigated proposed product or method, and determined that it is equal or superior in all respects to that specified.
 2. He will provide the same warranties, guarantees or bonds for the substitution as for the product or method specified herein.
 3. He will coordinate the installation of an accepted substitution into the Work, and make such other changes as may be required to make the Work complete in all respects.
 4. He waives the right to claims for additional costs related to the substitution which may subsequently become apparent and waives all rights to additional payment and time which may subsequently be necessitated, by failure of the substitution to perform as specified, and for the required Work to make corrections thereof.
 5. Cost data is complete and includes all related costs under his contract.

- F. Substitutions will not be considered if:
 - 1. They are indicated or implied on shop drawings or project data submittals without formal request submitted in accordance with the Contract Documents.
 - 2. Acceptance will require revision of the Contract Documents.
- G. After date bids are reviewed, approval of substitutions shall be governed by change order procedure.

1.03 PROCEDURAL REQUIREMENTS:

- A. General Limitations: Where possible, provide entire required quantity of each generic product, material or equipment from a single source; and, where not possible to do so, match separate products as closely as possible. To extend selection process is under Contractor's control, provide compatible products, materials and equipment. Where available and complying with requirements, provide standard products which have been used previously and successfully in similar applications, and which are recommended by manufacturers for applications indicated.

END OF SECTION

SECTION 01700

PROJECT CLOSEOUT

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Closeout procedures, final cleaning, project record documents, system demonstration, warranties and bonds.
- B. Closeout includes the general requirements near the end of the Contract Time in preparation for final acceptance, final payment, normal termination of the Contract, beneficial use by the Owner, and similar actions evidencing completion of the Work.

1.02 RELATED REQUIREMENTS

- A. Section 01010: Summary of Work.
- B. Section 01050: Field Engineering.
- C. Section 01500: Construction Considerations.

1.03 CLOSEOUT PROCEDURES

- A. Comply with procedures stated in the General Conditions of the Contract Documents for issuance of the Certificate of Substantial Completion and the Certificate of Final Completion.
- B. When the Contractor considers that the Work has reached final completion, submit written certification that the Contract Documents have been reviewed, the Work has been thoroughly inspected, and that the Work is considered to be completed in accordance with the Contract Documents and is ready for inspection by the Engineer.
- C. In addition to submittals required by the conditions of the Contract, provide all other submittals required by the Owner, other governing authorities or regulatory agencies, and submit to the Engineer a final statement of accounting giving the total adjusted Contract Sum, previous payments, and the sum remaining due.
- D. The Engineer will issue a final change order reflecting approved adjustments to the Contract Sum not previously made by Change Order.

1.04 SUBSTANTIAL COMPLETION

- A. When the Contractor considers the Work to be substantially complete, the Contractor will submit to the Engineer, or the Owner, as applicable:
 - 1. A written notice that the Work, or a designated portion thereof, is substantially complete.
 - 2. Special guarantees, warranties, workmanship bonds, maintenance agreements and similar documents.

3. Occupancy permits, operating certificates, test certificates and similar releases enabling the Owner's full and unrestricted use of the work and access to services and utilities.
 4. Record drawings, maintenance manuals, project photographs, property survey and similar record information.
 5. Tools, spare parts, extra stocks of materials and similar physical items to the Owner.
 6. Certification that all site temporary facilities and services, along with construction equipment, mock-ups and similar elements have been removed from the site and that all repairs, touch-ups and restorations of marred exposed finishes have been completed.
- B. Within a reasonable time after receipt of such notice, the Engineer will make an inspection to determine the status of completion.
- C. Should the Engineer determine that the Work is not substantially complete:
1. The Engineer will promptly notify the Contractor in writing, giving the reasons therefore.
 2. The Contractor will remedy the deficiencies in the Work, and send a second written notice of substantial completion to the Engineer.
 3. The Engineer will then re-inspect the Work.
- D. When the Engineer finds that the Work is substantially complete, it will:
1. Prepare and deliver to the Owner a tentative Certificate of Substantial Completion, with a tentative list of items to be completed or corrected before final payment.
 2. After consideration of any objections made by the Owner as provided in the General Conditions, and when the Engineer considers the Work substantially complete, it will execute and deliver to the Owner and the Contractor a definite Certificate of Substantial Completion with a revised tentative list of items to be completed or corrected.

1.05 FINAL SUBMITTALS

- A. The following submittals, as applicable, are required prior to finalizing the Contract:
1. Final shop drawings.
 2. Record drawings.
- B. All guarantees, bonds, certifications, licenses, and affidavits required for work and equipment must be filed with the Engineer.

1.06 RELEASE OF LIENS OR CLAIMS

- A. Satisfactory evidence of release or waiver of all liens or claims must be submitted to the Owner prior to finalizing the Contract.

1.07 FINAL INSPECTION

- A. When the Contractor considers the Work complete, it will submit written certification that:
 - 1. The Contract Documents have been reviewed.
 - 2. The Work has been inspected for compliance with the Contract Document.
 - 3. The Work has been completed in accordance with the Contract Documents.
 - 4. The Work is in every way completed and ready for final inspection.
- B. The Engineer will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.
- C. Should the Engineer consider that the Work is incomplete or defective:
 - 1. The Engineer will promptly notify the Contractor in writing, listing the incomplete or defective work.
 - 2. The Contractor will take immediate steps to remedy the stated deficiencies, and send a second written certification to the Engineer that the Work is complete.
 - 3. The Engineer will re-inspect the work.
 - 4. When the Engineer finds that the Work is acceptable under the Contract Documents, it shall request the Contractor to make close-out submittals.

1.08 REINSPECTION FEES

- A. Should the Engineer perform re-inspections due to the failure of the Work to comply with the claims of status of completion made by the Contractor:
 - 1. The Contractor will compensate the Engineer for such additional services.
 - 2. The Owner will deduct the costs of such additional compensation from the final payment to the Contractor.

1.09 CONTRACTOR'S CLOSE-OUT SUBMITTALS TO THE ENGINEER

- A. Project record drawings.
- B. Contractor's affidavit of payment of debts and claims:
 - 1. Contractor's release or waiver of liens.
- C. Separate releases or waivers of liens for subcontractors, suppliers and others that have filed lien rights against property of the Owner in accordance with Section 713.06 Florida Statutes, together with a list of those parties.
- D. Final payment request with Consent of Surety for Final Payment and the Contractor's Certification of Final Completion.
- E. Certified copy of the Engineer's final punch-list of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance.

1.10 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit a final statement of accounting to the Engineer. The statement will reflect all approved adjustments to the Contract Sum, including:
 - 1. The original Contract Sum.
 - 2. Additions and deductions resulting from:
 - a. Approved Change Orders.
 - b. Allowances.
 - c. Unit Prices.
 - d. Deductions for uncorrected Work.
 - e. Deductions for liquidated damages.
 - f. Deductions for re-inspection payments.
 - g. Deductions for re-testing due to failed tests.
 - h. Other adjustments.
 - 3. Total Contract Sum, as adjusted.
 - 4. Previous payments.
 - 5. Sum remaining due.
- B. The Engineer will prepare a final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Order.

1.11 FINAL CLEANING

- A. Perform prior to final inspection.
- B. Clean the site, sweep paved areas, rake clean other surfaces.
- C. Remove waste and surplus materials, rubbish and construction facilities from the project site and dispose of in a lawful manner.
- D. Remove stains, petrochemical spills and other foreign deposits.
- E. Except as otherwise indicated or requested by the Owner, remove temporary protection devices and facilities installed during the course of the Work to protect previously completed Work during the remainder of the construction period.
- F. Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at the site or bury debris or excess materials, or discharge volatile or other harmful or dangerous materials into the environment.
- G. Where extra materials of value remain after completion of the Work, dispose of or store such materials for use by the Owner as indicated in these Specifications.

1.12 PROJECT RECORD DOCUMENTS

- A. Store documents separate from those used for construction.
- B. Keep documents current. Do not permanently conceal any work until required information has been recorded.

- C. At Contract closeout, submit documents with transmittal letter containing date, project title, Contractor's name and address, list of documents and signature of Contractor.
- D. Drawings legibly marked to record actual construction and showing:
 - 1. Horizontal and vertical locations of underground utilities and appurtenances.
 - 2. Field changes of dimension and detail.
 - 3. Changes made by approved Field Order or by approved Change Order.
 - 4. Details not shown on original Contract Drawings.
- E. Specifications and Addenda with each Section legibly marked to record:
 - 1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment furnished and installed.
 - 2. Changes made by approved Field Order or by approved Change Order.

1.13 WARRANTIES AND BONDS

- A. Provide duplicate, signed, notarized originals. Execute Contractor's submittals and assemble documents executed by subcontractors, suppliers and manufacturers. Provide table of contents and assemble in binder with durable plastic cover.
- B. Submit material prior to final application for payment. For equipment put into use with Owner's permission during construction, submit within 10 days after first operation. For items of Work delayed materially beyond the date of Substantial Completion, provide updated submittals within 10 days after acceptance, listing the date of acceptance as the start of the warranty period.

1.14 FINAL APPLICATION FOR PAYMENT

- A. A. The Contractor will submit the Final Application for Payment in accordance with the procedures and requirements stated in the General Conditions.

1.15 FINAL CERTIFICATE FOR PAYMENT

- A. The Engineer will process the Final Application for Payment in accordance with the provisions of the General Conditions.

1.16 POST-CONSTRUCTION INSPECTION

- A. Prior to expiration of one year from the date of Substantial Completion, the Engineer will make a visual inspection of the Project in company with the Owner and the Contractor to determine whether correction of Work is required, in accordance with the provisions of the General Conditions.
- B. The Engineer will promptly notify the Contractor, in writing, of any observed defects or deficiencies in the work.
- C. The Contractor shall immediately undertake all work required to remedy defects and repair the work to the satisfaction of the Engineer and the Owner.

PART 2 - PRODUCTS

2.01 ACCESSORIES

- A. Furnish to the Owner, upon acceptance of equipment, all accessories required to place each item of equipment in full operation.
- B. Accessory items include, but are not limited to, adequate oil and grease as required for first lubrication of equipment (after field testing), light bulbs, fuses, hydrant wrenches, valve keys, handwheels, chain operators, special tools, and other items as required for initial operation.

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01720

RECORD DRAWINGS

PART 1 GENERAL

1.01 DESCRIPTION:

The work covered under this section shall include furnishing the Engineer all information necessary for a complete set of Record Drawings.

1.02 APPLICABLE CODES, STANDARDS AND SPECIFICATIONS:

The Record Drawings information shall be in strict accordance with the following codes and standards:

- A. Local county, municipal and utility codes.
- B. Department of Environmental Regulation.
- C. State of Florida Department of Health and Rehabilitative Services.

1.03 MATERIALS:

The Contractor shall mark on the construction drawings of the Contract Documents all field information.

PART 2 PRODUCTS

2.01 RECORD DRAWINGS:

The Record Drawings shall correctly and accurately show all changes from the Contract Documents made during construction and shall reflect surveyed information which shall be performed by a professional land surveyor registered in the State of Florida. The drawings shall be neat and legible. Show all elevations and horizontal control of all storm sewer, gravity sewers including laterals, electric cables, television cables, telephone cables, force mains and water mains which are crossed or exposed.

- A. Force Mains: Record Drawings shall show the following field information:
 - 1. Show material used to construct mains.
 - 2. Show location of tapping/stopping fittings and valve, by distances from known above ground reference points (manholes, catch basins and bridges).
 - 3. Show all variations in required cover over pipe.

PART 3 EXECUTION

3.01 RECORDS:

Daily records of changes in location of piping, fixtures and other items shall be kept and recorded on the Record Drawings.

The Contractor shall review the completed Record Drawings and ascertain that all data furnished is accurate and truly represents the work actually installed. No Record Drawings information will be accepted from subcontractors.

3.02 SUBMITTAL:

The project shall not be considered to be in substantial completion until Record Drawings have been submitted and accepted by the Engineer. Prior to final payment, the Record Drawings shall be revised by the Contractor to reflect any changes which have occurred since the substantial completion submittal.

END OF SECTION

SECTION 02070

ROOFING DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawing and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.

1.2 SUMMARY:

- A. This Section includes the following: Demolition and removal of existing roofing and appurtenances.
- B. Related Sections: Division 1 contains requirements that relate to this Section.

1.3 DEFINITIONS:

- A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the Owner's property.
 - 1. Existing flashings are to be removed and replaced with new. Existing wind driven turbine ventilators are to be removed and replaced with new. New to match existing.
- B. Remove and Reinstall: Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in the same locations or in locations indicated.
 - 1. Existing A/C units are to be disconnected by certified and experienced electricians and air conditioning specialists. Units are to be evaluated, cleaned, and serviced by an A/C service prior to being reinstalled.
 - 2. Existing power ventilators can remain in place if new flashing can be properly installed without removing them. If the units are removed they are to be evaluated, cleaned, and serviced prior to being reinstalled.
- C. Existing to Remain: Construction indicated to remain shall be protected against damage and soiling during demolition. When permitting by the Engineer, items may be removed to a suitable, protected storage location during demolition and then cleaned and reinstalled in their original locations.

1.4 MATERIALS OWNERSHIP:

- A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the Owner's property, demolished materials shall become the Contractor's property and shall be removed from the site and disposed of properly.

1.5 SUBMITTALS:

- A. Submit for approval a proposed schedule of demolition activities indicating the following:
 - 1. Detailing sequence of demolition and removal work, with starting and ending dates for each activity. Show schedule for proposed new roofing installation, protection of existing, and handling of unforeseen conditions.
 - 2. Any interruption of utility services or other building services such as A.C. units, ventilators, electrical, etc.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Detailed sequence of demolition and removal work to ensure uninterrupted progress of Owner's on-site operations. Coordinate location of work equipment with Owner.

1.6 QUALITY ASSURANCE:

- A. Regulatory Requirements: Comply with governing EPA notification regulations before starting demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.7 PROJECT CONDITIONS:

- A. Owner will occupy portions of the building immediately adjacent to demolition work areas. Conduct demolition work so that Owner's operations will not be disrupted. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.
- B. Asbestos: It is expected that asbestos will be encountered in the work. The City has identified through sampling and analysis that the roofing material contains 10-15% Chrysolite Asbestos. Therefore, the Contractor must provide verification to the City that 1) a supervisor is trained in accordance with the American Roofing Association's requirement as a competent person (Florida Administrative Code 469.012), and 2) Contractor's employees have been properly trained in accordance with OSHA 29 CFR 1926.1101 and 3) Contractor is to provide City with a written verification which identifies the contractor's experience in the removal, handling and disposing of category 1 asbestos.

1.8 SCHEDULING:

- A. Arrange demolition schedule so as not to interfere with Owner's on-site operations.
- B. Access to and around the work sites must be coordinated with the Owner.

PART 2 - EXECUTION

2.1 EXAMINATION:

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

2.2 PREPARATION:

- A. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with demolition operations.
- B. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area.
 - 1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by the Engineer.
 - 2. Protect existing site improvements, appurtenances, and landscaping to remain.
 - 3. Provide temporary weather protection, during interval between demolition and new construction to ensure that no water leakage or damage occurs to the structure or interior areas.

2.3 POLLUTION CONTROLS:

- A. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level.
- C. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing before start of demolition.

2.4 SELECTIVE DEMOLITION:

- A. Remove no more existing roofing than can be covered in one day by new roofing. Make provisions for rain and other inclement weather. All buildings must remain watertight. See applicable Division 7 Section for new roofing requirements.

2.5 PATCHING AND REPAIRS:

- A. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by demolition operations. Repair lightweight insulating concrete as required due to any small holes resulting from the removal of any previous mechanical fasteners. All types of patching material and methods proposed must be approved by the Engineer and roofing manufacturer prior to work being done. Structurally deteriorated lightweight insulating concrete will be included in the bid "allowance".

2.6 DISPOSAL OF DEMOLISHED MATERIALS:

- A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

2.7 CLEANING:

- A. Change filters on air-handling equipment on completion of demolition operations as required.

END OF SECTION

SECTION 07999

FUME RECOVERY SYSTEM

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Provide for the utilization of a Fume Recovery System as specified herein, as required to reduce bitumen fuming and subsequent odor to the limits stated herein including but not limited to:
 - 1. Roofing
 - 2. Heating of Bituminous Materials
- B. Standards: Comply with standards specified in this section and as listed in the general requirements.
- C. Qualification of Manufacturer: Projects used in the performance of this work shall be produced by manufacturers regularly engaged in the manufacture or supply of functionally similar items and with a history of successful use acceptable to the Owner.
- D. Qualifications of Contractor: Contractor to be currently approved by the manufacturer or supplier of the approved roofing system.
- E. Qualifications of Operator: The Contractor and his personnel shall be thoroughly familiar and experienced with the operation of Fume Recovery System as specified in this section.

1.2 REFERENCES

- A. Projects used in this section shall conform to specification as listed in the latest edition of the following:
 - 1. ASTM- Book of Standards (American Society of Testing Materials).
 - 2. ASHRAE- Testing Methods (American Society of Heating, Refrigeration, Air Conditioning Engineers).
 - 3. OSHA -CTPV's Concentration in Air
 - OSHA (Occupational Safety & Health Administration)
 - CTPV's (Coal Tar Pitch Volatiles) As the Benzene Soluble Fraction of total Particulate

1.3 SUBMITTALS

- A. General: Comply with the provisions of the Section which applies to pre-project project approval.
- B. Project Data: Prior to award of contract with bid submit:
 - 1. Complete list of all items proposed to be furnished and utilized under this section.
 - 2. Approved manufacturers or suppliers specifications.
 - 3. CTPV's concentration in Air Test results as per OSHA/NIOSH methods.
 - 4. NIOSH – (National Institute for Occupational Safety & Health).

1.4 SCHEDULING

- A. Fume Recovery System is to be used on a daily basis, whenever roofing bitumen in kettle or tanker is being heated. The system shall be operated at anytime heating of bitumen creates visible fumes or detectable odors. If fumes are present while system is not in use, then bitumen source shall be removed off site.
- B. Exterior of kettle must be kept clean and free of bitumen spills.
- C. Actual utilization time of the Fume Recovery System to be coordinated with Owner.

PART 2 – EQUIPMENT

2.1 Minimum equipment requirements have been listed. All of these projects to be used and bid.

- A. Approved equipment to be manufactured by Aercology, Inc. as distributed by National Tool & Equipment, Inc. (1-800-558-8665).

2.2 FUME RECOVERY UNIT

- A. 6000-CFM, Dual powered, multi-stage mobile, modular media filtration system. Aercology Model FRS-6000.
- B. Unit to be equipped to remove fumes and objectionable odors such as: petroleum oils, VOC's, sulfur residue, particulates, etc.
- C. Unit to incorporate EHPA stage capable of removing particulates as small as 0.3 microns at 99.97% efficiency.
- D. Unit to incorporate AC (Activated Coconut) carbon (180 lbs. min.) as designed to remove bituminous fumes and odors as well as airborne vapors or VOC's (Volatile Organic Compounds).
- E. Unit to utilize multi-stage modified Chevron type oil removal impinges and aluminum grease traps for 83% efficiency.
- F. Unit to be capable of collecting recovered oils and other substances to allow for proper recycling or disposal.
- G. Unit to utilize 168 sq. ft. of medium efficiency filter (40% efficiency by ASHREA 52-76 test method).
- H. Unit to utilize 252 sq. ft, minimum of collapsible borosilicate glass filter constructed in a series of v-shaped pockets providing 95% efficiency based on ASHREA 52-76 test method.
- I. Unit to be placed on steerable brakeable liftable rolling chassis with large foot print tires.

2.3 ACCESSORIES

- A. Hoses to be flexible metal piping as manufactured by Aercology, Inc.
- B. Fume hood for roof top collection at lugger transfer station as manufactured by Aercology, Inc.
- C. Fume collection at tanker/kettle to be accomplished utilizing dampered collection plate as manufactured by Aercology, Inc.

PART 3 - EXECUTION

- 3.1 Operation of the Fume Recovery System shall in every way conform to the written instruction and/or operator instruction.
- A. Operator shall be thoroughly trained and familiar with the function, design, performance, operation and maintenance of the Fume Recovery System Equipment.
- 3.2 Fume Recovery System shall be operating at all times while heating bitumen and complying with Section 0999 (1.5.A).
- A. Fume Recovery System shall be maintained with clean and efficient filters at all times. Filter replacement schedule shall be modified if found insufficient.
- B. Fume Recovery intakes shall be positioned so that no fume loss occurs at source.
- C. Fume Recovery intakes shall be positioned at each source (i.e kettles, tankers, lugger fill points, or any combination).
- D. Oils or other substances collected through the filtration process must be retained for proper recycling and/or disposal in accordance with all local, State and Federal regulations.
- E. Cleaning of non-disposable filters shall be conducted in such a manner as to reclaim all residue and cleaning solution for proper recycling or disposal in accordance with all local, State and Federal regulations.
- F. Fume Recovery System shall be positioned so that no obstruction or air flow restriction exists either at the intake or exhaust port.
- G. Temperature of Fume Recovery shall be maintained in accordance with manufacturer's instruction.

END OF SECTION 07999