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August 25, 2020

ADDENDUM #6

TO THE CONTRACT DOCUMENTS FOR THE CITY OF PALM BAY

Project Name & Number:
IFB # 39-0-2020/JG, South Regional Water Reclamation Facility Construction

FROM: City of Palm Bay
120 Malabar Road SE
Palm Bay, FL 32907

TO: All Parties Holding Specifications

The purpose of this addendum is to provide the following changes, modifications and/or additions to the contract documents and technical specifications.

CLARIFICATION: The Summary of Pay Items, pages 29-30 of the IFB has been REVISED. See this Addendum, page 37 – 38. Use ONLY this revised Summary of Pay Items to submit with your bid.

QUESTIONS RECEIVED:

Q1. Below list questions regarding control system:

a. **In Attachment D Section 13453 2.02 A PLC is called out as Modicon hardware for the PLC and I/O cards. However, in Section 11500 2.06.A.6 it calls "wires to the control panel shall be terminated to Allen Bradley FlexLogix". Please clarify.**

b. **The RFP states, in Section 13452 1.01.A that the "CONTRACTOR" is to supply all hardware and software. Please clarify the two following areas of the specifications that potentially conflict with this.**
   - **In Section 11500 1.01.B.11 the MBR System Supplier scope includes "SCADA and PLC programming". Please confirm this is limited to programing of the "MBR Control System".**
   - **In Section 13452 2.03 A and 2.03 B the specification indicates that the SUPPLIER is to provide the PC and SCADA software. Please confirm these items are being provided by the Contractor and not the MBR System Supplier.**

c. Section 11500 1.01.B.11 states that the MBR System Supplier shall provide both an "MBR control center panel" and a "MBR PLC Control Panel". We believe the intent of the specifications is to have a single control panel for the MBR system as outlined in Specification 11500 2.06A 6. Please confirm that the MBR System Supplier shall provide a single control panel for the MBR system, and that the MCC will be provided by others.

d. Please confirm that all VFD's will be provided by others.

A1. The PLC shall be manufactured by Modicon per Specification Section 13453.
The MBR System Supplier shall provide an MBR PLC Control Panel.
The MCC is not required to be provided by the MBR System Supplier. The Contractor is responsible for providing all equipment and materials necessary to complete the work. How acquisition of equipment is conveyed to subcontractors is the responsibility of the Contractor.

Q2. Regarding turbidity meter for MBR permeate system, in Attachment D Section 13451-6 it called for HACH Turbidimeter Model 1720, but this model is discontinued. We suggest HACH TU5300sc online laser turbidimeter instead.

A2. In Specification Section 13451-6 "Acceptable Manufacturers", replace the Hach 1720 Turbidimeter with the Hach TU5300sc Online Laser Turbidimeter. Replace the Hach SC100 Controller with the Hach SC4200C Controller.

Q3. Regarding level transmitter, in Attachment D Section 13451-7 it stated submersible pressure level transmitter to be used in mixed liquor, but in Attachment E Page 168 it illustrated the level sensor to (tag # LE-04011A1) be ultrasonic level transmitter. Please clarify.

A3. For Level Sensor tag LE-04011A1, in Specification Section 13451-7 "Acceptable Manufacturers", replace the Blue Ribbon Corporation "Bird Cage" model with Siemens HydroRanger 200 HMI Transmitter and Siemens Echomax Transducer.

Q4. Regarding process air flow meter, in Attachment D Section 13451-8 it stated the flow meter should be insertion thermal mass type, but in Attachment E Page 177 it illustrated the flow meter (tag # FM-100101A) to be magnetic type. Please clarify.

A4. The process air flow meter (tag FE-100101A) shall be an insertion thermal mass type as listed in Specification Section 13451-8 and not a magnetic type flowmeter as shown on drawing I-14.

Q5. Regarding process air flow control valve, in Attachment D Section 11500-2 and 11500-15 it stated the actuated valve to be supplied by MBR system supplier, but in Attachment E Page 177 it showed that the actuated valve (tag # V-100104A) to be supplied by the Contractor. Please confirm.

A5. It is the intent of the engineer that the air flow control valves should be supplied to the Contractor by the MBR system supplier. The Contractor is responsible for providing all equipment and materials necessary to complete the work. How acquisition of equipment is conveyed to subcontractors is the responsibility of the Contractor.

Q6. **Regarding sludge blower flow meters, in Attachment E Page 178 it they illustrated as magnetic type flow meter (tag # FE-110101A and FE-110102A). We believe these should be thermal mass type flow meters. Please confirm.**

A6. The process air flow meters (tags FE-110101A and FE-110102A) shall be an insertion thermal mass type as listed in Specification Section 13451-8 and not a magnetic type flowmeter as shown on drawing I-15.

Q7. **Regarding membrane permeate pumps, in Attachment D Section 11220-10 it stated 4 duty pumps, but it also stated PMP-08001B4 to be spare pump. From the drawings (Attachment E) there are 4 membrane permeate pumps and seem to be 4 duty pumps. Please confirm.**

A7. P-12 shows four installed PERM PUMPs, each train has two pumps, each pump can handle 100% of the flow from that train. There is one duty and one stand-by for each train.

Q8. **Specification Section 11200**

Section 11200 on the bottom right side of each page are the words "Not for Bid Set". Is this section correct offering for bid?

A8. Revise Section 11200 – Vertical Turbine Pumps to remove “Not for Bid Set.”

Q9. **Please confirm applicable section as may be required, such as, 09900 painting for epoxy coating inside and outside column, inside discharge head and outside bowl?**

A9. Specification section 11200 will be modified with the following changes:
The following subsection will be inserted after Part 1.01:

“1.02 RELATED WORK SPECIFIED ELSEWHERE
A. Division 1: General Requirements
B. Section 11005: Process Equipment General Requirements
C. Section 16010: Electrical General Requirements”

All subsequent subsections will be renumbered accordingly. (i.e. QUALITY ASSURANCE will be renumbered to 1.03, PERFORMANCE to 1.04, etc.)

Q10. **Part 1.01 and 2.0IB.8.c. and Drawing E7**

a. Are these pumps variable speed?
b. Should a computer generated head lateral analysis be performed on the motor and pump head showing no resonant frequencies 15% above full speed and 20% below minimum speed and submitted for approval?

A10.
a. Both sets of pumps are on VFDs. Please refer to the P&ID drawings.
b. The limits of vibration as set forth in the standards of the Hydraulic Institute shall be followed, please refer to ANSI/HI 9.6.4. Additional resonance testing is not required.

Q11. **Part 1. 1.01, 1.03 A. and 1.04.A.**
Please confirm there are four (4) pumps total Two (2) CCC Effluent and Two (2)

HSP Deep Well Injection. Comment: DWG P-18 to show three (3) effluent transfer pumps?

A11. Revise both the drawings and specifications for the CCC effluent pumps to 2 duty, 1 standby.

Revise both the drawings and specifications for the High Service Pumps to 2 duty, 1 standby.

Revised sheets include: G-3, C-16, C-22, P-26, E-7, E-19, I-22

Q12. 2.01.B.2.c. and 2.01.B.8.c., d.
Please confirm if vertical motors are Vertical Solid Shaft?

A12. Please provide motors with vertical hollow shafts.

Q13. 2.01.B.5.b and c.
Shall the wear ring have a difference in Brinell Hardness of 50 BHN, the bowl wear ring being the harder of the two?

A13. Not necessary. Both wear rings shall be bronze conforming to ASTM, B505 C93200.

Q14. 2.01.B.7.b. and c.
Should the line shaft material be upgraded to read "416 stainless steel"? Shall the couplings be upgrade to 416 stainless steel material?

A14. Yes, revise Section 11200, Part 2.01.B.7 to reflect this change.

Q15. 2.01.B.8.a. and DWG E7
If the pumps are variable speed shall the pump heads be fabricated steel in order to modify fabrication and deter any potential resonant frequencies? Comment: Cast Iron heads are not typically welded on?

A15. Please refer to Section 11200, Part 2.01.B.8.c:
"If the application uses a variable frequency drive, the discharge head shall be fabricated steel and specifically designed to elevate the discharge head natural frequency above the operating speed."

Q16. 2.01.B.8 and 2.01.B.8.e and f.
Please confirm if shaft sealing is to be mechanical seal or packing? If mechanical seal shall the solid shaft driver be fitted to the pump shaft using a four (4) piece adjustable coupling to allow removal and maintenance to seal without removing motor.

A16. Shaft sealing shall be done using mechanical seals. The proposed seal design shall be as per the recommendations of the pump manufacturer.

Q17. 2.01.8.d.
If the application is for mechanical seal shall the seal piping be included and conform to API piping plan 13.

A17. Recommended API plans are Plan 13 for vertical pumps and Plan 11 for horizontal pumps. Other plans may be proposed on a case-by-case basis and are subject to the approval of the ENGINEER.

Q18. **2.01.8.d.**
If mechanical seal is to be supplied, please confirm seal may be Chesterton type 155 or similar John Crane?

A18. Chesterton, John Crane or similar are acceptable manufacturers.

Q19. **2.01.9**
Shall pump be field tested by manufacturer for full spectrum vibration at design condition?

A19. Only the performance tests outlined in Section 11200, Part 3.04 are required.

Q20. **2.01 or other**
Please confirm the suction barrel to be fabricated in accordance with H.I.S and bowl inlet shall be located 2 times barrel diameter below the bottom suction invert of the barrel?

A20. Pump intakes for vertical turbine pumps to be designed per section 9.8.3.6 of the HI 9.8 standard.

Q21. **Please confirm the barrel shall be epoxy coated? (reference to 09900 Paint?)**

A21. Add paragraph to 09900, 2.02:

L. Exposure – Metals, Immersion
1. All metal surfaces coming into contact with the pumped media, other than stainless steel and/or brass, shall be protected by a factory-applied spray coating of acrylic dispersion zinc phosphate primer with a polyester resin paint finish or two-part epoxy on the exterior of the pump.
2. All coatings are to be suitable for extended contact with the fluid being pumped.
3. Other manufacturer-standard coatings of equal standing may be proposed and are subject to the approval from the ENGINEER.

Q22. **Comment: Note 5. The barrel at 24 inches design may not permit upsizing a future pump unless barrel is designed for said pump? Is there a future condition the barrel should be designed for so the correct design and velocity may be provided?**

A22. No need to provide for future expansion with this pump.

Q23. **Vertical Turbine Pump Drawings:**

DWG P-18

Is there to be an ARV installed before check valve and before 90 degree elbow of the transfer pumps?

DWG P-26 Section B.

a. **Please confirm if ARV required in pump discharge pipe and in connecting manifold?**
b. **Is ARV required in section A.?**

c. Is barrel to be vented?
d. Shall barrel incorporate a bottom plate for mounting?

A23.
a. DWG P-18: There should be an ARV before the check valve on the discharge of each pump. This is typical for all three pumps in parallel. No other ARVs are required on this drawing.
b. DWG P-26: There should be only be one ARV on the 24" common header before the flowmeter. This valve is shown in Section B. No other ARVs are required on this drawing.
c. Please include barrel vent piping.
d. Pump shall be anchored to the ground and installed as shown in details on drawings P-18 & P-26. Primary anchoring shall be on the above-ground discharge head assembly which shall be of sufficient design to support the entire weight of the pump and driver. If a barrel is required as indicated on the construction drawings, it shall be installed as per the manufacturer's recommendations.

Q24. **Specification 16460 Electric Motors and DWG E-7**

1.04.A.1 DWG E-7
Are motors for section 11200 to be inverter duty motors?

A24. Please use inverter duty, premium efficiency motors for all VFD-driven pumps per Section 16460, Part 2.02.H.

Q25. **1.05.A, B. and D.**
Please confirm each motors shall have a full scale test or a short commercial test?

A25. Only a standard short commercial test is required for each motor.

Q26. **2.01.C.**
Please all confirm all vertical motors shall be premium efficiency

A26. All motors shall be premium efficiency if operated on a VFD (per Specification Section 16460, 2.01,C). Any motor above 20 HP shall be premium efficiency (per Specification Section 16460, 2.02,G,3).

Q27. **2.01.E.**
Q. Please confirm the motor thrust bearing for vertical motors shall be spherical ball or angular contact?

A27. In accordance with the specifications, motor thrust bearings for vertical motors shall be either spherical ball or angular contact as required to obtain the specified life.

Q28. **2.01.E.**
Q. Please confirm Inverter duty motors are to incorporate bearing isolators and grounding rings to protect against stray current generated by inverter drive?

A28. Inverter duty motors shall be furnished with bearing isolators and grounding rings to protect against stray currents.

Q29. **2.01.E.**
Please confirm vertical motors shall be High Thrust design?

A29. Vertical motors shall be High Thrust design.

Q30. **2.01.H.**
Shall 120 volt space heaters be provided?

A30. Only “Open Drip Proof” type motors, if listed as acceptable in other equipment specifications, shall be provided with 120 volt space heaters.

Q31. **2.01.J.**
Shall Vertical motors incorporate non reverse ratchets?

A31. Yes.

Q32. **2.01.K.**
Per motor manufacturer please confirm it is acceptable sound test for Inverter rated motors under inverter power may not meet this requirement.

A32. Motors operating on inverter power are exempt from the sound test listed in 2.03, K.

Q33. **Specification Section 11740 Biological Odor Control System**

Section 1.05.A.2. and 2.02.A.
Perry would like to ask if paragraph 1.05.A.2. Is acceptable to meet requirements?

A33. The requirements of both sections 1.05.A.2 and 2.02.A must be met.

Paragraph 2.02.A will be revised to the following:
“The biological odor control system Manufacturer shall be experienced in the design, manufacture, installation, and operation of biotrickling filters designed to remove hydrogen sulfide and organic RSCs from municipal water and wastewater odor sources. The System Manufacturer shall have a minimum of ten (10) years of experience producing substantially similar equipment and shall show evidence of at least ten (10) systems (using the media specified herein) treating a minimum of 10,000 cfm in satisfactory operation for at least five (5) years in the United States.”

Q34. **1.07, paragraph 1, 2, 3. and 3.06**
Perry Fiberglass Products, based on its experiences and knowledge of odor control systems, asks the specification include, that the odor control system manufacture establish a working log to be kept for one year by the manufacturer's technical field services and turned over to the owner after the first year of operation? That the odor control manufacturer visit the site after successful start up four (4) times in that one year period, one visit per quarter. For the purpose to come alongside training owner personnel in operation and maintenance, logging data, so that the owner may understand the requirements to establish good record keeping in order that the warranty may be maintained on vessel, media, and process for a period of Five (5) years and irrigation spray nozzles for clogging for 10 years?

A34. No changes to the specification will be made at this time.

Q35. **1.05.6**
Perry Fiberglass Products would like to confirm that the odor control manufacture shall provide CFD (Computational Fluid Dynamic) analysis by Auto Desk or similar software for proof of design air flows?

A35. Confirmed.

Q36. **2.05 A.**
Perry would like to ask if FRP ladder with OSHA safety cage should be provided, to allow access to upper spray irrigation manifold, inspection covers and gasketing without independent lifting equipment on odor control vessels?

A36. Please provide standard FRP ladder with OSHA safety cage.

Q37. **2.05.B., parag. 5. And 1.07 parag. 2**
Q. Perry Fiberglass Products would like to ask is media 5 year or 10 year life without fouling?

A37. 1.07 requires media material warranty for 5 years. 2.05 requires performance without clogging for 10 years.

Q38. **2.05.D.1, 2. and 3.**
Perry would like to confirm that all wiring conduits for solenoids or other wired devices from the WCP to the ECP including conduits from the ECP to the main shall be sealed by the contractor in order to protect fan motor, motor starters and as may be required from irrigation water. Further should there be NEMA drains installed in the WCP and or the ECP?

A38. Yes, all conduits between the ECP and WCP shall be sealed along with conduits from the WCP and ECP to field devices such as the solenoids and fan motor. A NEMA drain shall be installed in the bottom of the WCP to drain any water leakage within the panel.

Q39. **2.05. E. Grease Mist eliminator?**
Q. Perry would like to ask if a FRP grease eliminator should be provided on inlet suction side of the blower, as close to the source as practical, for the purpose to protect inside duct, blower wheel (impeller), dampers, and first contact medias from possible contaminants that may affect these devises, process operation and ultimately contribute to foul air source. If such devise is to be provided shall it include a drain, removable stainless steel and poly mesh woven filter, magnahelic to measure delta in inches of water column and stand for mounting and fitting to FRP Duct nozzles?

A39. Please provide FRP grease mist eliminator with the following items as a minimum: drain, removable stainless steel filter, magnahelic gauges to measure pressure drop in inches of water column, and stand for mounting and fitting to FRP duct nozzles. Filters shall be reusable and able to be cleaned with pressurized water & detergent. The pressure drop across the grease mist eliminator shall not exceed 0.5 inches of water column static pressure when operating at the design flowrate of 9,000 CFM. The mist eliminator shall be part of the odor control system and the entire system as a whole shall be provided by a single vendor. The vendor shall be responsible for ensuring the pressure drop across the system is suitable for operating within the required design parameters.

Q40. **2.05.F. 1. 6., 1.03, and 1.01.B.5.**
Perry would like to ask if a recirculation system is to be considered, after bid, will this allow for the system to become an acidic bed design affecting the intent of the process?

A40. There is no intention of recirculating the liquid being discharged to drain. External water will be supplied to the unit for irrigation.

Revise 11740.1.01. To read in its entirety, "The System is designed as a once-through, non-recirculating system."

Section will be revised to delete other references to recirculation system.

Q41. **Specification 11320 Rotary Drum Screen**

2.02.C.
Q. DryCake Unidrum manufacturing would like to ask if a distribution plenum of 316 stainless steel allowing improved velocity for even flow and spread of material through the unit would be acceptable?

A41. Refer to Article 30 (Substitute Material and Equipment) of the Invitation for Bid document (starts on page 21).

Q42. **2.02.1.**
Drycake Unidrum manufacturing would like to ask if a 1 inch coupling connection allowing for increase pressure is acceptable?

A42. Note: We assume this question is with reference to subsection 2.02.I. SPRAY SYSTEM. If this is the case, the answer is as follows:

A 1" NPT coupling is acceptable. Manufacturer is to provide information on the required pressure and flow of water to each rotary screen.

If this question is not with reference to subsection 2.02.I., it will be considered during shop drawing review.

Q43. **2.02.K., L, and M.**
Drycake is asking if a bull gear drive design utilizing a 2HP motor for direct drive eliminating sprocket, chain and associated lubrication maintenance intensive devices is acceptable?

A43. Refer to Article 30 (Substitute Material and Equipment) of the Invitation for Bid document (starts on page 21).

Cylinder stabilizers as outlined by subsection 2.02.K are required unless the manufacturer can confirm their standard product offering does not include them. The manufacturer must provide guarantee that the equipment will function properly and without any adverse effects of not having stabilizers for the rotating drum.

The proposed 2 HP motor must be 460 VAC, 3 Phase, 60 Hz with a high inertia fan, suitable for severe service with a 1.15 service factor. The proposed gear drive must be sized to maintain a minimum 1.25 service factor based on the input brake horsepower. The other

stipulations of subsection 2.02.L may be omitted if the bull gear drive is utilized.

The automatic chain oiler system as outlined by subsection 2.0.2.M may be omitted if the proposed offering does not require one.

Q44. **Page 13450-7, Part 2, subsection 2.04A states the MBR supplier is to perform the control system integration for this entire project. Does this include furnishing the SCADA/HMI workstations, programming and integration of all 3rd party equipment (i.e. the blower system, chlorine contact chamber, plant re-use pumps, plant drain lift station, WAS pumps, sludge storage basin & transfer pumps, chemical feed system, ground storage tank, Hi Service Pumps, odor control system)?**

A44. The MBR supplier is to perform the control system integration for this entire project. This includes furnishing the SCADA/HMI workstations, programming and integration of all 3rd party equipment (i.e. the blower system, chlorine contact chamber, plant re-use pumps, plant drain lift station, WAS pumps, sludge storage basin & transfer pumps, chemical feed system, ground storage tank, Hi Service Pumps, odor control system)

Q45. **Section 11655, 2.05, A, 3**

- **Please confirm the method of backflow prevention.**
  - **Wide band diffusers as specified do not have backflow prevention.**

A45. Backflow prevention is required; wide band diffusers will not be accepted.

Replace specification 11655 Section 2.05.A with the following:
Air Diffuser

1. *Provide diaphragm style diffuser with polypropylene base and EPDM cap to prevent solids entry into the diffuser.*
2. *Diffusers shall connect to header piping using ¾ inch NPT connection.*
3. *Diffusers shall be connected to the top side of the header pipe.*

Delete Paragraph 2.05.B.

Modify Paragraph 2.07 Manufacturers as follows:

The Sludge Storage Tank Aeration Diffuser System, including coarse bubble diffusers, aeration
piping, and supports, shall be manufactured by:

- *Aquarius – Flexcap*
- *Environmental Dynamics International*
- *Or Engineer approved equal*

Q46. **Section 11500_B._8 & 9 calls for the membrane manufacturer to supply the blowers for the Supplemental Aeration System, and the Membrane Zone Aeration System. The digester blowers are not addressed in this section as they are not integral to the MBR process. Section 11600 lists three (3) acceptable blower manufacturers. Given these requirements, it is possible that the MBR supplier will include brand "X" blower with their offering, and brand "Y" blowers could be selected for the digesters. Please consider requiring that all of the blowers be provided by the MBR manufacturer to ensure brand uniformity.**

A46. Brand uniformity is not necessary. The contractor may coordinate with the MBR system supplier to provide the same product. All blowers to meet requirements of Section 11600.

Q47. In reviewing section 11500 MBR System, it states a PLC panel forms part of the scope of supply. In reviewing the instrument drawings, it appears there will also be a lot of 3rd party equipment signals that will also be passing through this panel. Typically, the 3rd party equipment signals (i.e. the blower system, chlorine contact chamber, chemical feed, ground storage tank, odor control, etc.) passes through a separate control panel and the MBR supplier will provide programming/controls for only their respective MBR equipment.

1) **Please advise if a separate PLC panel will be required to concentrate all the 3rd party signals and;**

2) **Confirm Revere Control Systems as the acceptable base bid system integration supplier for those 3rd party systems.**

A47.

1. Only one PLC panel shall be furnished. The PLC panel shall contain all signals, programming, and ancillary devices for control and monitoring of the MBR System and 3rd party equipment.

2. Section 13450-2.04A notes that the Control System Integration will be performed by the MBR Supplier. System integration suppliers for 3rd party systems shall be chosen at the discretion of the MBR Supplier and as outlined by Section 13450.

Q48. Drawing I-3 and the Valve Schedule on Drawing P-30 both show a 4" FLG Globe Valve (Tag Number V010104A) and a 4" FLG Ball Valve (Tag Number V010105A) on the Plant Water piping at the Headworks. Drawings P-5 through P-8 do not show these valves. If these valves are required please indicate where they are to be installed and provide a specification for the 4" FLG Glove Valve – Specification 15200, Paragraph 2.06 G. is only for Globe Valves 2" and smaller.

A48. Valve V010104A shall be a size 1-½" pressure reducing valve as shown in the legend on DWG I-1. Valve V010105A shall be a size 1-½" ball valve. The valve schedule will be updated with these corrections.

Refer to HEADWORKS LOWER LEVEL PLAN on DWG P-5 for location. Both valves shall be installed at a serviceable location after the 4"x1-½" reducing tee.

Section 15200, Part 2.06 will be modified to include the following:

"P. Pressure Reducing Valves
Pressure reducing valves shall be provided to regulate outlet pressure from 7 – 130 psig as a minimum. Valve shall be hand adjustable, with no tools needed to adjust the set point. Body shall be PVC Cell Class 12454 per ASTM D1784. Seals shall be FPM or PTFE. Valve shall be rated for 150 psig operating pressure and shall have flanged ends confirming to ANSI/ASME B16.5. Acceptable manufacturers are Hayward PR Series, GF Type 582 or approved equal."

Q49. **The Valve Schedule on Drawing P-30 calls for two 16" FLG Diaphragm Valves for the Chemical Dosing System (Tag Numbers V180201A and V180202A) and references Drawing I-16. Drawing I-16 does not show these valves. Drawings P-18 and P-20 also do not show these valves. If these valves are required indicate where they are to be installed, if they are to include electric motor actuators, and provide a specification for 16" FLG Diaphragm Valves – Specification 15200, Paragraph 2.06 K. is only for Diaphragm Valves 4" and smaller.**

A49. These valves will be removed from the schedule.

Q50. **Please confirm the following regarding the Valve Schedule on Drawing P-30:**

1. **Valves V180203A and V180204A should be MJ Butterfly Valves installed underground as shown on Drawing P-18 and not flanged valves as indicated in the schedule.**
2. **Valve V250104A should be a 24" MJ Butterfly Valve as shown on Drawing C-16 and not a 24" MJ Gate Valve as indicated in the schedule.**
3. **Valve V260108A should be a 12" FLG Plug Valve as shown on Drawing P-27 and not a 16" FLG Plug Valve as indicated in the schedule.**

A50.
1. Confirmed. The schedule will be revised.
2. Confirmed. Valve V250104A should be an MJ butterfly valve. Valve schedule will be updated.
3. Confirmed. Valve schedule will be updated.

Q51. **Detail 3 on Drawing P-8 implies that holes are to be cut in the FRP covers and that the odor control suction piping is to be connected with a flange attached to tapped holes in the covers. But, in the Odor Control System Plan the notes indicate that the 3" and 8" FRP duct is to 90 down through the cover and we are to seal around the penetrations. Please clarify whether the odor control suction piping is to penetrate through the covers as shown in the plan and Detail 3 only applies to the Air Inlets or each odor control suction piping connection is to be accomplished with an FRP Damper and Flange as shown in Detail 3.**

A51. Only the odor control suction piping is to penetrate through the covers. The vents may be directly bolted as shown in Detail 3. Revise Detail 3 title on P-8 to remove "AND SUCTION".

Q52. **All of the valves on the suction and discharge piping of the Permeate Pumps are designated to be provided by the Contractor on Drawing I-13. These valves are not shown on the Valve Schedule on Drawing P-30 and Note 1 under the Pipe Schedule on Drawing P-30 indicates that the MBR Supplier is responsible for the permeate piping to the 6 inch flanged tee connection at the permeate discharge manifold. Please confirm that all of these valves, along with the suction and discharge piping, are to be the responsibility of the MBR Supplier to the point indicated in Note 1 under the pipe schedule on Drawing P-30.**

A52. Confirmed. The intent is that the valves are to be provided to the Contractor by the MBR supplier. The Contractor is responsible for providing all equipment and materials necessary to complete the work. How acquisition of equipment is conveyed to subcontractors is the responsibility of the Contractor.

Q53. Drawing I-13 shows sample valves downstream of the flow meters on each permeate pump discharge line to be provided by the Contractor, not the MBR Supplier. Drawings P-12 and P-13 do not show any sample taps on the permeate pump discharge piping. If sample piping and valves are required, please indicate the location and size of the taps and valves and where to route the sample piping.

A53. See response to Q62. Sample valve to be located at an accessible position downstream of the flow meters and before the drop into the trench.

Q54. Specification 11600 does not indicate that the butterfly valves shown on Drawings P-15 and P-16 are required to be part of the blower package. Drawing P-15 specifically notes "SS Butterfly Valve". Specification 15200 does not include a specification for SS Butterfly Valves for process air service. Please provide a specification for the SS Butterfly Valves required on the sludge storage blower discharge piping.

A54. The SS butterfly valves used for process air service shall be as described by Section 11500, Part 2.05.F.3.a. The valve size may be selected to match the size of the connecting piping.

Q55. Please provide a specification for the flange gaskets and hardware to be used for the stainless steel blower piping.

A55. Section 15200, Part 2.01.E. will be modified as follows:

Insert the following after Item 3:

4. *Gaskets to be furnished in FKM (Viton) or an approved equal suitable for high-temperature air service. Drilling to conform to ANSI/ASME B16.5.*

All nuts and bolts for flanges shall be Type 316 stainless steel conforming to ASTM A-193, Grade B&M for bolts, and ASTM A-194, Grade M for nuts.

Q56. The Pipe Schedule on Drawing P-30 indicates that Process Air piping is to be Schedule 40 316 Stainless Steel. Specification 15200, Paragraph 2.01 E. specifies Type 316L, Schedule 5S Stainless Steel Pipe. Please clarify the requirements for the Stainless Steel Process Air piping.

A56. Use schedule 40S for all stainless steel 1-½" & below, and for all threaded fittings. All other stainless steel piping may be schedule 10S.

Revise Specification 15200, Paragraph 2.01 E to revise 5S to 10S.

Q57. Drawing I-14 shows a Motorized Butterfly Valve in the Process Air piping to Aeration Basins 1B1 and 1B2 (V-100104A) with the "3" designation, indicating that it is to be provided by the Contractor. This valve does not appear in the Valve Schedule on Drawing P-30 and the notes on Drawing P-14 indicate that all of the piping between

the blowers and equipment is to be provided by the MBR Supplier. Please confirm that all pipe, fittings, and valves, including this motorized butterfly valve, are to be provided by the MBR Supplier.

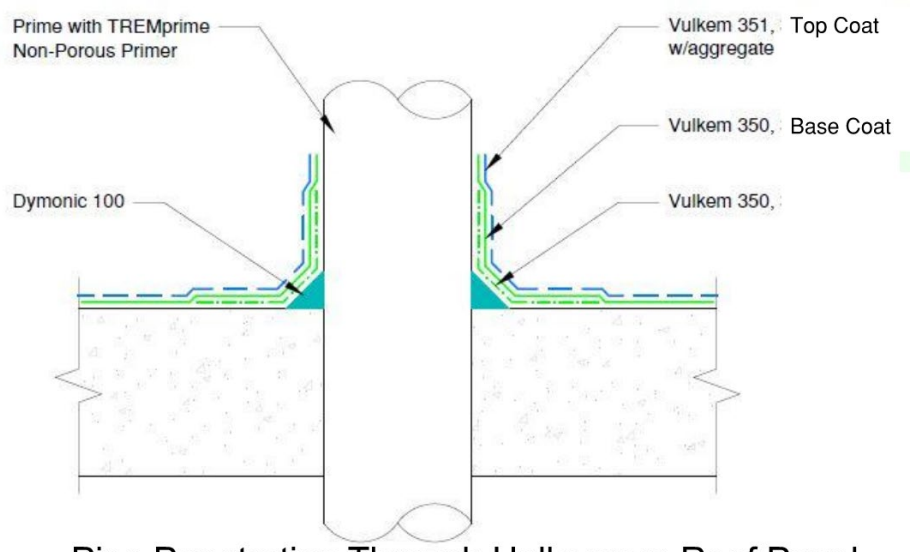
A57. Confirmed. The intent is that all process air pipe, fittings, and valves are to be provided to the Contractor by the MBR supplier. The Contractor is responsible for providing all equipment and materials necessary to complete the work. How acquisition of equipment is conveyed to subcontractors is the responsibility of the Contractor.

Q58. Drawings I-6 and I-7 show Butterfly Valves V-050101A and V-050102A in the Process Air piping to the Fine Bubble Diffusers with the "3" designation, indicating that they are to be provided by the Contractor. These valves do appear in the Valve Schedule on Drawing P-3 0 but the notes on Drawing P-14 indicate that all of the piping between the blowers and equipment is to be provided by the MBR Supplier. Please confirm that all pipe, fittings, and valves, including these butterfly valves, are to be provided by the MBR Supplier.

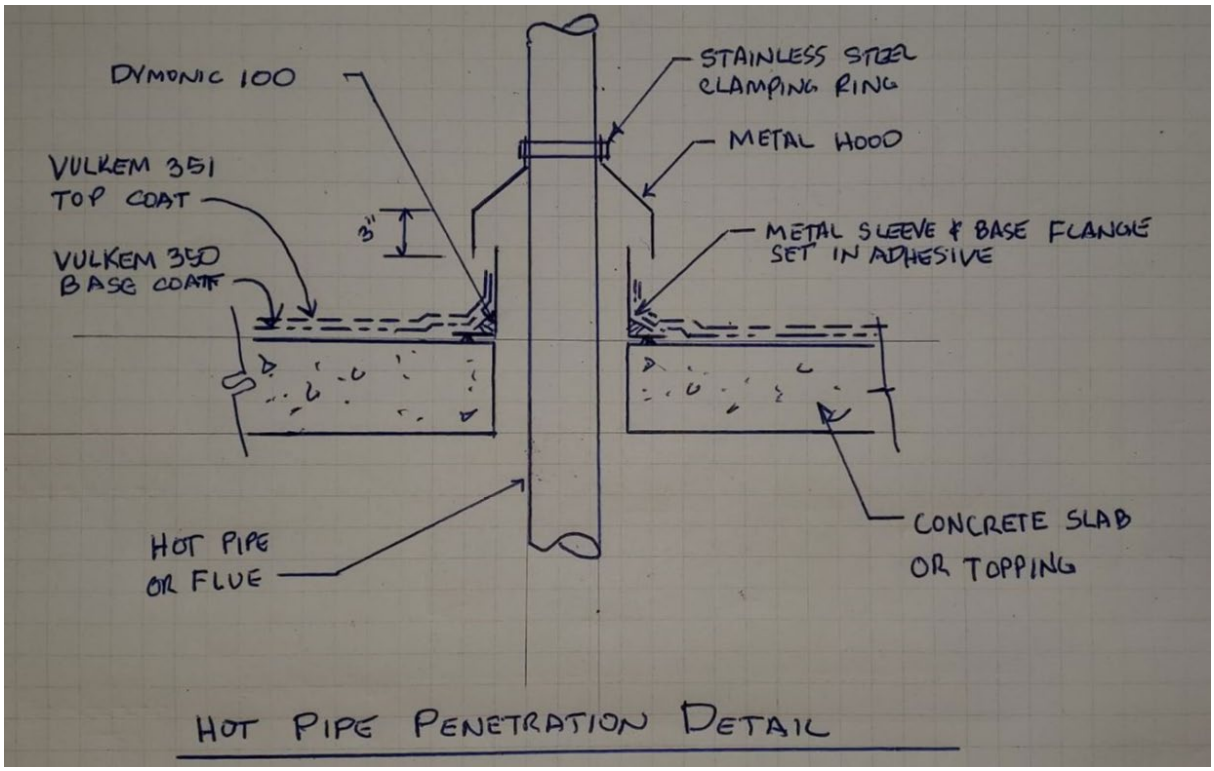
A58. Confirmed. The intent is that all process air pipe, fittings, and valves are to be provided to the Contractor by the MBR supplier. The Contractor is responsible for providing all equipment and materials necessary to complete the work. How acquisition of equipment is conveyed to subcontractors is the responsibility of the Contractor.

Q59. Drawing P-14 has notes at the one (1) 10" and two (2) 8" Process Air penetrations through the roof that say "Penetrate up thru roof; seal around opening". Please provide a detail showing the materials required to accommodate these high temperature piping penetrations through the precast hollowcore roof and roofing material and also the method to seal the penetrations at the roof. Please also provide a detail for the four (4) 3" PVC Clean In Place pipe penetrations through the precast hollowcore roof and roofing material.

A59. Concrete Roof Slab (Concrete topping over 6" hollowcore plank) between building lines 1 to 3 and B to C, shall be covered with a traffic membrane consisting of a 25 mil base coat of Vulkem 350 and a top coat of 15 mils of Vulkem 351 by Tremco (or approved equal). See attached details for penetration details.



Pipe Penetration Through Hollowcore Roof Panel



Q60. Sections 1 and 2 on Drawing P-11 show 10' Wide x 18" Tall (Adjustable) and 3' Wide x 8" Tall Weir Plates.

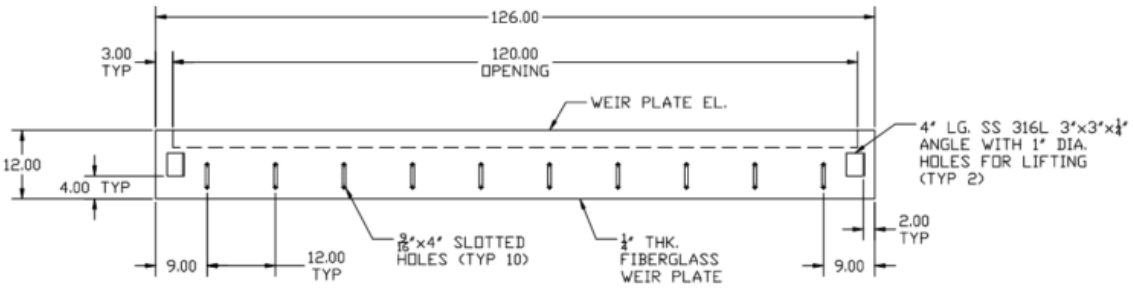
1. **Please provide a specification for these weir plates, or at least indicate the required material (i.e. FRP, Stainless Steel, etc.)**
2. **Please provide details for connection of the weir plates to the concrete and**

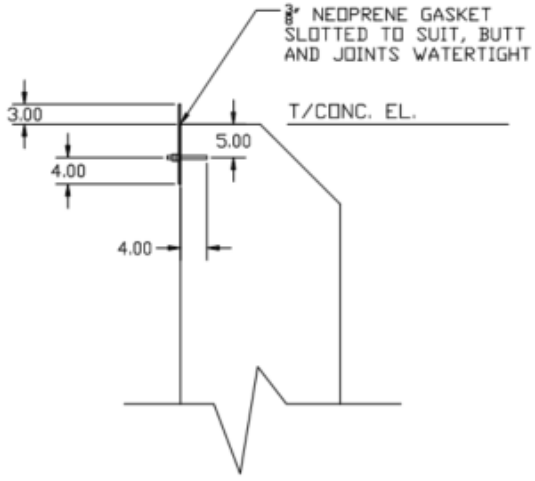
how to make the weir plate in Section 1 adjustable.

3. **Are these weir plates to be installed at all four Anaerobic Reactors or just at the two tanks with equipment in this phase of construction?**

A60.

1. Weir plate shall be FRP. All requirements will be indicated on the supplied detail drawing below.
2. Refer to the connection detail below.





3. Install weir plates in the two tanks with equipment in this phase of construction.

Q61. **Note 1 on Drawing P-11 says "Provide automatic sampling equipment per specifications." There is no other reference to automatic sampling equipment on this drawing. Does this note refer to the Influent Sampler shown on Drawings P-5 and I-4? Please confirm that the only automatic samplers required for this project are the influent sampler shown on Drawings P-5 and I-4, and the effluent sampler shown on Drawings P-18 and I-16.**

A61. Only the Influent Sampler shown on drawings P-5 and I-4 and the Effluent Sampler shown on the drawings P-18 and I-16 are required.

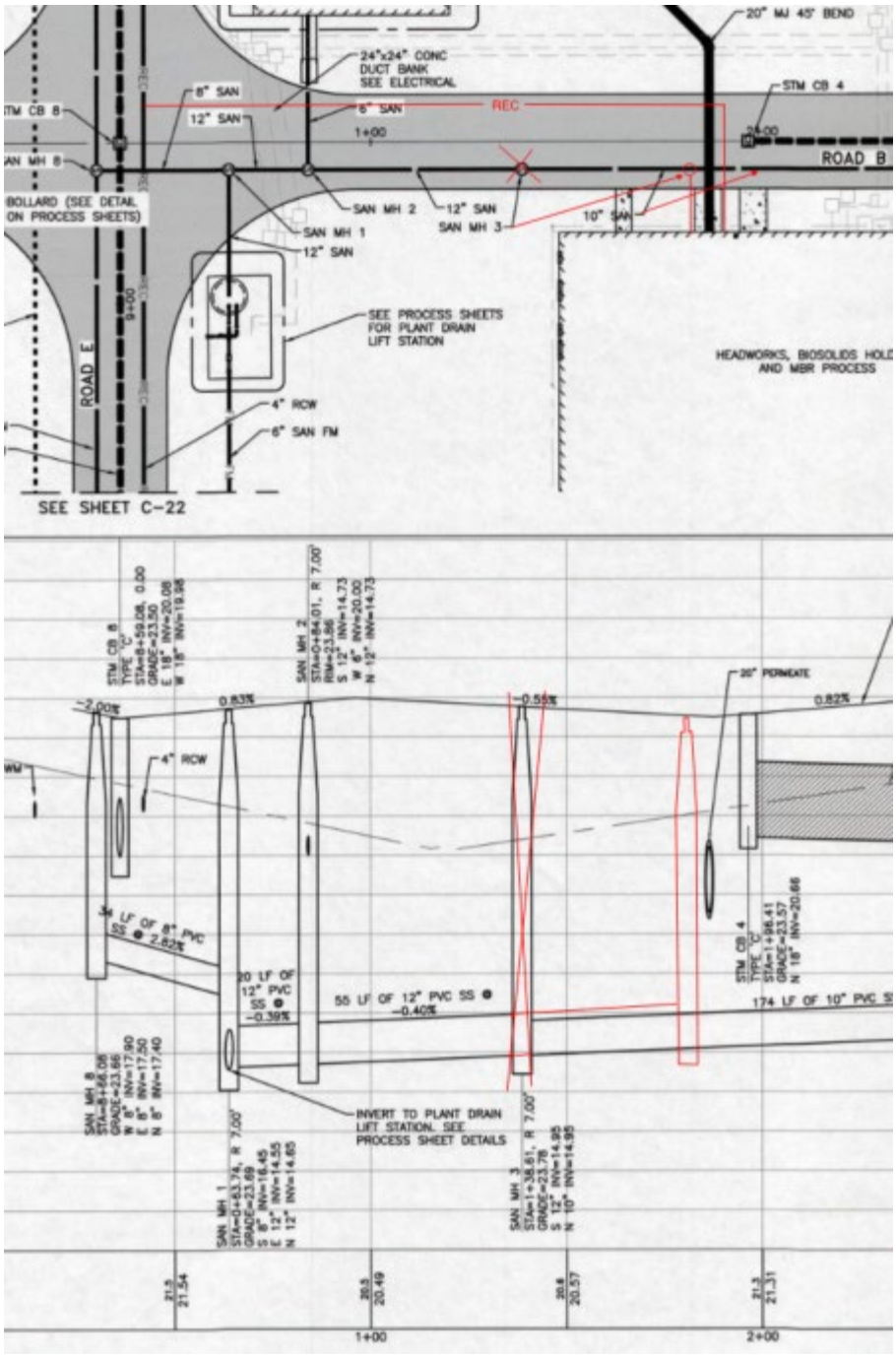
Q62. **Drawing I-16 shows two valves on the sample piping from the Effluent Transfer Well to the Effluent Sampler and the TRC Analyzer (V-180214A and V-180215A). The Valve Schedule on Drawing P-30 indicates that these are to be 2" ball valves with the note "size to be confirmed/determined by MBR Supplier". Drawing P-18 shows a 1" sample line to the automatic sampler and Specification 11305 indicates that a peristaltic pump will provide suction lift of up to 28 ft through 3/8" tubing. Please clarify the requirements for sample piping to the effluent sampler and TRC Analyzer. The valves indicated in the Pipe Schedule and on Drawing I-16 don't appear to be required - they are on the suction side of the automatic sampler's pump. Also, how is the TRC Analyzer to receive its sample from the tank? The sampler's pump only delivers sample to a bottle within the refrigerated unit per specification 11305. Is a separate sample pump required to deliver the sample to the analyzer? If so, please provide details and specifications.**

A62.
A. Valve schedule will be updated to show V-180214A and V-180215A as 1". Valve sizes should be confirmed with MBR manufacturer.
B. Valves V-180214A and V-180215A to be installed as part of the contract.
C. A complete and working system is required. A separate pump will be required to deliver flow to the TRC Analyzer from the tank, as recommended by the analyzer manufacturer.

Q63. **Drawing M-6 shows a 4" sanitary line leaving and 2" water line entering the Biological Treatment Facility on the west side of the structure. There is a note at this location that says "See Civil for continuation". The Civil drawings in general, and specifically Drawing C-20, do not show either of these lines and the closest potable water source is over 200 feet away, south of the intersection of Road B and Road E. Please provide details for the connection of these two lines on the Civil drawings.**

A63. Revise M-6 2" water line type to reclaimed water.

On C-20 add a reclaimed water line along Road B to the line on Road E as shown below. Relocate SAN MH 3 approximately 40 feet north as shown in the sketch below to receive the sanitary line.



Q64. **Drawing P-10 shows a 1-1/2" Service Water Line heading west along the upper level of the structure and turning down at the inside wall of the Pump Room. Drawing P-12 shows a Hose Bibb with Rack on the west wall of the Pump Room. There is no other information regarding Service Water at the building. Drawing M-6 shows a 2" Potable Water line entering the building from the west and teeing up to something just inside the door, continuing east to a tee and going south to a hose station and north to a trap primer with a tee and 2" line to another unidentified fixture. The Plumbing Equipment Schedule on Drawing M-7 includes numerous items that are not shown on**

Drawing M-6. Questions:

1. **What fixtures in the Pump Room are being fed by the 1-1/2" Service Water Line shown on Drawing P-10?**
2. **Are the hose station shown on Drawing M-6 and the Hose Bibb with Rack shown on Drawing P-12 two separate fixtures that are required? If so, is one to be fed by the 1-1/2" Service Water line as shown on Drawing P-10 and the other by the Potable Water piping as shown on Drawing M-6?**
3. **Are any of the fixtures in the Plumbing Equipment Schedule on Drawing M-7 that are not shown on Drawing M-6 required? If so, please revise Drawing M-6 to show the required equipment locations.**
4. **What is fed by the Potable Water line shown turning up just inside the west wall of the building on Drawing M-6?**
5. **What is the fixture represented by a rectangle on the west wall of the Pump Room just south of the entrance to the Future Blower Room?**

A64. P-10 shows the service water being supplied through the building from the east. Sheet C-21 shows two reclaimed water connections feeding the east end of the biological process building. The northern connection connects to this system.

1. The 1 ½" line on P-10 needs to connect to the system shown on M-6 to provide a looped system. See M-6 for fixtures in the pump room.
2. These are the same stations. (See A 73)
3. Revise M-7 from "Plumbing Equipment Schedule" to "Plumbing Legend." Provide only the fixtures shown on the drawings.
4. This line has been revised to reclaimed service (see A 73) it serves hose bibs and trap primers as shown. This will now provide a looped system which will feed the bleach clean in-place system.
5. That fixture is a second trap primer.

Q65. Note 3 on Drawing E-2A says "*The Contractor shall submit for approval the engineering product data and installation drawings signed and sealed by a licensed professional engineer acceptable to regulatory authorities*." Does "product data and installation drawings" refer to the generator only or is it the City's intent for the Contractor to include in the bid the cost to hire an engineer to assemble all of the data and drawings for the generator, fuel tanks and fuel system, grounding system, and electrical/controls system into one signed and sealed document?

A65. Only the generator diesel fuel system design (filters, piping size, layout, installation details) is required to be sealed by a licensed professional engineer acceptable to regulatory authorities.

Q66. Specification 13050, Paragraph 2.05 A.1. requires 1" schedule 40 black iron pipe for the diesel fuel system. Generator Note #5 and the plan view on Drawing E-2A require 2" schedule 80 black iron pipe. Please clarify the size (1" or 2") and type of pipe

(schedule 40 or schedule 80) required for the generator diesel fuel piping.

A66. The fuel system piping shall be 1". Above ground piping shall be Schedule 40 black iron pipe. Below ground piping shall be double-walled flexible pipe in a 4" diameter access pipe, such as FlexWorks brand manufactured by OPW Containment Systems or approved equal.

Q67. Specification 13050, Paragraph 3.03 C. requires the Contractor to provide fuel for testing and retesting and, "*upon completion of the testing and prior to final acceptance of the system, the Contractor shall fill the tanks to capacity*." Does this apply only to the 6,000 gallon diesel fuel storage tank, or is the Contractor also to provide an initial supply of diesel fuel for the 5,184 gallon (usable), double wall base mounted fuel tank referenced in Specification 16231, Paragraph 2.02 B.10.c.?

A67. Only the 6,000 gallon fuel tank in Specification Section 13050 is required to be filled. The 5,184 gallon double wall base tank listed in Specification Section 16231,2.02,B,10,C is not required to be furnished. Delete Specification Section 16231,2.02,B,10,C.

Q68. The detail labeled "Section" on Sheet P-22 displays a pipe that runs vertically up from the center of the floor to the dome. This pipe is not shown elsewhere in the drawings. Please clarify.

A68. This pipe will be removed from the design.

Q69. The detail labeled "Pipe Bracket" on Sheet P-23 displays a pipe bracket with a 20" DIP overflow pipe. This pipe is not shown on the plan view for the tank. Please clarify.

A69. There is no overflow pipe, detail will be removed from the design.

Q70. Section 11740 - Biological Odor Control System references "Heat tracing of air ductwork and/or water pipes" as being contractor responsibility. No other references, specification, or drawings regarding heat tracing have been found. Please confirm that there is not any heat tracing required for the project.

A70. Revise Section 11740 - Biological Odor Control System to omit reference to Heat tracing.

Q71. Reference Section 01025 Measurement And Payment

The Bid Items in this section do not match the bid form. Please update the section to match the bid form.

A71. The total of bid items shall be complete to provide Construction of the South Regional Water Reclamation Facility in accordance with the bid document, specifications and drawings

The Summary of Pay Items bid form has been revised as follows and is included with this addendum:

Item 1 - Mobilization/Demobilization
Item 2 – Demolition
Item 3 – Sitework

Item 4 – Chlorine Contact Tank
Item 5 – Chlorine Feed System
Item 6 – High Service Pump Station
Item 7 – Ground Storage Tank
Item 8 – Electrical Work and Instrumentation
Item 9 – Headworks/MBR Treatment Facility

Item 10 in Section 01025 will not be a biddable item. Item 10 is for use by the City.

Revise 01025 – Measurement and Payment as noted below.

Bid Item No. 9 – Headworks/MBR Treatment Facility

A. Payment of the applicable lump sum price shall be full compensation for furnishing and installing, but is not limited to, all labor, materials and equipment necessary to construct the MBR treatment facility, including: screening, grit removal, pumps; blowers; tanks; dewatering; concrete structures; steel structures; membranes; valves, hatches; piping; air release valves; flow meters; pressure gauges including all site preparation, clearing, grading, drainage, paving, grassing; borrow; demolition; excavation; signage and all other appurtenant work related to this lump sum pay item as presented in the Contract Documents.

Q72. Reference Section 02831 2.03 H, it calls for a Standard 20-foot width double gate by 6-foot height. Detail 1 on C-37 shows the height of the fence to be 8'.

Please confirm the height of the three proposed gates. Please confirm the 30' cantilever gate on drawing C-4 is existing and not included in this bid.

A72. Section 02831 2.03.H. will be revised to:
"Standard 12 foot width double gate by 8 foot height"

Q73. Reference Section 03300, 1.07: "Necessary construction joints are shown on the Plans."

Please indicate the locations for all construction joints, control joints and expansion joints.

A73. Construction joints in Slabs and Walls shall be spaced at a maximum spacing of 50'-0", specific locations shall be coordinated between the Engineer and the Contractor during Shop Drawings.

Q74. Reference Section 03300, 3.11 EXPANSION JOINTS. Reference is made to Section 03250
Concrete Accessories.

Please provide referenced Section 03250 as it is not found in the documents.

A74. See Attached Section 03250.

Q75. Reference Section 03300 3.19 RETENTION TESTING:
"the CONTRACTOR shall clean, disinfect (if required) and fill the tank or structure with

water to its maximum level."

1. **Please confirm which structures will need to be disinfected.**

2. **Please confirm that pressurized water will be available to the Contractor, onsite, and free of charge to perform all required Retention Tests.**

3. **Please confirm what is the flow rate of this available water.**

4. **Please confirm that this water can be disposed into the existing Storm Drain System.**

A75.

1. No disinfection is required.
2. See Addendum 3, A18.
3. See Addendum 3, A18.
4. Discharges to the existing storm drain system may require dichlorination in accordance with regulatory requirements.

Q76. Reference Section 04200,

1. **Please provide detail for grout filled cells for CMU walls, and indicate the locations where used.**

2. **Please provide detail for masonry wall insulation and indicate the locations where used.**

3. **Please provide detail for cavity wall insulation and indicate the locations where used.**

4. **Please provide detail for vertical joints and indicate the locations where used.**

A76.

1. All CMU cores and bond beams that have reinforcing shall be grout filled.
2. All Exterior CMU walls (Along "1" line, "3" line and "A" line) shall have 2 inch rigid insulation as shown on details #2 and #3 on Sheet S-33.
3. Cavity walls per say exist along Building Lines "1", "3" between lines "A" and "B" and along Building Line "A" between Building Lines "1" and "3", from elevation 24.50 to Elevation 27.17 as shown on Details #3 and #4 on Sheet S-32. Cavity walls consist of 12" or 8" CMU backup with 2" Rigid Insulation + ¾"" air space + 4" Face Brick. Per Detail #2 on Sheet S-33
4. Provide Control Joints in CMU backup and Face Brick at 25' max spacing conforming to Specification 04200 – 3.11

Q77. Reference Section 04200 2.09 A. It mentions for single Wythe masonry walls requiring thermal insulation, provide nontoxic foamed-in-place masonry wall insulation.

Please Confirm if any CMU requires thermal insulation and provide detail on placement.

A77. No CMU Walls require insulation material in core of CMU Units. Exterior walls shall have a 2" thick rigid insulation only.

Q78. Reference drawing S-10 "Metal Wall Stud (TYP)".

Please confirm this area is Cement Fiber Lap Plank per Dwg. S-32 Detail 4.

A78. Correct the West face of the Metal Stud wall “Above the Standing Seam Roof” shall consist of Cement Fiber Plank over 2” Rigid Insulation. The east side of the wall Shall be standing seam panel on ¾” treated plywood.

Q79. Reference Detail 2 on S-33, note calls for Bituminous Dampproof coated CMU over the face brick.

1. **Is this the only area to be applied, or should it be applied to the entire wall height?**

2. **Please confirm which class coating system is to be used.**

A79. The dampproof coating shall be applied to the full height of the exterior CMU walls. Dampproofing shall be a minimum of 1/16” wet film thickness, using Sealmastic Spray-Mastic by W.R. Meadows or approved equal.

Q80. Reference Note on S-13, “face brick see architectural sheets for details”.

Please provide architectural details.

A80. Note should read “See Details on Sheets S-32 and S-33. Refer to Specification Section 04200 for control joint and tie requirements.

Q81. Reference the Architectural painting specification 09901, The exterior schedule does not include a system for the cement fiber lap plank.

Please confirm if the Cement Fiber Lap Plank receives a coating system, and if so, which one is to be used.

A81. Cement Fiber Lap Plank shall receive manufacturers Finish Coating system, James Hardie “ColorPlus-Technology” or approved equal.

Q82. Reference DWG S-33, roofing Section 1 differs from Section 2.

Please confirm the roofing system is as follows, 1 ½’’ Metal Deck, 5/8’’ treated plywood sheathing, 3’’ rigid insulation, 30 # underlayment, 40 mil thick self-adhering underlayment per spec section 07411 2.01, standing seam metal roof panels.

A82. Roof System to be as follows: Standing Seam Metal Roof Panels on 40-mil self-adhering underlayment, on 3” Rigid Insulation, on 5/8” treated plywood sheathing on 1 ½” x 22 ga. metal decking (with G90 galvanized coating) over light gage metal stud trusses.

Q83. Reference Specification 07552 SBS-Modified Bituminous Sheet Roofing

Please indicate which area is this specification applicable to.

A83. This section no longer applies to the project. Delete Specification Section 07552 in its entirety.

Q84. **Reference Specification 09220 Portland Cement Plaster**

Please indicate which area is this specification applicable to.

A84. Per addendum 3, No Portland cement plaster required. Delete Specification Section 09220 in its entirety.

Q85. **Reference Specification 09651 Resilient Tile Flooring**

Please indicate which area is this specification applicable to.

A85. Per Addendum 3, No resilient tile flooring or resilient wall base and accessories required. Delete Specification Sections 09651 and 09653 in their entirety.

Q86. **Reference Specification 09653 Resilient Wall Base and Accessories**

Please indicate which area is this specification applicable to.

A86. Per Addendum 3, No resilient tile flooring or resilient wall base and accessories required. Delete Specification Sections 09651 and 09653 in their entirety.

Q87. **Reference Specification 10522 Fire Extinguishers, Cabinets, And Accessories**

Please indicate which area is this specification applicable to, or provide a schedule of items that are being requested.

A87. Provide (4) – wall mounted fire extinguishers meeting the requirements of Specification Section 10522 – 2.02.

Q88. **Reference Specification 13140 FRP Building**

Please indicate where on the drawings is this building.

A88. Per Addendum 3, Specification Section 13140 is not applicable to the project. Delete Specification 13140 – Fiberglass Reinforced Polymer Building in its entirety.

Q89. **Reference Drawing S-30, it shows exterior door G101-B. The door schedule does not include door G101-B.**

Please provide the door information.

A89. Per Addendum 3, G100B in the door schedule should be G101B. G101B, G102C, and G103B shall be HM doors, not wood doors.

Sheet S-34, Door and Louver Schedule, replace “G100B” with “G101B.”

Sheet S-34, Door Types, Change the type B to “B HOLLOW METAL WITH VISION PANEL”

Q90. **Reference the painting schedule on drawing S-34. It calls for “sealed concrete” floors. Specification 09900 2.02 D Class 11 exposures for interior floors refers to interior concrete floors (painted).**

Please confirm which coating system is to be used for the sealed concrete floors.

A90. Interior Floor shall receive a premixed concrete hardener per Specification Section 03300 – 3.10.

Q91. Reference the Protective Coating Schedule on drawing S-1. It calls for the aromatic polyurethane elastomer coating system to be used on the sludge storage basins. Section 09900 2.02 I calls for a Elastomeric polyurethane coating system for the waste sludge storage.

Please confirm which coating system is to be used.

A91. Aromatic Polyurethane Elastomer.

Q92. Reference sheet C-16, a note on the 24" reclaimed storage tank refers to a standard detail on sheet C-36 for the Motorized Butterfly valve. There is not a detail for butterfly valves on sheet C-36.

Please provide standard details for motorized butterfly valve installation requirements.

A92. See A-16 on Addendum 4.

Q93. Reference Figure 8. on sheet C-34, it lists sizing for the concrete thrust blocks on the project. The chart shown includes pipe sizes 6", 8", 12" and 16". Thrust restraints are required on the North and South side of the 20" Force main on sheet C-26.

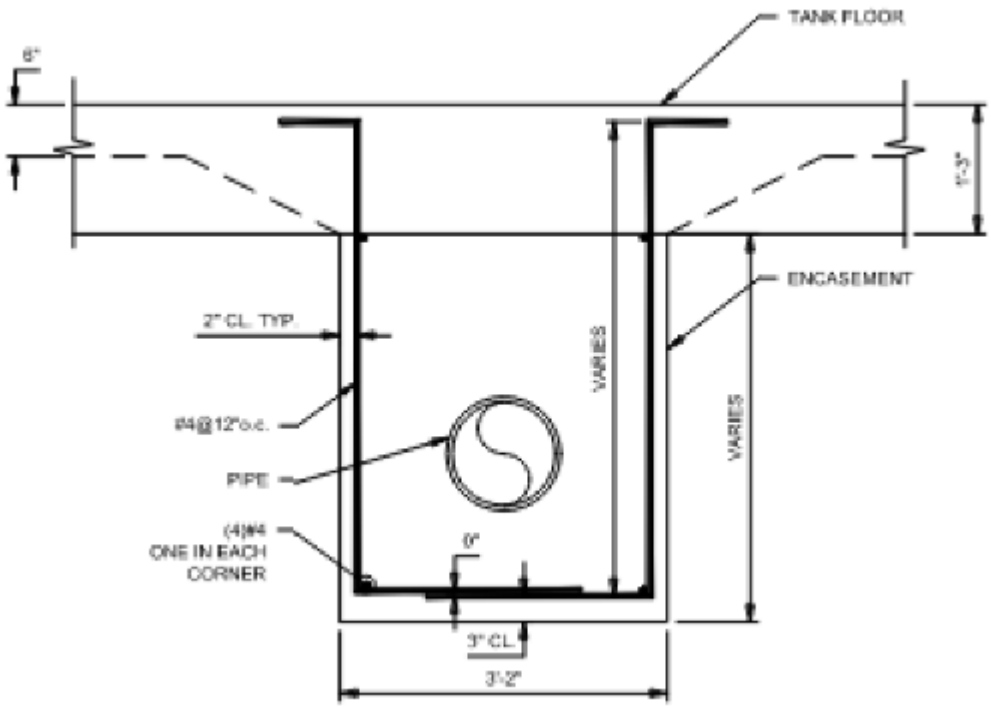
Please provide thrust block size for 20" dia. Pipe.

A93. Per C-34, Figure 6, "IN LINE VALVES AND THROUGH RUN OF TEES OUTSIDE LIMITS OF RESTRAINED JOINTS FROM OTHER FITTINGS NEED NOT BE RESTRAINED UNLESS OTHERWISE INDICATED."

Q94. Currently the drawings do not indicate a requirement for concrete encasement of the drain lines beneath the MBR concrete slab.

Please confirm that it is not a requirement to have these pipes encased in concrete.

A94. Lines must be encased, see detail added to set:



Q95. **Reference Sheet C-26, it provides a detail for a tie-in to the existing 20" PVC Forcemain.**

1. **Can this existing Forcemain be shut down to allow for the installation of the tie-in?**

2. **If a shut-down is permissible, what is the permissible shutdown duration?**

3. **Where are the nearest fully functioning isolation valves in relation to the tie-in location to isolate the line?**

A95.

1. Yes.
2. The forcemain at this location was installed in anticipation of the construction of the new wastewater plant and can be isolated indefinitely to complete the tie-in work.
3. There are isolation valves approximately 250 ft east and 1,200 ft west of the tie-in point.

Q96. **Reference specification section 02300-3, 2.01 A, 2. It asks to provide cathodic protection or coatings as indicated on the plans for casing pipes. Currently the plans do not indicate a cathodic protection requirement for the steel casings.**

Please confirm that the casing pipe will not require cathodic protection or coatings.

A96. Confirmed.

Q97. **Reference sheet C-29, the injection well bypass.**

1. **What is the existing pipe material for the RO-Permeate Pipe at this location?**

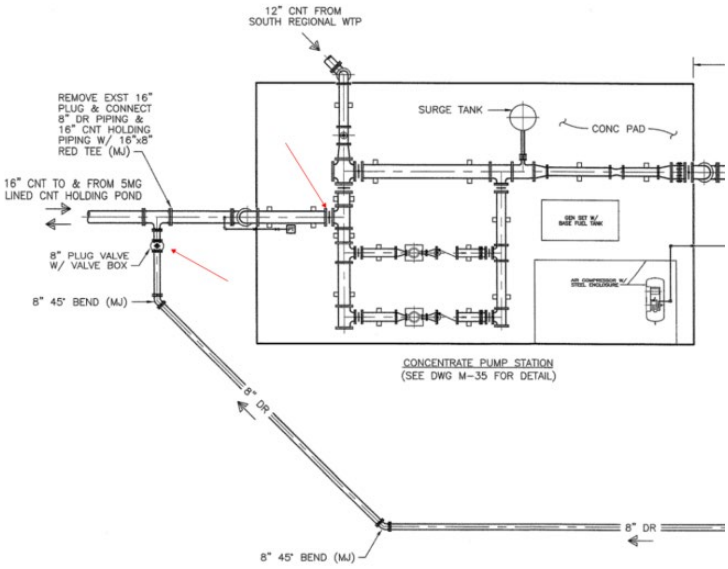
2. **Can the 16-Inch RO Permeate Pipe be shut down for the cut-in Tee fitting installation? If so, what is the allowed shut down duration?**

3. **Will the engineer accept a tap-in saddle with a 24”x16” reducer in lieu of the specified cut-in Tee Fitting?**

4. **Please identify the distance to the closest isolation valves upstream and downstream of this connection point.**

A97.

1. Assume ductile iron for the purposes of the bid. Contractor to confirm when they locate the line.
2. Approximately 8 hours. The water plant will be shut down to facilitate the tie-in; therefore, the work will occur overnight.
3. No, cut in a 24” tee with two 24” x 16” reducers. Restrain accordingly.
4. The isolation valves on the injection well end are shown on the record drawings below.



Q98. **Please confirm the structural framing material and coating system to be used for the Sodium Hypochlorite canopy.**

A98. Hot Dipped Galvanized per note on Sheet S-22.

Q99. **Reference Sheet C-39: 365-day Establishment Period Maintenance Plan**
“To be performed by the Contractor unless otherwise listed as by the city. The Contractor shall assume responsibility for the proper maintenance and survival in Florida No.1 condition of all landscape plant material for a period of 365 days after the acceptance of all work under the contract “

1. **Will this be a stand-alone maintenance contract with the City, that will commence after project Final Completion? or will the contract duration along**

with extended overhead, bonds, and insurances need to be added to this contract?

2. **Please clarify the requested Maintenance Plan start date as applicable to project Substantial and Final completion.**

A99. This maintenance requirement will begin at substantial completion to coincide with the Contractor's other warranty periods. This will not require the contractor to extend overhead, bonds, and insurances for this duration.

Q100. Reference Section 16231 Generator Specification.

Electric Standby Generator calls for a 5,184 Gallon Double Wall Base Tank. Specification 13050 A/G Diesel Fuel Tank calls for a 6,000 Gallon UL 142 & UL 2085 rectangular and low-profile tank to be provided.

Are both tanks required?

A100. Only the 6,000 gallon fuel tank in Specification Section 13050 is required. The 5,184 gallon double wall base tank listed in Specification Section 16231,2.02,B,10,C is not required. Delete Specification Section 16231,2.02,B,10,C.

Q101. Is the Owner providing the seed sludge for the start-up of the SRWRF process and what quantity will be required for start-up?

A101. See addendum 3, 15 & Addendum 7, A3.

Q102. Will the owner provide the chemicals to fill the chemical tanks through existing chemical supply contracts?

A102. Per Addendum 3, The Contractor is responsible for providing the Sodium Hypochlorite for testing and initial fill of the Sodium Hypochlorite tank.

Section 11335 3.03, add paragraph C as follows:

"C. Contractor shall provide chemical for any required testing and retesting. If the chemical subsequently becomes contaminated, Contractor shall dispose of the chemical at no cost to the Owner and in accordance with all FDEP regulations. Upon completion of the testing and prior final acceptance of the system, the Contractor shall fill the tanks to capacity with specified chemical."

Q103. Reference Erosion & Sedimentation Control Note 27 on Drawing C-1: "St Johns River Water Management district pump volume restrictions"

1. **Please provide these restrictions and clarify if the dewatering pump volume refers to the individual pump locations or the total of all pumping to be performed on site on any day?**

2. **Has an application for dewatering been made to the St Johns water Management District?**

A103. Modify Note 27 to state “If the dewatering activities require a dewatering permit, the Contractor is responsible to obtain the permit at the Contractor’s expense.”

Q104. Please provide historical pump draw down levels for the ground water for Production Wells 1 and 2 and the pumping rate utilized for each of these wells and anticipated cycle periods if any for being in services during the construction period as this may have direct impact for the project for dewatering efforts.

A104. The pumps are cycled 24-hours a day. The wells are 850-feet deep, they should not interfere with dewatering efforts.

Q105. Reference drawing C-1 Note 9 Grading & Drainage Notes:

“Preservation of Exceptional specimen trees may be required after review in the field by the Planning Director or his designee” Please confirm that this will be handled as a changed condition if it occurs.

A105. Confirmed.

Q106. Reference Section 09900 Painting and Special Coatings:

Please confirm the class of coating system to be used on the concrete surfaces of the aeration reactor chambers floors and walls.

A106. Protective Coatings shall be applied to the exterior surfaces of Biological Process Structure, Chlorine Contact Tank Structure and Chemical Storage Tanks. The Reclaimed Water Storage Tank shall be coated per Specification Section 13200 – 2.12

Q107. Reference Sheet S-1, PROTECTIVE COATINGS, Notes 4 & 5: “All exterior surfaces of tank walls which are exposed to view”

Please confirm the reference to include the exterior surfaces of the Biological Process Structure, the Chlorine Contact Tank Structure, the Reuse Storage Tank Structure, and the Chemical Storage Tanks.

A107. Protective Coatings shall be applied to the exterior surfaces of Biological Process Structure, Chlorine Contact Tank Structure and Chemical Storage Tanks. The Reclaimed Water Storage Tank shall be coated per Specification Section 13200 – 2.12.

Q108. Reference Section 09900 Painting and Special Coatings:

Please confirm which coating system is to be used on the internal concrete surfaces of the Sanitary Manholes.

A108. See C-35, Detail S-1A. “Manholes shall receive two coats (8 mil ea.) high solids epoxy interior and exterior.” Note 13: “Two coats of alternating colored epoxy shall be applied. The final interior color of manhole shall be gray. The final exterior color shall be black or gray.”

Q109. Reference Sheet P-27, Section 1, Note: “Exist below grade piping to be abandoned and grout filled”

Please provide as-built information or the total linear footage of 16" RO pipe and fittings that are to be abandoned and grout filled.

A109. Approximately 25', to be scaled by the Contractor.

Q110. Reference Sheet P-27, Note 6: "Buried plug valves shall have H-20 load rated valve boxes installed"

Please confirm the location of the valves that this note is applicable to as there are no underground valves on this sheet.

A110. Note applies to all buried valves on the project.

Q111. Reference Sheet C-31, it details modifications to the existing control structure located at Detention pond 2A.

1. **Please provide the current pond water surface elevation at this structure.**

2. **Please provide the current canal water surface elevation at the proposed Nutrient Removal Filtration system location shown on Drawing C-9.**

A.111. Elevations vary, contractor to confirm in the field.

Q112. Are the all the submerged concrete at the Biological Process Structure (MBRs and feed channels, Aeration Reactors, Feed Pump Stations, Anoxic/EQ Reactor, Anaerobic Reactors, influent channels, grit removal and sludge storage) to be coated. Please specify which tanks are to receive system F and which are to receive system I.

A112. All Surfaces which contain or transport fluids in the Biological Process Structure (including MBR's feed channels, Aeration Reactors, Feed Pump Stations, Anoxic/EQ Reactor, Anaerobic Reactors, Influent Channels, Grit Removal and Sludge Storage shall receive the Aromatic Polyurethane Elastomeric Coating.

Q113. Specification 09900 System F is not typical for application in biological processes please update the system.

A113. See Items A-119 and A-135.

Q114. Specification 09900 System I is antiquated. Polybrid 705 is no longer in production. Please update the system, high solid epoxies are common for this application.

A114. See Items A-119 and A-135.

Q115. Specification 09900 System J: is the intent to paint stainless steel in the field or at the manufacturers?

A115. Delete System J from 09900.

Q116. Is it possible to use a corresponding structural coefficient FDOT obg in lieu of soil cement base?

A116. Reference to soil cement was removed from C-31 Typical Asphalt Section per Addendum

#3, A17.

Q117. The proposed pond construction will end up with a huge (approx 130,000 cy) amount of excess fill. Should we figure hauling this off or stockpiling on-site?

A117. Per Addendum 4, the City has no desire to stockpile excess fill for future use. Additionally, the City has recently confirmed there are no immediate needs from our local partners; therefore, the Contractor shall be responsible for disposing all excess fill from the Site.

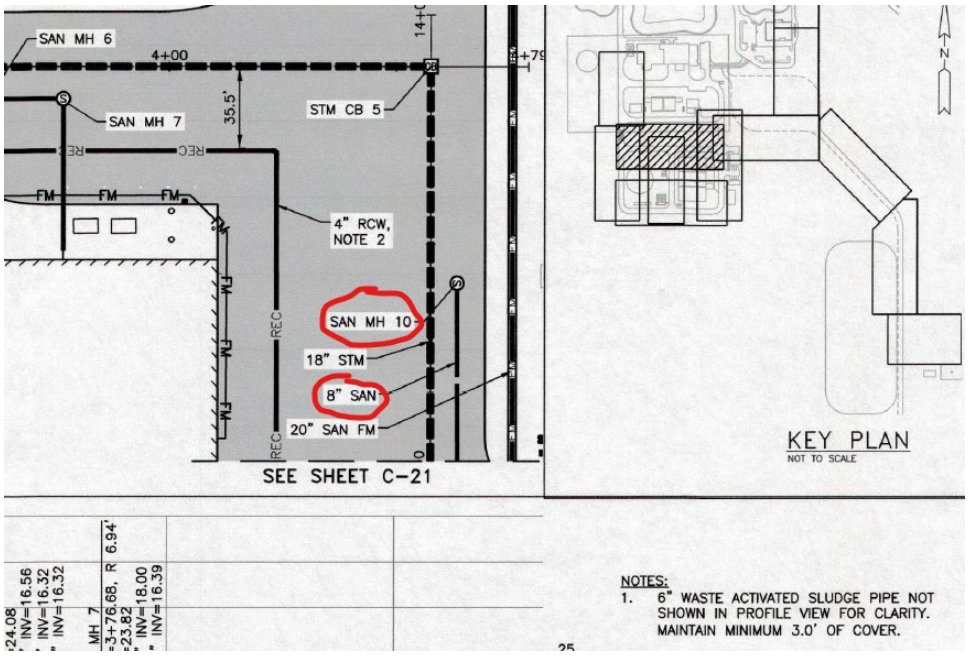
Note that the anticipated net cut amount is 80,000 CY: approximately 89,000 CY of cut and 9,000 CY of fill.

Revise Section 02200-3.02. P of the Technical Specifications to state the following:

Excess excavation materials shall be removed from the site and legally disposed at the Contractor's expense.

Q118. Please confirm which size pipe we are to use for the Headworks lower level pipe Drawing P-5 Notes 8" PVC pipe leading to the Gravity Sanitary Sewer Manhole #10 where the Civil plans notes it as a 6" PVC pipe.

A118. Provide an 8" pipe. The civil drawing on sheet C-23 already shows an 8" pipe leading to SM#10.



Q119. For the DIP pipe fittings can we use C 153 Fittings in lieu of C 110 Fittings?

A119. Use C110 full body fittings as specified for sludge and sewage. C153 is acceptable for water, reclaimed service, treated effluent, permeate, or other applications with low suspended solids concentrations.

Q120. Reference general Note 11 on Drawing C-1: "The City shall have the right to first refusal of of the remaining fill material."

Handling this excess fill material (approx. 80,000CY) is of considerable value, and this decision will significantly affect the project pricing.

Please confirm whether the owner is salvaging this excel fill material and confirm the location where it is needed.

A120. See A117.

Q121. Please confirm that Owner will pay for materials delivered to site, but not yet incorporated into the project, on the monthly pay applications.

A121. Payment for materials delivered to the site, securely stored in accordance with the manufacturer's recommendations, but not yet installed, will be paid based on the approved Schedule of Values.

Modify Section 01300 1.01C to add the following sentence at the end. "Schedule of Values shall show the purchase and delivery costs for materials and equipment for which Contractor anticipates requesting payment prior to installation."

Q122. With reference to GC4.2 please confirm that discovery of differing site conditions outlined in the article 4.2 will entitle Contractor to compensation and schedule relief.

A122. Per 0700 article 4.2, "If the Engineer finds that the results of such investigations or tests indicate that there are subsurface or latent physical conditions which differ materially from those intended in the Contract Documents, and which could not reasonably have been anticipated by the Contractor, a Change Order may be issued incorporating the necessary revisions."

Q123. Please confirm that Owner remains responsible as the generator for all pre-existing hazardous materials found on site, will sign any applicable waste manifests and except for Contractor's own negligence, will be responsible for any pre-existing hazardous materials.

A123. Confirmed.

Q124. Please confirm that Contractor will be entitled to compensation for delays to project caused by active interference of the Owner.

A124. See section 500 article 8.21 of the solicitation document.

Q125. With reference to BF3.D and Section 304 regarding limitation of liability in favor of the City please confirm that such limitation will not apply to Contractor claims for additional compensation allowed by contract or court of law.

A125. Liability is limited as described in the contract but also limited by Florida Statute. Additional

compensation allowed by the contract would be included in the maximum amount of the contract value. The contract limits the Contractor's recovery to the "maximum amount of the contract value less the amount of all funds actually paid by the City to the Contractor." The liability of the City is further limited by Florida Statute 768.28, sovereign immunity.

Q126. With reference to A17.2 Termination for Convenience - Please confirm that in the event of Owner terminating contract for convenience Contractor will be entitled to compensation for the value of completed work in addition to work in process plus reasonable costs to implement such termination including costs to close out subcontractors and vendors.

A126. Demobilization costs incurred and compensation for the value of completed work are included in the compensation Contractor is entitled to. In the clause referenced, the Contractor's recovery is limited to "the Contract Price earned through the date of termination, together with any retainage withheld and demobilization costs incurred."

Q127. With reference to A17.3 please confirm that submission of an acceptable cure plan by Contractor will not result in termination for cause.

A127. The clause referenced allows for termination for cause only after fifteen (15) days' notice and an opportunity to cure. "Submission of an acceptable cure plan" and satisfaction of the cure requirements may forego the need for termination for cause. See also 17.3.4.

Q128. With reference to A11.6 please confirm that normal wear, tear and improper maintenance or misuse by Owner will be excluded from Contractor warranty.

A128. Yes, as long as the warranty issue was caused by normal, operational use and not by a defective product or installation. See also additional warranty considerations and manufacturer warranty considerations in the contract documents and bid documents incorporated by reference.

Q129. Please confirm that any claims and disputes between Owner and Contractor will be decided by arbitration in accordance with FDEP4.4.

A129. FDEP Supplementary conditions 4.4 permits arbitration if both parties mutually agree but also permits disputes and claims in a court of competent jurisdiction within the State of Florida. See Article 20.1 of the contract listing the court of competent jurisdiction in Brevard County, Florida.

Q130. With reference to article 8.22 in the agreement would the Owner consider giving contractor schedule relief for all rain days?

A130. Yes, as long as the relief is in accordance with Article 8.22 and Article 15, which requires the following: Force majeure claims for inclement weather are only considered for continuous rain for three consecutive days or more and are required within 96 hours after event. Contract Time change claims are required with five (5) days of the event but are not officially incorporated unless approved by the City, in writing, via Contract Change Order, approved by the Department Director and the City contract representative. Without a bilaterally agreed upon Change Order, the time for completion remains as stated.

Q131. Please confirm which permits need to be pulled by the General Contractor, along with the related permit value.

A131. The Contractor is required to obtain a City Building Permit. Per Addendum 3, City Building Permit fees will be paid directly by the City.

Section 01061 of the Technical Specifications notes that the Contractor is responsible for submittals and fees related to the NPDES NOI and NOT. The City will pay the fee ($450) and submit the NOI and NOT applications; however, the Contractor is responsible for preparing the applications and all supporting documents in accordance with the Contract Documents [I.E. SWPPP, Dewatering plan(s)].

Clarification - Sludge Transfer pump modifications:

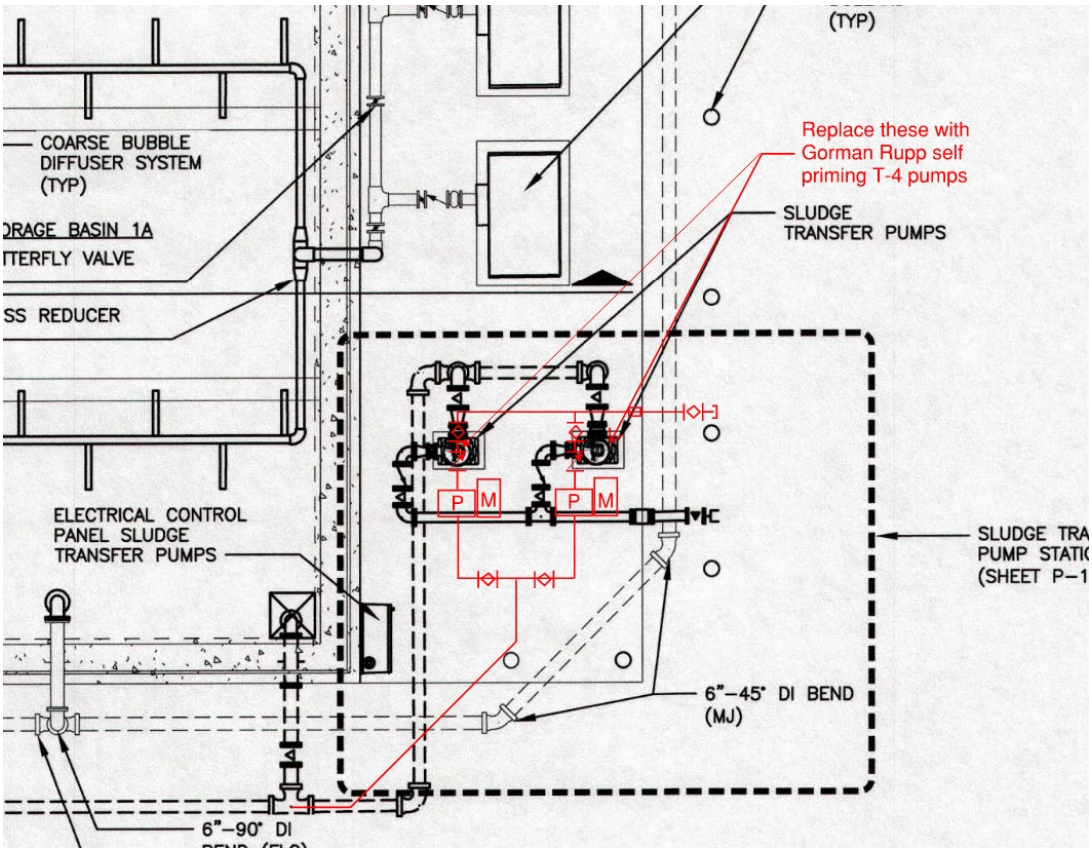
Section 11210, Part 3.05.A.2. will be removed and all subsequent sections will be renumbered appropriately.

Section 11220 will be modified to include the following under Part 3.07.A.4:

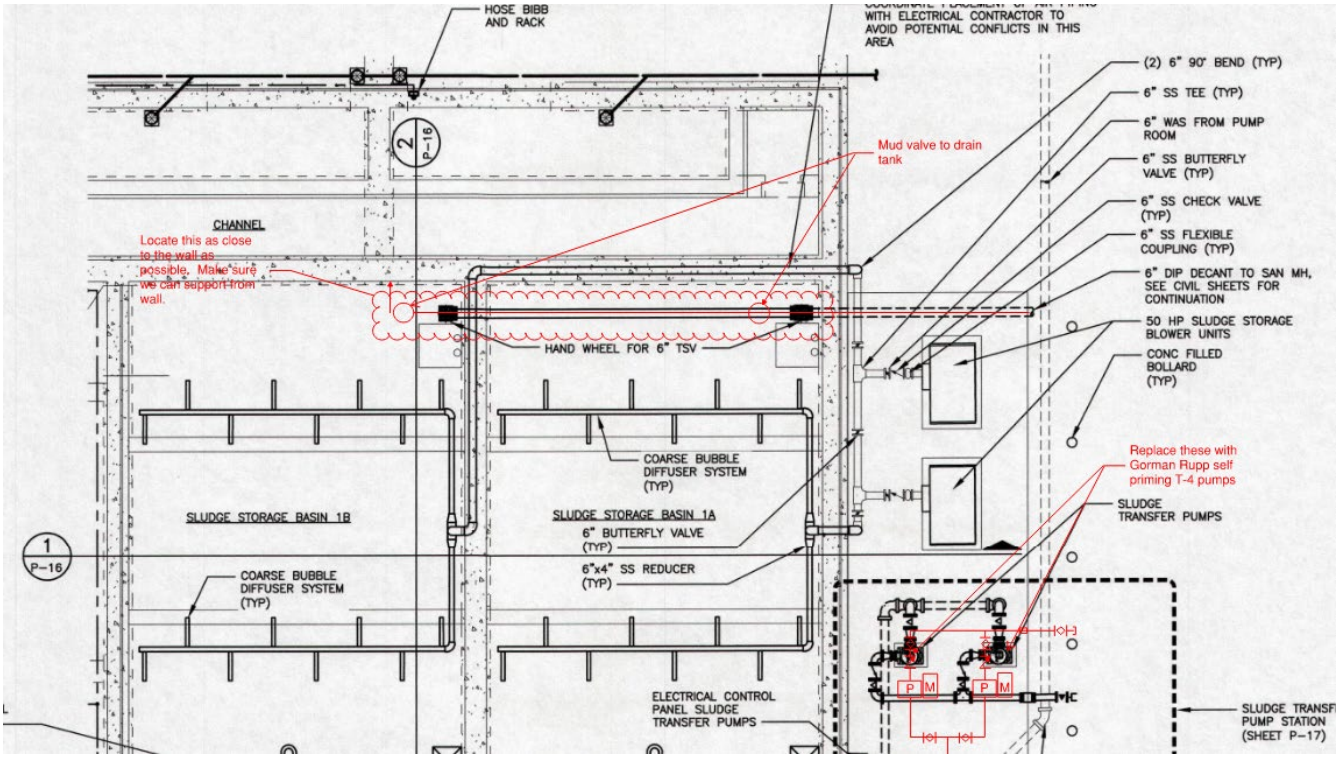
4. Waste Activated Sludge (WAS) Transfer Pumps

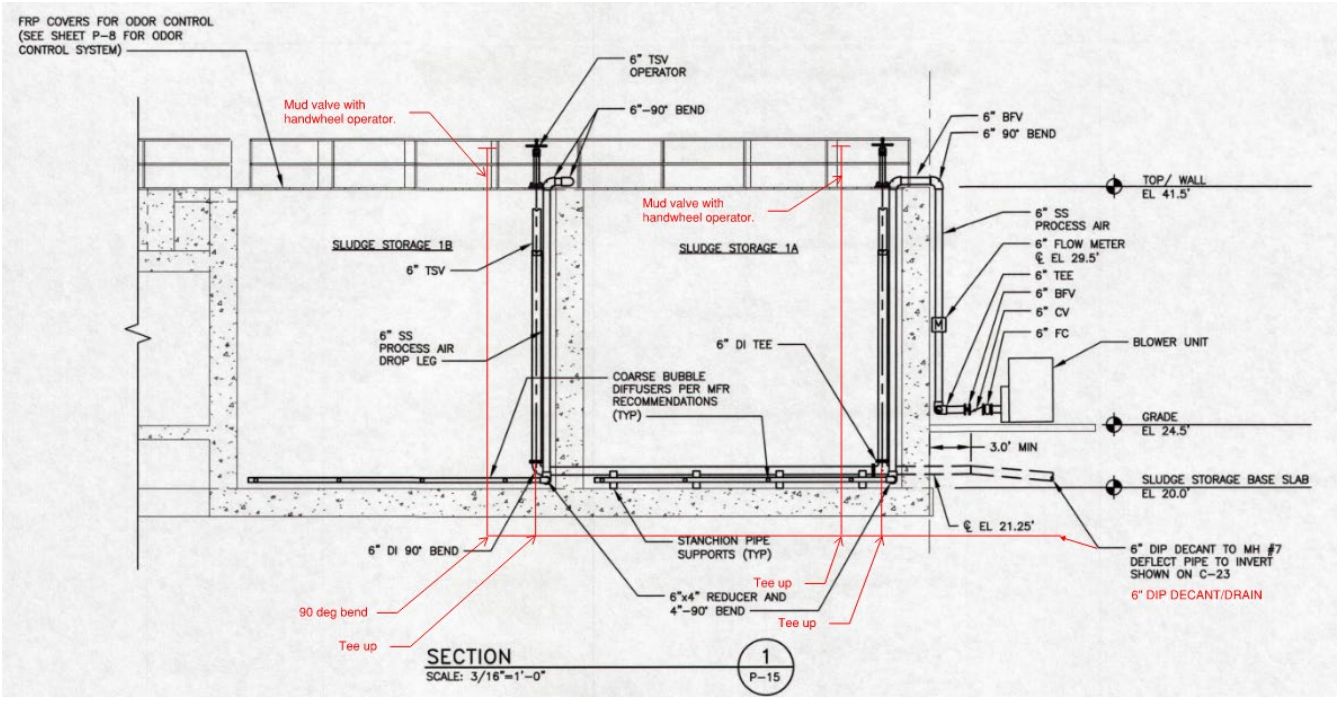
	Number		2
	Tag		PMP-190101A; 190101B
	Flow / Head		
	Point 1		300 gpm @ 30 ft TDH
	RPM		1150
	Motor Size		7.5 HP
	Suction Connection		4-in
	Discharge Connection		4-in
	VFD		NO
	Pumped Fluid		Waste Activated Sludge

Piping to be rerouted as shown in the below mark-ups:



Sludge tank modifications:





REPLACES PAGES 29 – 30 OF IFB

4. All Bid items shall include all materials, equipment, labor, permit fees, tests, miscellaneous costs of all types, overhead, and profit for the item to be complete, in place, and ready for operation in the manner consistent with the Contract Documents and Specifications. Bidder will complete the Work for the Unit Prices and the Lump Sum Base Bid as listed in the following schedule:

REVISED WITH ADDENDUM #6 SUMMARY OF PAY ITEMS

Item	Description	Unit	Price
1	Mobilization / Demobilization	LS	$
2	Demolition	LS	$
3	Sitework	LS	$
4	Chlorine Contact Tank	LS	$
5	Chlorine Feed System	LS	$
6	High Service Pump Station	LS	$
7	Ground Storage Tank	LS	$
8	Electrical Work and Instrumentation	LS	$
9	Headworks / MBR Treatment Facility	LS	$
	TOTAL BID PRICE		$

Contractor's Name: _____

The following documents are attached to and made a condition of this Bid:

a. Bid Form (Section 00300)
b. Non-collusion Affidavit of Prime Bidder (Section 00301)
c. Trench Safety Affidavit (Section 00302)
d. Drug Free Workplace Form (if applicable) (Section 00303)
e. Indemnification/Limitation of Liability Acknowledgement (Section 00304)
f. Statement of Bidder's Qualifications (Section 00305)
g. Notarized Letter of Maximum Bonding Capacity from Surety (See Section 00305)
h. Subcontractor Listing (Section 00306)
i. Bid Bond or other security (with Power of Attorney if applicable) (Section 00400)
j. Corporate Resolution (if applicable) (Section 00501)
k. Attachment D - Technical Specifications
l. Attachment E - Plans
m. Vendor Certification Regarding Scrutinized Companies' List (Section 00712)
n. Attachment A - Florida Department of Environmental Protection State Revolving Fund Program Supplementary Conditions
o. Attachment B - American Iron & Steel Compliance Information, Form and Instructions
p. Attachment C - Davis Bacon Wage Rate General Decision Number FL106, Heavy Construction

q. Signed Attachment F:
    i. Duns, Cage Code and Certification Regarding Debarment Form
    ii. Certification Regarding Lobbying

5. The terms used in this Bid, which are defined in Contract Documents and in Article 1 of the General Conditions, shall have the meanings assigned to them in the General Conditions as may be amended by the Supplementary Conditions.

6. Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified in the Agreement.

7. Work shall be performed under a Florida General Contractor's License. Contract shall not be executed unless proof of valid license(s) is provided.

Contractor's Initials _____

SECTION 03250
CONCRETE ACCESSORIES

PART 1 – GENERAL

1.1 DESCRIPTION

A. SCOPE

This Section includes joint fillers, joint sealants, waterstops, and miscellaneous embedded items in concrete.

Environmental requirements relative to temperature for placing joint sealants are specified in article 3.1 D of this Section.

B. COORDINATION

The CONTRACTOR shall sequence installation of miscellaneous embedded items with the WORK of Section 03 10 00, Concrete Formwork; Section 03 20 00, Concrete Reinforcing; and Section 03 30 00, Cast-In Place Concrete.

C. RELATED SECTIONS

1. Section 03100, Concrete Formwork.

2. Section 03200, Concrete Reinforcement

3. Section 03300 Cast-In-Place Concrete

1.1 REFERENCES

This section contains references to the following documents. They are a part of this section as specified and modified. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Unless otherwise specified, references to documents shall mean the documents in effect at the time of Advertisement for Bids or Invitation to Bid (or on the effective date of the Agreement if there were no Bids). If referenced documents have been discontinued by the issuing organization, references to those documents shall mean the replacement documents issued or otherwise identified by that organization or, if there are no replacement documents, the last version of the document before it was discontinued. Where document dates are given in the following listing, references to those documents shall mean the specific document version associated with that date,

regardless of whether the document has been superseded by a version with a later date, discontinued or replaced.

Reference	Title
ASTM	American Society for Testing Materials
CRD	U.S. Army Corps of Engineers Handbook for Concrete and Cement Specifications

1.2 QUALITY ASSURANCE

1.3 SUBMITTALS

A. The following submittals shall be provided in accordance with Section 01 33 00:

1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (√) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the CONTRACTOR, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The ENGINEER shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined will signify compliance on the part of the CONTRACTOR with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.

2. Submit certified manufacturer's affidavits for expansion joint filler, joint sealant and waterstops to verify compliance with the applicable Specifications.

3. Submit a schedule of concrete pouring and indicate locations of proposed construction and expansion joints. This schedule is subject to approval of the ENGINEER.

1.4 SHIPMENT, PROTECTION AND STORAGE

A. Equipment shipment, protection and storage shall conform to the requirements specified in Section 01600.

1.5 WARRANTY

A. General Warranty – Refer to Article 8.5 of General Conditions.

PART 2 – PRODUCTS

2.1 JOINT FILLER

A. Preformed Expansion Joint Filler for Concrete (Bituminous Type) ASTM D994.

B. Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types) ASTM D1751.

C. Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Concrete ASTM D1752.

2.2 JOINT SEALER

A. Concrete Joint Sealer, Hot Poured Elastic Type ASTM D1190.

B. Joint Sealants, Hot Poured, For Concrete and Asphalt Pavements ASTM D3405.

C. Joint Sealants, Hot Poured, Elastomeric Type, for Portland Cement Concrete Pavements ASTM D3406.

2.3 WATERSTOPS

A. Shall be of the size and type indicated on the Plans.

B. PVC waterstop: Shall conform to CRD C572 polyvinyl chloride (PVC) or CRD C513 styrene butadiene rubber (SBR). Flat ribbed type (6”x 3/8”) shall be used in joints in walls and slabs where shown on the plans. Center bulb type (9”) shall be used in expansion joints.

C. Hydrophilic Rubber waterstop: Flexible, hydrophilic synthetic rubber, strip waterstop (1”x3/4” min.) with manufacturer recommended adhesive, shall be used in joints in wall and slabs where indicated on the plans.

D. Bentonite Waterstop: Flexible, specially formulated compound of sodium bentonite-butyl waterstop (1”x3/4” min.) with manufacturer recommended adhesive, shall be used in joints in walls and slabs, where indicated on the plans.

E. Hydrophilic Vinylester Waterstop: Chemical resistant, soft and flexible durable strip waterstop shall be used for precast concrete structures.

2.4 CONCRETE ANCHORS

A. General

1. Select type and size to achieve required loading capacity using information provided by manufacturer. If required type is not indicated, select type appropriate to conditions and item being fastened.

2. Maintain critical edge distance and spacing per manufacturer's recommendations for all anchors. Provide tamper proof hardware when called for on the plans.

B. Adhesive Anchors

1. Injectable adhesive shall be used for installation of all reinforcing steel dowels or threaded anchor rods and inserts into new or existing concrete.

2. Combination injectable adhesive and insert system; chisel pointed threaded rod with hex nut/washer, reinforcing bar, or internally threaded insert, installed into pre-drilled anchor hole using rotary hammer drill. Adhesive shall be a hybrid adhesive consisting of a methacrylate resin, hardener, cement, and water formulated for fast curing and high strength and stiffness. Adhesive shall be furnished in containers which keep component A and B separate.

3. Threaded rod: ASTM A 193 Grade B7 Type 2, ASTM A 194 Grade 2H or ASTM A 563 Grade DH nuts, and ASTM F 436 washers; plated in accordance with ASTM B 633, SC1, with Type II yellow chromate treatment, or ASTM A316 stainless steel meeting requirements of ASTM F 593 (condition CW), when stainless steel is specified on plans.

4. Threaded Insert: Carbon steel tubular insert, internally threaded, plated in accordance with ASTM B 633, SC1.

C. Wedge Type Anchors

1. One piece body with expansion mechanism installed in pre-drilled hole using matching tolerance bit.

2. Carbon steel anchor body, washers, nuts and wedges, plated in accordance with ASTM B 633, SC1, Type III or Type 304 stainless steel anchor body, washers, nuts and wedges when so indicated on plans.

2.5 SPARE PARTS (NOT USED)

PART 3 – EXECUTION

3.1 INSTALLATION

A. CONTRACTOR'S VERIFICATION

1. Inspect the locations and surfaces to receive joint filler, joint sealer, waterstops, or miscellaneous embedded items and correct defects or conflicts which will affect the proper performance of the item to be placed.

B. PREPARATION

1. All accessories to be embedded into concrete shall have contact surfaces free of dirt, curing compound, protrusions of hardened concrete or any other foreign material which would affect bond with concrete.

2. Prime surfaces in accordance with manufacturer's recommendations.

C. INSTALLATION OF JOINT FILLERS

1. Details, including materials and methods of installation of joint fillers shall be as indicated on the Plans and as approved by the ENGINEER.

D. INSTALLATION OF JOINT SEALANTS

1. Joints shall not be sealed when the sealant, air or concrete temperature is less than 40 °F (4 °C). Bond breaker and backup material shall be installed where required as indicated on the Plans or manufacturer's recommendations.

E. INSTALLATION OF WATERSTOPS

1. Waterstops shall be of maximum practicable length to minimize joints.

2. Waterstops shall be positioned as indicated on the Plans in a manner to permanently retain flexibility.

3. Splice in length or at intersections shall be performed by heat sealing and in accordance with manufacturer's recommendations.

4. Reform splices with a remolding iron with ribs or corrugations to match the pattern of the waterstop. When cooled and bent by hand in as sharp as an angle as possible, the splice shall show no sign of separation.

5. Provide support and protection of the waterstops during the progress of the WORK. Any waterstop punctured or damaged shall be replaced or repaired at the CONTRACTOR's expense. The concrete shall be thoroughly consolidated in the vicinity of the waterstop. Suitable guards shall be provided to protect exposed projecting edges and ends of partially embedded waterstops from damage when concrete placement has been discontinued.

F. CONCRETE ANCHORS

1. Do not begin installation until substrates have been properly prepared. Do not proceed with installation if substrate preparation is unsatisfactory.

2. Clean surfaces thoroughly prior to installation. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3. Install in accordance with manufacturer's instructions and recommendations and as required by applicable code. Anchor applied items neatly, with item mounted plumb and level unless otherwise indicated.

4. The ENGINEER reserves the right to require the anchor manufacturer's representative to demonstrate proper installation procedures for post-installed anchors and to observe CONTRACTOR's installation procedures, at no extra cost to OWNER. The ENGINEER reserves the right to require pullout or shear tests to determine adequacy of anchors, at no extra cost to OWNER.

G. MISCELLANEOUS EMBEDDED ITEMS

1. All sleeves, inserts, anchor bolts, and other embedded items required for adjoining WORK or for its support shall be placed prior to concreting.

2. Embedded items shall be positioned accurately and supported against displacement. Voids in sleeves, inserts, and anchor slots shall be filled temporarily with readily removable material to prevent the entry of concrete into the voids.

3.2 FIELD TESTING

Testing shall conform to the requirements of Section 01 75 16 and those specified in this Section.

3.3 TRAINING (NOT USED)

SECTION 13051
DIESEL FUEL DAY TANK

Part 1 General

1.01 SUMMARY

A. The work of this section includes all labor, materials and equipment required for the installation and testing of the fuel storage and piping system complete and ready for operation. The system will include a new aboveground fuel storage tank, fuel piping system, fuel storage tank monitoring system and accessories.

1.02 RELATED WORK

A. Related work specified in other sections:

1. Rectangular Above Ground Diesel Fuel Storage Tanks and Piping: Section 13050.
2. Package Generator Set: Section 16231.

1.03 REQUIREMENTS OF REGULATORY AGENCIES

A. All work shall conform to the applicable requirements of the city, county, state and federal codes. Where the requirements of such agencies are more stringent than specified herein, abide by such requirements and consider this specification as supplementary to those requirements.

B. All work shall conform to the applicable requirements of the following: National Fire Protection Association (NFPA) 30-Flammable and Combustible Liquids Code; and NFPA 321 - Basic Classification of Flammable and Combustible Liquid.

C. All work shall conform to the applicable requirements of the following: Department of Environmental Prevention, Chapter 62-61; Chapters 4A-16 and 4A-33 of the State Fire Marshall's Rules and Regulations (Florida Fire Prevention Code); Southern Fire Prevention Code, Chapter 20; and the Standard Building Code, 1985 Edition with 1986 revisions.

D. The tank shall meet the current requirements of Underwriters Laboratories (UL) Standard 142. All components of the fuel distribution system shall be UL listed, unless otherwise specified, or approved by the Engineer.

E. The tank and fuel system shall be designed and fabricated according to best practices and methods available to date.

1.04 QUALIFICATIONS

A. Installer shall have had supervisory experience with two similar fuel systems in the past three years and shall hold a valid pollution control contracting license as required by the State of Florida, Department of Environmental Protection (FDEP). A copy of the license shall be submitted, prior to proceeding with construction.

B. Tank installers shall be certified in writing by the tank manufacturer as being qualified to install the equipment. A copy of the certificate shall be submitted, prior to proceeding with construction.

1.05 SUBMITTALS

A. Complete shop drawings shall be submitted, including certification of shop test to the Engineer for review.

1. The shop drawings shall include sufficient information to demonstrate compliance with the specified tank design standards, including copies of applicable sections of the specified design standards, manufacturer's catalog data and descriptive literature for the tank, fully dimensioned shop layout drawing (1/4" = 1' scale or larger) showing all piping, valves, equipment connections, tank outline dimensions, nozzle locations, foundation requirements and recommended tank installation and test procedures.

2. The shop drawings for pipe, fittings, and each item listed in the Specifications shall include manufacturer's catalog data and descriptive literature, fully dimensioned shop layout drawing (1/4" = 1' scale or larger) showing all piping, valves, equipment connections, nozzle locations and installation clearance requirements.

3. Submit all manufacturer's recommended installation and test procedures for all equipment including tanks, piping, etc.

4. Submit manufacturer's Test Reports (vessel fabrication, coating integrity and tank leakage, etc.) for each tank and specific service application.

5. Anchor certification.

B. Certification.

The Manufacturer shall provide an affidavit of compliance will all applicable provisions of this specification.

C. Testing and Inspection Reports

A written report shall be submitted to the OWNER'S REPRESENTAIVE documenting the testing and/or inspection results. The report shall be prepared as noted under Section 01 33 00.

D. Operations and Maintenance Manuals

Submit in accordance with the requirements of Section 01 78 23, Operations and Maintenance Manuals for items included under this section.

E. Warranty

Submit in accordance with the requirements of Section 01 74 40, Warranties covering the items included under this section.

1.06 PRODUCT HANDLING

A. Deliver materials and equipment to project site in manufacturer's original, unopened containers with labels intact and legible. Labels shall indicate manufacturer's name and model number. Store equipment in dry protected area. All damaged items shall be replaced with new at no additional cost to Owner.

B. Piping shall be supplied to the site with sealed end caps which shall remain in place until installation. Tanks shall be delivered to the site with all openings sealed which shall remain in place until installation. The tanks shall be properly supported during transportation to the site and during installation in accordance with the manufacturer's instructions.

1.07 ANCHOR DESIGN

The tank shall be anchored in accordance with the current edition of the Florida Building Code. The Contractor shall provide certification that calculations have been performed and signed by a structural or civil engineer registered in the State of Florida confirming that the anchorage system provided is within allowable shear and tension limits. The anchorage system shall be designed to withstand a wind load of 150 miles per hour and a submergence up to the 100-year flood elevation.

Part 2 Products

2.01 PACKAGED DAY TANK AND PUMP SYSTEM

1. Day tank manufacturer shall have a minimum of twenty years' experience in the design and construction of Underwriters Laboratories listed day tank systems.

2. Provide secondary containment type day tank, UL 142 labeled. Tank shall be constructed of minimum 12-gauge steel. Tank shall be fitted with a drain, a removable gasketed 4" square inspection plate, fuel level gage, level switches, level sensor, vent cap (shipped loose), and a 2" gasketed manual fill cap. Fuel inlet and return must be supplied with factory installed drop tubes to prevent surging and foaming in the day tank. Finish exterior in an oil enamel, finish interior with a rust resisting enamel. Secondary basin shall be capable of holding 160% of the primary tank capacity.
3. Tank shall be furnished with one suction and one return electric pumps. One manual pump shall also be furnished.

4. Tanks shall be complete with a control cabinet. Controls shall operate at 120 volts, 1 phase, 60 hertz and shall include level controls, safety interlocks a microprocessor based logic panel to sequence 4 level control switches. Controls shall include alarm activation. Control cabinet shall be labeled UL 508A. Cabinet front door will have an operator interface which will provide at a minimum, alarm silencing, manual reset lamp/alarm test buttons, lead pump selector, HOA switches for each pump, pump status indication lights, tank leak alarm, low-level alarm, common alarm, and tank level signal. All alarm bells and lights shall be factory installed. Entire tank control system shall be tested at the factory before shipping.

5. 5. Provide safety interlocks to shut down all pumps on detection of leaks, high fuel level or low fuel level. Interlocks must be capable of operating even when control panel fails or is out of service and the pumps are operating in manual "Hand" mode.

6. Approved Manufacturers: Simplex, Inc, Tramont, or PRYCO, Inc.

2.02 DIESEL FUEL PUMPS

1. Provide two 7 GPM at 100 PSIG transfer pumps. Pumps shall be of the positive displacement, rotary type with cast iron housing and self adjusting mechanical carbon ring seals, mounted directly to motor with C face or spider mount and a pressure relief valve. Pump and motor shall be connected through a flexible coupling, provided with a steel guard. Pump voltage shall be 120 volts, 1 phase, 60 Hz, and shall be factory wired to a terminal block in the control panel.

2.03 DIESEL FUEL SYSTEM VALVES

1. Ball valve shall be 1-inch ID, with bronze body.

2. Manufacturers: McMaster-Carr, or Engineer approved equal.

2.06 SIGNS

All sides of the fuel storage tanks shall be marked with warning signs. "FLAMMABLE," NO SMOKING", "DIESEL".

Part 3 EXECUTION

3.01 INSTALLATION

A. General

1. Equipment shall be installed in accordance with the manufacturer's recommendations.

2. All materials and equipment shall be new and free from defects or damage and shall be installed in accordance with the approved recommendations of the manufacturer to conform to the contract documents. The installation shall be accomplished by workmen skilled in this type of work. Equipment shall be erected in a neat manner, shall be aligned, leveled and adjusted to provide satisfactory operation. Installation shall be such that connection and disconnection of piping and accessories can be readily made and so that all parts are easily accessible for inspection, operation, maintenance and repair. Minor deviations from indicated arrangements to provide proper access may be made.

B. Storage Tanks

1. All control, alarm, sensing, etc. panels shall be mounted above the flood elevation.

2. Tanks shall be grounded. Where fittings cause a break in the electrical continuity of the system approval jumpers shall be provided.

3. Any damage to tank coatings or tank exteriors shall be replaced prior to backfilling.

C. Fuel Piping

1. All pipe shall be cut accurately to measurements established at the site and shall be worked into place without forcing or bending. All pipe shall be installed into place without traps or pockets and pitched 1-inch in 40-foot minimum to drain.

2. Piping shall be installed to minimize the quantity of piping joints. Provide unions and/or flexible connections at all equipment connections.

3. Joints shall be fabricated in accordance with standard industry practices and manufacturer's instructions. All joints shall be liquid tight, screwed joints except where flanged connections to equipment or valves are required. Cut pipe square using pipe cutting tool and carefully ream pipe to remove all burrs. Cut a complete thread, using sharp dies properly set and centered, while applying oil graphite cutting lubricant.

D. Flexible Fuel Piping

1. Provide flexible piping connectors at all day tank connections, all generator connections, all storage tank connections and all equipment connections.

2. Flexible connections shall be a minimum of 12 inches long or as required for equipment removal or maintenance. Protect flexible connectors where physical damage may occur due to adjacent equipment, other piping, wiring, or where subject to possible damage from operating personnel.

3.02 CLEANING

A. After the work thoroughly clean all pipelines to remove all dirt, stones, pieces of wood or other material which may have entered during the construction period.

B. If defective piping or joints are discovered at this time, they shall be repaired or replaced by the Contractor at no cost to the Owner.

3.03 TESTING

A. Piping shall be tested in strict accordance with the manufacturer's testing requirements. The entire piping system shall be pressure tested with fuel at 25 psig and proved tight at this pressure for a period of 4 hours. Defective work or material shall be replaced and retested. The system shall be test plugged or capped prior to testing to prevent test pressure from reaching any equipment or storage tank.

B. Storage tanks shall be pressure tested at 5 psi and all fittings soaped for a period of at least 12 hours. Tanks under test pressure shall not be left unattended.

C. Contractor shall provide fuel for any required testing and retesting. If the fuel subsequently becomes

contaminated, Contractor shall dispose of the fuel at no cost to the Owner and in accordance with all FDEP regulations. Upon completion of the testing and prior final acceptance of the system, the Contractor shall fill the tanks to capacity.

END OF SECTION

END OF ADDENDUM #6