Financial Management Department
Purchasing Division

1112 Manatee Avenue West, Ste 803

Bradenton, FL 34205

June 22, 2015

TO: All Interested Bidders

SUBJECT: Invitation for Bid# 15-1058-DS
Southeast Water Reclamation Facility (SEWRF) Septage / Grease Receiving Station Project

ADDENDUM # 4

Bidders are hereby notified that this Addendum shall be acknowledged on page Bid Form- 1 Of the Bid Form and made a part of the above named bidding and contract documents. Bids submitted without acknowledgement of the Addendum will be considered incomplete.

The following items are issued to add to, modify, and clarify the bid and contract documents. These items shall have the same force and effect as the original bidding and contract documents, and cost involved shall be included in the bid prices. Bids to be submitted on the specific bid date, shall conform to the additions and revisions listed herein.

The deadline for clarification of questions has been extended to **July 1, 2015 at 3:00 pm**. This deadline has been established to maintain fair treatment of all potential bidders. Questions received after this date and time shall not be considered.

BIDDERS NOTE 1

Delete: Section 01150 Measurement and Payment (pages 01150-1 through 01150-8) which was made a part of the original Invitation for Bid, Technical Specifications.

Replace: Section 01150 Measurement and Payment (pages 01150-1 through 01150-8) dated June 15, 2015 (8 total pages via pdf).

BIDDERS NOTE 2:

Delete: Section 09000 Painting and Protection Coatings (pages 09000-1 through 09000-25) which was made a part of the original Invitation for Bid, Technical Specifications.

Replace: Section 09000 Painting and Protection Coatings (pages 09000-1 through 09000-25) dated June 15, 2015 (25 total pages via pdf).

BIDDERS NOTE 3	**Delete**: Bid Form pages 2 and 3 which were made a part of the original Invitation for Bid, Bid Form. **Replace:** Bid Form page 4 (Bid Form "A") and page 5 (Bid Form "B") Addendum # 4 (2 pages via pdf).
BIDDERS NOTE 4	**Delete**: Drawings C-3, C-4, C-5, C-10, M-2, M-4, M-5 and M-10 which was made a part of the original Invitation for Bid. **Replace**: Drawings C-3, C-4, C-5, C-10, M-2, M-4, M-5 and M-10 dated 6/15/2015 (8 pages total).
BIDDERS NOTE 5	**Delete**: Section 16075 in its entirety.
BIDDERS NOTE 6	**Delete:** Section 16170 in its entirety.

Question # 1	Please provide a geotechnical report.
Response # 1	Geotechnical report attached.
Question # 2	Please provide the material specification for PVC pipe greater than 4 inches.
Response # 2	PVC pipe 4-inches or greater shall be shall be Class 235, DR 18 C-900. All buried piping shall be restrained.
Question # 3	Please provide the material specification for DI pipe.
Response # 3	Ductile iron pipe shall be minimum Pressure Class 350. All ductile iron pipe used in above ground applications shall be Special Thickness Class 53. DI pipe and fittings shall have an exterior bituminous coating and an interior lining of Protecto 401 or equivalent. All buried piping shall be restrained.
Question # 4	Detail 3/M-10 shows 4"dip line but lines coming in are all 6" dip. Please clarify if the 6" is to be reduced and where this reduction is located.
Response # 4	Replace Plan Sheet M-10 in its entirety. The lines under the above ground tanks are 6-inch and have a reducer outside the footprint of the tanks as shown.
Question # 5	Specification 10115 Page 6 says that the owner is to pay for testing, specification 01410 and 02201 says the General Contractor is to pay for the testing, which is correct?

Response # 5 Owner will procure services and pay for testing. Contractor shall coordinate with testing firm during construction. Contractor is responsible for all re-testing due to failed tests.

Question # 6 The Roll-Off Filter Canopy, Sheet S-7 shows a 1'-8" tall x 8" wide x 14' long concrete wall along with two side walls at 3'-8" tall at both sides of the ramp. Sheet M-12 has the walls shown with handrail and a metal wheel stop. Please indicate which material either concrete or metals and which drawing is to be utilized.

Response # 6 Material is concrete per structural drawings.

Question # 7 The Pump Station effluent piping material and configuration are in conflict between drawing M-4 and M-9. Please clarify what you are wanting at this area.

Response # 7 Replace Plan Sheet M-4 in its entirety.

Question # 8 Sheet M-4 shows the 4" FM from the Grease Storage Tank to the Transfer Pump is indicating to be Ductile Pipe. The 4" FM from the Septage Storage Tank to the Transfer Pump is indicating as PVC. Please clarify if this is correct.

Response # 8 The 4-inch force main shall be C900 PVC.

Question # 9 The 4" FM as shown on Sheet M-4 coming from the Grease & Septage Tanks to the Transfer Pumps is unclean. It appears to show a reducer just prior to the Pumps along with a Gate Valve. Can you clarify and provide a detail of the piping configuration to the Transfer Pump.

Response # 9 Drain and outlet piping shall be 6-inch DIP. Piping will reduce from 6-inch to 4-inch after tee then turn 90 degrees to an above ground valve before connecting to pump.

Question #10 Clarification is needed on the 3" PVC RCW line going towards the screw press. Is this line to be a 1" PVC line with a 3"x1" Reducer as shown on the other branch line above it?

Response # 10 Replace Plans Sheets M-2, M-4, M-5, and M-10 in their entirety.

Question # 11 Sheet C-9, Note 5 states the concrete pavement thickness shall "match existing or be 8" minimum, whichever is greater". Sheet C-10, Detail3 shows "proposed concrete pavement 6" thick 4,000 psi concrete". Specification 03330-21, Table 4 shows the design strength of concrete pavement as 3,000 psi. Please confirm:
a) The concrete pavement thickness
b) The concrete pavement design strength

Response # 11 Concrete pavement shall be 8-inch thick, 4,000 psi concrete reinforced with one layer of #4AT8-inch, each way. Provide sawcut joints at a maximum of 12 ft on center and construction joints at maximum of 40 ft on center. The pavement shall be placed over 8-inches of crushed concrete prepared to a minimum LBR of 100. Contactor shall submit a shop drawing for review indicating all proposed joint locations in the concrete pavement.

Question # 12 Specification 09000 PAINTING AND PROTECTIVE COATINGS mentions applying a number of different paint systems to various structures that are not being constructed under this contract. For instance, 09000-13 states "Apply Paint System No. 1 to the following surfaces: All submerged ferrous metal surfaces of the Headworks structure, Influent Flow Splitter, Oxidation Ditches, Secondary Clarifiers, Filters, Aerobic Sludge Holding Tank No.2, Chlorine Contact Basin No.2, and Reclaimed Water Storage Tank". Please confirm the Paint System Schedule applies to only those structures being constructed.

Response # 12 Confirmed. Replace Section 09000 in its entirety.

Question # 13 Sheet S-1, PEMB design criteria, calls for a superimposed dead load of 8 psf. Section 13121 calls for a collateral load of 5 psf. Please clarify.

Response # 13 Provide 8 psf collateral load as indicated on the drawings.

Question # 14 Sheet S-1, PEMB roof system, calls for a 20 gauge standing seam roof panel. These panels are not available in 20ga. Please advise.

Response # 14 Panels should be MR-24 roof panels by Butler or approved equal. Panels may be 22 or 24 gauge provided they meet the design criteria.

Question # 15 There is no pipe schedule found in the bidding documents. Please provide this information.

Response # 15 Pipe schedule provided in prior addenda.

Question # 16 There are only pipe specs for the stainless steel piping and small diameter PVC piping. Please provide addition project piping system specs.

Response # 16 Pipe schedule provided in prior addenda. Pipe specifications shall meet County standards.

Question # 17 The plans do not show pipe diameters or pipe material on the storm piping and gravity drain piping. Please provide this information.

Response # 17 Pipe diameters and pipe materials are shown on C-4 for gravity drain piping. Storm piping shall be 12-inch reinforced concrete pipe.

Question # 18 The plans are missing details of the screw press, chemical feed piping and storage tank pump valves and piping. Please provide this information.

Response # 18 Contractor shall supply all below ground and above ground piping, fittings, supports, etc. for a fully functional system.

Question # 19 The engineer is not showing isolation or check valves at point of connection to equipment on Forced Mains and Plant Waters / Reclaimed Waters. This is something that would benefit the owner.

Response # 19 PVC ball valve and check valve (both with unions) shall be provided for each connection to above-ground equipment.

Question # 20 The specifications on the Trench Drains are not in the specifications.

Response # 20 Trench drains shall be 6-inch PDX or equivalent, 1% channel slope, with standard slotted grating. Molded integral outlets shall be used for draining piping connections.

Question # 21 Many times electrical gear manufactures will only provide (1) complete package quote and will not breakout individual items. Sometimes even if they are not approved for some items. In this specification, SQ D is the only acceptable manufacturer for the local disconnect switches, they are approved for the MCC, but not listed as approved for the integral VFD's. Will you accept Eaton Local Disconnect switches? And will you accept Square D VFD's?

Response # 21 Equipment not named but meeting the technical specification will be accepted.

Question # 22 Some projects require the pump supplier to provide the associated VFD's. Is that a requirement for this project? If so, since they are an integral part of the MCC, will the pump supplier be required to supply the entire MCC?

Response # 22 The Pump supplier will not be required to provide the MCC or VFDs.

Question # 23

Can you provide the electrical details for the pump station that will be installed north of the Grease Receiving Station? We cannot find conduit and cable requirements between the Pump Station Local Control panel and the Wet Well. Also, please provide a detail for the Pump Station local control panel.

Response # 23

Contractor shall provide 3-inch conduit and cable between pump station local control panel and wet well. Contractor shall provide 316 stainless steel local control panel.

Question # 24

There appears to be a panel labelled "HW" just south of the new Pump Station local control panel. Is this part of this project? If so, can please provide details for this panel and any associated electrical scope?

Response # 24

HW location is where Contractor shall supply an electric tankless water heater, Hubbell TX018-3T4 or equivalent. Contractor shall install a 3-pole, 480V, 30A circuit breaker in the MCC, three (3) #8 and one (1) #10 and in 1" conduit from MCC to the heater, and one (1) 3-pole, 600V, 30A, non-fused disconnect switch in a NEMA 4X SS enclosure at the disconnect. The connection from the disconnect to the heater should be in flexible, sealtite conduit.

Question # 25

Are key Note cables 9, 11, and 12 shown on plan E-12 to be 1000v shielded VFD rated power cables and are they to be manufactured by Belden only?

Response # 25

No, shielded VFD cables, per specification section 16120 are for the Septage and Grease Station equipment only, not the transfer pumps or grease pump. Where required, VFD cables will be by Belden only.

Question # 26

We found some information on the Handholes on Detail 1 on Plan E-15. What is the loading rating for the cover? Also, we could not find any information on these Handholes in the specifications (key note 1).

Response # 26

Cover shall be Tier 15/22. Handholes to be 24" x 36" x 30" Fiber-reinforced polymer concrete. No other specifications required.

Question # 27

Section 13121, Part 2 H. 1. calls for Kynar finish on both sides of the roof panel. This is not a standard procedure and the small amount of roof panel for this job would make the price unreasonably expensive. Please advise if a standard Kynar outer face and standard wash coat inner face is acceptable.

Response # 27 Yes. Standard Kynar outer face and standard wash coat inner face is acceptable.

Question # 28 In specification section 01005 General Requirements, 1.04.B.1 it is stated that "all inspection and testing of materials...without cost to the Contractor". In specification section 02201 Earthwork and Concrete Engineering, 3.00.A it states "Contractor shall employ and pay for the services of a Materials Engineering Lab (MEL)..." Please clarify who will be paying for material testing.

Response # 28 Owner will procure services and pay for testing. Contractor shall coordinate with testing firm during construction. Contractor is responsible for all re-testing due to failed tests.

Question # 29 Will the forced main piping under concrete slabs and tanks will be ductile iron?

Response # 29 Replace Plans Sheets M-2, M-4, M-5, and M-10 in their entirety.

Question # 30 On drawing M-4 under tank found a forced main tagged as 4FM-2 and the schedule that was supplied to us does not have a 4FM-2.

Response # 30 Replace Sheet M-4 in its entirety.

Question # 31 Buried valves in yard do not have a designation number as depicted in specifications.

Response # 31 Buried valves shall be gate valves meeting County standards.

Question # 32 Reference drawing M-4 please provide details for the transfer pump stations regarding piping and concrete.

Response # 32 Buried valves shall be gate valves meeting County standards.

Question # 33 Drawing M-7 shows a discharge shoot from grease screen into a dumpster. Specifications 11321 2.3.A.12, 13 call for a bagger. Which is correct?

Response # 33 Discharge shoot shall be equipped with a bagger.

Question # 34 Spec section 09000 does not seem to pertain to this project. Please provide new 09000 specification section.

Response # 34 Section 09000 has been amended. See attached document dated 6/15/2015.

Question # 35 Please confirm the deletion of all DI piping per Spec Section 15000 Piping Systems Schedule issued in Addenda #2.

Response # 35 Per revised plans and previous responses, DI piping only required under above ground storage tanks to 5 feet beyond edge of tank. Transition fittings shall be included in lump sum fee.

Question # 36 If a power circuit is required for the intercom at the Admin bldg. and/or field intercom devices, please provide details?

Response # 36 Field devices do not require a power supply. New Master Station is to be provided with an Aiphone SKK-620 power supply. This supply is cord connected and should be plugged into receptacle under SCADA desk.

Question # 37 We could not find any PLC I/O modules that are required per Addendum 2 controls spec 13300.1.02.A.5. Are there any?

Response # 37 I/O modules are specified in section 13310 and indicated on sheets I-2, I-3 and I-4.

Question # 38 Please indicate if any of the electrical work will require explosion proof fittings.

Response # 38 No explosion proof fittings will be required based the current equipment layout.

Question # 39 Can you please provide part numbers for the light fixtures and indicate if 'equals' will be accepted.

Response # 39 The ordering information for the Lithonia VRC LED series, 50K color temperature with multivolt (120-277V) driver would be: VRC LED 1 50K MVOLT. There will be no accepted equals.

Question # 40 The Addendum 2 revised controls spec indicates many items that are to be provided by the Electrical Contractor to that are typically provided by an I&C subcontractor, Equipment/System Supplier, or Systems Integrator (Loop sheets and reports, calibration and testing reports, Instrumentation installation details, etc.). Can you please confirm that you expect the Electrical Contractor to provide these items?

Response # 40 It is the Contractor's responsibility to contract all required work as necessary.

Question # 41 Please confirm that the contractor is to supply aluminum handrail around the entire perimeter of the vacuum truck ramp.

Response # 41 Aluminum handrail is only required at the stairs of the vacuum truck ramp. Refer to structural drawings for concrete walls to be provided.

Question # 42 Addendum 2, revised Section 13300, paragraph 1.01 B. states the following "The Contractor shall provide the services of a SYSTEMS INTEGRATOR to provide programming of any/all Programmable Logic Controllers (PLCs). The Contractor shall also provide the services of a Citect Certified SCADA Engineer (CCSE) for the required SCADA modifications. The SYSTEMS INTEGRATOR may be but is not required to be the same firm as the CCSE". The following paragraph in Addendum 2, revised Section 13300, paragraph 1.02 C. states "The SYSTEM INTEGRATOR (under a separate Manatee County contract) shall be responsible for, and his/her scope of work shall include: 1. Programming of any/all PLC's and the modification of the SCADA System's Human Machine Interface (HMI) screens as required." It first paragraph asks the Contractor to provide a system integrator for PLC's, however the second tells us the PLC System Integration and SCADA upgrade work is being provided under a separate contract. Please clarify if the Systems Integration scope under this contract.

Response # 42 System integration is included with Contractor's scope. In second paragraph, delete text "(under a separate Manatee County contract)".

Question # 43 E-15 Panel schedule is shown as existing, should we assume this is actually new and is the lighting panel in MCC-SEP?

Response # 43 Panel "LPS" is new and will be located in MCC-SEP.

Question # 44 E-7/E-12 There is a conflict between the disconnect switch shown on the detail vs the switch on the one line diagram. Should it be 100A or 60A?

Response # 44 60A.

Question # 45 Specification 16075 3.02 A 6. Confirm these name plates are not required

Response # 45 Remove Section 16075 in its entirety.

Question # 46 Specification 16108 2.01 A Confirm FD3200 breaker is for MCC-SEP feeder, not "Motor Operated Valves".

Response # 46 FD3200 breaker is for MCC-SEP.

Question # 47 Specification 16108 2.01 B 5. Since Eaton/Cutler Hammer equipment is specified for use elsewhere will it be acceptable to use EATON disconnect switches?

Response # 47 Disconnect switches shall be square-D only.

Question # 48 Specification 16170 1.01 Does this refer to the EATON breaker in MCC-1? 2.10, see question 5 above.

Response # 48 Remove Section 16170 in its entirety.

Question # 49 Specification 16370 1.01 Confirm that 3 VFD's are to be furnished in MCC-SEP, not 2.

Response # 49 Yes, including a 7.5 HP Grease Pump, a total of 3 VFDs are required.

Question # 50 Specification 16445 2.02 B Please confirm requirement for NEMA 3R 316 Stainless Steel for MCC-SEP. The requirement for Stainless Steel is not noted on the drawings.

Response # 50 MCC-SEP shall be provided with NEMA 3R, stainless steel enclosure.

Question # 51 Specification 16450 3.01 Grounding Requirements. Please confirm that a ground ring is required around all new structures and that each canopy column is to be grounded to the new ring. If so, can you provide a drawing and details showing the location of new ground ring, ground rods, etc.?

Response # 51 Ground ring to consist of #1 AWG bare stranded copper conductor buried a minimum of 36" below grade. Provide one (1) - 5/8" x 10' ground rod adjacent to each column. Ground rods shall not be installed as to be encased in concrete slab.

Question # 52 Drawing E-15. Is a bare ground wire required to be embedded in the duct-bank concrete? What size is required? Do you require a ground rod to be provided in each of the hand holes? Do you want caution tape buried above the duct-bank?

Response # 52 Bare ground wire is not required. Ground rod is not required. Caution tape is not required.

Question # 53 Drawing E-3 and E-4. Do the underground conduits between the East and West Septage Receiving Stations need to be concrete encased with rebar, per the detail on E-15?

Response # 53 No, they do not.

Question # 54 Drawing E-5 Keyed Note 15. How do you propose to route the conduit above ground from the East SRS to the Fiber Optic Patch panel at the West SRS?

Response # 55 Unistrut supports up to and down from the canopy.

Question # 56 Where does the Spray Water Heater (HW) get power?

Response # 56 Information provided in previous RFI response.

Question # 57 What are the motor HP for the pump station? What are the float elevations?

Response # 57 Motors are 15 HP. Refer to sheet M-9 for float elevations.

Question # 58 Eyewash station flow switch connections are not shown on the electrical drawings. See M-13 Detail 3.

Response #58 On Detail 3, Sheet M-13, delete callout "2-Pole Flow Switch See Elec for Connection" and Note 3 in their entirety.

Question # 59 Is a lightning protection system required on the canopy roofs?

Response # 59 No.

The deadline for submitting sealed Bids at the Manatee County Purchasing Division, 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205 has been extended to **July 16, 2015 at 3:00 PM.**

FROM: **July 1, 2015 at 3:00 PM**

TO: **July 16, 2015 at 3:00 PM.**

END OF ADDENDUM # 4

Sincerely,

Melissa M. Wendel, CPPO
Purchasing Official
/ds

Attachments:
(8 pages in pdf of 01150 dated 6/15/2015)
(25 pages in pdf of 09000 dated 6/15/2015)
(Bid Form 2 pages Addendum # 4)
(Revised Drawings -8 pages)

BID FORM (Submit in Duplicate)

IFB# 15-1058-DS

SEWRF- Septage Grease Receiving Station Project

(Bid "A" - Based on Completion Time of 480 calendar days)

ADDENDUM # 4

ITEM NO.	DESCRIPTION	QTY	U/M	UNIT PRICE ($)	EXTENDED PRICE ($)
1	Mobilization & Demobilization	LS	1	$	$
2	Septage / Grease Receiving Station	LS	1	$	$
3	Grease Dewatering Screw Press	LS	1	$	$
4	Vacuum Truck Receiving Area	LS	1	$	$
5	Lift Station	LS	1	$	$
6	Glass Fused to Steel Storage Tanks (2) tanks	LS	1	$	$
7	Yard Piping	LS	1	$	$
8	Site Improvements	LS	1	$	$
9	Electrical and Instrumentation	LS	1	$	$
10	**Security Camera (Addendum # 4)**	**LS**	**1**	**$**	**$**
	TOTAL BASE BID (Based on Completion of 480 CALENDAR DAYS)				$
10	**CONTRACT CONTINGENCY (USED ONLY WITH COUNTY APPROVAL)**		**10% of TOTAL BASE BID**		$
	TOTAL OFFER FOR BID with CONTRACT CONTINGENCY (BASED ON COMPLETION TIME OF 480 CALENDAR DAYS) ADDENDUM # 4				$

BIDDER:_____

AUTHORIZED BY:_____

BID FORM (Submit in Duplicate)

IFB# 15-1058-DS

SEWRF- Septage Grease Receiving Station Project

(Bid "B" - Based on Completion Time of 360 calendar days)

ADDENDUM # 4

ITEM NO.	DESCRIPTION	QTY	U/M	UNIT PRICE ($)	EXTENDED PRICE ($)
1	Mobilization & Demobilization	LS	1	$	$
2	Septage / Grease Receiving Station	LS	1	$	$
3	Grease Dewatering Screw Press	LS	1	$	$
4	Vacuum Truck Receiving Area	LS	1	$	$
5	Lift Station	LS	1	$	$
6	Glass Fused to Steel Storage Tanks (2 tanks)	LS	1	$	$
7	Yard Piping	LS	1	$	$
8	Site Improvements	LS	1	$	$
9	Electrical and Instrumentation	LS	1	$	$
10	**Security Camera (Addendum # 4)**	**LS**	**1**	**$**	**$**
	TOTAL BASE BID (Based on Completion of 360 CALENDAR DAYS)				$
10	**CONTRACT CONTINGENCY (USED ONLY WITH COUNTY APPROVAL)**			**10% of TOTAL BASE BID**	$
	TOTAL OFFER FOR BID with CONTRACT CONTINGENCY (BASED ON COMPLETION TIME OF 360 CALENDAR DAYS) ADDENDUM # 4				$

BIDDER:_____

AUTHORIZED BY: _____

SECTION 09000
PAINTING AND PROTECTIVE COATINGS

PART 1 GENERAL

1.01 SCOPE OF WORK

A. This section of these specifications is intended to cover the furnishing of all materials, labor, tools, and transportation necessary for a complete job of painting or coating in every respect, in the shop or factory and at the project site, whether every item is specifically mentioned or not, and the Contractor is to provide same.

B. Surfaces to be painted or coated include indicated portions of concrete surfaces, masonry surfaces, wood surfaces, dry wall surfaces, interior piping, above-grade exterior piping, electrical conduit, valves, equipment, pipe supports and hangers, and metal surfaces except as noted below.

C. The following surfaces shall NOT be painted or coated:

1. Surfaces not intended for painting such as color-pigmented fiberglass tanks, FRP odor control system duct work and vessels, weir plates, baffles, control panels, HDPE tanks, pipes, fittings; glass, etc., unless noted otherwise.

2. Operating surfaces such as valve stems, sheaves, etc.

3. Stainless steel.

4. Galvanized sheet metal, or other corrosion resistant metal, unless otherwise directed.

5. PVC pipe unless exposed outdoors or otherwise directed.

6. Buried DI and HDPE piping except for steel couplings, fittings, and tie-rods.

7. Grease nipples, hose threads, etc.

8. Equipment name plates.

9. Structural aluminum, aluminum handrailing, stair treads, nosing, and grating end supports.

10. Stormwater inlets.

11. Expansion joints.

D. In the event that surfaces not intended to be painted or coated are painted or coated, the Contractor, at his expense, shall remove the paint or coating and recondition the surface if, and as directed by the Engineer.

E. All painting shall be done in strict accordance with the written procedures and recommendations of the Paint Systems Manufacturer and shall be performed in a manner satisfactory to the Engineer.

1.02 RELATED WORK (NOT USED)

1.03 SUBMITTALS

The Contractor shall submit shop drawings in accordance with Section 01300, Shop Drawings, Submittals and Samples:

A. Samples: Submit three (3) sample sets of manufacturer's color chips for Owner's selection of colors for the project. Provide color cards for piping color coding and identification.

B. Product Data Submittals: Submit, for approval, separate packets of product data for each Paint System specified. Clearly label to identify product data with appropriate paint system numbers corresponding to this specification section. Submit the label analysis of the products and manufacturer's recommended surface preparation, cleaning, and application procedures for each paint system.

C. Test Reports: Submit copies of all tests made by the Contractor as called for hereinafter or by applicable referenced standards.

D. Certifications: Submit paint manufacturer's written certification that all paint systems specified to be in contact with potable water is certified to meet the requirements of ANSI/NSF Standard 61.

1.04 WORK SEQUENCE (NOT USED)

1.05 REFERENCE STANDARDS

Reference standards and recommended practices referred to in this Specification Section shall be the latest revision of any such document in effect at the bid time. The following documents are a part of this Section. Where this Section differs from these documents, the requirements of this Section shall apply.

A. American National Standards Institute (ANSI)

1. ANSI/EIA RS-359—Colors for Identification and Coding.
2. ANSI A13.1—Scheme for Identification of Piping Systems.
3. ANSI/NSF Standard 61—Drinking Water System Components-Health Effects.
4. ANSI Z53.1—Safety Color Code for Marking Physical Hazards.

B. American Society for Testing and Materials (ASTM)

1. ASTM D2200—Standard Practice for Use of Pictorial Surface Preparation Standards and Guides for Painting Steel Surfaces.
2. ASTM D3276—Standard Guide for Painting Inspectors (Metal Substrates)
3. ASTM G62—Standard Test Methods for Holiday Detection in Pipeline Coatings.

C. Society for Protective Coatings (SSPC)

1. SSPC-SP 1—Solvent Cleaning.
2. SSPC-SP 2—Hand Tool Cleaning.
3. SSPC-SP 3—Power Tool Cleaning.
4. SSPC-SP 6—Commercial Blast Cleaning.
5. SSPC-SP 7—Brush-off Blast Cleaning.
6. SPC-SP 10—Near-White Metal Blast Cleaning.
7. SSPC-PA 1—Shop, Field, and Maintenance Painting.
8. SSPC-PA 2—Measurement of Dry Coating Thickness with Magnetic Gauges.
9. SSPC-PA 3—Guide to Safety in Paint Application.
10. SSPC-PA 4—Guide to Maintenance Repainting with Oil Base or Alkyd Painting Systems.

1.06 QUALITY ASSURANCE

A. Applicator: Painters shall have a minimum of 5 years experience and be a qualified professional in the preparation and application of the painting systems and the type of materials being applied for this project.

B. Allowable Tolerance: The dry paint film thickness shall be that specified for the system hereinafter. Field measurements taken to show coated surfaces have received the specified dry film thicknesses shall be made in accordance with SSPC-PA 2. The film thickness shall be prepared and applied so that neither the appearance nor the service life of the paint will be detrimentally affected by weather or site conditions during the preparation, application, or within the guarantee period for this project.

C. Pre-Painting Conference: Before any painting work, shop, or field is started, the Contractor shall arrange a meeting of the Paint Systems Manufacturer, Painting Contractor, and Engineer. All aspects of the Contractors' submitted paint system, surface preparation, application, painting and coating schedule shall be reviewed at this meeting.

D. Source Quality Control: Products for use on this project shall be of one manufacturer, unless specifically approved otherwise or noted herein. No request for substitutions that decrease the film thicknesses and/or number of coats to be applied or that offer a change from the generic type of coating system specified will be considered. Materials not manufactured or furnished by the manufacturer of the painting and coating system materials specified shall be approved in writing by the Engineer and the Manufacturer as being compatible and not detrimental either to the appearance or service life of the system provided.

1.07 WARRANTIES

A. Warranties shall be in accordance with General Conditions, Supplemental Conditions, and Specification Section 01740, Warranties and Bonds.

1.08 DELIVERY, STORAGE, AND HANDLING OF MATERIALS

A. The Contractor shall adhere to the requirements specified in Section 01620, Delivery, Storage and Protection, for storing and protecting the items specified in this Section.

B. Paint materials shall be delivered in the original factory-sealed containers, labeled to plainly show the designated brand name, formula or specification number, batch number, color, date of manufacture, and name and address of manufacturer. Store all paint materials in a place approved by the

Engineer. Protect materials from exposure to conditions that would affect the application and service life of the system. Flammable coatings shall be stored to conform with city, county, state, and federal safety codes and requirements for flammable coatings and paint materials.

C. Field touch-up of factory, shop, or field-applied paint and coatings shall be performed by, and at the expense of, the Contractor in accordance with the paint or coating manufacturer's printed instructions to meet the requirements of these specifications.

1.09 QUALIFICATIONS (NOT USED)

1.10 TESTING REQUIREMENTS (NOT USED)

1.11 MOCK-UP (NOT USED)

1.12 PROJECT REQUIREMENTS (NOT USED)

1.13 GUARANTEE

A. A minimum 2-year guarantee from the date of substantial completion is required for all Paint Systems. The guarantee will cover pealing, excessive chalking, and other similar coating system failures. Provide a guarantee, in a form acceptable to the Owner, for removal and replacement of painting and coating materials, at no additional cost, for any painting or coating found to be unsatisfactory within a 2-year period subsequent to substantial completion. The paint manufacturer and the painting system applicator shall also provide a removal and replacement guarantee for materials and labor if the provided paint system fails within a 2-year period.

PART 2 PRODUCTS

2.01 MATERIALS

A. General: Paint systems products used for the work shall be as specified in the Painting Systems and Application Schedule hereinafter. With the exception of special piping color coding, all colors shall be selected by the Owner.

B. Paints and Coatings: Paint shall arrive at the project site ready-mixed, except for tinting or undercoats, special coating and approved thinning. Paint shall not be settled, caked, or thickened in the container, shall be readily

dispersed with a paddle to a smooth consistency, and shall have excellent application properties.

C. Tinting Materials: Tinting materials shall be as recommended by the manufacturer for the particular material tinted. Finish coats shall be factory-mixed colors and shall not be tinted in the field.

D. Thinner: Thinner shall be type and product recommended by the painting or coating systems manufacturer of the materials to be thinned and shall comply with the paint specifications hereinafter.

E. Cleaning Materials: Shall comply with the requirements of the referenced standards as to type of surface preparation required unless specified otherwise by the manufacturer's approved written instructions. Cleaning materials shall not be detrimental to the application, appearance or service life of the painting system.

2.02 EQUIPMENT

A. Cleaning Equipment: Contractor's equipment shall be suitable and as required for the specified cleaning, in accordance with approved SSPC-PA and SSPC-SP Standards for application and surface preparation specifications for painting listed herein.

B. Painting Equipment: Equipment shall be adequate and commensurate for the work conditions, materials to be applied and workmanship required herein. Surface preparation, cleaning, and painting equipment shall be in conformance with the Painting Systems Manufacturers written recommendations and instructions.

PART 3 EXECUTION

3.01 PRELIMINARY INSPECTION

A. Before starting any work, the Contractor and Painting Subcontractor(s) shall examine surfaces to receive paint finishes for defects that cannot be corrected by procedures specified or referenced under this section and which might prevent satisfactory painting results. Work shall not proceed until such damages or defects are corrected by the trades involved. The commencing of work shall be construed as acceptance and approval of the surfaces by the Contractor and Painting Subcontractor(s), and acceptance of full responsibility for satisfactory painting in accordance with this specification.

3.02 PREPARATION

A. Removals: Aluminum doors, hardware, hardware accessories, machined surfaces, plates, lighting fixtures, wall-mounted enclosures, and similar items in contact with painted surfaces and not to be painted shall be removed, masked and coated or otherwise protected prior to surface preparation and painting operations. Such removal and reinstalling shall be done by workmen skilled in the trades involved.

B. Wood Surfaces: Sandpaper wood surfaces to smooth and even surface, then dust off. Apply shellac, 4 pounds cut, to all knots, pitch, and resinous sapwood prior to application of specified primer coats. After primer coats have dried, putty all nail holes, cracks, open joints, and other defects. Putty shall be colored to match primer. If putty is not compatible with finish, spot prime puttied areas.

C. Concrete and Masonry: Patch large openings and holes and finish flush with adjacent surface. After priming, fill remaining small holes with prepared patching materials. Remove form oil from poured-in-place concrete by washing concrete with xylol, or exempt-type form oil solvent, as required for complete removal. These surfaces shall be dry. No painting shall be done until surfaces have cured for 28 days and are clean and dry. Concrete and precast concrete shall be prepared in accordance with the Paint System Manufacturer's written recommendations or as directed by the Engineer.

D. Galvanized Metal Surfaces: Remove dirt and grease with mineral spirits and wipe dry with clean cloths, solvent cleaning per SSPC-SP 1 and in accordance with the Paint System Manufacturer's written recommendations or as directed by the Engineer.

E. Metal Surfaces: Prepare metal surfaces, masts, poles, and structures to meet the requirements of The Society for Protective Coatings (SSPC) Surface Preparation Specifications referenced in this section and in accordance with the Paint System Manufacturer's written recommendations or as directed by the Engineer.

3.03 APPLICATION

A. General: Only skilled and qualified painters shall be employed to do the work. Application may be by brush, roller, or spray after approval by the Engineer. All materials shall be applied under adequate illumination, evenly spread, and smoothly flowed on to avoid runs, sags, holidays, brush marks, air bubbles, and excessive roller stipple. Coverage and hide shall be

complete. Finish coats shall be free from noticeable laps or brush marks. When color, stain, dirt, or undercoats show through final coat of paint, the surface shall be covered by additional coats until the paint film is of uniform finish, color, appearance, and coverage, at no additional cost to the Owner. All coats shall be dry to manufacturer's recommendations before applying succeeding coats. All suction spots or hot spots in plaster and/or cement after the application of the first coat shall be touched up before applying the second coat. Application of all painting for structural steel structures shall be in strict accordance with the procedures specified in SSPC-PA 1. During paint system application, paint shall be continuously stirred and no thinner shall be added after the paint has been mixed. Paint shall be thoroughly worked into all joints, crevices, and corners.

B. Cleaning: Surfaces to be painted shall be clean before applying paint or surface treatment. Oil and grease shall be removed with clean cloths and cleaning solvents prior to mechanical cleaning. Solvent cleaning shall conform to SSPC-SP 1. Rust and corrosion shall be removed from metal in accordance with the SSPC and as directed by the Engineer.

C. Environmental Requirements: The requirements of SSPC-PA 1, 3, or 4 and the manufacturer's requirements for surface and ambient temperature, moisture and cover of work being applied, or to be applied, shall be followed throughout the project. Any exceptions shall be approved in writing by the Engineer. Paint shall not be applied when the temperature of the surface or paint is below 40EF or when the temperature of the surface is expected to drop to 40EF or below before paint has dried or properly cured. Provide proper ventilation of space within structures for proper drying of paint. All surfaces shall be dry prior to painting unless specifically approved otherwise. Paint shall not be applied to wet or damp surfaces, and shall not be applied in the rain, fog, mist, or when the temperature of the surface to be painted is less than 5EF above the dew point temperature. No paint shall be applied when it is expected that the surface temperature will drop below the paint system manufacturer's written recommendation within eight hours after application. Dew or moisture condensation should be anticipated, and if such conditions are prevalent, painting shall be delayed until the surface is dry. Further, the day's painting shall be completed well in advance of the probable time of day when moisture condensation will occur, in order to allow the film the required moisture-free drying time as specified by the paint system manufacturer. Care must be taken that the coatings are applied to the film thicknesses or surface area coverages recommended and specified herein to assure proper release of solvents.

D. Protection: Cleaning and painting shall be so programmed that detrimental amounts of dust or other contaminants do not fall on surfaces prepared for painting or wet, newly-painted surfaces. Surfaces not intended to be painted shall be suitably protected from the effects of cleaning and painting operations.

E. Scheduling: This work shall be scheduled and coordinated with the Engineer, work of other trades and shall not proceed until other work, climate, and/or job conditions are as required to achieve satisfactory results. The Contractor shall examine the specifications for the various other trades and shall thoroughly familiarize himself with their provisions regarding painting. All walls and ceilings shall be painted before installation of surface-mounted equipment, conduit, or piping.

F. Workmanship, Exterior Painting: Exterior painting shall not be done during adverse environmental conditions. Avoid painting surfaces in direct hot sun, rain, high humidity conditions, or temperature at or below 40EF.

G. Damages: Existing utilities, structures, and properties: It shall be the responsibility of the Contractor to locate and avoid damage to any and all existing water, gas, sewer, electric, telephone, and other utilities, structures, and appurtenances. The Contractor shall repair or pay for all damages caused by his operations or his personnel to existing utilities, structures, appurtenances, or properties, either below ground or above ground and shall settle in full all damage suits that may arise as a result of the Contractor's operations.

3.04 FIELD QUALITY CONTROL

A. Testing: As coating and painting progresses, the applicator shall check wet film with a wet film gauge to check thickness required to get dry film thickness. After the paint and coatings have dried and properly cured, the measurement of dry paint thickness on ferrous metal shall be made in accordance with SSPC-PA 2 and on concrete and masonry be means of a dry film thickness device approved by the Engineer and provided by the paint manufacturer. Make five separate spot measurements in each space for each surface such as walls, floor, and ceilings in the presence of the Engineer, unless otherwise specified. Record and submit location and test results to the Engineer for the record.

B. Testing Equipment and Procedures: The Contractor shall have on the project site the following testing equipment. Equipment shall be in calibration and proper working order. Equipment shall be used in accordance with the

manufacturer's instructions or as directed by the Engineer. The Engineer shall be notified of time of testing so that he might be present to witness testing.

1. Sling Psychrometer: Relative humidity and dew point readings shall be taken at intervals throughout the day's work. Readings shall be taken at the start of the morning's work, mid-day, and afternoon. Should environmental conditions change, additional reading shall be taken to assure that coatings are being applied under the conditions as outlined by the coatings manufacturer.

2. Surface Temperature Thermometer: Surface temperatures shall be taken in areas where work is being performed. Surface temperature shall be that as specified by the coatings manufacturer.

3. Replica Tape and Micrometer: Testex X-Course Replica Tape shall be employed to determine the surface profile of blasted surfaces. Surface profile shall be as specified.

4. Dry Film Thickness Measurements: Dry film thickness reading shall be taken with a properly calibrated (per the manufacturer's instructions) Type 1 (magnetic) or Type 2 (electromagnetic) instrument. Dry film thickness reading will be taken and recorded in a frequency and manner as indicated by the Engineer.

5. Holiday Detection: After completion of any ferrous metal immersion coating system, interior surfaces shall be holiday detected in accordance with ASTM G62 low voltage holiday detection. Holiday detector shall be a Tinker & Rasor Model M-1 or equal. Areas found to have holidays shall be marked and repaired in accordance with the paint manufacturer's instructions. The Engineer shall be notified of time of testing so that he might be present to witness testing. The Contractor shall provide ladders, rigging, etc., as necessary to allow the Engineer to spot check paint thickness of each coat.

C. Coating Cans: Empty coating cans shall be capped and neatly stacked in an area designated by the Engineer. Remove from the project site after being accounted for. A notarized statement shall be provided by the Contractor detailing materials and quantities used in the project.

D. Adjustment and Cleaning: During progress of the work and at completion, remove and clean all paint where spilled, splashed, splattered, sprayed, or smeared from on all surfaces not scheduled for painting, including glass, light

fixtures, hardware, equipment, painted, and unpainted surfaces. After completion of all painting, the Contractor shall remove from the job site all equipment, surplus materials, and debris resulting from the work.

E. Overspray: Overspray shall not be allowed. The Contractor shall not apply paint or coatings during windy periods nor allow overspray or dripping of paint to occur. The Contractor shall be responsible for any damage to adjacent structures, automobiles, etc., due to uncontrolled painting or coating.

3.05 DAMAGED COATINGS

A. Damaged coatings, pinholes, and holidays shall have edges feathered and repaired in accordance with the recommendations of the manufacturer, as approved by the Engineer.

B. All finish coats, including touch-up and damage-repair coats, shall be applied in a manner that will present a uniform texture and color-match appearance.

3.06 UNSATISFACTORY APPLICATION

A. If the item has an improper finish, color, or insufficient film thickness, the surface shall be cleaned and topcoated with the specified material to obtain the specified color and coverage. Specific surface preparation information to be secured from the coatings manufacturer and the Engineer.

B. All visible areas of chipped, peeled, or abraded paint shall be hand or power-sanded, feathering the edges. The areas shall then be primed and finish coated in accordance with the specifications.

C. Work shall be free of runs, bridges, shiners, laps, or other imperfections. Evidence of these conditions shall be cause for rejection.

D. Any defects in the coating system shall be repaired by the Contractor per written recommendations of the coating manufacturer.

3.07 GUARANTEE AND ANNIVERSARY INSPECTION

A. All work shall be warranted for a period of two years from the date of acceptance of the project.

B. The Owner will notify the Contractor at least 30 days prior to the second anniversary date and shall establish a date for the inspection. Any defects in

the coating system shall be repaired by the Contractor at no additional cost to the Owner. Should a failure occur to 25 percent of the painted surface, either interior or exterior, the entire surface shall be cleaned and painted in accordance with these specifications.

3.08 CLEAN UP

A. All cloths and waste that might constitute a fire hazard shall be placed in closed metal containers or destroyed at the end of each day. Upon completion of the work, all staging, scaffolding, and containers shall be removed from the site and/or destroyed in an approved and legal manner. Paint spots, oil, or stains upon adjacent surfaces and floors shall be completely removed and the entire job left clean and acceptable to the Engineer.

3.09 PAINTING SYSTEMS AND APPLICATION SCHEDULE

A. The following schedule describes the painting systems to be applied to the various structures, equipment, and surfaces included on the project. Colors will be selected by the Owner, unless otherwise noted on the drawings or in these specifications. Each coat applied shall have a dry film thickness within the range specified. However, prior to ordering each paint system, the Contractor shall obtain written acknowledgment from the paint system manufacturer verifying that the film thickness range as specified is satisfactory. Any discrepancy shall be immediately brought to the attention of and resolved by the Engineer.

B. The following schedule defines the painting or coating system to be used on various items identifies specific surfaces to be prepared, cleaned, and painted. In the event that an item or surface is not identified herein, the Contractor shall utilize the appropriate specified paint system which provides the maximum protection for said surface. Note that some items may be delivered with factory or shop applied primer and finish paint; the Contractor need not repeat the completed preparation and painting except for necessary touch-up to the applied finish coating or painting to conform to adjacent piping, structures, or other field painted surfaces colors. The Scheduled items to be painted for each Paint System include, but are not limited to, the following:

1. Paint System No. 1: Submerged ferrous metal surfaces in contact with domestic sewage and interior concrete surfaces of submersible pumping station valve vaults.

   a. Paint Application Schedule—Apply Paint System No. 1 to the following surfaces:

      (1) Metal embeds in concrete walls, tanks and other structures, wall pipes, pipe sleeves, slide and sluice gate frames, disks, and thimbles.

      (2) All submerged ferrous metal surfaces

      (3) All pumps, DI piping, fittings and supports in the wet well.

      (4) All interior concrete surfaces of pumping stations valve vault

   b. Paint System Description

      (1) General: Coal Tar Epoxy, 2-coat system.

      (2) Surface Preparation: SSPC-SP 10.

      (3) Primer Coat(s): 1 coat @ 10.0 mils DFT (8.0 mils DFT minimum to 12.0 mils DFT maximum).

      (4) Finish Coat(s): 1 coat @ 10.0 mils DFT (8.0 mils DFT minimum to 12.0 mils DFT maximum).

      (5) Total Dry Film Thickness = 18.0-24.0 mils DFT.

      (6) Acceptable Paint System Manufacturer(s) and Product(s): Tnemec Series 46H-413 (primer and finish coats); Induron Ruff Stuff 2100 Coal Tar Epoxy (primer and finish coats); Carboline Bitumastic 300 M (primer and finish coats); or approved equal.

2. Paint System No. 2: Exposed ferrous metal surfaces in a mildly corrosive atmosphere.

a. Paint Application Schedule – Apply Paint System No. 2 to the following surfaces:

(1) Exposed ferrous metal surfaces inside and outside of structures with mildly corrosive atmospheric conditions.

(2) All non-immersed exterior surfaces exposed ferrous metal surfaces including all above grade interior and exterior DI piping and supports, influent flow meter, and all associated piping, pipe supports and hangers, instrument and control panel supports, and other miscellaneous non-immersed ferrous metal surfaces.

b. Paint System Description

(1) General: Polyamide Epoxy/Polyurethane, 3-coat system.

(2) Surface Preparation: SSPC-SP 6 for non-immersed surfaces and SSPC-SP 10 for steel tankage exterior, non-immersed walls, and appurtenances.

(3) Primer Coat(s): 1 coat @ 3.0 mils DFT (2.5 mils DFT minimum to 3.5 mils DFT maximum) unless indicated otherwise.

(4) Intermediate Coat(s): 1 coat @ 4.0 mils DFT (3.5 mils DFT minimum to 4.5 mils DFT maximum) unless indicated otherwise.

(5) Finish Coat(s): 1 coat @ 4.0 mils DFT (3.0 mils DFT minimum to 5.0 mils DFT maximum) unless indicated otherwise.

(6) Total Dry Film Thickness = 9.0 to 12.0 mils DFT unless indicated otherwise.

(7) Acceptable Paint System Manufacturer(s) and Product(s): Tnemec Series 90-97 (primer coat), Series 66 (intermediate coat), Series 73 (finish coat); Induron P-14 Armorguard Primer (primer coat), Armorguard Polyamide Epoxy (intermediate coat), Indurethane 5500 (finish coat); Sauereisen 501 Conoweld Epoxy Primer

(primer coat, 8 mils DFT), 201 Conoglaze Epoxy (intermediate coat, 10 mils DFT), 310 Conothane Polyurethane (finish coat, 5 mils DFT); Carboline Carboguard 893 SG (primer coat), Carboguard 893 SG (intermediate coat), Carbothane 134 HG (finish coat) or approved equal.

3. Paint System No. 3: Buried ferrous metal surfaces except ductile iron pipe.

   a. Paint Application Schedule – Apply System No. 3 to the following ferrous metal surfaces:

      (1) Below grade and buried ferrous metal piping, sleeves, couplings, repair clamps, wall pipes, bolts and nuts, and other miscellaneous metals except ductile iron pipe.

   b. Paint System Description

      (1) General: Polyamide Epoxy-Coal Tar, 2-coat system.

      (2) Surface Preparation: SSPC-SP 10 for immersed or submerged service including buried below normal groundwater level. SSPC-SP 6 for non-immersed or buried above normal groundwater level.

      (3) Primer Coat(s): 1 coat @ 9.0 mils DFT (8.0 mils DFT minimum to 10.0 mils DFT maximum).

      (4) Finish Coat(s): 1 coat @ 9.0 mils DFT (8.0 mils DFT minimum to 10.0 mils DFT maximum).

      (5) Total Dry Film Thickness = 16.0 to 20.0 mils DFT.

      (6) Paint System Manufacturer and Product(s): Tnemec Series 46H-413 (primer and finish coats); Induron Ruff Stuff 2100 Coal Tar Epoxy (primer and finish coats); Carboline Bitumastic 300 M (primer and finish coats) or approved equal.

4. Paint System No. 4: Outdoor exposed copper, bronze, aluminum, and galvanized steel and other non-ferrous metal surfaces.

a. Paint System Schedule—Apply Paint System No. 4 to the following surfaces:

(1) Galvanized pipe and metal surfaces such as piping, pipe vents, supports, walkways, ladders, hangers, conduit supports, and other surfaces requiring painting to match adjacent painted surfaces.

(2) Copper surfaces requiring paint to match adjacent painted surfaces.

b. Paint System Description

(1) General: Polyamide Epoxy/Polyurethane, 3-coat system.

(2) Surface Preparation: Prepare surfaces in accordance with the Paint System Manufacturer's recommendations.

(3) Primer Coat(s): 1 coat @ 1.0 mil DFT (0.5 mil DFT minimum to 1.5 mils DFT maximum).

(4) Finish Coat(s): 1 coat @ 3.0 mils DFT (2.0 mils DFT minimum to 4.0 mils DFT maximum).

(5) Intermediate Coat(s): 1 coat @ 3.0 mils DFT (2.0 mils DFT minimum to 4.0 mils DFT maximum).

(6) Total Dry Film Thickness = 6.0 to 8.0 mils DFT.

(7) Acceptable Paint System Manufacturer(s) and Product(s): Tnemec Series 66 (Primer), Series 66 (intermediate coat), Series 73 (finish coat); Induron Armorguard Polyamide Epoxy (primer coat), Armorguard Polyamide Epoxy (intermediate coat), Indurethane 5500 (finish coat); Carboline Galoseal WB (primer coat), Carboguard 893 SG (intermediate coat), Carbothane 134 HG (finish coat) or approved equal.

5. Paint System No. 5: Galvanized metal surface repair.

a. Paint System Schedule – Apply Paint System No. 5 to the following surfaces:

(1) Galvanized metal surfaces with damaged, abraded, chipped, or marred galvanized surfaces.

b. Paint System Description

(1) General: Zinc-rich Aromatic Urethane, 1-coat system.

(2) Surface Preparation: Remove rust or corrosion, SSPC-SP 1.

(3) Primer Coat(s): 1 coat @ 3.0 mils DFT (2.0 mils DFT minimum to 4.0 mils DFT maximum) applied to damaged galvanized steel surface.

(4) Finish Coat(s): None.

(5) Acceptable Paint System Manufacturer(s) and Product(s): Tnemec Series 90-97 (primer coat); Induron Z-Rep 52 Primer; Carboline Carbomastic 15 (primer coat) or approved equal.

6. Paint System No. 6: Aluminum and dissimilar metals contact surfaces isolation.

a. Paint System Schedule – Apply Paint System No. 6 to the following surfaces:

(1) Aluminum hand rail anchorages, aluminum grating support frames, supports, slide gate frames, panel support posts, aluminum structures, and embedded aluminum items in contact with concrete and masonry.

(2) Aluminum handrail, grating, stair risers, and other aluminum items in contact with steel surfaces.

(3) The contact surface between dissimilar metals.

b. Paint System Description:

(1) General: Coal-Tar, 1-coat system.

(2) Surface Preparation: SSPC-SP 1.

(3) Primer Coat(s): 1 coat @ 11.0 mils DFT (10.0 mils DFT minimum to 12.0 mils DFT maximum).

(4) Finish Coat(s): If applied by brush, apply additional coats to obtain 10.0 to 12.0 mils DFT total.

(5) Acceptable Paint System Manufacturer(s) and Product(s): Tnemec Series 46H-413 (primer and additional coats if necessary); Induron Ruff Stuff 2100 Coal Tar Epoxy (primer and additional coats if necessary); Carboline Bitumastic 300 M (primer and additional coats if necessary) or approved equal.

7. Paint System No. 10: Fiberglass (where shown or specified) and polyvinyl chloride (PVC) surfaces exposed to direct or indirect sunlight (outdoor exposures).

a. Paint System Schedule – Apply Paint System No. 10 to the following surfaces:

(1) FRP enclosure, PVC piping and electrical conduit, junction boxes, terminal boxes, and other miscellaneous items.

b. Paint System Description:

(1) General: Polyamide Epoxy/Polyurethane, 2-coat system.

(2) Surface Preparation: As recommended by Paint System Manufacturers for application to new and existing PVC and fiberglass surfaces.

(3) Primer Coat(s): 1 coat @ 225 SFPG (200 SFPG minimum to 250 SFPG maximum).

(4) Finish Coat(s): 1 coat @ 375 SFPG (300 SFPG minimum to 450 SFPG maximum).

(5) Acceptable Paint System Manufacturer(s) and Product(s): Tnemec Series 66 (primer coats), Series 73 (finish coat); Induron Armorguard Polyamide Epoxy (primer coat), Indurethane 5500 (finish coat); Carboline Carboguard 893 SG (primer coat), Carbothane 134 HG (finish coat) or approved equal.

8. Paint System No. 21: Acid Resistant Submerged and Vapor Lining—submerged or intermittently submerged concrete in raw sewage and concrete surfaces subject to vapor phase exposure of raw sewage:

a. Paint System Schedule – Apply Paint System No. 21 to the following surfaces:

(1) All interior concrete surfaces continuously or intermittently in contact with severe wastewater and raw sewage (in Pumping Station wet well, and manholes continuously or intermittently in contact with raw sewage. Provide high abrasion resistance.

(2) All interior concrete surfaces continuously or intermittently exposed in vapor phase severe wastewater and raw sewage in Headworks Structure and Scum Pumping Station wet well (underside of the concrete roofs).

b. Paint System Description

(1) General: Epoxy Surfacer/Aliphatic amine epoxy mortar/Polyamine epoxy, 4-coat system.

(2) Surface Preparation: Abrasive blast or mechanically abrade to remove laitance, form release agents, curing compounds, sealers, fines, and other foreign contaminants to provide a surface profile in accordance with SSPC-SP13/NACE 6, ICRI CSP 3-5. All surfaces must be clean and dry prior to the application of any coatings.

(3) Epoxy Surfacer: The Contractor shall fill masonry surfaces and concrete surfaces that have pits, pockets, and bugholes following surface preparation with an

epoxy surfacer with a minimum solids volume of 100%. Apply one coat to fill voids, pores, and cracks and provide a minimum thickness of 1/8-inch. Apply according to the manufacturer's instructions.

(4) Prime Coat(s): Epoxy Mortar, one (1) coat @ 125 mils DFT.

(5) Intermediate Coat (s): one (1) coat @ DFT of 15.0-20.0 mils.

(6) Finish Coat (s): one (1) coat @ DFT of 15.0-20.0 mils.

(7) Acceptable Paint System Manufacturer(s) and Product(s): Tnemec 218 Mortar Clad (surfacer), Series 434 Perma-Shield H_2S modified aliphatic amine epoxy mortar (primer), Series 435 Perma-Glaze modified polyamine epoxy (intermediate and finish coats); Sauereisen F-121 Resurfacer @ 125 mils or 209HB Epoxy Filler @ 125 mils (surfacer), SewerGard Epoxy 210T @ 125 mils (primer coat), SewerGard Epoxy 210G @ 20 mils (intermediate and finish coat); Carboline Carboguard 510 or 510 SG (surface), Plasite 5371 (primer), Plasite 4500 S (intermediate and finish coats) or approved equal.

9. Paint System No. 23: Concrete interiors in contact with corrosive chemicals:

a. Paint System Schedule – Apply Paint System No. 23 to the following surfaces:

(1) All interior concrete surfaces continuously or intermittently in contact with sodium hypochlorite solution in sodium hypochlorite tank truck filling station, chemical building pump skids pipe trench, and sodium hypochlorite drain/overflow manhole.

b. Paint System Description

(1) General: Epoxy Surfacer/ Cycloaliphatic amine epoxy, 3-coat system, Carboline 4-coat system or Sauereisen 4-coat system as specified below.

(2) Surface Preparation: Surfaces shall be clean and dry. Allow new concrete to cure for 28 days. Abrasive blast clean per SSPC-SP6 (brush off blast).

(3) Epoxy Surfacer: The Contractor shall fill masonry surfaces
and concrete surfaces that have pits, pockets, and bugholes following surface preparation with an epoxy surfacer with a minimum solids volume of 100%. Apply one coat to fill voids, pores, and cracks and provide a minimum thickness of 1/8-inch. Apply according to the manufacturer's instructions.

(4) Primer Coat (s): one (1) coat @ DFT of 8.0-12.0 mils unless indicated otherwise.

(5) Finish Coat(s): one (1) coat @ DFT of 8.0-12.0 mils unless indicated otherwise.

(6) Acceptable Paint System Manufacturer(s) and Product(s): Tnemec 218 Mortar Clad (surfacer), series 61 cycloaliphatic amine epoxy (primer and finish coats); Carboline Semstone 800 Series Patching Mortar (surface), Plasite 800 Series Primer @ 5-6 mils (primer), Plasite 4007 @ 15-17 mils per coat (intermediate and finish coats); Sauereisen F-121 Resurfacer @ min. 125 mils or 209HB Epoxy Filler @ 125 mils (surface), 550 VE Prime @ 3 mils (primer coat), Fiberline 440 Vinyl Ester @ 31 mils (intermediate coat), VE Glaze 472 @ 7 mils (finish coat); or approved equal.

10. Paint System No. A1: New and Existing Gypsum Wallboard and Plaster; Interior:

a. Paint System Schedule - Apply Paint System No. A1 to the Administration Building interior new and existing gypsum wallboard and plaster.

b. Paint System Description

(1) General: Acrylic, 3-coat system.

(2) Surface Preparation: Comply with manufacturer's published recommendations for material and surface condition.

(3) Primer: Minimum 30% solids, 100% acrylic, primer-sealer; 50 grams per liter VOC, maximum. 1 coat @ 0.8 mils DFT.

(4) Finish: Eggshell/Satin: Minimum 34% solids, 100% acrylic latex; 50 grams per liter VOC, maximum. 2 coats, 1.2 mils DFT per coat.

(5) Acceptable Paint System Manufacturer(s) and Product(s): Benjamin Moore Eco Spec Latex 231 (primer coat), Eco Spec Latex 223 (finish coats); Sherwin Williams Harmony Low Odor Interior Latex Primer (primer coat), Harmony Low Odor Interior Latex Eggshell (finish coats); Carboline Sanitile 120 (primer coat), Sanitile 155 (finish coats).

11. Paint System No. A2: New and Existing Wood; Interior:

a. Paint System Schedule - Apply Paint System No. A2 to the Administration Building interior new and existing wood.

b. Paint System Description

(1) General: Acrylic, 3-coat system.

(2) Surface Preparation: Comply with manufacturer's published recommendations for material and surface condition.

(3) Primer Coat(s): Minimum 30% solids, 100% acrylic, primer-sealer; 50 grams per liter VOC, maximum. 1 coat @ 0.8 mils DFT.

(4) Finish Coat(s): Minimum 34% solids, 100% acrylic latex, semi-gloss; 50 grams per liter VOC, maximum. 2 coats, 1.4 mils DFT per coat.

(4) Acceptable Paint System Manufacturer(s) and Product(s): Benjamin Moore Eco Spec Latex 231 (primer coat), Eco Spec Latex Enamel 224 (finish coats); Sherwin Williams Harmony Low Odor Interior Latex Primer (primer coat), Harmony Low Odor Interior Latex Semi-Gloss (finish coats); Carboline Sanitile 120 (primer coat), Carbocrylic 3359 (finish coats).

12. Paint System No. A4: Structural steel and metal trim surfaces.

a. Paint System Schedule - Apply Paint System No. A4 to the following surfaces:

(1) Metal doors and frames.

(2) Building trim, soffits, and fascia.

(3) Bollards, miscellaneous steel items.

b. Paint System Description

(1) General: Polyamide Epoxy/Polyurethane, 3-coat system.

(2) Surface Preparation: SPCC-SP6.

(3) Primer Coat(s): 1 coat @ 4.0 mils DFT (3.0 mils DFT minimum to 5.0 mils DFT maximum).

(4) Intermediate Coat(s): 5.0 mils DFT (4.0 mils DFT minimum to 6.0 mils DFT maximum).

(5) Finish Coat(s): 1 coat @ 2.5 mils DFT (2.0 mils DFT minimum to 3.0 mils DFT maximum).

(6) Total Dry Film Thickness = 9.0 to 12.0 mils DFT.

(7) Acceptable Paint System Manufacturer(s) and Product(s): Tnemec Series 66-1211 (primer coat),

Series 66- color (intermediate coat), Series 73 (finish coat); Induron P-14 Armorguard Primer (primer coat), Armorguard Polyamide Epoxy (intermediate coat), Indurethane 5500 (finish coat); Carboline Carboguard 893 SG (primer and intermediate coats), Carbothane 134 HG (finish coat) or approved equal.

13. Paint System No. A5: Concrete floor surface clear sealant.

    a. Paint System Description

        (1) General: Polyamide Epoxy, 1-coat system.

        (2) Surface Preparation: Prepare concrete floor surfaces in accordance with the Paint System Manufacturer's recommendations.

        (3) Primer Coat(s): 1 coat @ 140 SFPG (130 SFPG minimum to 150 SFPG maximum) unless indicated otherwise.

        (4) Finish Coat(s): None.

        (5) Acceptable Paint System Manufacturer and Product(s): Tnemec Series 201 (primer-seal coat); Induron Armorguard Epoxy Clear (primer-seal coat); Sauereisen Conospread 256 @ 12 mils; Carboline Carboguard 1340 @ 3-4 mils or approved equal.

14. Paint System No. A6: Concrete waterproofing: One coat, minimum 25 lbs per square yard of Thoroseal by Thoro System Products; or Sauereisen H2OPRUF F-190 @ 125 mils (two 1/16-inch coats); or approved equal.

15. Paint System No. A7: Primer over bituminous coating: two-coat system, Tnemec series 66 or Carboline Carboguard 890 at 4.0 mils DFT each. Allow bituminous coating to bleed through on first coat. Apply second coat, third coat shall be per service condition schedule.

3.10 COLOR CODE SCHEDULE

A. All equipment and pipe shall be painted solid, using a color code according to the following scheme. Safety color coding and marking of physical hazards shall be in accordance with ANSI Z53.1.

B. Description:

Building	Color Name
Interior, exterior	Color selected by Owner

Equipment and Piping	Color Name
All equipment, piping, valves, supports	Match existing and as picked by Owner

Special Piping	Color Name
Chlorine Solution	Safety Yellow

END OF SECTION

SECTION 01150
MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SCOPE

A. The scope of this section of the Contract Documents is to further define the items included in each Bid Item in the Bid Form section of the Contract Documents. Payment will be made based on the specified items included in the description in this section for each bid item.

B. All contract prices included in the Bid Form section will be full compensation for all shop drawings, working drawings, labor, materials, tools, equipment and incidentals necessary to complete the construction as shown on the Drawings and/or as specified in the Contract Documents to be performed under this Contract. Actual quantities of each item bid on a unit price basis will be determined upon completion of the construction in the manner set up for each item in this section of the Specifications. Payment for all items listed in the Bid Form will constitute full compensation for all work shown and/or specified to be performed under this Contract.

1.02 ESTIMATED QUANTITIES

The quantities shown are approximate and are given only as a basis of calculation upon which the award of the Contract is to be made. The County does not assume any responsibility for the final quantities, nor shall the Contractor claim misunderstanding because of such estimate of quantities. Final payment will be made only for satisfactorily completed quantity of each item.

1.03 WORK OUTSIDE AUTHORIZED LIMITS

No payment will be made for work constructed outside the authorized limits of work.

1.04 MEASUREMENT STANDARDS

Unless otherwise specified for the particular items involved, all measurements of distance shall be taken horizontally or vertically.

1.05 AREA MEASUREMENTS

In the measurement of items to be paid for on the basis of area of finished work, the lengths and/or widths to be used in the calculations shall be the final dimensions measured along the surface of the completed work within the neat lines shown or designated.

1.06 LUMP SUM ITEMS

Where payment for items is shown to be paid for on a lump sum basis, no separate payment will be made for any item of work required to complete the lump sum items. Lump sum contracts shall be complete, tested and fully operable prior to request for final payment. Contractor may be required to provide a break-down of the lump sum totals.

1.07 UNIT PRICE ITEM

Separate payment will be made for the items of work described herein and listed on the Bid Form. Any related work not specifically listed, but required for satisfactory completion of the work shall be considered to be included in the scope of the appropriate listed work items.

No separate payment will be made for the following items and the cost of such work shall be included in the applicable pay items of work. Final payments shall not be requested by the Contractor or made by the County until as-built (record) drawings have been submitted and approved by the County.

1. Shop Drawings, Working Drawings.
2. Clearing, grubbing and grading except as hereinafter specified.
3. Trench excavation, including necessary pavement removal and rock removal, except as otherwise specified.
4. Dewatering and disposal of surplus water.
5. Structural fill, backfill, and grading.
6. Replacement of unpaved roadways, and shrubbery plots.
7. Cleanup and miscellaneous work.
8. Foundation and borrow materials, except as hereinafter specified.
9. Testing and placing system in operation.
10. Any material and equipment required to be installed and utilized for the tests.
11. Pipe, structures, pavement replacement, asphalt and shell driveways and/or appurtenances included within the limits of lump sum work, unless otherwise shown.
12. Maintaining the existing quality of service during construction.
13. Maintaining or detouring of traffic.
14. Appurtenant work as required for a complete and operable system.
15. Seeding and hydromulching.
16. As-built Record Drawings.

1.08 BID ITEM NO. 1 - MOBILIZATION

Measurement and payment for this Bid Item shall include full compensation for the required 100 percent (100%) Performance Bond, 100 Percent (100%) Payment Bond, all required insurance for the project and the Contractor's mobilization and demobilization costs as shown in the Bid Form. Mobilization includes, but it not limited to: preparation and movement of personnel, equipment, supplies and incidentals such as safety and sanitary supplies/ facilities

Payment for mobilization shall not exceed 10 percent (10%) of the total Contract cost unless the Contractor can prove to the County that his actual mobilization cost exceeds 10 percent (10%).

Partial payments for this Bid Item will be made in accordance with the following schedule:

Percent of Original Contract Amount:	Percent Allowable Payment of Mobilization/Demobilization Bid Item Price:
5	25
10	35
25	45
50	50
75	75
100	100

These payments will be subject to the standard retainage provided in the Contract. Payment of the retainage will be made after completion of the work and demobilization.

1.09 BID ITEM NO. 2 – SEPTAGE AND GREASE RECEIVING STATION

A. Description: Payment for this item shall include all costs to furnish all labor, materials, equipment, spare parts, operation and maintenance manuals, training, and incidentals required for the complete construction of the septage / grease receiving station at the Southeast WRF. This item shall include but not be limited to clearing; sheeting, shoring and bracing; dewatering, excavation; backfill, compaction, installation of septage and grease screens, dumpsters, grating, magnetic flow meters, piping, spray water system, tankless hot water system, concrete channels, concrete manholes, trench drains, metal canopy, concrete slabs and equipment pads, hoses, yard hydrants, painting, and all other work and miscellaneous equipment. All work and equipment needed for a complete and functional system which is not specifically included in another bid item shall be furnished and installed under this bid item.

B. Measurement: The quantity to be paid for under this item shall be measured as one lump sum.

C. Payment: Payment shall be made at the lump sum price, and includes furnishing all equipment, labor, materials and performing all necessary work and incidental operations to construct a fully operable and complete septage / grease receiving station as shown on the Drawings.

1.10 BID ITEM NO. 3 – GREASE DEWATERING SCREW PRESS

A. Description: Payment for this item shall include all costs to furnish all labor, materials, equipment, spare parts, operation and maintenance manuals, training, and incidentals required for the complete construction of the grease dewatering screw press at the Southeast WRF. This item shall include but not be limited to clearing; sheeting, shoring and bracing; dewatering, excavation; backfill, compaction, installation of volute dewatering press, polymer feed equipment, polymer storage totes, polymer feed platform, progressive cavity transfer pumps, magnetic flow meter, concrete pads, trench drains, and all other work and miscellaneous equipment. All work and equipment needed for a complete and functional system which is not specifically included in another bid item shall be furnished and installed under this bid item.

B. Measurement: The quantity to be paid for under this item shall be measured as one lump sum.

C. Payment: Payment shall be made at the lump sum price, and includes furnishing all equipment, labor, materials and performing all necessary work and incidental operations to construct a fully operable and complete dewatering screw press and polymer system as shown on the Drawings.

1.11 BID ITEM NO. 4 – VACUUM TRUCK RECEIVING AREA

A. Description: This bid item describes measurement and payment for construction of the vacuum truck receiving area complete.

B. Measurement: The quantity to be paid for under this item shall be measured as one lump sum.

C. Payment: Payment for the lift station will be made at the lump sum price and shall include all labor, equipment, and incidentals required for the construction of the vacuum truck receiving area complete including clearing; sheeting, shoring and bracing; dewatering, excavation; backfill, compaction, installation of roll-off filter, concrete slabs, concrete ramp, curb, metal canopy, aluminum stairs, cam-lock, trench drain, site work, and all other work and equipment required for a full, operable, and complete vacuum truck receiving area as shown on the Drawings and as specified herein.

1.12 BID ITEM NO. 5 – LIFT STATION

A. Description: This bid item describes measurement and payment for construction of the lift station associated with the septage / grease receiving station complete.

B. Measurement: The quantity to be paid for under this item shall be measured as one lump sum.

C. Payment: Payment for the lift station will be made at the lump sum price and shall include all labor, equipment, and incidentals required for the construction of the lift station complete per Manatee County standards as shown in the Contract Documents. Payment shall include clearing; sheeting, shoring and bracing; dewatering, excavation; backfill, compaction, trenching, bedding and backfill; compaction and testing; protection and adjusting of existing above ground and underground utilities; disposal of soil; hydrostatic testing; flushing, pigging, cleaning, erosion and sedimentation control; protection of culverts and drainage facilities, construction of the new lift station complete with concrete wet well, protective liner, submersible chopper pumps (2), floats, rails, piping, valves, valve vault, fittings, restraints, adapters, pipe supports, bypass assembly, hatches, concrete slabs, site work, water service connection and backflow preventer, eyewash station, cleaning and testing, all restoration including but not limited to sidewalks, curbs, asphalt, sod, etc; and all other work and equipment required for a full, operable, and complete lift station installation as shown on the Drawings and as specified herein.

1.13 BID ITEM NO. 6 – GLASS FUSED TO STEEL STORAGE TANKS

A. Description: This bid item describes measurement and payment for construction of two (2) glass-fused-to-steel wastewater storage tanks.

B. Measurement: The quantity to be paid for under this item shall be measured as one lump sum.

C. Payment: Payment for the storage tanks will be made at the lump sum price and shall include all labor, materials, equipment, and incidentals required for the fabrication and erection of the two glass-fused-to-steel wastewater storage tanks complete including clearing; sheeting, shoring and bracing; dewatering, excavation; backfill, compaction, testing; disposal of soil; concrete foundation and footer, factory coated bolted steel tank assembly, geodesic aluminum roof, aluminum gravity vent assembly, aluminum ladder and safety cage, steel platform, guardrails, manways, cathodic protection, piping connections, level sensors, cleaning and testing, all restoration including but not limited to sidewalks, curbs, asphalt, sod, etc; and all other work and equipment required for two (2) fully operable and complete glass-fused-to-steel storage tank installations as shown on the Drawings and as specified herein.

1.14 BID ITEM NO. 7 – YARD PIPING

A. Description: This item shall include but not be limited to furnishing and installing pipe and fittings of the size and material indicated on the Drawings. This item includes all necessary labor, equipment and materials for the furnishing, laying of the pipe, construction stakeout, installing and maintaining silt fence, erosion control, clearing and grubbing, fittings, joint restraint, maintenance of traffic, dewatering, compaction, pipe bedding, backfilling, sheeting, tracer wire, poly wrap, clamps, harnessing, supports, hangers, plugs and caps, adapters, excavation of all material encountered including rock, bedding, backfill, site grading, seeding and mulching, replacement of grass, sod, pavement, driveways, sidewalks, and other surface materials not specifically designated in the Bid, clean-up, line flushing, pressure testing, connections to existing pipes, and painting of the exterior surfaces.

B. Measurement: The quantity to be paid for under this item shall be measured as one lump sum.

C. Payment: Payment will be made at the lump sum price, with a percentage of the lump sum being paid periodically based on the percentage of the total construction completed, and includes furnishing all equipment, labor, materials and performing all necessary work and incidental operations to furnish and install fully operable and complete yard piping as specified herein.

1.15 BID ITEM NO. 8 – SITE IMPROVEMENTS

A. Description: This item shall include but not be limited to furnishing and installing miscellaneous site improvements including grading, site drainage and associated , concrete paving, asphalt pavement, pavement striping, concrete sidewalk, concrete curb, landscaping, and sod.

B. Measurement: The quantity to be paid for under this item shall be measured as one lump sum.

C. Payment: Payment will be made at the lump sum price, with a percentage of the lump sum being paid periodically based on the percentage of the total construction completed, and includes furnishing all equipment, labor, materials and performing all necessary work and incidental operations to furnish and install fully operable and complete site improvements as specified herein.

1.16 BID ITEM NO. 9 – ELECTRICAL AND INSTRUMENTATION

A. Description: This item shall include but not be limited to furnishing all labor, materials, equipment, instrumentation, controls, spare parts, and incidentals required for a complete and functional septage/grease receiving system

including all electrical equipment, panels, electrical panelboards, cabinets, PLCs, circuit breakers, transformers, disconnects, variable frequency drives, starters, wiring, conduit, switches, fiber optic cable, intercom system, grounding, lighting, connections to electrically operated equipment, tie in to existing plant SCADA system, installation of new electrical equipment in the MCC /Blower Building No. 2, programming, testing and start-up, and any other miscellaneous equipment needed for a complete electrical/instrumentation installation. Any electrical work or equipment which is not specifically included in another bid item shall be furnished and installed under this Pay item.

B. Measurement: The quantity to be paid for under this item shall be measured as one lump sum.

C. Payment: Payment will be made at the lump sum price, with a percentage of the lump sum being paid periodically based on the percentage of the total construction completed, and includes furnishing all equipment, labor, materials and performing all necessary work and incidental operations to furnish and install fully operable and complete electrical and control systems for the septage / grease receiving station.

1.17 BID ITEM NO. 10 – SECURITY CAMERAS

A. Description: This item shall include but not be limited to furnishing all labor, materials, equipment for furnishing and installing the security cameras for the project.

B. Measurement: The quantity to be paid for under this item shall be measured as one lump sum.

C. Payment: Payment will be made at the lump sum price, with a percentage of the lump sum being paid periodically based on the percentage of the total construction completed, and includes furnishing all equipment, labor, materials and performing all necessary work and incidental operations to furnish and install fully operable and complete security cameras.

1.18 BID ITEM NO. 11 - OWNER'S CONTINGENCY

A. Description: The work covered by this item consists of unforeseen items of work not included in other bid items but necessary for accomplishing the work and shall apply only to extra work or additional items over and above those specified or shown on the plans. The cost of this additional work shall be agreed upon in writing and approved by the Owner or his authorized representative prior to starting this additional work. The value of the work shall be based on unit prices or similar bid items called for in the proposal.

B. Measurement: The quantities of unspecified work to be paid under this item shall be measured in place, completed and accepted.

C. Payment: The Owner has calculated this item on the Bid Form, and has established the item total to be used in calculating the total Base Bid. This item will be treated as a contingency, against which the Owner at his discretion may direct additional work required during the course of the project to facilitate the project. The additional work shall be agreed upon in writing and approved by the Owner. The final project change order shall include all additional costs approved under the contingency.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION