



**CITY OF HOLLYWOOD  
FLORIDA**

**SOUTHERN REGIONAL WASTEWATER TREATMENT PLANT**

**CONTRACT DOCUMENTS**

**TREATMENT UNIT GRIT REMOVAL**

**CITY PROJECT NO. 23-9421**

**BID SET**

**ATTACHMENT D**

**JANUARY 2024**

**Hazen**

**Hazen and Sawyer  
4000 Hollywood Boulevard, Suite 750N  
Hollywood, FL 33021  
Certificate of Authorization Number: 2771**

***Engineers Project No. 4321-103***

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## SECTION 01010 - SUMMARY OF WORK

### PART 1 -- GENERAL

#### 1.01 THE REQUIREMENT

- A. The work to be performed under this Contract shall consist of furnishing all tools, equipment, materials, supplies, and manufactured articles and for furnishing all transportation and services, including fuel, power, water, and essential communications, and for the performance of all labor, work, or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents. The work shall be complete, and all work, materials, and services not expressly shown or called for in the Contract Documents which may be necessary for the complete and proper construction of the work in good faith shall be performed, furnished, and installed by the CONTRACTOR as though originally so specified or shown, at no increase in cost to the CITY.
- B. Prior to construction, the CONTRACTOR shall verify existing utilities identified on the Drawings. The utility verifications consist of excavation to verify tie-in points and to locate potential conflicts that may affect the work as shown on the Drawings. The CONTRACTOR will be responsible for the coordination of this work with the associated utility and permitting agencies having jurisdiction over the specific locations to be verified.

#### 1.02 SCOPE

- A. The work to be performed includes grit removal in the following operation units at Southern Regional Wastewater Treatment Plant:
  - Interceptor Box
  - Grit Removal System
  - Influent Pump Station
  - Oxygenation Flow Distribution Box (OFDB)
  - Oxygenation Train Nos. 1, 2, 3, 4, and 5
  - Clarifier Splitter Box Nos. 1 and 2
  - Clarifier Influent Box Nos. 1 and 2
  - Clarifier Nos. 2 and 4
  - Clarifier 5-8 Flow Diversion Box (FDB)
- B. It is the intent of the CITY to obtain cleaned operations units under this contract and any items of labor, materials or equipment, which may reasonably be assumed as necessary to accomplish this end, should be supplied whether or not specifically shown on the plans or described herein. Maintenance of existing operations is mandated throughout the construction period.

### 1.03 WORK BY OTHERS

- A. The CONTRACTOR shall cooperate fully with all utility forces of the CITY, or other public or private agencies engaged in the relocation, altering, or otherwise rearranging any facilities which interfere with the progress of the work, and shall schedule the work so as to minimize interference with said relocation, altering, or rearranging of facilities.
- B. The CONTRACTOR'S attention is directed to the fact that work will be conducted at the site by other contractors during the performance of the work under this Contract. The CONTRACTOR shall conduct its operations so as to cause a minimum of interference with the Work of such other contractors, and shall cooperate fully with such contractors to provide continued safe access to their respective portions of the site, as required to perform their respective contracts.
- C. When two or more contracts are being executed at one time on the same or adjacent land in such manner that Work on one contract may interfere with that on another, the CITY shall determine the sequence and order of the Work. When the territory of one contract is the necessary or convenient means of access for the execution of another contractor, such privilege of access or any other reasonable privilege may be granted by the CITY to CONTRACTOR.

### 1.04 LOCATION OF THE PROJECT

- A. The project is located at Southern Regional Wastewater Treatment Plant, 1621 N. 14<sup>th</sup> Ave, Hollywood, FL 33022.

### 1.05 CONTRACT DRAWINGS

- A. The work to be performed is shown on the set of Contract Drawings entitled "City of Hollywood Southern Regional Wastewater Treatment Plant, Treatment Unit Grit Removal".

### 1.06 CONTRACTOR FURNISHED MATERIAL AND EQUIPMENT

- A. All equipment, materials, instruments or devices incorporated in this project shall be new and unused, unless indicated otherwise in the Contract Documents and shall be the products of reliable manufacturers who, unless otherwise specified, have been regularly engaged in the manufacture of such material and equipment for at least five (5) years. Procedures and additional requirements regarding manufacturer's experience and substitutions are included in Section 01300 - Submittals.

### 1.07 DRAWINGS OF EXISTING FACILITIES

- A. Drawings of the existing facilities may be inspected at the City Engineering Support Services Office. These drawings are for information only and are not a part of the Contract Documents. In making these drawings available for inspection, the CITY makes no guarantee, either expressed or implied, as to their accuracy or completeness.
- B. The CONTRACTOR shall contact representatives for other utilities, facilities in proximity to the work and Sunshine State One Call Inc., to obtain the as-built information from

them directly. The utilities shown on Drawings are based upon available records supplied from various sources.

#### 1.08 ITEMS SPECIFIED ON DRAWINGS

- A. Certain items of material and/or equipment, and their installation may be specified on the Drawings and not mentioned in the Specifications. Such items are to be considered as both shown on the Drawings and noted in the Specifications and be provided by the CONTRACTOR in accordance with the Specification on the Drawings.

#### 1.09 FIELD LAYOUT OF WORK

- A. All work under this Contract shall be constructed in accordance with the lines and grades shown on the Contract Drawings or as directed by the ENGINEER. Elevations of existing ground, structures and appurtenances are believed to be reasonably correct but are not guaranteed to be absolute and therefore are presented only as an approximation. Any error or apparent discrepancy in the data shown or omissions of data required for accurately accomplishing the stake-out survey shall be referred immediately to the ENGINEER for interpretation or correction.
- B. All survey work for construction control purposes shall be made by the CONTRACTOR at his expense.
- C. The CONTRACTOR shall establish all base lines for the location of the principal component parts of the work together with benchmarks and batter boards adjacent to the work. Based upon the information provided by the Contract Drawings, the CONTRACTOR shall develop and make all detail surveys necessary for construction. The CITY will furnish information and location of existing benchmarks.
- D. The CONTRACTOR shall have the responsibility to carefully preserve the benchmarks, reference points and stakes. In case of destruction thereof by the CONTRACTOR or resulting from his negligence, he shall be held liable for any expense and damage resulting therefrom and shall be responsible for any mistakes that may be caused by the unnecessary loss or disturbance of such bench marks, reference points and stakes.
- E. Existing or new control points, property markers, and monuments that will be established or are destroyed during the normal causes of construction shall be re-established by the CONTRACTOR; and all reference ties recorded therefore shall be furnished to the ENGINEER. All computations necessary to establish the exact position of the work shall be made and preserved by the CONTRACTOR.
- F. The ENGINEER may check all or any portion of the work, and the CONTRACTOR shall afford all necessary assistance to the ENGINEER in carrying out such checks. Any necessary corrections to the work shall be performed immediately by the CONTRACTOR and he shall accept all responsibility for the accuracy and completeness of his work.

#### PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

## SECTION 01025 - BASIS OF PAYMENT

### PART 1 -- GENERAL

#### 1.01 GENERAL

- A. Payments to the CONTRACTOR shall be made on the basis of the Proposal bid items as full and complete payment for furnishing all materials, labor, tools and equipment, and for performing all operations necessary to complete the work included in the Contract Documents. Such compensation shall also include payments for any loss or damages arising directly or indirectly from the work, or from any discrepancies between the actual quantities of work and those shown in the Contract Documents, or from any unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the CITY.
- B. The prices stated in the proposal include all costs and expenses for taxes, labor, equipment, materials, commissions, transportation charges and expenses, patent fees and royalties, labor for handling materials during inspection, together with any and all other costs and expenses for performing and completing the work as shown on the plans and specified herein. The Basis of Payment for an item at the price shown in the Proposal shall be in accordance with its description of the item in this Section and as related to the work specified and as shown on the Drawings. Unit prices where used will be applied to the actual quantities furnished and installed in conformance with the Contract Documents.
- C. The CONTRACTOR's attention is called to the fact that the quotations for the various items of work are intended to establish a total price for completing the work in its entirety. Should the CONTRACTOR feel that the cost of any item of work has not been established by the Proposal or Basis of Payment, he shall include the cost for that work in the last Bid Item so that his proposal for the project does reflect his total price for completing the work in its entirety.

#### 1.02 MEASUREMENT

- A. The quantities for payment under this Contract shall be determined by actual measurement of the completed items, in place, ready for service and accepted by the CITY, in accordance with the Schedule of Payment Values as described in Section 01300, unless otherwise specified. A representative of the CONTRACTOR shall witness all field measurements.

### 1.03 PAYMENT ITEMS

#### A. Base Bid Items

1. Item No. 1 – Mobilization: The lump sum price bid for this item shall be full compensation for all mobilization activities, including but not limited to bonds, insurance, scheduling, labor associated with permit acquisition, temporary facilities, audio-video documentation of the existing site, preparation and submittal of shop drawings, and all other activities necessary to prepare to complete the contract work. The payment item for mobilization shall not exceed 3% of the sum of Bid Item Nos. 2 through 19.
2. Item No. 2 – All Work Associated with Interceptor Box: Payment for all labor, equipment and material for all work necessary and required to provide for access to the work including temporary railing, the removal and reinstallation of the concrete roof slab as required in the Contract Documents, including all work not defined in Bid Item No. 3.
3. Item No. 3 – Removal, Dewatering and Disposal of Grit from Interceptor Box: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the Interceptor Box under live flow conditions. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
4. Item No. 4 – All Work Associated with the Grit Removal System: Payment for all labor, equipment and material for all work necessary and required to remove the grit chambers and associated piping and channels from service, to provide for access to and implementation of the work including the removal of FRP roof panels, draining residual waters, to clean the interior walls, floors, ceilings, and equipment for inspection, and to prepare the grit chambers and associated piping and channels to be returned to service including the reinstallation of FRP roof panels as required in the Contract Documents, including all work not defined in Bid Item No. 5.
5. Item No. 5 – Removal, Dewatering and Disposal of Grit from the Grit Removal System: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the grit chambers and associated piping and channels. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
6. Item No. 6 – All Work Associated with the Influent Pump Station: Payment for all labor, equipment and material for all work necessary and required to isolate the Influent Pump Station wet well chambers from service, to provide for access to and implementation of the work including the removal of FRP roof panels, draining residual waters, to clean the interior walls, floors, ceilings, and equipment for inspection, and to prepare the wet well chambers to be returned to service including the reinstallation of FRP roof panels as required in the Contract Documents, including all work not defined in Bid Item No. 7.

7. Item No. 7 – Removal, Dewatering and Disposal of Grit from the Grit Removal System: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the grit chambers and associated piping and channels. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
8. Item No. 8 – All Work Associated with Oxygenation Flow Distribution Box North Center Cell: Payment for all labor, equipment and material for all work necessary and required to remove the North Center Cell from service, to provide for access to and implementation of the work including temporary railing, removal and reinstallation of concrete roof slab, draining of residual waters, to clean the interior walls, floors, and equipment for inspection, and to prepare the North Center Cell to be returned to service as required in the Contract Documents, including all work not defined in Bid Item No. 9.
9. Item No. 9 – Removal, Dewatering and Disposal of Grit from Oxygenation Flow Distribution Box North Center Cell: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the North Center Cell. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
10. Item No. 10 – All Work Associated with Oxygenation Flow Distribution Box South Center Cell: Payment for all labor, equipment and material for all work necessary and required to remove the South Center Cell from service, to provide for access to and implementation of the work including temporary railing, removal and reinstallation of concrete roof slabs, draining of residual waters, to clean the interior walls, floors, and equipment for inspection, and to prepare the South Center Cell to be returned to service as required in the Contract Documents, including all work not defined in Bid Item No. 11.
11. Item No. 11 – Removal, Dewatering and Disposal of Grit from Oxygenation Flow Distribution Box South Center Cell: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the South Center Cell. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
12. Item No. 12 – All Work Associated with Oxygenation Flow Distribution Box Cells 1-5: Payment for all labor, equipment and material for all work necessary and required to remove the Oxygenation Flow Distribution Box feed cell numbers 1 through 5 from service, to provide for access to and implementation of the work including temporary railing, removal and reinstallation of concrete roof slabs, draining of residual waters, to clean the interior walls, floors, and equipment for inspection, and to prepare the feed cells to be returned to service as required in the Contract Documents, including all work not defined in Bid Item No. 13.

13. Item No. 13 – Removal, Dewatering and Disposal of Grit from Oxygenation Flow Distribution Box Cells 1-5: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the Oxygenation Flow Distribution Box feed cell numbers 1 through 5. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
14. Item No. 14 – All Work Associated with Oxygenation Train and Effluent Box No. 1: Payment for all labor, equipment and material for all work necessary and required to remove the oxygenation train from service, to provide for access to and implementation of the work including electrically disconnecting and removing aeration mixers, draining of residual waters, to clean the interior walls, floors, ceilings, and equipment for inspection, and to prepare the oxygenation train and associated piping and channels to be returned to service including the reinstallation and electrical reconnection of aeration mixers as required in the Contract Documents, including all work not defined in Bid Item No. 15.
15. Item No. 15 – Removal, Dewatering and Disposal of Grit from Oxygenation Train and Effluent Box No. 1: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the oxygenation train and associated piping and channels. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
16. Item No. 16 – All Work Associated with Oxygenation Train and Effluent Box No. 2: Payment for all labor, equipment and material for all work necessary and required to remove the oxygenation train from service, to provide for access to and implementation of the work including electrically disconnecting and removing aeration mixers, draining of residual waters, to clean the interior walls, floors, ceilings, and equipment for inspection, and to prepare the oxygenation train and associated piping and channels to be returned to service including the reinstallation and electrical reconnection of aeration mixers as required in the Contract Documents, including all work not defined in Bid Item No. 17.
17. Item No. 17 – Removal, Dewatering and Disposal of Grit from Oxygenation Train and Effluent Box No. 2: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the oxygenation train and associated piping and channels. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
18. Item No. 18 – All Work Associated with Oxygenation Train No. 3: Payment for all labor, equipment and material for all work necessary and required to remove the oxygenation train from service, to provide for access to and implementation of the work including electrically disconnecting and removing aeration mixers, draining of residual waters, to clean the interior walls, floors, ceilings, and equipment for inspection, and to prepare the oxygenation train and associated piping and channels to be returned to service

including the reinstallation and electrical reconnection of aeration mixers as required in the Contract Documents, including all work not defined in Bid Item No. 19.

19. Item No. 19 – Removal, Dewatering and Disposal of Grit from Oxygenation Train No. 3: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the oxygenation train and associated piping and channels. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
20. Item No. 20 – All Work Associated with Oxygenation Train No. 4: Payment for all labor, equipment and material for all work necessary and required to remove the oxygenation train from service, to provide for access to and implementation of the work including electrically disconnecting and removing aeration mixers, draining of residual waters, to clean the interior walls, floors, ceilings, and equipment for inspection, and to prepare the oxygenation train and associated piping and channels to be returned to service including the reinstallation and electrical reconnection of aeration mixers as required in the Contract Documents, including all work not defined in Bid Item No. 21.
21. Item No. 21 – Removal, Dewatering and Disposal of Grit from Oxygenation Train No. 4: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the oxygenation train and associated piping and channels. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
22. Item No. 22 – All Work Associated with Oxygenation Train No. 5: Payment for all labor, equipment and material for all work necessary and required to remove the oxygenation train from service, to provide for access to and implementation of the work including electrically disconnecting and removing aeration mixers, draining of residual waters, to clean the interior walls, floors, ceilings, and equipment for inspection, and to prepare the oxygenation train and associated piping and channels to be returned to service including the reinstallation and electrical reconnection of aeration mixers as required in the Contract Documents, including all work not defined in Bid Item No. 23.
23. Item No. 23 – Removal, Dewatering and Disposal of Grit from Oxygenation Train No. 5: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the oxygenation train and associated piping and channels. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
24. Item No. 24 – All Work Associated with Clarifier Splitter Box No. 1: Payment for all labor, equipment and material for all work necessary and required to remove the splitter box from service, to provide for access to and implementation of the work, draining of residual waters, to clean the interior walls, floors, ceilings and equipment for inspection,

and to prepare the splitter box to be returned to service as required in the Contract Documents, including all work not defined in Bid Item No. 25.

25. Item No. 25 – Removal, Dewatering and Disposal of Grit from Clarifier Splitter Box No. 1: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the splitter box and associated piping and channels. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
26. Item No. 26 – All Work Associated with Clarifier Splitter Box No. 2: Payment for all labor, equipment and material for all work necessary and required to remove the splitter box from service, to provide for access to and implementation of the work, draining of residual waters, to clean the interior walls, floors, ceilings and equipment for inspection, and to prepare the splitter box to be returned to service as required in the Contract Documents, including all work not defined in Bid Item No. 27.
27. Item No. 27 – Removal, Dewatering and Disposal of Grit from Clarifier Splitter Box No. 2: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the splitter box and associated piping and channels. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
28. Item No. 28 – All Work Associated with Clarifier Influent Box No. 1: Payment for all labor, equipment and material for all work necessary and required to remove the influent box from service, to provide for access to and implementation of the work, draining of residual waters, to clean the interior walls, floors, ceilings and equipment for inspection, and to prepare the influent box to be returned to service as required in the Contract Documents, including all work not defined in Bid Item No. 29.
29. Item No. 29 – Removal, Dewatering and Disposal of Grit from Clarifier Influent Box No. 1: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the influent box and associated piping and channels. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
30. Item No. 30 – All Work Associated with Clarifier Influent Box No. 2: Payment for all labor, equipment and material for all work necessary and required to remove the influent box from service, to provide for access to and implementation of the work, draining of residual waters, to clean the interior walls, floors, ceilings and equipment for inspection, and to prepare the influent box to be returned to service as required in the Contract Documents, including all work not defined in Bid Item No. 13.

31. Item No. 31 – Removal, Dewatering and Disposal of Grit from Clarifier Influent Box No. 2: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the influent box and associated piping and channels. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
32. Item No. 32 – All Work Associated with Clarifier No. 2: Payment for all labor, equipment and material for all work necessary and required to remove the clarifier from service, to provide for access to and implementation of the work including the removal of the center column hatch for the rag and debris removal, and draining of residual waters, to clean the interior walls, floors, and equipment for inspection, and to prepare the clarifiers to be returned to service as required in the Contract Documents, including all work not defined in Bid Item No. 13.
33. Item No. 33 – Removal, Dewatering and Disposal of Grit from Clarifier No. 2: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the clarifier and associated piping and channels. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
34. Item No. 34 – All Work Associated with Clarifier No. 4: Payment for all labor, equipment and material for all work necessary and required to remove the clarifier from service, to provide for access to and implementation of the work including the removal of the center column hatch for the rag and debris removal, and draining of residual waters, to clean the interior walls, floors, and equipment for inspection, and to prepare the clarifiers to be returned to service as required in the Contract Documents, including all work not defined in Bid Item No. 35.
35. Item No. 35 – Removal, Dewatering and Disposal of Grit from Clarifier No. 4: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags, debris, and floatable materials from the clarifier and associated piping and channels. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.
36. Item No. 36 – All Work Associated with Clarifier 5-8 Diversion Box: Payment for all labor, equipment and material for all work necessary and required to provide for access to and implementation of the work including furnishing, installation and removal of temporary bypass piping and valving, pumping of the diversion box cells, and furnishing, installation and removal of a center cell seal plate, as required in the Contract Documents, including all work not defined in Bid Item No. 37.
37. Item No. 37 – Removal, Dewatering and Disposal of Grit from Clarifier 5-8 Diversion Box: Included in the pay item is the unit cost per cubic yard for all materials, labor, and equipment required to remove, dewater and dispose of grit, sand, grease, scum, rags,

debris, and floatable materials from the diversion box. Measurement for payment shall be the cubic yards of grit to be disposed as determined by measurement after dewatering in accordance with the requirements of the Contract Documents.

38. Item No. 38 – Undefined Conditions Allowance: Included in this allowance is work associated with undefined conditions or conflicts developing from undefined conditions. All work authorized for payment will be authorized in writing by the CITY. Amount to be paid per undefined conditions or conflicts shall be negotiated or agreed to by both parties.
39. Item No. 39 – Consideration for Indemnification: In recognition of CONTRACTOR's indemnification obligations, the CITY will pay to the CONTRACTOR the specific consideration of ten dollars (\$10.00). Payment of said specific consideration shall be made at the time of the payment of the first progress estimate and the CONTRACTOR shall acknowledge payment of this consideration by letter to the CITY after receipt of the progress payment.
40. Item No. 40 – Demobilization: Payment for completing all work including but not limited to demobilization, site cleanup and restoration - all as per the Technical Specifications and Contract Drawings. The payment items for demobilization shall not exceed 2% of the sum of Bid Item Nos. 2 through 37.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

## SECTION 01070 - ABBREVIATIONS

### PART 1 -- GENERAL

#### 1.01 THE REQUIREMENT

- A. Wherever in these specifications references are made to the standards, specifications, or other published data of the various national, regional, or local organizations, such organizations may be referred to by their acronym or abbreviation only. As a guide to the user of these specifications, the following acronyms or abbreviations which may appear in these specifications shall have the meanings indicated herein.

#### 1.02 ABBREVIATIONS AND ACRONYMS

AAMA	Architectural Aluminum Manufacturer's Association
AASHTO	American Association of the State Highway and Transportation Officials
ACI	American Concrete Institute
ACIFS	American Cast Iron Flange Standards
ACOE	Army Corps of Engineers
ACPA	American Concrete Pipe Association
AFBMA	Anti-Friction Bearing Manufacturer's Association, Inc.
AGMA	American Gear Manufacturer's Association
AHGDA	American Hot Dip Galvanizers Association
AI	The Asphalt Institute
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Moving and Conditioning Association
ANSI	American National Standards Institute, Inc.
APA	American Plywood Association
API	American Petroleum Institute
APHA	American Public Health Association
APWA	American Public Works Association
ASA	Acoustical Society of America
ASAE	American Society of Agriculture Engineers
ASCE	American Society of Civil Engineers
ASHRAE Engineers	American Society of Heating, Refrigerating, and Air-Conditioning Engineers

ASLE	American Society of Lubricating Engineers
ASME	American Society of Mechanical Engineers
ASMM	Architectural Sheet Metal Manual
ASSE	American Society of Sanitary Engineers
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Association
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWWA	American Water Works Association
BCEPGMD	Broward County Environmental Protection and Growth Management Department (formerly BCEPD)
BCHD	Broward County Health Department
CEMA	Conveyor Equipment Manufacturer's Association
CMA	Concrete Masonry Association
CRSI	Concrete Reinforcing Steel Institute
DIPRA	Ductile Iron Pipe Research Association
EIA	Electronic Industries Association
ETL	Electrical Test Laboratories
FBC	Florida Building Code
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FS	Federal Specifications
IEEE	Institute of Electrical and Electronics Engineers
IES	Illuminating Engineering Society
IPCEA	Insulated Power Cable Engineers Association
ISA	Instrument Systems and Automation
ISO	International Organization for Standardization
MBMA	Metal Building Manufacturers Association
MMA	Monorail Manufacturers Association
MTI	Marine Testing Institute
NAAM	National Association of Architectural Metal Manufacturers
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards
NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association

NFPA	National Fire Protection Association
NIOSH	National Institute of Occupational Safety and Health
NIST	National Institute of Standards and Testing
NRCA	National Roofing Contractors Association
NSF	National Science Foundation
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PCM	Program Construction Manager
PMT	Program Management Team
SFWMD	South Florida Water Management District
SMACCNA	Sheet Metal and Air Conditioning Contractors National Association
SSPC	Steel Structures Painting Council
SSPWC	Standard Specifications for Public Works Construction
SFWMD	South Florida Water Management District
UL	Underwriters Laboratories, Inc.

## PART 2 -- PRODUCTS

(NOT USED)

## PART 3 -- EXECUTION

(NOT USED)

- END OF SECTION -

## SECTION 01090 - APPLICABLE STANDARDS AND CODES

### PART 1 -- GENERAL

#### 1.01 GENERAL

- A. Wherever reference is made to any published standards, codes, or standard specifications, it shall mean the latest standard code, specification, or tentative specification of the technical society, organization, or body referred to, which is in effect at the date of opening of bids.
- B. The following is a partial list of typical abbreviations which may be used in the Specifications and the organizations to which they refer:

AASHTO	- American Association of State Highway and Transportation Officials
ACI	- American Concrete Institute
ACIFS	- American Cast Iron Flange Standards
AGA	- American Gas Association
AGMA	- American Gear Manufacturers Association
AIA	- American Institute of Architects
AISC	- American Institute of Steel Construction
AISI	- American Iron and Steel Institute
ANSI	- American National Standard Institute
API	- American Petroleum Institute
ASCE	- American Society of Civil Engineers
ASHRAE	- American Society of Heating, Refrigeration, and Air Conditioning Engineers
ASME	- American Society of Mechanical Engineers
ASTM	- American Society of Testing and Materials
AWI	- Architectural Woodwork Institute
AWPA	- American Wood Preservers Association
AWS	- American Welding Society
AWWA	- American Water Works Association
BHMA	- Builder's Hardware Manufacturers Association
CIPRA	- Cast Iron Pipe Research Association
CRSI	- Concrete Reinforcing Steel Institute
CSA	- Canadian Standards Association
DHI	- Door and Hardware Institute
DOT	- Florida Department of Transportation
EEI	- Edison Electric Institute
FBC	- Florida Building Code
ICEA	- Insulated Cable Engineers Association
IEEE	- Institute of Electrical and Electronic Engineers
IPCEA	- Insulated Power Cable Engineers Association
ISO	- Insurance Service Offices
NAAMM	- National Association of Architectural Metal Manufacturers
NBS	- National Bureau of Standards
NCPI	- National Clay Pipe Institute
NEC	- National Electric Code
NEMA	- National Electrical Manufacturers Association

NFPA - National Fire Protection Association  
NLMA - National Lumber Manufacturers Association  
OSHA - Occupational Safety and Health Act  
SAE- Society of Automotive Engineers Standards  
SHBI - Steel Heating Boiler Institute  
SSPC - Steel Structures Painting Council  
UL - Underwriters' Laboratories, Inc.

- C. CONTRACTOR shall, when required, furnish evidence satisfactory to the ENGINEER that materials and methods are in accordance with such standards where so specified.
- D. In the event any questions arise as to the application of these standards or codes, copies shall be supplied on site by the CONTRACTOR.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

## SECTION 01200 - PROJECT MEETINGS

### PART 1 -- GENERAL

#### 1.01 PRECONSTRUCTION

- A. A preconstruction meeting will be held to acquaint representative of the CITY and various agencies with those in responsible charge of the CONTRACTOR's activities for the project. The meeting will cover such subjects as the following: insurance certificates; permits and licenses; affirmative action employment; construction schedules; cost breakdown and application for payments; material deliveries, storage and payments; shop drawings and submittals; job-site inspection by the ENGINEER; safety and emergency action procedures; operations of the existing treatment facilities; field offices, security and other housekeeping procedures; list of subcontractors; liquidated damages; communications; coordinating; and other appropriate matters.

#### 1.02 PROGRESS

- A. A progress meeting shall be held on a once-per-week basis for the purpose of coordinating and expediting the work. The CONTRACTOR, as a part of his obligations under the Contract, shall attend in person or by an authorized representative to attend and to act on his behalf. The ENGINEER will conduct such meetings and as necessary, with the CONTRACTOR's input, issue an agenda.
- B. In addition, the ENGINEER or CONTRACTOR may call for special job site meetings for the purpose of resolving unforeseen problems or conflicts which may impede the construction schedule. The ENGINEER will prepare a brief summary report of the decisions or understandings concerning each of the items discussed at the meeting.
- C. At weekly progress meetings, the CONTRACTOR shall submit to the ENGINEER for review a current three (3) week progress schedule. This schedule submission shall include a two week look ahead schedule and reflect status of the work performed during the preceding week.

### PART 2 -- PRODUCTS (Not Used)

### PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

## SECTION 01300 - SUBMITTALS

### PART 1 -- GENERAL

#### 1.01 THE REQUIREMENT

- A. This section specifies the means of all submittals. All submittals, whether their final destination is to the CITY, ENGINEER, or other representatives of the CITY, shall be directed from the CONTRACTOR through the ENGINEER. A summary of the key types of submittals and the number of copies required is as follows:

<u>Copies to ENGINEER</u>	<u>Type of Submittal</u>
4 <sup>1</sup>	Construction schedule
4	Schedule of payment items
1	Audio visual preconstruction record
6	Progress estimates
4	Shop drawings
4	Certificates of compliance
2	Warranties
1 <sup>2</sup>	Product samples
3 <sup>2</sup>	O&M Manuals
1 <sup>3</sup>	Record drawings

<sup>1</sup>One USB flash drive containing the electronic source file shall be included

<sup>2</sup>Unless otherwise required in the specific Section where requested.

<sup>3</sup>One marked-up set of Drawings (Original Markup).

#### 1.02 SUBMITTAL PROCEDURES

- A. Transmit each submittal with a form acceptable to the ENGINEER, clearly identifying the project CONTRACTOR, the enclosed material and other pertinent information specified in other parts of this section. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work. Acceptance of submittals in electronic format via email attachment or USB flash drive shall be at the discretion of the CITY and ENGINEER. USB flash drives must be accompanied by the CONTRACTOR's transmittal stating the contents of the drive. Under no circumstances will hyperlinks to internet site(s) for submittal retrieval by the CITY or ENGINEER be accepted.
- B. Revise and resubmit submittals as required. Identify all changes made since previous submittals. Resubmittals shall be noted as such.
- C. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

### 1.03 CONSTRUCTION PROGRESS SCHEDULE

- A. The CONTRACTOR shall have the capability of preparing and utilizing the specified construction progress scheduling techniques. A statement of capability shall be submitted in writing to the ENGINEER with the return of the executed Agreement to the CITY and will verify that either the CONTRACTOR's organization has in-house capability qualified to use the technique or that the CONTRACTOR employs a consultant who is so qualified. Capability shall be verified by description of the construction projects to which the CONTRACTOR or its consultant has successfully applied the scheduling technique and which were controlled throughout the duration of the project by means of systematic use and updating of the construction progress schedule, the network analysis and associated reports. The submittal shall include the name of the individual on the CONTRACTOR's staff who will be responsible for the construction progress schedule, and associated reports and for providing the required updating information of same. The CONTRACTOR shall submit its proposed progress (baseline) schedule to the ENGINEER for review and comment within thirty days of the Notice to Award. The ENGINEER shall have the authority to determine acceptability/correctness of the schedule logic and activity interrelationships. The use of extraneous, nonworking activities and activities which add restraints to the construction schedule shall not be accepted. Baseline schedules that do not meet their contract completion dates shall not be accepted.
- B. The Contractor's progress schedule (baseline and monthly updates) shall be computer generated and resource loaded. Each construction progress schedule, and associated report shall include the following tabulations: a list of activities in numerical order, a list of activity precedence, schedules sequenced by Early Start Date, Total Float, and Late Start Date. Each schedule, and report shall include the following minimum items.
1. Activity Numbers
  2. Estimated Duration
  3. Activity Description
  4. Early Start Date (Calendar Dated)
  5. Early Finish Date (Calendar Dated)
  6. Latest Allowable Start Date (Calendar Dated)
  7. Latest Allowable Finish Date (Calendar Dated)
  8. Status (whether critical)
  9. Estimated Cost of the Activity
  10. Total Float and Free Float
- C. In addition, each construction progress schedule, network analysis and report shall be prefaced with the following summary data:

1. Contract Name and Number
  2. CONTRACTOR'S Name
  3. Contract Duration and Float
  4. Contract Schedule
  5. The Effective or Starting Date of the Schedule (the date indicated in the Notice-to-Proceed)
- D. The work day to calendar date correlation shall be based on an 8-hour day and 40-hour week with adequate allowance for holidays and all other special requirements of the Work. A total of five (5) days for adverse weather shall also be allowed for in the progress schedule such that the CONTRACTOR can secure the jobsite as specified in Section 01560.
- E. If the CONTRACTOR desires to make changes in its method of operating which affect the construction progress schedule and related items, the CONTRACTOR shall notify the ENGINEER in writing stating what changes are proposed and the reason for the change. If the ENGINEER accepts these changes, in writing, the CONTRACTOR shall revise and submit, without additional cost to the CITY, all of the affected portions of the construction progress schedule, and associated reports. The construction progress schedule and related items shall be adjusted by the CONTRACTOR only after prior acceptance, in writing by the ENGINEER. Adjustments may consist of changing portions of the activity sequence, activity durations, division of activities, or other adjustments as may be required. The addition of extraneous, nonworking activities and activities which add restraints to the construction progress schedule shall not be accepted.
- F. Except where earlier completions are specified, schedule dates which show completion of all Work prior to the contract completion date shall, in no event, be the basis for claim for delay against the CITY by the CONTRACTOR.
- G. Construction progress schedules and related items which contain activities showing negative float or which extend beyond the contract completion date will not be accepted by the ENGINEER.
- H. Whenever it becomes apparent from the current construction progress schedule and associated reports that delays to the critical path have resulted and the contract completion date will not be met, or when so directed by the ENGINEER, the CONTRACTOR shall take some or all of the following actions at no additional cost to the CITY. They shall submit to the ENGINEER for approval, a written statement of the steps they intend to take to remove or arrest the delay to the critical path in the current construction progress schedule, including a computer generated schedule revision to reflect proposed actions.
1. Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of work.

2. Increase the number of working hours per shift, shifts per day, working days per week, the amount of construction equipment, or any combination of the foregoing, sufficiently to substantially eliminate the backlog of work.
  3. Reschedule activities to achieve maximum practical concurrency of accomplishment of activities, and comply with the revised schedule.
- I. If when so requested by the ENGINEER, the CONTRACTOR should fail to submit a written statement of the steps they intend to take or should fail to take such steps as reviewed and accepted in writing by the ENGINEER, the ENGINEER may direct the CONTRACTOR to increase the level of effort in manpower (trades), equipment and work schedule (overtime, weekend and holiday work, etc.) to be employed by the CONTRACTOR in order to remove or arrest the delay to the critical path in the current construction progress schedule, and the CONTRACTOR shall promptly provide such level of effort at no additional cost to the CITY.
  - J. If the completion of any activity, whether or not critical, falls more than 100 percent behind its previously scheduled and accepted duration, the CONTRACTOR shall submit for approval a schedule adjustment showing each such activity divided into two activities reflecting completed versus uncompleted work.
  - K. Shop drawings which are not approved on the first submittal or within the time scheduled, and equipment which does not pass the specified tests and certifications shall be immediately rescheduled. The CONTRACTOR shall allow a 21 day review period for all shop drawings and other submittals requiring approval by the ENGINEER.
  - L. The contract time will be adjusted only in accordance with the General Requirements and other portions of the Contract Documents as may be applicable. If the ENGINEER finds that the CONTRACTOR is entitled to any extension of the contract completion date, the ENGINEER's determination as to the total number of days extension shall be based upon the current construction progress schedule and on all data relevant to the extension. Such data shall be included in the next updating of the schedule and related items. Actual delays in activities which, according to the construction progress schedule, do not affect any contract completion date will not be the basis for a change therein.
  - M. From time to time it may be necessary for the contract schedule of completion time to be adjusted by the CITY in accordance with the General Requirements and other portions of the Contract Documents as may be applicable. Under such conditions, the ENGINEER will direct the CONTRACTOR to reschedule the Work or contract completion time to reflect the changed conditions, and the CONTRACTOR shall revise the construction progress schedule and related items accordingly, at no additional cost to the CITY.
  - N. Available float time may be used by the CITY through the CITY'S ENGINEER.
  - O. The CITY controls the float time and, therefore, without obligation to extend either the overall completion date or any intermediate completion dates, the CITY may initiate changes that absorb float time only. CITY initiated changes that affect the critical path on the network diagram shall be the sole grounds for extending the completion dates. CONTRACTOR initiated changes that encroach on the float time may be accomplished only with the CITY'S concurrence. Such changes, however, shall give way to CITY initiated changes competing for the same float time.

- P. To the extent that the construction project schedule, or associated report or any revision thereof shows anything not jointly agreed upon or fails to show anything jointly agreed upon, it shall not be deemed to have been accepted by the ENGINEER. Failure to include on a schedule any element of Work required for the performance of this Contract shall not excuse the CONTRACTOR from completing all Work required within any applicable completion date, notwithstanding the review of the schedule by the ENGINEER.
- Q. Review and acceptance of the construction progress schedule, and related reports, by the ENGINEER is advisory only and shall not relieve the CONTRACTOR of the responsibility for accomplishing the Work within the contract completion date. Omissions and errors in the construction progress schedule, and related reports shall not excuse performance less than that required by the Contract and in no way make the ENGINEER an insurer of the CONTRACTOR'S success or liable for time or cost overruns flowing from any shortcomings in the construction progress schedule, and related reports.
- R. The CONTRACTOR shall present and discuss the proposed schedule at the preconstruction conference.
- S. The construction progress schedule shall be based upon the precedence diagramming method of scheduling and shall be prepared in the form of a horizontal bar chart showing in detail the proposed sequence of the Work and identifying all construction activities included but not limited to yard piping, all structures and treatment units and all related Work specified herein to be performed under the Contract. The schedule shall be time scaled, identifying the first day of each week, with the estimated date of starting and completion of each stage of the Work in order to complete the project within the contract time. The project critical path shall be clearly identified in color or by other means acceptable to the ENGINEER.
- T. The progress schedule shall be plotted on 22-inch by 34-inch and 11-inch by 17-inch paper and shall be revised and updated monthly, depicting progress through the last day of the current month and scheduled progress through completion. Six (one 22-inch by 34-inch and five 11-inch by 17-inch), schedules, required schedule "sorts" (tabulations) and an electronic copy of the baseline schedule shall be submitted for review and acceptance. Six (one 22-inch by 34-inch and four 11-inch x 17-inch) up-to-date copies of the schedule and six copies of tabulations and an electronic copy shall be submitted along with the application for monthly progress payments for the same period.
- U. The construction progress schedule shall be developed and maintained using Primavera Sure Trak as manufactured by Primavera Systems, Inc., or equal.

#### 1.04 SCHEDULE OF PAYMENT VALUES

- A. The CONTRACTOR shall submit a Schedule of Payment Values, in accordance with Section 01025, for all items in the proposal that are to be paid for on a lump sum basis. The schedule shall contain the labor and material values of the component parts of Work for the purpose of making progress payments during the construction period. The Schedule of Payment Values shall directly correlate on an item by item basis (unless otherwise accepted by the ENGINEER) to each individual activity detailed in the construction progress schedule.

- B. The schedule shall be given in sufficient detail for the proper identification of Work accomplished. Each item shall include its proportional share of all costs including the CONTRACTOR's overhead, contingencies and profit. The sum of all scheduled items shall equal the total value of the Contract.
- C. If the CONTRACTOR anticipates the need for payment for materials stored on the project site, it shall also submit a separate list covering the cost of materials, delivered and unloaded with taxes paid. This list shall also include the installed value of the item with coded reference to the Work items in the Schedule of Payment Items.
- D. The CONTRACTOR shall expand or modify the above schedule and materials listing as required by the ENGINEER'S initial or subsequent reviews.
- E. The CONTRACTOR shall update the Schedule of Payment Values monthly for reviewing by the ENGINEER. The payment applications shall be reviewed by the ENGINEER in accordance with the updated Schedule of Payment Values.

#### 1.05 SHOP DRAWINGS, PROJECT DATA AND SAMPLES

- A. General: A Shop Drawing Submittal Schedule shall be provided by the CONTRACTOR within thirty (30) days of the Notice to Proceed.
- B. The CONTRACTOR shall furnish for review ten (10) copies of shop drawings, project data, samples and other submittal items required by the Contract Documents. Three (3) copies shall be returned to the CONTRACTOR stamped "Furnish as Submitted" or "Furnish as Corrected". Where major corrections are indicated, two (2) copies will be returned stamped "Revise and Resubmit" and a new submittal is required (10 copies).
- C. The review of the CONTRACTOR'S submissions shall in no way relieve the CONTRACTOR of any of his responsibilities under the Contract. An acceptance of a submission shall be interpreted to mean that there are no specific objections to the submitted material, subject to conformance with the Contract Drawings and Specifications.
- D. All submissions shall be dated and properly referenced to the specifications section and Contract Drawing number. The submittal number shall match the following submittal numbering system (or an equivalent system as approved by the ENGINEER):

##### Submittal Numbering System

- 1. Package ID: The package number will reflect the CSI (specification) section number as it appears in the specifications.
- 2. Subgroup ID: The submittal number will include the CSI number followed by two additional codes. The first will define the type of submittal as follows:
  - 01 Product Data, Specifications, Cut Sheets, Manufacturers certification or approval letters.
  - 02 Shop Drawings

- 03 Product samples and mock-ups
- 04 Special requirements as required in the contract documents
- 05 As-Built Drawings
- 06 Warranties
- 07 O&M
- 08 Spare Parts

The second code will identify individual submittals within that submittal type. The number to the left of the decimal represents the submittal number and the number to the right of the decimal represents the revision number.

Example:

<u>Package</u>	<u>Submittal</u>	<u>Description</u>
03300	03300-01-1.1	Concrete Admixture A, First Submittal
06400	06400-01-1.2	Re-submittal
		First Submittal
		Product Data
		Finish Carpentry

By the following this code system, all submittals may be entered into the Document Tracking System prior to receipt of submittals. When a particular submittal is received, locate the entry in the Document Tracking project file, add the appropriate information and process. The Document Tracking System will provide the next sequence number.

- E. Shop Drawings and Project Data within practical limits shall be submitted as a single complete package for any operating system and shall include all items of equipment and mechanical units involved in the functioning of such system. Where applicable, the submission shall include elementary wiring diagrams showing circuit functioning and necessary interconnection wiring diagrams for construction.
- F. All submissions shall bear the CONTRACTOR'S stamp certifying that they have been checked for conformance and accuracy. Submissions without the CONTRACTOR'S stamp of approval will not be reviewed by the ENGINEER and will be returned to the CONTRACTOR.
- G. For any submission containing any departure from the Contract Documents and the CONTRACTOR shall include proper explanation in his letter of submittal.

- H. Work on fabricated or special items shall not be commenced until the required submission information has been reviewed and accepted.
- I. Standard items shall not be assembled or shipped until the required submission information has been reviewed and accepted.
- J. Prior review actions shall not relieve the CONTRACTOR of the responsibility for correcting errors, deviations, and/or omissions discovered at a later date.
- K. Shop Drawings: Shop Drawings include, but are not limited to, layout drawings, installation drawings, construction drawings, certified and interconnecting wiring diagrams, etc. The CONTRACTOR shall be responsible for security of all the information, details, dimension, drawings, etc. necessary to prepare submission drawings required and necessary under this Contract and to fulfill all other requirements of his Contract. The CONTRACTOR shall secure such information, details, drawings, etc. from all possible sources including the Contract Drawings, drawings prepared by subcontractors, ENGINEER, manufacturers, CONTRACTORS, etc.
- L. Submission drawings shall accurately and clearly present the following:
  - 1. All working and installation dimensions.
  - 2. Arrangement and sectional views.
  - 3. Units of equipment in the proposed position for installation, details of required attachments and connections and dimensioned locations between units and in relation to the structures.
  - 4. Necessary details and information for making connections between the various trades including but not limited to, power supplies and interconnection wiring between units, accessories, appurtenances, etc.
- M. Product Data: Where manufacturer's publications in the form of catalogs, brochures, illustrations, or other data sheets are submitted in lieu of prepared shop drawings, such submission shall specifically indicate the particular item offered. Identification of such items and relative pertinent information shall be made with indelible ink. Submissions showing only general information will not be accepted.
- N. Product data shall include materials of construction, dimensions, performance characteristics, capacities, wiring diagrams, piping and controls, etc.
- O. Samples: CONTRACTOR shall furnish for review all samples as required by the Contract Documents or requested by the ENGINEER.
- P. Samples shall be of sufficient size or quantity to clearly illustrate the quality, type, range of color, finish or texture and shall be properly labeled to show the nature of the work where the material represented by the sample will be used.
- Q. Samples shall be checked by the CONTRACTOR for conformance to the Contract Documents before being submitted to the ENGINEER and shall bear the CONTRACTOR'S stamp certifying that they have been so checked. Transportation

charges on samples submitted to the ENGINEER shall be prepaid by the CONTRACTOR.

- R. ENGINEER's review will be for compliance with the Contract Documents, and his comments will be transmitted to the CONTRACTOR with reasonable promptness.
- S. Accepted samples will establish the standards by which the completed work will be judged.

#### 1.06 OPERATION AND MAINTENANCE INSTRUCTIONS (MANUALS)

- A. Individual Instructions: The CONTRACTOR , through manufacturer's representatives or other qualified individuals, shall provide instruction of designated employees of the CITY in the operation and care of all equipment furnished.
- B. Written Instructions: The CONTRACTOR shall furnish and deliver to the ENGINEER, prior to the fifty percent completion point of construction, and no later than thirty (30) days prior to operator training, ten (10) complete sets of instructions, technical bulletins, and any other printed matter such as diagrams, prints or drawings, containing full information required for the proper operation, maintenance, and repair of the equipment. As a minimum, the following shall be included in this submittal:
  - 1. Operating Instructions
  - 2. Troubleshooting Information
  - 3. Maintenance Schedule(s)
  - 4. Lubrication Schedule
  - 5. Location of Service Centers
  - 6. Parts Diagram and List
  - 7. Spare Parts List (spare parts furnished shall be defined)
  - 8. Special Tools List
  - 9. Installation Instructions
  - 10. Assembly & Erection Drawings
  - 11. Dimensional Drawings
  - 12. Wiring Diagram(s)
  - 13. Storage Instructions
- C. Availability of the O&M Manual is a prerequisite to the operation and acceptance of the system. Instructions shall be bound together in appropriate three-ring binders with a searchable electronic PDF provided, complete with Chapter bookmarks. A detailed Table of Contents shall be provided for each set. Written operation and maintenance

instructions shall be required for all equipment items supplied. The amount of detail shall be commensurate with the complexity of the equipment item. They shall include all mechanical and electrical equipment such as valves, etc.

- D. Information not applicable to the specific piece of equipment installed on this project shall be struck from the submission. Information provided shall include a source of replacement parts and names of service representatives, including address and telephone number.

#### 1.07 RECORD DRAWINGS

- A. The CONTRACTOR shall keep and maintain, at the job site, one record set of Drawings. On these, it shall mark all project conditions, locations, configurations, and any other changes or deviations which may vary from the details represented on the original Contract Drawings, including buried or concealed construction and utility features which are revealed during the course of construction. Special attention shall be given to recording the horizontal and vertical location of all buried utilities that differ from the locations indicated, or which were not indicated on the Drawings. As-Built furnished grade information shall be included on the record drawings. Said record drawings shall be supplemented by detailed sketches as necessary or directed to indicate, fully, the Work as actually constructed. These master record drawings of the CONTRACTOR'S representation of as-build conditions, including all revisions made necessary by addenda and change orders shall be maintained up-to-date during the progress of Work.
- B. The record drawings shall be received on the 20th working day of every third month after the month in which the final notice to proceed is given as well as on completion of Work. Failure to maintain the record drawings up-to-date shall be grounds of withholding monthly progress payments until such time as the record drawings are brought up-to-date.
- C. In the case of those drawings which depict the detail requirement for equipment to the assembled and wired in the factory, such as motor control centers and the like, the record drawing shall be updated by indicating those portions which are superseded by change order drawings or final shop drawings, and by including appropriate reference information describing the change orders by number and the shop drawings by manufacturer, drawing, and revision numbers.
- D. Record drawings shall be accessible to the ENGINEER at all times during the construction period.
- E. Final payment will not be acted upon until the CONTRACTOR prepared record drawings have been delivered to the ENGINEER. Said up-to-date record drawings shall be in the form of a set of prints with carefully plotted information overlaid in pencil.
- F. Upon substantial completion of the Work and prior to final acceptance, the CONTRACTOR shall finalize and deliver a complete set of record drawings to the ENGINEER for transmittal to the CITY, conforming to the construction records of the CONTRACTOR. This set of drawings shall consist of corrected drawings showing the reported location of the Work. The information submitted by the CONTRACTOR and incorporated in the Record Drawings will be assumed to be correct, and the ENGINEER

will not be responsible for the accuracy of such information, and for any errors or omissions which may appear on the Record Drawings as a result.

- G. The information submitted by the CONTRACTOR in the record drawings shall be certified by a land surveyor registered in the State of Florida.
- H. The record drawings shall show the exact location of all structures and all mains within the right-of-way or easement, size and type of material of mains, all deflection points (vertical and horizontal), top pipe elevations and stationing at 100-foot increments, and exact dimensions and locations of all fittings and valves.

#### 1.08 WARRANTIES

- A. Original warranties, called for in the Contract Documents, shall be submitted to the CITY through the ENGINEER. When warranties are required, they shall be submitted prior to request for payment.
- B. When advance copies of warranties are requested, they shall be submitted with, and considered as shop drawings.
- C. The CONTRACTOR shall warrant to the CITY that all material and labor used in the construction are covered by his warrantee for a minimum of a one year period upon approval and acceptance by the CITY. The CONTRACTOR shall replace or repair defects at no cost to the CITY during the warrantee period. No visible or potential leakage shall be allowed during the warrantee period.

#### 1.09 CERTIFICATES

- A. Copies of certificates of compliance and test reports shall be submitted for requested items to the ENGINEER prior to request for payment.

#### 1.10 AUDIO-VISUAL PRECONSTRUCTION RECORD

- A. General: Prior to commencing work, the CONTRACTOR shall have a continuous color audio-video digital video recording taken of the entire Project, including adjacent work areas, plant site and all other areas that will be disturbed by the Contractor's operations, to serve as a record of preconstruction conditions. No construction shall begin prior to review and acceptance of the discs covering the respective, affected construction area by the ENGINEER. The ENGINEER shall have the authority to reject all or any portion of the recording not conforming to the specifications and order that it be redone at no additional charge. The CONTRACTOR shall reschedule unacceptable coverage within five days after being notified. The ENGINEER shall designate those areas, if any, to be omitted from or added to the audio-video coverage. Recordings shall not be performed more than ninety days prior to construction in any area. Recording format shall be MP4 audio-video, minimum 1280 x 720 resolution, and playable using Windows Media Player. CONTRACTOR shall submit MP4 video via three (3) flash drives. CDs and/or DVDs will not be accepted. All flash drives and written records shall become property of the City.
- B. Services: The CONTRACTOR shall engage the services of a professional electrographer. The color video shall be prepared by a responsible commercial firm known to be skilled and regularly engaged in the business of preconstruction color audio-video video

documentation. The electrographer shall furnish to the ENGINEER a list of all equipment to be used for the audio-video recording, i.e., manufacturer's name, model number, specifications and other pertinent information. Additional information to be furnished by the electrographer is the names and addresses of two references that the electrographer has performed color audio-video recordings for on projects of a similar nature within the last twelve months.

- C. Equipment: All equipment, accessories, materials and labor to perform this service shall be furnished by the CONTRACTOR.
1. The total audio-video system shall reproduce bright, sharp, clear pictures with accurate colors and shall be free from distortion, tearing, rolls or any other form of imperfection. The audio portion of the recording shall reproduce the commentary of the camera operator with proper volume and clarity, and be free from distortion and interruptions.
  2. When conventional wheeled vehicles are used, the distance from the camera lens to the ground shall not be less than twelve feet. In some instances, audio-video coverage may be required in areas not accessible by conventional wheeled vehicles. Such coverage shall be obtained by walking or special conveyance acceptable to the ENGINEER.
  3. The color video camera used in the recording system shall have a horizontal resolution of 300 lines at center, a luminance signal to noise ratio of 45 dB and a minimum illumination requirement of twenty-five foot-candles.
- E. Recorded Information - Audio: Each disc shall begin with the current date, project name and municipality and be followed by the general location; i.e., process structure, or area, viewing side and direction of progress. The audio track shall consist of an original live recording. The recording shall contain the narrative commentary of the electrographer, recorded simultaneously with his fixed elevation video record of the zone of influence of construction.
- F. Recorded Information - Video: All video recordings must, by electronic means, display continuously and simultaneously, generated with the actual recording, transparent digital information to include the date and time of recording. The date information shall contain the month, day and year. The time information shall contain the hours, minutes, and seconds. Additional information shall be displayed periodically. Such information shall include, but not be limited to, project name, process structure or area, and the viewing side. This transparent information shall appear on the extreme upper left hand third of the screen.
- G. Conditions for Recording: All recording shall be done during times of good visibility. No recording shall be done during precipitation, mist or fog. The recording shall only be done when sufficient sunlight is present to properly illuminate the subjects of recordings and to produce bright, sharp video recordings of those subjects.
- H. Video Coverage: Video coverage shall include all surface features located within the zone of influence of construction supported by appropriate audio coverage. Such coverage shall include, but not be limited to, existing driveways, sidewalks, curbs, pavement, landscaping, fences, signs and interior and exterior of existing structures affected by the

work and the exteriors of structures adjacent to the work, and any other on-site area that will be occupied or impacted by the CONTRACTOR or any of his subcontractors or suppliers within the area covered.

#### 1.11 PROJECT PHOTOGRAPHS

- A. The CONTRACTOR shall engage and pay for the services of a professional photographer for ground level progress pictures each month during the course of the construction activities. The photographer's periodic visits and work shall be coordinated with the CITY. A total of 12 progress photographs in electronic format of completed work is required each month. A photograph (picture) shall be defined as one exposure. Meta data shall include the following information:

1. Name of Facility
2. Name/number of Structure
3. Photo Number
4. Date picture was taken
5. Description
6. Name of photographer
7. Owner's witness

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

## SECTION 01500 - CONSTRUCTION CONSIDERATIONS

### PART 1 -- GENERAL

#### 1.01 HYDRAULIC UPLIFT ON STRUCTURES

- A. The CONTRACTOR shall be completely responsible for any tanks, wet wells, pipelines, manholes, foundations, cellars, or similar structures that may become buoyant during the construction operations due to the ground water, floods or buoyancy of piping caused due to the placement of flowable backfills before the structure is put into operation. Should there be any possibility of buoyancy of a pipeline or structure, the CONTRACTOR shall take the necessary steps to prevent its buoyancy. Damage to any structures due to floating or flooding shall be repaired or the structures replaced at the CONTRACTOR'S expense.

#### 1.02 WATER TIGHTNESS OF STRUCTURES

- A. General: It is the intent of these specifications that all concrete work, sealing work around built-in items and penetrations be performed as required to ensure that groundwater, rainwater, wastewater, chemical solutions or other process liquids in tanks, wetwells, channels, and containers will not leak into any buildings and/or equipment rooms, pipe galleries, habitable areas, or other generally dry areas.
  - 1. The required watertightness shall be achieved by quality concrete construction and proper sealing of all joints and penetrations.
  - 2. Each unit shall be tested separately, and the leakage tests shall be made prior to backfilling and before equipment is installed unless otherwise approved by the ENGINEER. Only potable water shall be used for the tests.
  - 3. The watertightness of buildings exclusive of the portions designed to contain liquids will consist of checking for leaks due to rain or groundwater infiltration.
  - 4. The CONTRACTOR shall provide at his own expense all labor, material, temporary bulkheads, pumps, water, measuring devices, etc., necessary to perform the required test.
- B. Built-in Items and Penetrations: All pipe sleeves, built-in items and penetrations shall be sealed as detailed and as required to ensure a continuous watertight seal.

#### 1.03 CUTTING AND PATCHING

- A. 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.

#### 1.04 ABANDONMENT AND SALVAGE OF EXISTING FACILITIES

- A. General: The scope of work requires the CONTRACTOR to interface with existing structures, and piping which will be abandoned or otherwise removed and/or relocated as part of the work. Prior to beginning any work associated with existing facilities to be abandoned, salvaged, or otherwise removed or relocated, the CONTRACTOR shall inform the CITY and the ENGINEER of his intent so that all arrangements can be made with the CITY for isolating pipelines (where possible) or otherwise removing existing facilities from service to the extent possible. The CONTRACTOR shall not proceed without written authorization from the CITY.
- B. Pipelines: The CONTRACTOR shall abandon, salvage or otherwise remove existing pipelines or segments of existing pipelines shown to be abandoned in place, salvaged, or removed as part of the contract work. Unless otherwise indicated in the Contract Documents, all piping shown on the Drawings to be abandoned shall be abandoned in place. Pipe shown to be abandoned need only be removed a minimum three feet clear of new utilities to be installed. Abandon-in-place shall be defined as installing plugs, or other permanent closure, as reviewed and accepted by the CITY, on all termination's, open ends or ends of pipe designated as being cut, capped and anchored in an acceptable manner. The pipe will remain buried unless otherwise noted.
- C. Piping indicated on the Drawings as being removed, or any piping to be abandoned which interferes with new structures or piping, shall be excavated and removed using methods which will not disturb adjacent piping or other facilities. All pipe materials shall be subject to salvage by the CITY as defined below. Any remaining piping on both ends of pipe segments removed shall be abandoned in-place, per the above definition. After piping has been removed, the CONTRACTOR shall backfill the evacuated area in accordance with requirements set forth in other sections of these specifications.
- D. Equipment: The CONTRACTOR shall abandon, salvage or otherwise remove existing equipment or other facilities as shown on the Contract Drawings or indicated herein. In all cases, the CONTRACTOR shall exercise caution when handling the existing equipment so as not to disturb or damage adjacent facilities. The CONTRACTOR shall make all repairs to adjacent facilities which may be damaged as a result of the CONTRACTOR's efforts in abandoning, salvaging or otherwise removing existing facilities, at no additional cost to the CITY.
- E. Salvage: The CITY may desire to salvage certain items of existing equipment which are to be dismantled and removed during the course of construction. Prior to removal of any existing equipment or piping from the site of work, the CONTRACTOR shall ascertain from the CITY whether or not the particular item or items are to be salvaged. Items to be salvaged shall be stockpiled on the site, in a location as designated by the CITY. All other items of equipment shall be disposed of off-site by the CONTRACTOR at his own expense, in accordance with applicable laws, ordinances and regulations.

#### 1.05 DIMENSIONS OF EXISTING STRUCTURES

- A. Where the dimensions and locations of existing structures are of critical importance in the installation or connection of new work, the CONTRACTOR shall verify such dimensions and locations in the field before the fabrication of any materials or equipment which is dependent on the correctness of such information.

## 1.06 REHABILITATION

- A. Certain areas of existing structures, piping, conduits, and the like will be affected by work necessary to complete modifications under this Contract. The CONTRACTOR shall be responsible to rehabilitate those areas affected by its construction activities.
- B. Where new rectangular openings are to be installed in concrete or concrete masonry walls or floors, the CONTRACTOR shall score the edges of each opening (both sides of wall or elevated slab) by saw cutting clean straight lines to a minimum depth of one inch and then chipping out the concrete. Alternately, the opening can be formed by saw cutting completely through the slab or wall. Saw cuts deeper than one inch (or the depth of cover over existing reinforcing steel, whichever is less) shall not be allowed to extend beyond the limits of the opening. Corners shall be made square and true by a combination of core drilling, chipping, or grinding. All necessary precautions shall be taken during removal of concrete to prevent debris from falling and damaging adjacent equipment or piping. Saw cuts allowed to extend beyond the opening shall be repaired by filling with nonshrink grout. The concrete around any exposed reinforcement steel shall be chipped back and exposed reinforcement steel cut a minimum of 1-1/2 inches from the finished face of the new opening. The inside face of the new opening shall be grout to fill any voids and cover the exposed aggregate and shall be trowel-finished to provide a plumb and square opening.
- C. Where new conduit or piping is to be installed through existing concrete walls, the CONTRACTOR shall accurately position the core-drill openings. Openings shall be adequately sized to allow alignment of piping or conduit and fittings without deflection and to provide adequate clearance for satisfactory packing in the annular space between the piping or conduit and the core drilling opening as shown on the Drawings.
- D. Where new piping is to be connected to existing piping, the existing piping shall be cut square and the ends properly prepared for the connection shown on the drawings. Any damage to the lining and coating of the existing piping shall be repaired by the CONTRACTOR.
- E. Where existing equipment, equipment pads and bases, piping, piping supports, electrical panels and devices, conduits, and associated appurtenances are removed, the CONTRACTOR shall rehabilitate the affected area such that little or no evidence of the previous installation remains. Opening in concrete floors, walls, and ceiling from piping, conduit, and fastener penetrations shall be filled with nonshrink grout and finished to match the adjacent area. Concrete pads and bases for equipment and supports shall be removed by chipping away concrete and cutting any exposed reinforced steel and anchor bolts a minimum of 1-1/2 inches below finished grade. The area of concrete to be rehabilitated shall be scored by saw cutting clean, straight lines to a minimum depth of 1-1/2 inches, and all concrete within the scored lines removed to a minimum depth of 1-1/2 inches. The area within the scored lines shall be patched with nonshrink grout to match the adjacent grade and finish. Abandoned connections to piping and conduits shall be terminated with blind flanges, caps, and plugs suited for the material, type, and service of the pipe or conduit.
- F. Where existing structural steel members are removed or modified, the surface of the remaining existing steel members damaged by construction activities shall be repaired.

The affected areas shall be surface prepared and coated in accordance with Section entitled "Painting".

- G. Disposal of Debris: All debris, materials, piping, and miscellaneous waste products from the work described in this section shall be removed from the project as soon as possible. They shall be disposed of in accordance with applicable federal, state, and local regulations. The CONTRACTOR is responsible for determining these regulations and shall bear all costs or retain any profit associated with disposal of these items.

#### 1.07 INSTALLATION OF EQUIPMENT

- A. CONTRACTOR shall have on hand sufficient personnel, proper equipment, and machinery of ample capacity to facilitate the work.
- B. CONTRACTOR shall be responsible for locating, aligning and leveling all equipment and shall employ a licensed surveyor to set all lines and levels of equipment to the accuracy required.
- C. Complete manufacturers installation instructions, including permissible tolerances, shall be furnished in duplicate with each unit of equipment or set of identical units.
- D. All equipment shall be installed in accordance with the shop drawings; inclusive of manufacturers specifications, drawings and tolerances; under the direct supervision of the required manufacturers ENGINEER. No instructions shall be issued that are contrary to written specifications without prior written approval by the CITY's ENGINEER.
- E. Equipment shall be erected in a neat and workmanlike manner on the foundations' at the locations and elevations shown on the drawings unless otherwise indicated by the ENGINEER during installation.

#### 1.08 SUPERVISION BY MANUFACTURER'S REPRESENTATIVES

- A. The CONTRACTOR shall provide the services of qualified equipment manufacturers technical representatives who shall adequately supervise the installation and testing of all equipment furnished under this Contract and instruct the CONTRACTOR's personnel and CITY's operating personnel in its maintenance and operation.

#### 1.09 EQUIPMENT MANUFACTURER'S CERTIFICATION

- A. As a condition precedent to acceptance of equipment installed and operating, the CONTRACTOR will provide the CITY with written certification, obtained from each company manufacturing equipment for the Project, that the equipment is installed and does operate in accordance with the specifications and manufacturers recommendations.

#### 1.10 SLEEVES AND OPENINGS

- A. The CONTRACTOR shall provide all openings, chases, etc., to fit his own work and that of any other subcontractors and contractors. All such openings or chases shown on the Contract Drawings, or reasonably implied thereby, or as confirmed or modified by shop,

setting or erecting drawings approved by the ENGINEER, shall be provided by the CONTRACTOR.

- B. Where pipes or conduits are to pass through slabs or walls, or where equipment frames or supports are to be installed as integral part of an opening, the sleeves, opening, forms or frames shall be furnished by the installer of the pipes, conduits or equipment, but shall be placed by the CONTRACTOR.
- C. Where hanger inserts, anchor bolts and similar items are to be embedded in concrete as an integral part of a slab or wall, they shall be furnished by the installer of the pipe or other equipment requiring the hanger, etc. but shall be placed by the CONTRACTOR.
- D. When requested by the CONTRACTOR, the installer of the pipes, conduit, or equipment, including those contractors or subcontractors who require openings or chases in slabs and walls for passage of ducts, mounting or equipment, etc., shall furnish all necessary information, instructions, and materials to effect accurate installation of the required openings, chases, sleeves, frames, inserts, etc. When such items are secured in position, and just prior to construction of the surrounding slab or wall, the subcontractor or contractor for whom the items are installed shall ascertain the proper number, locations, and settings thereof; and the CONTRACTOR shall schedule his operations so as to provide a reasonable opportunity and time interval for such inspection.
- E. Any cost resulting from correction of defective, ill-timed, or mislocated work, or for subsequent work which becomes necessary because of omitted openings, chases, sleeves, frames, inserts, etc., shall be borne by the subcontractor or contractor responsible therefor. No contractor or subcontractor shall arbitrarily cut, drill, alter, damage, or otherwise endanger the work of another Contractor. In no case shall beams lintels, or other structural members be cut without the approval of the ENGINEER. The nature and extent of any corrective or additional work shall be subject to the approval of the ENGINEER following consultation with the affected parties.

#### 1.11 OBSTRUCTIONS

- A. All water pipes, storm drains, sanitary sewers, force mains, gas or other pipe, telephone or power cables or conduits and all other obstructions, whether or not shown, shall be temporarily supported across utility line excavations. The CONTRACTOR shall be responsible for any damage to any such pipes, conduits, or structures. Approximate locations of known water, sanitary, drainage, power and telephone installations along route of new pipelines or in the vicinity of new work are shown, but must be verified in the field by the CONTRACTOR. The CONTRACTOR shall uncover these pipes, ducts, cables, etc., carefully, by hand, prior to installing new lines. Any discrepancies or differences found shall be brought to the attention of the ENGINEER in order that necessary changes may be made to permit installation of new work. These conditions are supplemental to general requirements elsewhere in the Contract Documents.

#### 1.12 SITE CONDITIONS

- A. The CONTRACTOR acknowledges that he has investigated prior to bidding and satisfied himself as to the conditions affecting the Work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials,

availability of labor, water, electric power, roads and uncertainties of weather, canal stages, tides, water tables or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during prosecution of the Work. The CONTRACTOR further acknowledges that he has satisfied himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, or any contiguous site, as well as from information presented by the Drawings and Specifications made a part of this Contract, or any other information made available to him prior to receipt of Bids. Any failure by the CONTRACTOR to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the Work. The CITY assumes no responsibility for any conclusions or interpretations made by the CONTRACTOR on the basis of the information made available by the CITY.

#### 1.13 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. A separate Geotechnical Report which includes geotechnical subsurface investigations for previous projects is provided with the Contract Documents. The Geotechnical Report is for general information purposes only.
- C. Subsurface data are offered in good faith solely for placing the CONTRACTOR in receipt of all information available to the CITY and ENGINEER and in no event is to be considered as part of the Contract Documents. The CONTRACTOR shall interpret such sub-surface data according to his own judgment and not rely upon the same as accurately describing the sub-surface conditions, which may be found to exist.
- D. 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.
- E. In making this data available, the CITY makes no guarantee, either expressed or implied, as to their accuracy or to the accuracy of any interpretation thereof.

#### 1.14 DIFFERING SITE CONDITIONS

- A. The CONTRACTOR shall promptly and before such conditions are disturbed, notify the CITY in writing of: (1) subsurface or latent physical conditions at the site differing

materially from those indicated in this contract, or (2) unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for this contract. The CITY will promptly investigate the conditions, and if he finds that such conditions do materially so differ and cause an increase or decrease in the CONTRACTOR's cost of, or the time required for, performance of any part of the work under this contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the contract modified in writing accordingly

#### 1.15 PROTECTION OF PROPERTY

- A. The 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.
- B. The CONTRACTOR shall take all measures necessary to protect new and existing mechanical equipment from dust and debris. All protective measures shall be furnished, installed, lighted, ventilated, maintained, and removed at the CONTRACTOR'S own cost.
- C. When city water is being used, the supply source shall be protected against contamination in accordance with existing codes and regulations.
- 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.

#### 1.16 WEATHER CONDITIONS

- A. 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 CITY 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 CITY for damage to the work from the elements of weather.

#### 1.17 FIRE PROTECTION

- A. The CONTRACTOR shall take all necessary precautions to prevent fires at or adjacent to the work, including his own buildings and trailers. Adequate fire extinguisher and hose line stations shall be provided throughout the work area.

#### 1.18 SAFETY AND HEALTH REQUIREMENTS

- A. The CONTRACTOR shall comply in every respect with all Federal, State and local safety and health regulations. Copies of the Federal Regulations may be obtained from the U.S. Department of Labor, Occupational Safety and Health Administration, 3200 East Oakland Park Boulevard, Room 204, Bridge Building, Fort Lauderdale, Florida 33300.
- B. The CONTRACTOR shall provide all barricades and flashing warning lights or other devices necessary to warn pedestrians and area traffic.
- C. Personnel working in contact with sewage flow or surfaces carrying wastewaters or sludges shall be immunized as recommended by the Broward County Health Department.
- D. The CONTRACTOR shall advise all his staff and his subcontractors that there are a considerable number of non-potable water sources on the site, that there are identified by signs and that non-potable water shall not be used for drinking, consumption, etc.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

## SECTION 01510 - UTILITIES AND SERVICES

### PART 1 -- GENERAL

#### 1.01 GENERAL

- A. The CONTRACTOR shall provide for utilities and services for his own operations. 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. In addition, the CONTRACTOR shall provide the following:

#### 1.02 TEMPORARY POWER

- A. The CONTRACTOR shall arrange with Florida Power and Light (FPL) for construction period service and pay all costs for the work and power. The CONTRACTOR shall arrange and pay for a separate feeder to supply power from off-site directly from FPL service to the CONTRACTOR'S temporary power system. In addition to providing for a safe construction period distribution system the CONTRACTOR shall provide a safe and adequate artificial lighting system for work areas which do not have sufficient natural light. Temporary lighting shall be maintained during non-working periods if the area is subject to access by the public or plant personnel.

#### 1.03 TEMPORARY WATER

- A. The CONTRACTOR shall supply all water used for construction, flushing, testing, and temporary sanitary facilities. The CONTRACTOR shall provide and maintain all piping, fittings, adapters, and valving required. It is the CONTRACTOR'S responsibility to arrange through the City Water Department for a 2-inch fire hydrant water meter. A deposit to be paid by the CONTRACTOR is required for meter rental and all water shall be purchased at the prevailing rate.

#### 1.04 TEMPORARY VENTILATION

- A. The CONTRACTOR shall provide and maintain adequate ventilation for a safe working environment. In addition, forced air ventilation shall be provided for the curing of installed materials, humidity control and the prevention of hazardous accumulations of dust, gases or vapors.

#### 1.05 TEMPORARY SANITARY FACILITIES

- A. The CONTRACTOR shall provide and maintain adequate and clean sanitary facilities for the construction work force and visitors. The facilities shall comply with local codes and regulations and be situated at approved locations.

#### 1.06 TEMPORARY TELEPHONE SERVICE

- A. The CONTRACTOR shall provide for telephone services for his own operations and the field offices including arranging and paying for separate feeder(s) from off-site as required.

#### 1.07 SECURITY

- A. The CONTRACTOR shall install fences and employ security guards to protect the job site against vandalism, burglary, theft, trespassing, etc., if required. The CONTRACTOR shall care for and protect against loss or damage of all material to be incorporated in the construction, the existing structures, equipment and materials for the duration of the Contract and shall repair or replace damaged or lost materials and damage to structures.
- B. The CONTRACTOR shall be responsible for providing, maintaining and securing gates used for construction purposes for the duration of the project as required for security purposes.

#### 1.08 STAGING AREA

- A. The CONTRACTOR can establish staging area(s) suitable for the storage of materials and equipment associated with the project, as defined on the Drawings, and shall be fully responsible for abiding all applicable rules, regulations and conditions having jurisdictional control at the site chosen.
- B. The CONTRACTOR shall be aware that the entire work area is congested and staging area shall be limited to the area(s) defined on the Drawings. The CONTRACTOR shall arrange, coordinate and take all necessary steps regarding his work effort to work within these site constraints, including off site parking, etc., as required to complete his work. Costs associated with these efforts shall be included in the bid for this project.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

## SECTION 01520 - MAINTENANCE OF FACILITIES AND SEQUENCE OF CONSTRUCTION

### PART 1 -- GENERAL

#### 1.01 GENERAL

- A. Numerous construction sequence requirements and restrictions, including nighttime work, are required to ensure that grit removal in the Interceptor Box, Grit Removal System, Influent Pump Station, Oxygenation Flow Distribution Box (OFDB), Oxygenation Trains, Clarifier Splitter Box Nos. 1 & 2, Clarifier Influent Box Nos. 1 & 2, Clarifier Nos. 2 and 4, and Clarifiers 5-8 Flow Diversion Box are accomplished with minimal interruption to the ongoing treatment process. A detailed discussion of the requirements is presented in Article 1.08 of this section.

#### 1.02 CONSTRUCTION SCHEDULE

- A. The Construction Schedule shall be submitted by the CONTRACTOR in accordance with Section 01300 of these Specifications.

#### 1.03 USE OF FACILITIES BEFORE COMPLETION

- A. The CITY reserves the right to enter and use any portion of the constructed facilities before final completion of the whole work to be done under this Contract in accordance with Article 14.2, Partial Utilization, of the General Conditions.

#### 1.04 CONNECTION OF EXISTING SYSTEMS

- A. All connections to existing systems shall be performed in such a manner that no damage and minimal interruption is caused to the existing installation. On completion of its installation, the CONTRACTOR shall complete the connection to the existing systems in a proper manner. Any damage caused to existing installations shall be repaired or replaced by the responsible CONTRACTOR at no additional cost to the CITY.
- B. The CONTRACTOR shall note that some of the work in this Contract will require the CONTRACTOR to connect to existing pipelines and structures. The CONTRACTOR shall be responsible for the proper containment and disposal of wastewater or sludge, or other materials drained from existing pipelines and structures during construction, unless otherwise specifically noted to be performed by the CITY.
- C. The CONTRACTOR shall contain such wastewater or sludge, or other materials (in accordance with all applicable codes) and shall dispose of such to an on-site wastewater basin (such as a manhole for the central plant drain system) as designated by the CITY. The CONTRACTOR shall be responsible for the prevention of wastewater or sludge, or other material spills within its work area.

#### 1.05 COORDINATION WITH UTILITY PERSONNEL

- A. Before commencing work involving removing or placing in operation existing or new facilities or tie-ins to existing facilities, the CONTRACTOR shall notify the CITY at least

twenty (20) days in advance in writing. The CITY shall be responsible for removing facilities from operation as deemed necessary.

- B. Only the CITY's appointed representative can authorize the shutdown of portions of the treatment plant facilities. The CONTRACTOR shall, under no circumstances, interfere with any treatment plant facility component without the CITY's authorization, in writing, and supervision. The CONTRACTOR shall notify the CITY's representative in writing a minimum of three work days prior to each scheduled service request. This notification shall be provided on the CITY's standard form, or on an approved equivalent form completed in full by the CONTRACTOR.

#### 1.06 GENERAL SEQUENCE OF CONSTRUCTION AND OPERATION REQUIREMENTS

- A. Work under the Contract shall be scheduled and performed in such a manner as to result in the least possible disruption to the operation of the treatment plant facilities and to the public's use of roadways, driveways, parking areas, and utilities. Utilities shall include but not be limited to water, sewerage, irrigation, drainage structures, gas, electrical service and telephone. Prior to commencing with the WORK, CONTRACTOR shall perform a location investigation of existing underground utilities and facilities in accordance with Section 01530 – Protection of Existing Facilities.
- B. The outlined sequence of construction does not include all items necessary to complete the work, but is intended to identify the sequence of critical events necessary to minimize disruption to the on-going treatment plant process. It shall be understood by the CONTRACTOR that the critical events identified are not all inclusive and that additional items of work not shown may be required. The sequence of construction is a precedence requirement and does not attempt to schedule the CONTRACTOR' work. It is intended only to indicate which activities must precede other activities in order to minimize interference's and disruptions.
- C. All work by the CONTRACTOR that disrupts the normal treatment plant operations shall be shown on the Construction Schedule specified in Section 01300 and specifically scheduled with the CITY. Schedule notification shall consist of a written notice defining the work to be accomplished, the normal treatment plant that will be interrupted, the duration of the interruption, and the mitigating effort to be performed by the CONTRACTOR. The written notice shall be submitted to the CITY twenty (20) days in advance of the proposed work and the CITY will respond to the CONTRACTOR in writing within seven days of receipt of the notice regarding the acceptability of the proposed plan.
- D. At no time shall the CONTRACTOR undertake to close off any pipelines, or open valves, or take any other action which would affect the operation of the existing system, except as specifically required by the drawings and specifications, until authorization is granted by the CITY or ENGINEER and after proper notification.
- E. Temporary installations required to complete a particular aspect of the work during the allotted time period shall be determined by the CONTRACTOR and implemented by the CONTRACTOR at no additional cost to the CITY. All such temporary installations shall be subject to the review and acceptance of the ENGINEER.
- F. Sequence of certain major events and identification of time constraints for removing existing facilities from active service and installation of new facilities are described below

in paragraph 1.07. No phase of work (or tasks within a phase) shall preclude or be performed in parallel with a subsequent phase unless specifically defined so in these documents. In all cases, work in each phase shall be checked out and accepted for satisfactory use, subject to the ENGINEER's approval, prior to the CONTRACTOR proceeding to the next phase of construction.

## 1.07 OVERALL SEQUENCE OF CONSTRUCTION

### A. Mobilization / Site Preparation:

1. Mobilize for work – Set up field offices and staging area as per Drawings, obtain permits, develop and submit construction schedule, submit shop drawing schedule and begin shop drawing submittals.
2. For interfering utilities, construct new utilities up to tie-in points, perform tests, then make final connections with minimum amount of shutdown time. After acceptance of new utilities, remove existing interfering underground utilities and structures. Provide temporary services as required to maintain continuous site drainage, plant treatment and operation, golf course irrigation (water, control and electrical lines), etc.

### B. Demolition, Rehabilitation and Construction of New Facilities:

1. CONTRACTOR shall complete all demolition, construction and rehabilitation work described in the Contract Documents.
2. CONTRACTOR shall complete all startup, testing and training activities required by the Contract Documents.
3. CONTRACTOR shall complete site restoration, site cleanup and demobilization activities.

### C. Project Closeout:

1. CONTRACTOR shall complete all final punch list items.
2. CONTRACTOR shall complete project closeout in accordance with Section 01700.
3. Final acceptance of project.
4. Commence warranty period.

## 1.08 DETAILED SEQUENCE OF CONSTRUCTION AND OPERATIONAL CONSTRAINTS

- A. All work discussed in this section is subject to revision based on actual conditions encountered during construction, but only as approved by the ENGINEER. However, where Phased implementation (and sequence of steps, and tasks within a phase are) defined on the Drawings or in the Specifications, it shall be construed to mean a strict precedence requirement. This means that work in the previous Phase (or previous step or task within a phase) shall be completed and accepted by the ENGINEER, prior to

allowing the CONTRACTOR to proceed with the subsequent phase (or step or task within a phase) of the work.

- B. The CONTRACTOR shall be responsible for pumping out the liquid contents of each structure to a location identified by the CITY. The liquid contents will consist of raw wastewater. The CONTRACTOR shall take steps to protect all workers from contact with wastewater and to properly dispose of all wastewaters. Grit removal for the project is to be performed in the areas outlined below. Once grit removal commences in an area, all activities must be completed before the CONTRACTOR may move to another area. The sequence of construction and related requirements are defined on the Drawings.

1. Interceptor Box
2. Grit Removal System
3. Influent Pump Station
4. Oxygenation System (Oxygenation Flow Distribution Box, Trains 1 through 5, Clarifier Splitter Boxes, Clarifier Influent Boxes, Clarifier Nos. 2 and 4)
5. Clarifier 5-8 Flow Diversion Box

C. Phase 1 – Interceptor Box:

1. Coordinate with CITY for access to Interceptor Box.
2. The Interceptor Box cannot be taken out of service. All work must be done under live flow. Low flow periods are from midnight to 6:00AM.
3. Remove Interceptor Box top slab to perform the work. Remove, dewater and dispose of fats, oils, grease, floating solids, scum, and grit in Interceptor Box.
4. Replace Interceptor Box top slab and neoprene gasket as needed when work is complete.

D. Phase 2 - Grit Removal System:

1. Coordinate shutdown of Grit Removal System with CITY.
2. Remove, dewater and dispose of grit in Grit Flow Distribution Box, Influent Channels and Grit Chamber Nos. 1-3. Remove grit chamber FRP panels to perform the work.
3. Pressure wash Grit Flow Distribution Box, Influent Channels and Grit Chamber Nos. 1-3 for inspection.
4. Replace grit chamber FRP panels.
5. Coordinate with CITY to place Grit System back into service.

E. Phase 3 – Influent Pump Station:

1. Coordinate with CITY for access to individual Influent Pump Station wet well chambers
2. Remove, dewater and dispose of floating solids, scum, and grit in each wet well chamber in sequence. Remove wet well cover panels as needed to perform the work.
3. Replace wet well cover panels as needed when work is complete.

F. Phase 4 – Oxygenation System, Task 1:

1. Coordinate with CITY for shutdown of Oxygenation Train No. 1 and isolation of OFDB Cell No. 1.
2. Pump out liquid contents of OFDB Cell. CITY will remove mixed liquor from Oxygenation Train No. 1. CONTRACTOR shall be responsible for residual liquids.
3. Remove, dewater and dispose of grit in Oxygenation Train and OFDB Cell.
4. Remove Oxygenation Train mixers sequentially in each oxygenation train stage as required to perform the work.
5. Remove all rags and debris from Oxygenation Train mixers.
6. Pressure wash Oxygenation Train and OFDB Cell for inspection at each stage.
7. Coordinate with CITY to place back into service Oxygenation Train No. 1.

F. Phase 4 – Secondary Treatment System, Task 2:

1. Coordinate with CITY for shutdown of Oxygenation Train No. 2 and isolation of OFDB Cell No. 2 and OFDB North Center Cell. OFDB Cell No. 1 to be fed from Cell No. 5 via bypass pipe. The CONTRACTOR shall perform his work such that all work specific to the North Center Cell shall be returned to service within 1 week.
2. Remove OFDB North Center Cell precast concrete roof plank.
3. Pump out liquid contents of OFDB Cells and associated piping. CITY will remove mixed liquor from Oxygenation Train No. 2. CONTRACTOR shall be responsible for residual liquids
4. Remove, dewater and dispose of grit in Oxygenation Train and OFDB Cells.
5. Remove Oxygenation Train mixers sequentially in each oxygenation train stage as required to perform the work.
6. Remove all rags and debris from Oxygenation Train mixers.
7. Pressure wash Oxygenation Train and OFDB Cells for inspection at each stage.
8. Replace OFDB North Center Cell precast concrete roof plank including new gasket and joint sealant.
9. Coordinate with CITY to place back into service Oxygenation Train No. 2 and OFDB Cell No. 2 and OFDB North Center Cell as the work is completed.

G. Phase 4 – Secondary Treatment System, Task 3:

1. Coordinate with CITY for shutdown of Oxygenation Train No. 5 and isolation of OFDB Cell No. 5.

2. Pump out liquid contents of OFDB Cell. CITY will remove mixed liquor from Oxygenation Train No. 5.
3. Remove, dewater and dispose of grit in Oxygenation Train and OFDB Cell.
4. Remove Oxygenation Train mixers sequentially in each oxygenation train stage as required to perform the work.
5. Remove all rags and debris from Oxygenation Train mixers.
6. Pressure wash Oxygenation Train and OFDB Cell for inspection at each stage.
7. Coordinate with CITY to place back into service Oxygenation Train No. 5.

H. Phase 4 – Secondary Treatment System, Task 4:

1. Coordinate with CITY for shutdown of Oxygenation Train Nos. 3 and 4, and isolation of OFDB Cell Nos. 3 and 4 and South Center Cell. Cell No. 5 to be fed from Cell No. 1 via bypass pipe. The CONTRACTOR shall perform his work such that all work specific to the South Center Cell shall be returned to service within 1 week at which time CITY will return Oxygenation Train No. 3 to service.
2. Remove OFDB South Center Cell precast concrete roof plank.
3. Remove, dewater and dispose of grit in Oxygenation Train No. 4 and OFDB Cells.
4. Remove Oxygenation Train No.4 mixers sequentially in each oxygenation train stage as required to perform the work.
5. Remove all rags and debris from Oxygenation Train mixers.
6. Pressure wash Oxygenation Train No. 4 and OFDB Cells for inspection at each stage.
7. Replace OFDB South Center Cell precast concrete roof plank including new gasket and joint sealant.
8. Coordinate with CITY to place back into service Oxygenation Train No. 4 and OFDB South Center Cell as the work is completed.
9. Coordinate with CITY for shutdown of Oxygenation Train No. 3 and isolation of OFDB Cell No. 3
10. Remove, dewater and dispose of grit in Oxygenation Train No. 3 and OFDB Cell No. 3.
11. Remove Oxygenation Train No. 3 mixers sequentially in each oxygenation train stage as required to perform the work.
12. Remove all rags and debris from Oxygenation Train mixers.

13. Pressure wash Oxygenation Train No. 3 and OFDB Cell for inspection at each stage.

14. Coordinate with CITY to place back into service Oxygenation Train No. 3.

I. Phase 5 – Secondary Treatment System, Task 1:

1. Coordinate with CITY for shutdown of Clarifier Splitter Box No. 1 Cell 2, Clarifier Influent Box No. 1 Cell 2, and Clarifier No. 2.
2. Remove center column hatch on Clarifier No. 2 to access interior of center column. Remove all rags and debris from Clarifier Splitter Box No. 1 Cell 2, Clarifier Influent Box No. 1 Cell 2, and Clarifier No. 2.
3. Pressure wash Clarifier Splitter Box No. 1 Cell 2, Clarifier Influent Box No. 1 Cell 2, and Clarifier No. 2 for inspection.
4. Coordinate with CITY to place Clarifier No. 2 back into service.

J. Phase 5 – Secondary Treatment System, Task 2:

1. Coordinate with CITY for shutdown of Clarifier Splitter Box No. 2 Cell 4, Clarifier Influent Box No. 2 Cell 4, and Clarifier No. 4.
2. Remove center column hatch on Clarifier No. 4 to access interior of center column. Remove all rags and debris from Clarifier Splitter Box No. 2 Cell 4, Clarifier Influent Box No. 2 Cell 4, and Clarifier No. 4.
3. Pressure wash Clarifier Splitter Box No. 2 Cell 4, Clarifier Influent Box No. 2 Cell 4, and Clarifier No. 4 for inspection.
4. Coordinate with CITY to place Clarifier No. 4 back into service.

K. Phase 6 – Clarifier 5-8 Flow Diversion Box, Task 1:

1. Coordinate with CITY to close weir gate at a Clarifier Nos. 5-8 feed cell.
2. Coordinate with CITY to remove a single clarifier from service. CITY will drain contents of clarifier.
3. Pump out/remove contents of clarifier feed cell.
4. Remove wall pipe blind flange, install CONTRACTOR-furnished 30-inch isolation valve and bypass piping.
5. Remove and dewater all rags and debris from feed cell.
6. Pressure wash feed cell for inspection.
7. CITY to place clarifier and clarifier feed cell back into service.
8. Repeat process for next clarifier feed cell (typical of 4).

L. Phase 6 – Clarifier 5-8 Flow Diversion Box, Task 2:

1. Coordinate with CITY for closing existing 42" plug valve at Oxygenation Train No. 5 effluent line.
2. Remove 42" blind flange and install CONTRACTOR-furnished bypass piping from isolation valves on clarifier feed cells at the Flow Diversion Box to the 42" plug valve.
3. Coordinate with CITY to remove Oxygenation Train Nos. 3, 4 and 5 from service, to close 36" diversion line from Oxygenation Train Nos. 1 and 2 to Pump Suction Cell, and to close weir gates of clarifier feed cells. This work is to take place after 8:00 PM.
4. Pump out/remove contents of flow diversion box center cell, pump discharge cell, the portion of the oxygenation trains downstream of the pan weirs of Stage 4, and portions of the 42-inch piping and 66-inch piping from the oxygenation trains to the flow diversion box center cell. All contents above elevation 3.0 must be removed within a timeframe sufficient to allow completion of all tie-in work by 6:00 AM. The volume to be pumped and removed is approximately 180,000 gallons.
5. Seal 66-inch influent pipe to flow diversion box center cell with CONTRACTOR-furnished gasketed steel seal plate as shown on the Drawings.
6. Coordinate with CITY to place oxygenation trains and clarifiers back in service.
7. Remove and dewater all rags, grit and debris from all cells in Flow Diversion Box.
8. Pressure wash all cells in Flow Diversion Box for inspection.
9. Coordinate with CITY to remove Oxygenation Train Nos. 3, 4, and 5 and Clarifiers 5, 6, 7, and 8 from service and isolate Clarifier Feed Cells. CITY will sequentially drain contents of clarifiers to Elevation 8.00. This work is to take place after 8:00 PM.
10. Pump out/remove contents of the portion of the oxygenation trains downstream of the pan weirs of Stage 4, and portions of the 42-inch piping and 66-inch piping from the oxygenation trains to the Flow Diversion Box center cell. All contents above elevation 3.0 must be removed within a timeframe sufficient to allow completion of all reverse tie-in work by 6:00 AM. The volume to be pumped and removed is approximately 70,000 gallons.
11. Isolate the bypass piping and drain/remove contents from bypass piping.
12. Pump out/remove contents of clarifier feed cells to Elevation 8.00. The volume to be pumped and removed is approximately 40,000 gallons.
13. Remove seal plate from center cell; install nuts on seal plate bolt threads for protection, disconnect bypass piping and valves at wall pipes of clarifier feed cells and install 30" blind flanges at each wall pipe. Disconnect bypass piping at 42" plug valve and re-install 42" blind flange. 42" isolation valve to remain in place.

14. Coordinate with CITY to place oxygenation trains and clarifiers back into service.

15. Turn over 30" valves and 66" seal plate to CITY.

#### 1.09 WASTEWATER DEWATERING

- A. The CONTRACTOR shall note that many tasks will require wastewater dewatering of existing pipelines and structures. The CONTRACTOR shall be responsible for the proper containment and disposal of wastewater, chemicals, etc., drained from existing pipelines and structures during construction. The CONTRACTOR shall contain such wastewater, chemical, etc., in accordance with all applicable codes and shall dispose of such to an on-site wastewater basin as designated by the OWNER. The CONTRACTOR shall be responsible for the prevention of wastewater, chemicals, etc., spills within his work area. Refer to Division 2 for additional requirements and related requirements for construction dewatering.

#### 1.10 CANCELLATION OF PLANNED SHUTDOWN

- A. A planned shutdown in accordance with the Contract Documents may be canceled by the CITY upon 24 hour notification by the CITY / ENGINEER to the CONTRACTOR. Cancellations shall be expected due to wet weather conditions or other conditions beyond control of the CITY / ENGINEER or CONTRACTOR. All efforts shall be made by the CONTRACTOR to check weather forecasts and the like prior to scheduling shutdowns. The CITY shall not be responsible for any additional costs associated with the cancellation of a planned shutdown.

### PART 2 -- PRODUCTS (Not Used)

### PART 3 -- EXECUTION

#### 3.01 COORDINATION WITH EXISTING UTILITIES AND OTHER AGENCIES

- A. The CONTRACTOR shall notify all utilities including FPL, Bell South and TCI Cable in writing with a copy to the CITY/ENGINEER prior to construction commencement. The CONTRACTOR shall cooperate with these utility owners as necessary to minimize service interruptions. The CONTRACTOR shall coordinate with Sunshine One-Call Notification at 1-800-432-4770 a minimum of 48 hours prior to any excavation for location of existing underground facilities.

#### 3.02 COOPERATION

- A. The CONTRACTOR shall allow the CITY or its agents, and other project contractors or their agents, to enter facilities being constructed under this Contract for the purpose of constructing, installing, operating, maintaining, removing, repairing, altering or replacing such equipment pipes, sewers, conduits, manholes, wires, or other structures and appliances which may be required to be installed at or in the work. The CONTRACTOR shall cooperate with all the aforesaid parties and shall allow reasonable provisions for

the prosecution of any other work by the CITY, or others, to be done in connection with his work, or in connection with normal use of the facilities.

- END OF SECTION -

## SECTION 01530 - PROTECTION OF EXISTING FACILITIES

### PART 1 -- GENERAL

#### 1.01 THE REQUIREMENT

- A. The CONTRACTOR shall protect all existing utilities and improvements not designated for removal and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation, all in accordance with requirements of the Contract Documents.
- B. The CONTRACTOR shall verify the exact locations and depths of all utilities shown and the CONTRACTOR shall make exploratory excavations of all utilities that may interfere with the Work. All such exploratory excavations shall be performed as soon as practicable after award of Contract and, in any event, a sufficient time in advance of construction to avoid possible delays to the CONTRACTOR'S Work. When such exploratory excavations show the utility location as shown to be in error, the CONTRACTOR shall so notify the CITY.
- C. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the utility.

#### 1.02 RIGHTS-OF-WAY

- A. The CONTRACTOR shall not enter upon any rights-of-way involved until notified that the CITY has secured authority therefore from the proper party. After authority has been obtained, the CONTRACTOR shall give said party due notice of its intention to begin Work, and shall give said party convenient access and opportunity for removing, shoring, supporting, or otherwise protecting utilities or structures within the right-of-way. When 2 or more contracts are being executed at one time on the same or adjacent land in such manner that Work on one contract may interfere with that on another, the CITY shall determine the sequence and order of the Work.

#### 1.03 PROTECTION OF STREET OR ROADWAY MARKERS

- A. The CONTRACTOR shall not destroy, remove, or otherwise disturb any existing survey markers or other existing street or roadway markers without proper authorization. No pavement breaking or excavation shall be started until all survey or other permanent marker points that will be disturbed by the construction operations have been properly referenced for easy and accurate restoration. It shall be the CONTRACTOR'S responsibility to notify the proper representatives of the CITY of the time and location that Work will be done. Such notification shall be sufficiently in advance of construction so that there will be no delay due to waiting for survey points to be satisfactorily referenced for restoration. All survey markers or points disturbed by the CONTRACTOR without proper authorization by the CITY, will be accurately restored by the CITY at the CONTRACTOR'S expense after all street or roadway resurfacing has been completed.

#### 1.04 RESTORATION OF FACILITIES

- A. General: All paved areas including asphaltic concrete berms cut or damaged during construction shall be replaced with similar materials and of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents or in the requirements of the agency issuing the permit. All temporary and permanent pavement shall conform to the requirements of the affected pavement CITY. All pavements which are subject to partial removal shall be neatly saw cut in straight lines. Within five working days of the pipe installation, temporary restoration shall be completed. All paved areas including asphaltic concrete berms cut or damaged during construction shall be replaced with similar materials and of equal thickness to match the existing adjacent undisturbed areas, except where specific restoration requirements have been called for in the Contract Documents or in the requirements of the agency issuing the permit.
- B. Within five working days of the pipe installation, temporary restoration of paved surfaces shall be completed. All paved areas, including asphaltic concrete berms cut or damaged during construction, shall be replaced with similar materials and of equal thickness to match the existing adjacent undisturbed areas, except where specific restoration requirements have been called for in the Contract Documents or in the requirements of the agency issuing the permit.
- C. Temporary Restoration: Temporary restoration includes repair to all driveways, sidewalks and roadways. They shall be swept clean and be maintained free of dirt and dust. All areas disturbed by the construction activities shall be restored to proper grade, cleaned up, including the removal of debris, trash, and deleterious materials. All construction materials, supplies, or equipment, including piles of debris shall be removed from the area. All temporarily restored areas shall be maintained by the CONTRACTOR. These areas shall be kept clean and neat, free of dust and dirt, until final restoration operations are completed. The CONTRACTOR is responsible to utilize dust abatement operations in the temporarily restored areas as required, to the satisfaction of the ENGINEER.
- D. Temporary Resurfacing: Wherever required by the public authorities having jurisdiction, the CONTRACTOR shall place temporary surfacing promptly after backfilling and shall maintain such surfacing for the period of time fixed by said authorities before proceeding with the final restoration and improvements.
- E. Temporary Restoration of Sidewalks or Private Driveways: Wherever sidewalks or private driveways have been removed for purposes of construction, the CONTRACTOR shall place suitable temporary sidewalks or driveways at the end of each workday and shall maintain them in satisfactory condition for the period of time fixed by the authorities having jurisdiction over the affected portions before proceeding with the final restoration or, if no such period of times is so fixed, the CONTRACTOR shall maintain said temporary sidewalks or driveways until the final restoration thereof has been made.

#### 1.05 EXISTING UTILITIES AND IMPROVEMENTS

- A. General: The CONTRACTOR shall protect all underground utilities and other improvements which may be impaired during construction operations. It shall be the

CONTRACTOR'S responsibility to ascertain the actual location of all existing utilities and other improvements that will be encountered in its construction operations, and to see that such utilities or other improvements are adequately protected from damage due to such operations.

- B. Utilities to be Moved: In case it shall be necessary to move the property of any public utility or franchise holder, such utility company or franchise holder will, upon request of the CONTRACTOR, be notified by the CITY to move such property within a specified reasonable time. When utility lines that are to be removed are encountered within the area of operations, the CONTRACTOR shall notify the CITY a sufficient time in advance for the necessary measures to be taken to prevent interruption of service.
- C. Where the proper completion of the Work requires the temporary or permanent removal and / or relocation of an existing utility or other improvement which is shown, the CONTRACTOR shall remove and temporarily replace or relocate such utility or improvement in a manner satisfactory to the CITY and the OWNER of the utility/facility. In all cases of such temporary removal or relocation, restoration to former location shall be accomplished by the CONTRACTOR in a manner that will restore or replace the utility or improvement as nearly as possible to its former locations and to as good or better condition than found prior to removal.
- D. CITY'S Right of Access: The right is reserved to the CITY and to the OWNER'S of public utilities and franchises to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the Work of this Contract.
- E. Underground Utilities Shown or Indicated: Existing utility lines that are shown or the locations of which are made known to the CONTRACTOR prior to excavation and that are to be retained, and all utility lines that are constructed during excavation operations shall be protected from damage during excavation and backfilling and, if damaged, shall be immediately repaired by the CONTRACTOR.
- F. Underground Utilities Not Shown or Indicated: In the event that the CONTRACTOR damages any existing utility lines that are not shown or the locations of which are not made known to the CONTRACTOR prior to excavation, a written report thereof shall be made immediately to the CITY. If directed by the CITY, repairs shall be made by the CONTRACTOR under the provisions for changes and extra Work contained in the General Conditions.
- G. Approval of Repairs: All repairs to a damaged improvement are subject to inspection and approval by an authorized representative of the improvement CITY before being concealed by backfill or other Work.
- H. No fill, excavation material, construction generated debris or equipment shall obstruct water valves, gas meters or sewer manholes. Water, sewer and gas service shall be made accessible to repair or maintenance crews representing the CITY or a privately-owned utility company.

## 1.06 TREES WITHIN STREET RIGHTS-OF-WAY AND PROJECT LIMITS

- A. General: The CONTRACTOR shall exercise all necessary precautions so as not to damage or destroy any trees or shrubs, including those lying within street rights-of-way and project limits, and shall not trim, relocate or remove any trees unless such trees have been approved for trimming, relocating or removal by the jurisdictional agency or CITY. All existing trees and shrubs which are damaged during construction shall be trimmed or replaced by the CONTRACTOR. Tree trimming, relocating and replacement shall be in accordance with requirements of local jurisdictions.
- B. Replacement: The CONTRACTOR shall immediately notify the jurisdictional agency and / or the CITY if any tree is damaged by the CONTRACTOR'S operations. If, in the opinion of said agency or the CITY, the damage is such that replacement is necessary, the CONTRACTOR shall replace the tree at its own expense. The tree shall be of a like size and variety as the tree damaged, or, if of a smaller size, the CONTRACTOR shall pay to the CITY of said tree compensatory payment acceptable to the tree CITY, subject to the approval of the jurisdictional agency or CITY.

### PART 2 -- PRODUCTS (Not Used)

### PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

## SECTION 01550 - SITE ACCESS AND STORAGE

### PART 1 -- GENERAL

#### 1.01 SITE ACCESS

- A. The CONTRACTOR shall make its own investigation of the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to the site of the Work. It shall be the CONTRACTOR's responsibility to construct and maintain any haul roads required for its construction operations.
- B. The Southern Regional Wastewater Treatment Plant maintains a perimeter chain link fence and security gate. Delivery and employee access to the plant will be via the plant access electronic gate and security guard. Vehicles entering or leaving the plant will be required to check in with the security guard located at the gate.
- C. The CONTRACTOR will be responsible for monitoring the main gate for its personnel, equipment and material deliveries.

#### 1.02 STORAGE

- A. Limited storage area is available within the work areas shown on the Drawings. Any equipment and materials stored here shall be in accordance with the manufacturer's recommendations and as indicated by the CITY.
- B. Responsibility for protection and safekeeping of equipment and materials will be solely that of the CONTRACTOR, and no claim shall be made against the CITY by reason of any act of an employee or trespasser. Should an occasion arise necessitating access to an area occupied by stored equipment and/or materials, the CONTRACTOR shall immediately move them.
- C. If the CONTRACTOR requires additional staging and storage area than shown on the Drawings, the CONTRACTOR shall obtain such areas from off site sources at no additional cost to the CITY.
- D. Upon completion of the Contract, the CONTRACTOR shall remove from the storage and work areas all of their equipment, temporary fencing, surplus materials, rubbish, etc., and restore the area to its original or better conditions.

### PART 2 -- PRODUCTS (Not Used)

### PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

## SECTION 01560 - SPECIAL CONTROLS

### PART 1 -- GENERAL

#### 1.01 CHEMICALS

- A. All chemicals used during project construction or furnished for testing of project operation, whether herbicide, pesticide, disinfectant, polymer, reactant of other classification, will be required to show approval of either EPA or HUD. The handling, use, storage and disposal of such materials, containers or residues shall be in strict conformance with manufacturer and/or CONTRACTOR'S secured storage. Copies of antidote literature and a supply of antidotes shall be kept at the job site office.

#### 1.02 DUST

- A. During all work for this Contract, the CONTRACTOR shall by the application of water and/or calcium chloride or other means, approved by the ENGINEER, eliminate dust annoyance to adjacent property, business establishments and the plant site in accordance with Article 7.21, Dust Control, of the General Conditions. The CONTRACTOR shall take all protective measures, to the satisfaction of the ENGINEER, necessary to ensure that dust and debris does not enter any of the mechanical or electrical equipment. The CONTRACTOR shall be responsible for the cleanup of existing buildings, equipment, controls, etc., which have become soiled due to the lack of proper dust control as determined by the ENGINEER. The CONTRACTOR shall provide daily application of water to all unpaved areas designated by the ENGINEER in the field and to the satisfaction of the ENGINEER in the field.

#### 1.03 NOISE

- A. Noise resulting from the CONTRACTOR'S work shall not violate the Hollywood Code of Ordinance Chapter 100, with specific note to the restrictions of paragraph 100.05 or exceed the noise levels and other requirements stated in the Broward County Chapter 27 Pollution Control, relating to noise abatement in Broward County. The CONTRACTOR shall be responsible for curtailing noise resulting from his operation. He shall, upon written notification from the ENGINEER or the noise control officers, make any repairs, replacements, adjustments, additions and furnish mufflers when necessary to fulfill requirements.

#### 1.04 EROSION ABATEMENT AND WATER POLLUTION

- A. It is imperative that the CONTRACTOR'S dewatering operations not contaminate or disturb the plant environment or properties adjacent to the Work. The CONTRACTOR, shall, therefore, schedule and control his operations to confine all runoff water from disturbed surfaces, water from dewatering and/or from excavation below the ground water table operations that becomes contaminated with lime silt, muck and other deleterious matter, fuels, oils, bitumens, calcium chloride, chemicals and other polluting materials.

- B. The CONTRACTOR shall construct temporary stilling basin(s) of adequate size and provide all necessary temporary materials, operations and controls including, but not limited to, filters, coagulants, screens and other means necessary to attain the required discharge water quality.
- C. The CONTRACTOR shall be responsible for providing, operating and maintaining materials and equipment used for conveying the clear water to the point of discharge. All pollution prevention procedures, materials, equipment and related items shall be operated and maintained until such time as the dewatering operation is discontinued. Upon the removal of the materials, equipment and related items the CONTRACTOR shall restore the area to the condition prior to his commencing work.

#### 1.05 HURRICANE AND STORM WARNINGS

- A. As the schedule for this project coincides, in part, with the recognized South Florida hurricane season, the CONTRACTOR's attention is drawn to the possibility of hurricane conditions, or severe storm conditions, occurring at the plant site during the course of Contract work.
- B. Within 30-days of the date of Notice-to-Proceed, 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 at no additional cost to the Owner in case of a hurricane warning.
- C. In the event of inclement weather, or whenever the ENGINEER shall direct, the CONTRACTOR shall, and will cause Sub-Contractors to protect carefully the Work and materials against damage or injury by reasons of failure on the part of the CONTRACTOR to so protect the Work. Such Work and materials so damaged shall be removed and replaced at the expense of the CONTRACTOR.
  - 1. Hurricane Watch: Upon designation of a hurricane watch, CONTRACTORS shall be responsible for storing all loose supplies and equipment on the job site that may pose a danger. In addition, the CONTRACTOR shall remove all bulkheads and plugs in pipelines that would impede drainage in the case of flooding. Structures that may be in danger of floatation shall be flooded. The CONTRACTOR shall also cooperate with CITY personnel in protecting other structures at the site.
  - 2. Hurricane Warning: No mobile "temporary facility" under the control of the City of Hollywood, or on City property, shall be staffed during a hurricane warning. CONTRACTOR facilities meeting these criteria shall comply.
- D. The CONTRACTOR is advised to take all necessary precautions to protect his equipment by moving it to higher ground if in an area subject to flooding. Known areas of Hollywood that would be subject to flooding from storm tides include:

Hollywood Blvd.	North Lake Area	South Lake Area
A1A	Sheridan Street	Dania Beach Blvd.
US Highway 1	46 <sup>th</sup> Avenue	Hallandale Beach Blvd.

#### 1.06 PESTS AND RODENTS

- A. The CONTRACTOR shall be responsible for maintaining the jobsite free from litter, rubbish and garbage. He shall provide containers for the disposal of garbage and other materials that attract and are breeding places for pests and rodents. The CONTRACTOR shall provide the services of an exterminator to inspect the jobsite on a periodic basis and to provide service as required to control pests and rodents.

#### 1.07 PERIODIC CLEAN-UP; BASIC SITE RESTORATION

- A. During construction, the CONTRACTOR shall regularly remove from the site all accumulated debris and surplus materials of any kind which result from his operations, or whenever the accumulation in excess of one truck load. Unused equipment and tools shall be stored at the CONTRACTOR'S yard or base of operations for the project.
- B. When the work involves installation of sewers, drains, water mains, manholes, underground structures, or other disturbance of existing features in or across streets, rights-of-way, easements, or private property, the CONTRACTOR shall (as the work progresses) promptly backfill, compact, grade and otherwise restore the disturbed area to a basic condition which will permit resumption of pedestrian or vehicular traffic and any other critical activity or function consistent with the original use of the land. Unsightly mounds of earth, large stones, boulders, and debris shall be removed so that the site presents a neat appearance.
- C. The CONTRACTOR shall perform the clean-up work on a regular basis and as frequently as ordered by the ENGINEER. Basic site restoration in a particular area shall be accomplished immediately following the installation or completion of the required facilities in that area. Furthermore, such work shall also be accomplished, when ordered by the ENGINEER, if partially completed facilities must remain incomplete for some time period due to unforeseen circumstances.
- D. Upon failure of the CONTRACTOR to perform periodic clean-up and basic restoration of the site to the ENGINEER'S satisfaction, the ENGINEER may, upon five (5) days prior written notice to the CONTRACTOR, employ such labor and equipment as he deems necessary for the purpose, and all costs resulting therefrom shall be charged to the CONTRACTOR and deducted from the amounts of money that may be due him.

#### 1.08 SECURITY

- A. The CONTRACTOR shall care for and protect against loss or damage of all material to be incorporated in the construction for the duration of the Contract and shall repair or replace damaged or lost materials and damage to structures.
- B. The CONTRACTOR shall be responsible for providing, and maintaining temporary fencing and gates and the daily securing of temporary fencing and gates used for construction purposes for the duration of the project.
- C. The CONTRACTOR shall strictly comply with working hours on the project site. Prior to any work outside of the standard working hours, the CONTRACTOR shall request the City's approval via written request (at least 8 hours in advance). The written request

shall clearly define the work to be performed, the names of the employees, their employer and their trade and the hours and days during which the work is planned.

The City is considering and the CONTRACTOR shall comply with additional security requirements including employee photo identification at all times on-site and employee parking passes.

#### 1.09 CHLORINE EMERGENCY PREPARATION

- A. The CONTRACTOR's attention is directed to the CITY's policy of conducting periodic chlorine emergency drills at the WWTP. The drills are intended to ensure readiness to respond to a potential emergency due to the leakage of chlorine gas (which is a toxic substance) from the Chlorine Facility at the WWTP. The CONTRACTOR shall designate an on-site member of his staff that will be trained by the CITY and be responsible for ensuring that the CONTRACTOR's and subcontractor's personnel fully participate in the drills and are prepared to deal with a potential emergency. The CONTRACTOR shall submit for each WWTP operation shift change (before 9:00 A.M., 5:00 P.M., 1:00 A.M.) a list of names of these employees and all subcontractor's employees working on the project site.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

## SECTION 01600 - EQUIPMENT AND MATERIALS

### PART 1 -- GENERAL

#### 1.01 GENERAL

- A. All equipment, materials, instruments or devices incorporated in this project shall be new and unused, unless indicated otherwise in the Contract Documents.
- B. Equipment and materials to be incorporated in the work shall be delivered sufficiently in advance of their installation and use to prevent delay in the execution of the work, and they shall be delivered as nearly as feasible in the order required for executing the work.
- C. The CONTRACTOR shall protect all equipment and materials from deterioration and damage. The equipment and materials shall be handled and stored by the manufacturer, fabricator CONTRACTOR and CONTRACTOR before, during, and after shipment to prevent warping, twisting, bending, breaking, chipping, rusting, and any injury, damage or theft of any kind whatsoever. Any equipment exhibiting any of the above, shall be removed and replaced at the CONTRACTOR'S expense for both labor and materials.

#### 1.02 STORAGE

- A. The CONTRACTOR shall store its equipment and materials at the jobsite in accordance with the manufacturer's recommendations and as directed by the ENGINEER in the field. He shall not store unnecessary materials or equipment on the jobsite and shall prevent any structure from being overloaded and endanger the safety of his personnel or the public. The CONTRACTOR shall enforce the instructions of the CITY and the ENGINEER regarding the posting of regulatory signs for loadings on structures, fire safety, and smoking areas.

#### 1.03 HANDLING AND MAINTENANCE

- A. The manufacturer's storage instructions shall be carefully followed and any deviations shall be approved by the manufacturer in writing with a copy to the ENGINEER. Equipment with moving parts shall be rotated per the manufacturer's recommendations while in storage and during the period between installation and acceptance.
- B. All equipment shall be stored fully lubricated unless otherwise instructed by the manufacturer. Lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. New lubricants shall be put into the equipment at the time of acceptance.
- C. Equipment with electric motors having space heaters shall have the space heaters energized unless stored in a temperature and humidity controlled building. Space heaters shall be energized at the time of installation and maintained until acceptance of the equipment.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

## SECTION 01700 - PROJECT CLOSEOUT

### PART 1 -- GENERAL

#### 1.01 PROJECT CLOSEOUT

- A. As construction of the project enters the final stages of completion, the CONTRACTOR shall, in accordance with the requirements set forth in the Contract Documents, attend to or have already completed the following items:
  - 1. Scheduling start-up and initial operation.
  - 2. Correcting or replacing defective work, including completion of items previously overlooked or work which remains incomplete, all as evidenced by the CITY's "Punch" lists.
  - 3. Make final submittals.
  - 4. Attend to any other items listed herein or brought to the CONTRACTOR's attention by the CITY.

#### 1.02 CLOSEOUT TIMETABLE

- A. The CONTRACTOR shall establish dates for equipment testing, acceptance periods, and on-site instructional periods (as required under the Contract). Such dates shall be established not less than one week prior to beginning any of the foregoing items, to allow the CITY, the ENGINEER, and their authorized representatives sufficient time to schedule attendance at such activities.

#### 1.03 FINAL SUBMITTALS

- A. Before the acceptance of the project major milestones for substantial completion, the CONTRACTOR shall submit to the ENGINEER (or to the CITY if indicated) certain records, certifications, etc., which are specified elsewhere in the Contract Documents. Missing, incomplete or unacceptable items, as determined by the ENGINEER or the CITY, shall indicate non-compliance with substantial completion major milestone dates. A partial list of such items appears below, but it shall be the CONTRACTOR'S responsibility to submit any other items which are required in the Contract Documents:
  - 1. Written Test results of project components.
  - 2. Performance affidavits for equipment.
  - 3. Operation and Maintenance Manuals for equipment.
  - 4. Record Drawings: during the entire construction operation, the CONTRACTOR shall maintain records of all deviations from the Drawings and Specifications and shall prepare therefrom record drawings showing correctly and accurately all changes and deviations from the Work made during construction to reflect the Work as it was actually constructed. These drawings shall conform to recognized

standards of drafting, shall be neat, legible and on mylar or other reproducible material acceptable to the ENGINEER.

5. Written guarantees, where required.
6. Certificates of inspection and acceptance by local governing agencies having jurisdiction.
7. Releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law.

#### 1.04 PUNCH LISTS

- A. Final cleaning and repairing shall be scheduled upon completion of the project.
- B. The ENGINEER will make his final inspection whenever the CONTRACTOR has notified the ENGINEER that the work is ready for the inspection. Any work not found acceptable and requiring cleaning, repair and/or replacement will be noted on the "Punch" list. Work that has been inspected and accepted by the ENGINEER shall be maintained by the CONTRACTOR, until final acceptance of the entire project.
- C. Whenever the CONTRACTOR has completed the items on the punch list, he shall again notify the ENGINEER that it is ready for final inspection. This procedure will continue until the entire project is accepted by the ENGINEER. The "Final Payment" will not be processed until the entire project has been accepted by the ENGINEER and all of the requirements in previous Article 1.03 "Final Submittals" have been satisfied.

#### 1.05 MAINTENANCE AND GUARANTEE

- A. The CONTRACTOR shall comply with all maintenance and guarantee requirements of the Contract Documents.
- B. Replacement of earth fill or backfill, where it has settled below the required finish elevations, shall be considered as a part of such required repair work, and any repair or resurfacing constructed by the CONTRACTOR which becomes necessary by reason of such settlement shall likewise be considered as a part of such required repair work unless the CONTRACTOR shall have obtained a statement in writing from the affected private CITY or public agency releasing the CITY from further responsibility in connection with such repair or resurfacing.
- C. The CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order from the CITY. If the CONTRACTOR fails to make such repairs or replacements promptly, the CITY reserves the right to do the Work and the CONTRACTOR and his surety shall be liable to the CITY for the cost thereof.

#### 1.06 TOUCH-UP AND REPAIR

- A. The CONTRACTOR shall touch-up and repair damage to all field painted and factory finished equipment. Touch-up of equipment panels, etc., shall match as nearly as possible the original finish. If in the opinion of the ENGINEER the touch-up work is not

satisfactory, the CONTRACTOR shall repaint the item. CONTRACTOR shall also furnish additional paint as defined in Section 09900.

1.07 FINAL CLEANUP

- A. The CONTRACTOR shall promptly remove from the vicinity of the completed Work, all rubbish, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction. Final acceptance of the Work by the CITY will be withheld until the CONTRACTOR has satisfactorily complied with the foregoing requirements for final cleanup of the project site.

PART 2 -- PRODUCTS (Not Used)

PART 3 -- EXECUTION (Not Used)

- END OF SECTION -

## SECTION 02150 – TREATMENT UNIT DEWATERING AND CLEANING

### PART 1 – GENERAL

#### 1.01 THE REQUIREMENT

- A. Provide all labor, supervision, materials, tools, chemicals, equipment or process machinery, as well as all trucks, containers, supplies, and all other incidentals necessary for removal, processing, sampling, testing, transport, and disposal of the liquids and/or solids removed from the basin(s) as part of dewatering and cleaning operations as described herein. The major components associated with this work include the following:
1. Removal and off-site disposal of all solid contents in the basin(s), including, but not limited to grit, sand, grease, scum, rags, floatable materials, hair, sediment, sludge, and any other foreign materials (hereinafter referred to as "grit") as may have accumulated in the basin(s). Extracted solids shall be dewatered to a minimum of 85% solids prior to disposal. Dewatered liquids may be returned to the headworks of the plant for treatment via the plant drain at flowrates not to exceed 200 gpm.
  2. Maintain an Excel spreadsheet log containing data for each trailer load of grit hauled offsite. Log shall include (at a minimum) date, trucking company, truck number, truck tare weight, truck total weight, percent moisture or solids content, and calculated dry tons.
  3. Submit daily updates of Excel spreadsheet log.
  4. Materials removed from the basin(s) are to be legally transported and legally disposed of in an approved sanitary landfill.
  5. Payment of all applicable tipping fees, disposal fees, monitoring fees, testing fees, and fees for applicable permits and licenses.
  6. Odor control (if necessary) during basin dewatering and cleaning.
  7. Cleaning the interior walls, ceilings, baffles, columns, and floors of the basin(s), including all piping, ductwork, and other equipment via power washing, and the removal of cleaning liquid and debris.
- B. The residuals contained in the basin(s) are provided in an "as-is; where is" basis for removal, transport and disposal. Solids or chemical content that are outside the ranges of what could be reasonably anticipated for typical wastewater treatment residuals characteristics shall not result in additional costs to the CITY for removal, transport and ultimate disposal.
- C. Unless otherwise noted, on-site dewatering may be conducted using an appropriate and approved method provided. The CITY will accept wastewater from the CONTRACTOR'S dewatering operation provided that the concentration of such meets the requirements specified herein. CONTRACTOR is responsible for delivering all liquids to the headworks of the plant.

## 1.02 SCHEDULE OF BASINS TO BE CLEANED

1. The CONTRACTOR shall install temporary pumps and piping as necessary to discharge mixed liquor suspended solids from treatment. Proposed pumps, piping, and discharge location shall be submitted by the CONTRACTOR and approved by the CITY and ENGINEER prior to fabrication.
2. Sludge contents, containing sand, grit, inert solids and rags, and floating surface scum shall be removed in accordance with the requirements of this Specification Section and shall not be sent to the plant headworks or discharged to internal plant drain system.

## 1.03 SEQUENCING/SCHEDULING THE WORK

- A. Work must be performed within an operating wastewater treatment plant and must be scheduled and performed to have minimal impact on plant operations.
- B. The sequence of cleaning the basins is defined in Section 01520 – Maintenance of Facilities and Sequence of Construction.
- C. CONTRACTOR shall coordinate scheduling of cleaning operations with CITY and shall assume that the CITY requires up to 5 workdays (i.e., 7-calendar days) to complete activities to remove a treatment unit from service, if possible. It is noted that certain units/basins or portions of certain units/basins cannot be removed from service and must be bypassed by the CONTRACTOR as shown on the drawings for grit removal and cleaning activities to take place.
- D. Plant operational requirements take precedence over CONTRACTOR activities. Therefore, interruption of plant operations must be coordinated and are subject to the operational requirements of the plant. CONTRACTOR is to assume that any interruption of plant operations may be deferred by up to one week from the requested time due to operational constraints.

## 1.04 SUBMITTALS

- A. Submit proof of an agreement with an approved sanitary landfill to accept the removed materials prior to beginning the work.
- B. Details of disposal plan that includes, but is not limited to, equipment and materials and methods proposed by CONTRACTOR for dewatering and cleaning operations including:
  1. A description of how the materials will be removed from the basins;
  2. A description of the equipment to be used;
  3. Wet weather and Hurricane plan; and
  4. Odor control provisions (if required).
- C. Transportation Plan including the following:
  1. Name of hauling subcontractor (if applicable);
  2. Description of hauling equipment; and

3. Copy of license for hauling contractor for proof of acceptability.
- D. Spill response contingency plan.
- E. Project schedule; include daily schedule and total length of time required.
- F. Utility water requirements, and proposed schedule for disposal of wash water. The CONTRACTOR shall have use of the non-potable water bibbs available near each unit/basin.
- G. All submittals listed above shall be approved by the CITY and ENGINEER prior to beginning the work.

#### 1.05 PERMITS AND REGULATORY REQUIREMENTS

- A. The work covered under this Section may be subject to Federal (e.g., 40 CFR 503), State, and/or local municipal jurisdictions. Other regulatory requirements may apply depending on the CONTRACTOR's chosen means and methods for removal, transport and disposal. The CONTRACTOR shall make himself aware of these requirements (i.e., Federal, State and Local), as applicable, in the preparation of his Bid. No claim for additional compensation or reimbursement shall be made to the CITY based on the failure of the CONTRACTOR to consider regulatory requirements and/or constraints.
- B. The CONTRACTOR shall obtain any required Federal, State, and Local regulatory permits from those authorities, agencies, or municipalities having jurisdiction over the land areas, utilities, or structures which are affected by the CONTRACTOR's operations. Permits shall reflect the estimated quantity of solids to be disposed of based on the basin volumes specified herein, and shall remain current throughout the entire term of the contract. All costs associated with obtaining the required permits, fees, and related testing, monitoring, and record keeping, shall be the responsibility of the CONTRACTOR. Record copies of all permits shall be submitted to the CITY.
- C. The CONTRACTOR shall be responsible, at his expense, for meeting all monitoring and reporting requirements imposed by all regulatory agencies having jurisdiction over CONTRACTOR's operations.

#### 1.06 SAFETY

- A. General:
  1. Work is to be pursued in accordance with all pertinent OSHA regulations.
  2. Exposure to Wastewater Biosolids:
    - a. The material inside the basins is potentially hazardous to human health; the CONTRACTOR shall take all precautions necessary to protect the health of his workers, the CITY's workers and to protect the environment.
    - b. All employees working onsite performing cleaning and dewatering operations are to have up-to-date immunizations for working in a wastewater treatment facility.

3. Lockout – Tag-Out:
  - a. The CITY will lockout and tag-out all equipment that is removed from service in accordance with the procedures in place at the facility.
  - b. CONTRACTOR may not turn off equipment, close valves, disconnect electric service, etc., without first requesting, in writing, permission from the CITY.

#### 1.07 UTILITIES

##### A. Electrical Service:

1. The CONTRACTOR shall be responsible for providing temporary power if required for his operations.

##### B. Water Service:

1. Non-potable plant reuse water may be used by the CONTRACTOR without charge. Plant reuse water is treated secondary effluent.
2. CONTRACTOR's use of non-potable water is limited to a total instantaneous flow of not more than 100 gallons per minute.
3. CONTRACTOR to verify available pressure of non-potable water system to determine if it meets his needs. CONTRACTOR shall provide any booster pump(s) as may be required for CONTRACTOR's operations.

##### C. Wastewater Service:

1. CONTRACTOR may return liquid from the treatment units draining operations to the plant for treatment. The liquid is to be returned to the plant headworks at the location designated by the CITY.
2. Liquid returned to the plant must not exceed the following parameters:
  - a. Maximum flow rate: 200 gpm
  - b. Total solids:  $\leq 1\%$

#### 1.08 GENERAL OPERATING REQUIREMENTS, CONSTRAINTS, AND CONSTRUCTION REQUIREMENTS

- A. The CONTRACTOR's use of the project site shall be limited to lay down, storage and operational areas the areas agreed upon by the ENGINEER and CITY.
- B. The CITY intends to occupy the entire site during the duration of the dewatering and cleaning operation. The CONTRACTOR must coordinate his work so as not to interfere with, or jeopardize, the routine operation of the treatment facilities or the operations of any other CONTRACTOR operating at the facility. The CONTRACTOR's operation shall be in support of Plant operational considerations, therefore, the CITY may suspend hauling of cleaning residue at any time deemed necessary by operational constraints. All operational procedures and schedules shall be established by the CITY.

- C. Concurrent Work by Other Contractors: The CITY may award contracts for adjacent or complementary works during the performance of the work of this Contract. The CONTRACTOR will be required to co-operate and coordinate with other contractors for adjacent or complimentary works. The CONTRACTOR shall conduct his operations so as to cause a minimum of interference with the work of such other contractors.
- D. Access to Plant Site, Roadways, and Parking Areas
  - 1. An unobstructed traffic route through the Main Entrance and South Gate shall be maintained at all times for the CITY's operations personnel and maintenance equipment.
  - 2. An unobstructed traffic route around the plant site shall be maintained at all times for the CITY's operations personnel and maintenance equipment. Vehicular access to the treatment units and buildings for CITY's personnel shall be maintained at all times by the CONTRACTOR.
  - 3. The CONTRACTOR shall repair any damage to existing paved surfaces that occurs during the construction period into and out of the plant site. Any areas disturbed along the shoulders of the access road and interior roads and elsewhere inside and outside of the plant shall be repaired, graded, sodded, seeded, etc., as necessary to match pre-existing conditions.
- E. Personnel Access: Treatment plant personnel shall have access to all areas which remain in operation throughout the construction period. The CONTRACTOR shall locate stored material, dispose of construction debris and trash, provide temporary walkways, provide temporary lighting, and other such work as directed by the CITY to maintain personnel access to areas in operation.
- F. The CONTRACTOR's operations shall in no way contribute to air, water, or land pollution, including such nuisances as odors, insects, noise, surface or groundwater contamination, or any other condition that would have a detrimental effect on the environment.
- G. The CONTRACTOR shall be responsible and take necessary precautions to control and prevent nuisance odors from leaving the plant site during cleaning, solids removal operations, hauling and all associated works.

#### 1.09 BID PRICING

- A. The unit price bid for the work in this Section shall be inclusive of all labor, equipment, fuel, regulatory fees, tipping fees, transportation costs, weighing, sampling, testing, etc., to complete as necessary the intended work as outlined in this Section.
- B. Quantities stated in the bid form are for estimating purposes only and no guarantee is given or implied as to actual quantities that will be performed during the contract period.

#### PART 2 – PRODUCTS (NOT USED)

## PART 3 – EXECUTION

### 3.01 PREPARATION

- A. Prior to beginning dewatering and cleaning operations, CONTRACTOR is to block off all storm drain inlets that would receive flow in the event of a failure of the CONTRACTOR's equipment or as directed by the ENGINEER.
- B. In order to remove debris from the basin(s), plant staff will isolate the structure.

### 3.02 OPERATIONS

- A. The CONTRACTOR shall take all necessary precautions to prevent any leakage or sewage spills onto the worksite, public or private roadways, drainage systems or waterways. All pumping operations shall be continuously monitored. The CONTRACTOR will be responsible for all clean-up costs and any fines associated with any spills, including any fines that may be levied against the CITY by a regulatory agency. All spills must be reported.
- B. The CONTRACTOR shall maintain a clean work site and remove all rubbish and debris resulting from the work on a daily basis.
- C. Existing process equipment and drains may not be used for dewatering or removing debris from the basin(s).
- D. If existing drains are plugged due to CONTRACTOR's operations, then they are to be cleaned at no additional cost to the CITY.
- E. If other process facilities are filled with grit or sand as the result of CONTRACTOR's dewatering operations, the affected basins are to be vacuumed of all accumulated grit/sand at no additional cost to the CITY.

### 3.03 EXECUTION OF TANK CLEANING

- A. CONTRACTOR shall provide temporary pumps to remove all standing water from the structure prior to removal of debris. After CONTRACTOR removes debris, CONTRACTOR shall remove additional water through a means agreeable to the ENGINEER (e.g., allowing water to drain from the debris in a truck loading bin into an approved on-site manhole) prior to hauling the debris off-site. The objective is to remove as much water as reasonably possible to limit hauling of water off-site and its associated costs.
- B. Provide all pumps, piping, hoses and other equipment required for the work.
- C. The CONTRACTOR shall be responsible for selecting the method of cleaning. Regardless of method, the CONTRACTOR shall provide positive odor control measures to prevent odors generated by these activities from leaving the treatment plant site.
- D. Following removal of the basin(s) contents, clean all interior surfaces including piping, fittings, pipe hangers, and brackets. Remove rags, debris, sand, solid waste, and other matter from fittings, piping, pipe hangers, brackets, and leave the entire interior in a clean condition to bare substrate.
- E. If hydro-blasting is utilized to clean the basin walls and floors, CONTRACTOR shall

perform a test on one small area to determine the water pressure required for cleaning, without causing damage to the concrete surface or any protective coatings.

- F. Survey: Upon completion of cleaning, the CONTRACTOR and ENGINEER will conduct a survey to identify repairs that are necessary to be performed prior to placing the basin(s) back in service. The ENGINEER will identify structural cracks, spalls, cavities, and construction joints that may require repair under a future project.
- G. Hydro-jet basin drains after completing cleaning operations.

#### 3.04 TRANSPORTATION

- A. Transport the waste material directly from the project site to the designated disposal site. No additional payload may be added at any time. A manifest shall accompany each load with copies provided to the CITY. Contents of the waste load may be checked at the disposal site to assure conformance with the manifest.
- B. Hauling Vehicles:
  - 1. The CONTRACTOR shall provide water-tight trucks for hauling sludge.
  - 2. All trucks used for sludge hauling shall have an empty weight certificate.
  - 3. All trucks shall be marked, in large lettering, with the name, truck number and phone number for clear identification by the public and CITY's staff is possible.
  - 4. The cost of all equipment and maintenance shall be included in the bid price.
  - 5. Equipment Cleaning: CONTRACTOR shall wash all trucks off site.
  - 6. Maintenance of vehicles/hauling equipment may not be performed onsite.

- END OF SECTION -

## SECTION 02934 - SODDING

### PART 1 -- GENERAL

#### 1.01 SCOPE

- A. Provide all labor, materials and equipment necessary for complete sodding of areas affected by construction. This shall include, but not be limited to: liming, fertilizing, sodding, necessary barriers, tests and all incidentals to make the work complete.

#### 1.02 WORK INCLUDED

- A. Testing of topsoil.
- B. Raking and leveling topsoil as required for sodding.
- C. Liming and fertilizing of topsoil.
- D. Laying and rolling of sod.
- E. Maintaining sod.

#### 1.03 SUBMITTALS

- A. Submit product source and information sheets in accordance with Section 01300, "Submittals".

### PART 2 -- PRODUCTS

#### 2.01 MATERIALS

- A. Fertilizer
  - 1. Fertilizer shall be commercial fertilizer, as manufactured by International Chemical Company or equal.
  - 2. Said fertilizer shall have a 10-20-6 N.P.K. content and contain a minimum of 60% of organic material.
  - 3. It shall be delivered at the site in the original sealed containers.
  - 4. For sodding at the Eco Grande Golf Course, CONTRACTOR shall coordinate selection and application of fertilizer with Golf Course personnel.
- B. Sod
  - 1. Eco-Grande Golf Course:
    - a) All sod installed at the Eco Grande Golf Course shall be Bermuda 419. Bermuda 419 sod shall be well matted with roots; shall be of firm tough texture having a compact top growth and heavy root development.

- b) Sod shall be absolutely true to varietal type, live, fresh and free from weeds or objectionable vegetation, fungus, insects and disease of any kind.
- c) Sod shall be kept moist from the time it is field cut until it is laid at the proposed site. Sod shall have been mowed no more than four days before it is cut.
- d) Soil base of the sod shall be of uniform thickness.
- e) Clean fill shall be used and it shall be a 70/30 organic/sand mix, no larger than ½ inch in diameter.

## 2. Other Sites

- a) Sod from right-of-way swales within the work area shall be Bahia sod or replaced in-kind, whichever is finer quality.
- b) Sod shall be first quality Bahia sod of firm texture having a compacted growth and good root development.
- c) Sod shall be absolutely true to varietal type, live, fresh and free from weeds or objectionable vegetation, fungus, insects and disease of any kind. Sod shall be kept moist from the time it is field cut until it is laid at the proposed site.
- d) The sod shall be as grown by a certified turf nursery and CONTRACTOR shall inform ENGINEER as to the source of the sod to be utilized prior to ordering and delivery of sod.
- e) Sod shall be furnished and installed in rectangular sod strips measuring 12 to 16-inches in width of standard lengths of not less than 2 feet and delivered on pallets.

## PART 3 -- EXECUTION

### 3.01 INSTALLATION

- A. These areas shall be fine graded to achieve the finished subgrade after compaction which shall be obtained by rolling, dragging or by an approved method which obtains an equivalent compaction to that produced by a hand roller weighing from 75 to 100 pounds per foot of width. All depressions caused by settlement or rolling shall be filled with additional existing or furnished topsoil and regraded and prepared as specified above until it presents a reasonably smooth and even finish at the required sod sub-grade.
- B. All sod furnished shall be living sod containing at least 70% of thickly matter grasses as specified and free from noxious weeds. All sod shall be certified free of fire ants.

- C. No broken pads or torn or uneven ends will be accepted. Standard size sections of sod shall be strong enough to support own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10% of the section. Sod shall not be harvested when its moisture content (excessively wet or dry) may adversely affect its survival.
- D. Sod shall be harvested, delivered, and installed within a period of 24 hours. Sod not installed within this time period shall be subject to inspection and rejection by ENGINEER, and shall be removed from the site and a fresh sod supply shall be furnished at no extra cost to CITY.
- E. The topsoil shall not be moist at time of installation; however, it shall contain sufficient moisture so as not be powdery or dusty, both as determined by the supplier's representative.
- F. The overlapping of existing lawn with new sod along limit of work lines will not be permitted. Sod shall be laid in strips, edge to edge, with the lateral joints staggered. All minor or unavoidable openings in the sod shall be closed with sod plugs or with topsoil, as directed by ENGINEER. However, sod laid with joints determined to be too large shall be lifted and re-laid as specified herein at no extra cost to CITY.
- G. Immediately after the sod is laid, the sod shall be watered thoroughly by hand or mechanical sprinkling until the sod and at least 2-inch of the top soil bed have been thoroughly moistened.
- H. CONTRACTOR shall be responsible to furnish his own supply of water to the site at no extra cost. If possible, CITY shall furnish CONTRACTOR, upon request, with a source and supply of water. CONTRACTOR shall apply for temporary meter and pay CITY for water used at current utility billing rates. However, if CITY's water supply is not available or not functioning, CONTRACTOR shall be responsible to furnish adequate supplies at his own cost. All work injured or damaged due to the lack of, or the use of too much water, shall be CONTRACTOR's responsibility to correct.

### 3.02 MAINTENANCE

- A. Maintain the entire sodded areas at least a 30-day period or until final acceptance at the completion of the Contract, whichever is longer. Maintenance shall include watering as specified, weeding and removal of stones which may appear. All bare or dead spots which become apparent shall be properly prepared, limed and fertilized, and resodded at CONTRACTOR's expense as many times as necessary to secure a good growth. In the event that the sod installation is not accepted by ENGINEER, the entire area shall be maintained and cut by CONTRACTOR until final acceptance of the sod installation.
- B. Take whatever measures are necessary to protect the sod while it is developing. These measures shall include furnishing of warning signs, barriers, or any other necessary measures of protection.

- END OF SECTION -

## SECTION 02950 – GRIT, SAND AND FLOATABLE MATERIALS REMOVAL

### PART 1 -- GENERAL

#### 1.01 THE REQUIREMENT

- A. The CONTRACTOR shall provide all necessary equipment and labor to remove grit, sand, grease, scum, rags, floatable materials, hair, sediment, sludge, and any other foreign materials from the following locations, as indicated on the Drawings and specified herein:
- Interceptor Box
  - Grit Removal System
  - Influent Pump Station
  - Oxygenation Train Nos. 1, 2, 3, 4, and 5
  - Oxygenation Train Nos. 1 and 2 Effluent Boxes
  - Oxygenation Flow Distribution Box
  - Clarifier Splitter Box Nos. 1 and 2
  - Clarifier Influent Box Nos. 1 and 2
  - Clarifier Nos. 2 and 4
  - Clarifier 5-8 Flow Diversion Box
- B. For the purposes of this project, the term “grit” shall mean to include grit, sand, grease, scum, rags, floatable materials, hair, sediment, sludge, and any other foreign materials.
- C. Materials may be removed either hydraulically, with vacuum trucks, manually, or by other acceptable means.
- D. The work will require the removal and replacement of four aeration mixers at each of the Oxygenation Trains. Electrical disconnection and re-connection will be required. Aeration mixers weigh up to 25,000 lbs each. At the CONTRACTOR’S own risk, CONTRACTOR may use the CITY-furnished scaffold capable of accommodating a single aeration mixer without the need for dismantling (i.e., mixer blade and shaft intact). If the CONTRACTOR desires to remove more than one mixer at a time, CONTRACTOR must furnish additional scaffolding or dismantle and properly store mixers, then reassemble upon completion of the work.
- E. The work will require the removal of concrete roof slabs at the Oxygenation Flow Distribution Box and Interceptor Box.
- F. The work will require the furnishing and installation of bypass piping, valving, and a seal plate at the Clarifier 5-8 Flow Diversion Box. The CONTRACTOR shall be responsible for providing new gaskets and fasteners.

## 1.02 SUBMITTALS

- A. The CONTRACTOR shall record and keep a daily record of the volume of grit and the volume of floatable material removed and loaded into sealed dump trucks or dumpsters for disposal. This record shall be submitted to the ENGINEER at the end of each day of the grit removal operation.
- B. The CONTRACTOR shall submit, for review by the CITY, a written plan including the procedures that will be employed in each of the areas; truck routing, dewatering plan, methods employed to control potential odors, etc. Work shall not commence until acceptance of the written plan is received from the CITY's Risk Management Department and the ENGINEER.

## 1.03 PERMITS

- A. The CONTRACTOR shall be responsible for any permits required to transport and dispose of the removed materials.

## 1.04 ANALYSES

- A. The CONTRACTOR shall be responsible for any sampling and analyses required by any regulatory agency having jurisdiction or required by the disposal facility.
- B. The CONTRACTOR shall sample and analyze the grit as necessary to characterize the material to complete the work.

## 1.05 BASIS OF PAYMENT

- A. The cost for removal of grit will be based on the unit price cost bid. The quantities stated therein are approximate only and are intended to serve as a basis for the comparison of bids and to fix the approximate amount of the cost of the Project. The CITY does not expressly or impliedly agree that the actual amount of the work done in the performance of the contract will correspond with the quantities in the Proposal Bid Form; the amount of work done may be more or less than the said quantities and the increase or decrease of any quantity shall not be regarded as grounds for an increase in the unit price or in the time allowed for the completion of the work, except as provided in the Contract Documents.

## PART 2 – PRODUCTS (Not Used)

## PART 3 -- EXECUTION

### 3.01 GENERAL

- A. This work shall be coordinated with the Construction Sequence.
- B. All areas shall be considered as "confined" space. The CONTRACTOR shall comply with OSHA and Federal, State and local regulations as applicable for work in confined spaces where sewage gases are present.

### 3.02 GRIT DEWATERING

- A. The grit shall be extracted and dewatered on site.
- B. Liquid from the dewatering process shall be returned to the facility for further processing.
- C. The extracted material shall be dewatered to at least 85% total solids.

### 3.03 PATHOGEN, VECTOR AND ODOR CONTROL

- A. Hydrated lime shall be added to the materials removed, as directed by the ENGINEER, for pathogen, vector and or odor control. The lime shall be furnished and applied, at the site, at no additional cost to the OWNER.

### 3.04 GRIT DISPOSAL

- A. The dewatered material shall be loaded into trucks provided by the CONTRACTOR. The CONTRACTOR shall transport and dispose of the material. Material shall be dewatered and removed from the project site as soon as possible. "Storage" at the project site shall not be permitted.
- B. The CONTRACTOR shall be responsible for all landfill disposal fees.

- END OF SECTION -