



November 6, 2018

Mr. Jon Cooper
City of Pembroke Pines
Senator Howard C. Forman Campus
8300 South Palm Drive
Pembroke Pines, FL 33025
jcooper@ppines.com

**Re: WWTP Rehabilitation – Phase 1
GMP Clarification Letter with Revised Bid Form**

Dear Mr. Cooper:

Please see our clarifications below to the questions addressed at the meeting held on 11/01/2018:

East Influent Pump Station:

1. Cardinal is proposing to replace all 8 pumps with 4 new pumps. Clarification is requested on the pump capacity (gpm/TDH) and manufacturer to confirm existing capacity is being met or exceeded. Also confirm if they plan to maintain the existing suction/discharge diameter connections to the existing suction/discharge manifolds.

CARDINAL RESPONSE:

- Proposed pumps are Yeomans Model No. 8415-3D.***
- All four (4) proposed pumps are same for interchangeability and maintenance standardization.***
- Design point 1 is 1400GPM at 32 FT TDH per pump. 2,016,000 GPD.***
- Two Pumps in Parallel = 2800GPM at 32Ft TDH. 4,032,000 GPD.***
- Design Point 2 is 2125 GPM at 16 Ft TDH per pump. 3,060,000 GPD.***
- All four pumps are VFD driven.***
- Plan is to install all four pumps in the east containment area. All suction/discharge connections to be reused except for the existing 24"x10" tees at Pumps 5 and 6. These will be removed and replaced with 24" x 8" Tees.***

2. Confirm if all plug valves specified to be replace are included, a total of 7 plug valves shall be replace per BODR/dwgs. Should utilize one of the manufacturers listed on the specs.

CARDINAL RESPONSE:

Confirmed. Plug valves will be Dezurik.

3. Confirm new 24" knife gate valve is included.

CARDINAL RESPONSE:

Confirmed.

4. Confirm replacement of the pumps drain system (seal water) is included.

CARDINAL RESPONSE:

Confirmed.

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5. Confirm modifications to the sump structure is included.

CARDINAL RESPONSE:

Confirmed.

6. Confirm replacement of aluminum handrails and repair stairs is included.

CARDINAL RESPONSE:

Confirmed.

7. Confirm that a new crane structure will be installed that is isolated from the existing structure. Are they intending to surface prep and paint the canopy structure? Are you replacing all of the fasteners?

CARDINAL RESPONSE:

New crane structure will be a separate structure isolated from the existing. Surface preparation and painting of the existing structure is priced in the Alternate section of the GMP. No fasteners are being replaced.

8. Clarify why the new 200 amp fused bucket in the existing main switch gear is being provided?

CARDINAL RESPONSE:

- *There are two conditions to be addressed during construction that impact design. ONE: The existing Breaker panel, PLC panel and VFD panels at the East PS need to be replaced. TWO: In order to maintain service the pump removal/replacement will need to be a stepped process and at times existing pumps and new pumps may need to be operational at same time.*
- *To meet these conditions new electrical distribution Panel, PLC Panel and VFD's will be installed to north of east containment area. This new equipment will be fed with the proposed 200 amp breaker and will be functional separate from the existing equipment. As new pumps are installed they will be powered up, commissioned, tested and placed into operation with new gear. As new pumps are placed in operation existing pumps will be removed from service. Once all existing pumps are remove the existing gear will be removed.*
- *Having two sets of live gear allows combination of new and existing pumps to be ran during the transitional period.*

West/East Surge Tanks:

1. Confirm the basis for the aeration system replacement scope of work, especially how Cardinal plans to identify which diffusers should be replace. If during construction more is needed, is the cost included in the GMP? The surge tanks utilize coarse bubble diffusers.

CARDINAL RESPONSE:

For the Base Bid portion of the GMP, we anticipated in the West Tank to replace a quantity of seventy-five 316SS band diffusers and fifty 316SS band diffusers in the East Tank. Once the tank has been cleaned, we will visually inspect the band diffusers for damage and replace as necessary. We will also fill the tank with water and have the system run to see if any of the band diffusers are not functioning properly.

2. Does the allowance included all of the necessary SS or PVC pipes/fittings, etc. for coarse diffusers? What grade of stainless steel is being proposed? What schedule for PVC and stainless steel?

CARDINAL RESPONSE:

Yes. 316SS is the grade of stainless steel being proposed and Schedule 5 for the dropleg/feed pipe-manifold and Schedule 10 for the headers.

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3. Please clarify the scope of work included in the extension of handrail at catwalk to tank dome.

CARDINAL RESPONSE:

We plan on extending the handrail so there is no gap between the catwalk and the dome.

4. Specify type of fall protection system, confirm with Jacobs (safety) if acceptable.

CARDINAL RESPONSE:

We looked at two options depending on what type hatch is there presently. Either a safety grate will be installed inside the hatch or a safety post system outside the hatch.

5. Confirm the replacement of the air actuator valve is only at the East Surge Tank.

CARDINAL RESPONSE:

Confirmed.

Treatment Unit 5:

1. Confirm what items are included with the removal and rehabilitation of the existing clarifier drive, should follow items included on BODR.

CARDINAL RESPONSE:

1. The clarifier drive rehabilitation only includes the following:

- Removal of the clarifier drive unit
- Shipping costs to and from a local motor shop
- Inspection of gearbox
- Replacement of bearings and any damaged gears
- Replacement of the drive motor
- Reinstallation of the refurbished drive unit
- Metal repair on the clarifier arms
- Replacement of the neoprene at the scum trough skimmer arm
- Replacement of the neoprene at the clarifier scraper arm

2. Is there a reason to enlarge the passage from the contact chamber to reaeration instead of reduce it as specified on the BODR?

CARDINAL RESPONSE:

Per Addendum #2, we will reduce the size in lieu of enlarging.

3. Clarify item 16, "utilizing Owner furnished weirs". Per BODR, Contractor shall replace existing weirs on clarifier.

CARDINAL RESPONSE:

We anticipated using the unused weirs that are on site. The weirs stored onsite by Pembroke Pines match the aluminum weirs at treatment unit no. 3. Cardinal will procure the missing (2) sections of new weirs needed to replace all the weirs.

4. Confirm the grade and schedule of stainless steel is being proposed?

CARDINAL RESPONSE:

316L is the grade of stainless steel being proposed and Schedule 5S for the dropleg/feed pipe-manifold and Schedule 10S for the headers. Supports are 316 Stainless.

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5. Clarify the approach for tank cleaning, including but not limited to, the blasting of the interior walls and other surfaces.

CARDINAL RESPONSE:

The tank cleaning subcontractor will pump the sludge to TU 4. Any rags present during the pump down will be caught by the subcontractor. The remaining sand/grit will be disposed of by the subcontractor at an offsite landfill approved to accept the material. The walls will be pressure washed (low pressure) to clean the walls.

Clarifications

1. Contractor proposes to dispose of the sludge removed from TU5 and surge tanks into TU4. Confirm with Jacobs/Operation if this is acceptable and if there any concerns of affecting the treatment process. Cardinal to explain their approach

CARDINAL RESPONSE:

The tank cleaning subcontractor will pump the sludge to TU 4. Any rags present during the pump down will be caught by the subcontractor. The remaining sand/grit will be disposed of by the subcontractor at an offsite landfill approved to accept the material. The walls will be pressure washed (low pressure) to clean the walls.

2. Additive Alternates:

a. TU5 - Coating of Interior Walls - Will this alternate be required when replacing the weirs on the clarifier?

CARDINAL RESPONSE:

No.

b. TU5 -V-Port Ball Valves for Manual Air Control and Isolation -For future reference, confirm how the decision will be made to move forward with this alternate.

CARDINAL RESPONSE:

Cardinal recommends this option for flow control. This is offered as an Alternate for City of Pembroke Pines to select if deemed necessary by the City.

Cost break down:

1. Section 09000 - Painting:

a. The breakdown shows an item for exterior catwalks (\$30,900) and another item for yellow non-skid safety painting on deck (\$16,000), provide justification for why this is being provided.

CARDINAL RESPONSE:

The exterior catwalks were called out to be painted in the BODR. The yellow non-skid safety painting on the deck will be necessary since personnel will be walking on the deck.

b. Interior steel and modifications for \$53,500, confirm what is this for (BODR specifies launders and weirs). There is an additive alternate for TU5 for coating of interior walls.

CARDINAL RESPONSE:

This item is for the painting of the new structural steel for the tank cover.

2. Alternates - West Surge Tank

a. The aeration equipment full replacement includes all new piping?

CARDINAL RESPONSE:

Yes, all new aeration piping inside the West Surge Tank.

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Basis of Pricing:

1. Division 1:

a. Provide justification for how the \$10,000.00 permit fees allowance was determined?

CARDINAL RESPONSE:

The majority of the work is rehabilitation and maintenance related. The 10k was based on what we anticipated might be considered new or addition/alteration. This is an allowance only as discussed. Permit fees are determined by the City, and we ask that Utilities be a part of determining that fee. Any overages would need to be paid from the general allowance. Any savings would be credited to the City.

b. Provide the amount included for 3rd party/independent testing allowance?

CARDINAL RESPONSE:

\$15,000 per the Allowance section of the GMP.

2. Division 2:

a. Provide the amount included for sidewalk restoration allowance?

CARDINAL RESPONSE:

\$4,900 per the Allowance section of the GMP.

b. Cardinal is responsible to verify existing underground utilities around the project area (where excavation is needed). As specified on sheet C-01, Cardinal shall pothole and verify all existing pipe crossings to avoid existing utilities damaged by construction. Confirm this is included in the GMP.

CARDINAL RESPONSE:

Confirmed.

3. Division 5:

a. Confirm all stainless steel will be 316L.

b. Confirm if the new aluminum plate covers for TU5 are going to be specified with the appropriate loading criteria to address their use by O&M staff.

c. Cardinal did not include welding repairs under this division.

CARDINAL RESPONSE:

Confirmed.

4. Division 11:

a. Clarify the scope of work included for start-up and training. Also, clarify which piece of equipment is included.

CARDINAL RESPONSE:

Start-up and training will be per the specifications included in the design package.

b. Confirm how the flow rate of 6.5-8 mgd was determined and is it acceptable.

CARDINAL RESPONSE:

Please see response to question #1 for the East Influent Pump Station.



c. Define coarse and fine bubble aeration system for TU5 and surge tanks.

CARDINAL RESPONSE:

TU#5:

- *PVC Fine bubble diffusers (contact tank, secondary aeration)*
- *Stainless Steel Coarse bubble diffusers (digesters)*

West/East Surge Tanks

- *Coarse bubble diffuser system*

5. Division 13:

a. Define Control Systems to include control panels.

CARDINAL RESPONSE:


New PLC Control Panel "PLC2-1" is included.

The above responses clarify the questions issued to Cardinal Contractors, Inc. and shall be incorporated with the GMP letter as a contract documents for purposes of the scope of services included in the Contract. Cardinal has utilized its understanding of the plant to clarify and limit the scope of services in order to provide the best value to Pembroke Pines. These items have been summarized in the GMP letter. A revised "bid form" is attached to this document clarifying and correcting unit price variances in the coatings section as requested in our meeting.

Cardinal will work with Pembroke Pines and Calvin Giordano to establish an agreeable baseline schedule for the work activities based on our sequence approach. Any sequence variances to our approach and the design criteria document will be memorialized in our final baseline project schedule.

Thank you for the opportunity to meet with you and provide clarification to our proposal. If you have any questions or comments, please do not hesitate to call me.

Respectfully,
Cardinal Contractors, Inc.


Michael Brandao
Vice President

cc: Eric Macek/Cardinal Contractors, Inc.

| BASE BID | |
|---|---------------|
| | |
| MOBILIZATION | \$ 49,100.00 |
| BONDS/INSURANCE | \$ 37,900.00 |
| PRECONSTRUCTION/DESIGN SERVICES | \$ 364,700.00 |
| GENERAL CONDITIONS | \$ 583,300.00 |
| | |
| TREATMENT UNIT 5 | |
| 02000 - DEMOLITION | \$ 42,000.00 |
| 02001 - TANK CLEANING | |
| - SUBCONTRACTOR TANK CLEANING & GRIT REMOVAL - 293 TONS | \$ 121,200.00 |
| 03000 - CONCRETE | \$ 24,000.00 |
| 05000 - AIR PIPING SUPPORTS | \$ 47,600.00 |
| 09000 - PAINTING | |
| - TANK INSPECTION | \$ 1,800.00 |
| - EXTERIOR WALLS (SSPC-SP7) - 135' DIA X 16.5' H = 6,994 SF | \$ 45,100.00 |
| - EXTERIOR CATWALKS | \$ 30,900.00 |
| - DIP / CARBON STEEL PIPE SURFACES | \$ 16,800.00 |
| - INTERIOR STEEL & MODIFICATIONS | \$ 53,500.00 |
| - YELLOW NON-SKID SAFETY PAINTING ON DECK | \$ 16,000.00 |
| 11000 - TREATMENT UNIT EQUIPMENT/AERATION | |
| MATERIAL: | |
| - COARSE BUBBLE | \$ 90,900.00 |
| - FINE BUBBLE | \$ 84,000.00 |
| - CLARIFIER DRIVE REHAB | \$ 12,700.00 |
| - CLARIFIER SUPPORT CABLES | \$ 2,500.00 |
| - WEIRS | \$ 6,400.00 |
| - SPRAY WASH PIPING PUMP | \$ 1,900.00 |
| LABOR & EQUIPMENT: | |
| - COARSE BUBBLE | \$ 9,400.00 |
| - FINE BUBBLE | \$ 28,900.00 |
| - CLARIFIER DRIVE REHAB | \$ 13,300.00 |
| - CLARIFIER SUPPORT CABLES | \$ 2,200.00 |
| - WEIRS | \$ 7,000.00 |
| - SPRAY WASH PIPING PUMP | \$ 600.00 |
| 13000 - TREATMENT UNIT COVERS AND RELATED ITEMS | |
| SUBCONTRACTOR PRICING: | |
| - ALUMINUM DIGESTER COVER | \$ 231,600.00 |
| - COVER HANDRAIL | \$ 45,000.00 |
| - EAST DIGESTER WALL REINFORCEMENT | \$ 20,600.00 |
| - WEST DIGESTER WALL REINFORCEMENT | \$ 20,600.00 |
| - HYDROSTATIC BULKHEADS REINFORCEMENT - 4EA | \$ 72,500.00 |
| - SPLITTER BOX SUPPORT STEEL | \$ 20,800.00 |
| 15000 - PIPING | |
| BLOWER AIR PIPING: | |
| - PIPE | \$ 48,100.00 |
| - VALVES | \$ 56,900.00 |
| - FITTINGS | \$ 86,800.00 |
| - WELDING | \$ 47,300.00 |
| - LABOR & EQUIPMENT | \$ 40,500.00 |
| ODOR AIR PIPING: | |
| - PIPE | \$ 5,700.00 |
| - LABOR & EQUIPMENT | \$ 6,100.00 |
| SLUDGE LINE PIPING: | |
| - PIPE | \$ 15,700.00 |
| - VALVES | \$ 2,600.00 |
| - FITTINGS | \$ 900.00 |
| - WELDING | \$ 3,400.00 |
| - LABOR & EQUIPMENT | \$ 6,100.00 |

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| CLARIFIER DRAIN / AIRLIFT PIPING: | |
| - PIPE | \$ 13,000.00 |
| - VALVES | \$ 7,500.00 |
| - FITTINGS | \$ 7,500.00 |
| - WELDING | \$ 3,000.00 |
| - LABOR & EQUIPMENT | \$ 4,000.00 |
| SMALL PIPING: | |
| - PIPE | \$ 6,100.00 |
| - VALVES | \$ 4,200.00 |
| - FITTINGS | \$ 4,900.00 |
| - WELDING | \$ 2,300.00 |
| - LABOR & EQUIPMENT | \$ 10,100.00 |
| SST DECANTER SWIVEL JOINT ASSEMBLY: | |
| - PIPE | \$ 1,000.00 |
| - FITTINGS | \$ 11,100.00 |
| - LABOR & EQUIPMENT | \$ 500.00 |
| 16000 - ELECTRICAL | \$ 42,600.00 |
| 17000 - INSTRUMENTATION & CONTROLS | \$ 44,100.00 |
| SUBTOTAL | \$ 1,551,800.00 |
| | |
| WEST SURGE TANK | |
| 02000 - DEMOLITION | \$ 2,200.00 |
| 02001 - TANK CLEANING | |
| - SUBCONTRACTOR TANK CLEANING & GRIT REMOVAL - 290 TONS | \$ 99,600.00 |
| 05000 - MISCELLANEOUS METALS | \$ 3,700.00 |
| 09000 - PAINTING | |
| - TANK INSPECTION | \$ 1,800.00 |
| - EXTERIOR WALLS (SSPC-SP7) - 122.34' DIA X 16.5' H = 6,338 SF | \$ 41,113.00 |
| 11000 - AERATION (REPLACING SS DIFFUSERS ONLY) | \$ 14,700.00 |
| 15000 - PIPING | \$ 51,300.00 |
| 16000 - ELECTRICAL | \$ 2,800.00 |
| 17000 - INSTRUMENTATION & CONTROLS | \$ 6,900.00 |
| SUBTOTAL | \$ 224,113.00 |
| | |
| EAST SURGE TANK | |
| 02000 - DEMOLITION | \$ 2,200.00 |
| 02001 - TANK CLEANING | |
| - SUBCONTRACTOR TANK CLEANING & GRIT REMOVAL - 113 TONS | \$ 37,200.00 |
| 05000 - MISCELLANEOUS METALS | \$ 4,300.00 |
| 09000 - PAINTING | |
| - TANK INSPECTION | \$ 1,800.00 |
| - EXTERIOR WALLS (SSPC-SP7) - 74.75' DIA X 16.5' H = 3,873 SF | \$ 25,213.00 |
| 11000 - AERATION (REPLACING SS DIFFUSERS ONLY) | \$ 14,700.00 |
| 15000 - PIPING | \$ 39,900.00 |
| 16000 - ELECTRICAL | \$ 2,800.00 |
| 17000 - INSTRUMENTATION & CONTROLS | \$ 6,900.00 |
| SUBTOTAL | \$ 135,013.00 |
| | |
| EAST INFLUENT PUMP STATION | |
| 02000 - DEMOLITION | \$ 46,000.00 |
| 03000 - CONCRETE | \$ 16,200.00 |
| 09000 - PAINTING - PIPING, VALVES, EQUIPMENT, CONCRETE | \$ 16,600.00 |
| 11000 - PUMPS | |
| - MATERIAL - 4 EA | \$ 145,500.00 |
| - LABOR & EQUIPMENT | \$ 21,800.00 |
| 14000 - CRANE & HOIST (CRANE STRUCTURE SEPARATE FROM EXISTING CANOPY) | \$ 54,700.00 |
| 15000 - PIPING | |
| - PIPE | \$ 45,100.00 |

| | |
|--|------------------------|
| - VALVES | \$ 143,800.00 |
| - FITTINGS | \$ 26,100.00 |
| - LABOR & EQUIPMENT | \$ 81,900.00 |
| - ASPHALT RESTORATION | \$ 15,000.00 |
| 16000 - ELECTRICAL | \$ 176,600.00 |
| 17000 - INSTRUMENTATION & CONTROLS | \$ 66,600.00 |
| SUBTOTAL | \$ 855,900.00 |
| BASE BID ALLOWANCES | |
| MATERIAL TESTING | \$ 15,000.00 |
| BUILDING PERMITS | \$ 10,000.00 |
| LEAD & ASBESTOS REPORT | \$ 10,000.00 |
| SODDING | \$ 5,000.00 |
| SIDEWALK | \$ 4,900.00 |
| SURGE TANK CONCRETE INSPECTION | \$ 1,500.00 |
| SURGE TANK CONCRETE CRACK REPAIR - 100 LF | \$ 9,000.00 |
| STEEL TANK REPAIRS | \$ 20,000.00 |
| ODOR CONTROL FRP DUCT PAINTING - PPG PSX 700 TOP COAT | \$ 150,000.00 |
| TARIFF ALLOWANCE | \$ 20,000.00 |
| SUBTOTAL | \$ 245,400.00 |
| BASE BID TOTAL | \$ 4,047,226.00 |
| ALTERNATES | |
| TREATMENT UNIT 5 | |
| 09000 - PAINTING OF INTERIOR WALLS (SSPC-SP7) - 6,994 SF | \$ 322,200.00 |
| 15000 - 6" V-PORT VALVES IN LIEU OF BUTTERFLY VALVES ON AIR RISERS - ADDER | \$ 46,800.00 |
| WEST SURGE TANK | |
| 09000 - PAINTING OF INTERIOR WALLS (SSPC-SP7) - 6,338 SF | \$ 150,287.00 |
| 11000 - AERATION EQUIPMENT FULL REPLACEMENT | \$ 129,700.00 |
| EAST SURGE TANK | |
| 09000 - PAINTING OF INTERIOR WALLS (SSPC-SP7) - 3,873 SF | \$ 91,828.00 |
| 11000 - AERATION EQUIPMENT FULL REPLACEMENT | \$ 83,500.00 |
| EAST INFLUENT PUMP STATION | |
| 09000 - PAINTING OF METAL STRUCTURE (SSPC-SP10 ON CORRODED AREAS, SSPC-SP7 ON BALANCE) | \$ 19,600.00 |
| 17000 - PRESSURE GAUGES (8EA) | \$ 10,000.00 |
| ALTERNATES BID TOTAL | \$ 853,915.00 |
| UNIT PRICING | |
| 02001 - SAND/GRIT REMOVAL PER TON | \$ 366.00 |
| 09000 - UNIT PRICE SPOT REPAIR (\$12K FOR THE FIRST 500 SF) *TU #5 & TANKS ONLY* | \$12,000/TANK |
| 09000 - UNIT PRICE SPOT REPAIR (\$12/SF AFTER THE MINIMUM 500 SF) *TU #5 ONLY* | \$ 56.00 |
| 09000 - UNIT PRICE SPOT REPAIR (\$12/SF AFTER THE MINIMUM 500 SF) *SURGE TANKS ONLY* | \$ 29.00 |
| 09000 - UNIT PRICE SPOT REPAIR (\$12/SF - NO MINIMUM) *INFLUENT PUMP STATION | \$ 12.00 |



October 24, 2018

Mr. Jon Cooper
City of Pembroke Pines
Senator Howard C. Forman Campus
8300 South Palm Drive
Pembroke Pines, FL 33025
jcooper@ppines.com

**Re: WWTP Rehabilitation – Phase 1
GMP Letter**

Dear Mr. Cooper:

We have revised our guaranteed maximum price proposal in response to your email requesting additional breakdowns for review.

The proposal is based on Design Criteria Package incorporating the various scope modifications discussed in our meeting. We have utilized our intimate knowledge of your facility to develop an offering that incorporates more accurately the actual conditions of the facility.

We are pleased to provide the following scope of work:

East Influent Pump Station:

1. Replace all eight (8) pumps on Influent Pump Station with four (4) new pumps. The remaining four (4) existing pumps will be removed and blanked off. Associated piping, fitting valves and appurtenances will be replaced to give the City a complete working system
2. One (1) new Influent Pump Station PLC control panel, PLC2-1 to replace existing control panel
3. PLC/HMI SCADA programming for new PLC2-1 control panel
4. One (1) new pressure transmitter with diaphragm seal for pump suction header
5. Associated Electrical which includes:
 - a. Demo existing control panels and eventually feeders
 - b. Intercept existing 3" conduit from existing manhole outside of the pump station to feed new power panel
Furnish and install new 200 amp rated conductors
 - c. Furnish and install a new 200 amp fused bucket in existing main switch gear
 - d. Furnish and install a new 200 amp power panel, transformer, lighting panel, (4) four Danfoss VFD's and panel supports
 - e. Assist with the installation of a new PLC control panel
 - f. Replace (8) existing light fixtures with new LED type fixtures
 - g. Furnish and install conduit and wire for the new pumps, lights and controls
6. New manual crane/hoist added to existing canopy structure

West/East Surge Tanks:

1. Tanks will be cleaned and all sand/grit to be removed

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2. ***Restore existing stainless steel aeration system as follows: proposal is based on replacement of 30 existing supports and 70 band diffusers total combined for East and West Surge Tanks.***
3. Removal of blower set-up
4. Extend handrail at catwalk to tank dome
5. Install fall protection inside tank hatch
6. Blast and coat exterior of tanks
7. Replace air actuator valve
8. Replace 8-inch ductile iron belowground pipe, from existing tee located outside of East Blower Building to East Surge Tank
9. An allowance for repairs to corroded areas on the outside wall of the East Surge Tank. A lead test will be performed
10. An allowance for inspection of concrete slab for cracks, and replace as needed
11. Replace level transmitter with transducer with 6" mounting flange
12. New tank level floats – 2ea tank
13. Associated Electrical including new conduit from the existing level transmitter panels to the tanks for the new transducers and floats.
14. ***No bypassing or linestops included to divert flow from surge tanks. Using existing piping/valving to divert flow.***

Treatment Unit 5:

1. Replace coarse bubble diffuser system in digester section with new stainless steel system (similar to Treatment Units 1-4)
2. Replace fine bubble diffuser system in contact tank and secondary aeration section with PVC system (similar to Treatment Units 1-4)
3. Installation of new air header on tank exterior including expansion joints, supports and concrete foundations where required
4. Removal and rehabilitation of existing clarifier drive (rebuild gearbox and refurbish/replace motor)
5. Tanks will be cleaned and all sand/grit to be removed
6. Reinforce carbon steel walls on TU No. 5, from contact chamber to reaeration area to withstand difference in head pressure
7. Enlarge passage from contact chamber to reaeration
8. Replace clarifier sludge return pipe in the digester section. Sludge return line in clarifier section is encased in concrete/grout and shall remain. Valve inside of digester on sludge return piping shall be removed to match Treatment Units 1-4
9. Remove existing fabric cover on Treatment Unit No. 5
10. Install new field erected cover over digester section with aluminum plates, including support system utilizing existing galvanized beams, new aluminum and steel beams, and new steel columns similar to Treatment Units 1-4
11. New aluminum handrail at covers
12. Modify 10" FRP odor control ductwork as required for a new penetration/connection to new aluminum digester cover
13. Remove FRP ductwork and cap at locations where fabric cover is removed and not replaced with a new aluminum cover
14. Replace existing Return Activated Sludge (RAS) box with stainless steel box
15. Replace supernatant line with stainless steel pipeline lower existing decant pipeline
16. Replace existing weirs on clarifier, with powder coating aluminum utilizing owner furnished weirs. Cardinal will furnish hardware and 3 missing sections of weirs
17. Install new spray wash piping and pump for the effluent launders
18. Provide access thru the existing catwalk handrail to the scum arm system for maintenance purposes



19. Replace 16-inch influent valve
20. Replace instrumentation as follows:
 - a. Dissolved Oxygen sensors and transmitters – 2ea
 - b. Level Elements and Indicating Transmitters – 3ea
21. Replace air lifting pipe, with stainless steel
22. Associated Electrical which includes:
 - a. Disconnect/reconnect MOV
 - b. Remove and replace exiting disconnects for clarifier drive and scum spray pump. Reuse existing feeder conduit and wire
 - c. Remove and replace on/off switch and HOA for clarifier drive and scum spray pump
 - d. Furnish and install new power aluminum conduit and wire from existing pull box 51 to torque switches, clarifier drive on/off switch, scum spray pump HOA switch, CP-870, 871, 872, 874 and 877
 - e. Disconnect/reconnect limit switch and air solenoid valve. Furnish and install sealtight as necessary
 - f. Furnish and install new control aluminum conduit and wire from existing pull box 52 to CP-870, 871, 872, 874 and 877. Furnish and install conduit from these same panels to the devices
23. Blast and coat exterior of tank, including **exterior** catwalks.
24. Apply safety non-slip coating to covers at walkway and paint new air piping.
25. Reference bid form for detail on allowances.

Clarifications:

1. The base bid includes sand and grit removal in the treatment Unit, West Surge Tank, and East Surge Tank calculated on 8" of material for a total of 696 tons. Sludge will be returned to the digester section of Treatment Unit No. 4. Removal and disposal of materials exceeding the 696 tons included in the base bid will be charged at an additional \$366.00 / ton.
2. Additive Alternates have been provided as optional additional scopes to the base bid as follows:
 - a. Treatment Unit No. 5 – Coating of Interior Walls
This coating alternate adds the blasting and coating of the treatment unit interior walls and accessories such as launders, scum trough, interior non-stainless piping and interior walkways. Surface preparation is based on blasting of metal to meet SSPC-SP 7 NACE requirements on all tightly adhered surfaces SSPC-SP 10 where SP 7 is not attainable. The basis of the pricing is an assumption of 70% tightly adhered surfaces in the Treatment Unit.
 - b. Treatment Unit No. 5 – V-Port Ball Valves for Manual Air Control and Isolation
This alternate is an option to upgrade the stainless steel high performance butterfly valves with v-port ball valves at each of air header outlets to each air diffuser grid. The upgrade to a v-port ball valve will provide for improved control and balancing of the air on Treatment Unit No. 5. The scope includes quantity (7) – 6" v-port ball valves in lieu of butterfly valves.
 - c. East Surge Tank – Coating of Interior Walls
This coating alternate adds the blasting and coating of the East Surge Tank interior walls. Surface preparation is based on blasting of metal to meet SSPC-SP 7 requirements on all tightly adhered surfaces and SSPC-SP 10 where SP 7 is not attainable. The basis of the pricing is an assumption of 70% tightly adhered surfaces in the East Surge Tank.
 - d. West Surge Tank – Coating of Interior Walls
This coating alternate adds the blasting and coating of the West Surge Tank interior walls. Surface preparation is based on blasting of metal to meet SSPC-SP 7 requirements on all tightly adhered surfaces



and SSPC-SP 10 where SP 7 is not attainable. The basis of the pricing is an assumption of 70% tightly adhered surfaces in the West Surge Tank.

- e. ***Influent Pump Station - Painting of Metal Structure***
SSPC-SP10 on corroded areas and SSPC-SP7 on balance.

Our pricing is broken down with a base bid item for each structure and additive alternates as identified in the table below.

| BASE BID | |
|---|------------|
| MOBILIZATION | 49,100.00 |
| BONDS/INSURANCE | 37,900.00 |
| PRECONSTRUCTION/DESIGN SERVICES | 364,700.00 |
| GENERAL CONDITIONS - 12 MONTHS | 583,300.00 |
| TREATMENT UNIT 5 | |
| 02000 - DEMOLITION | 42,000.00 |
| 02001 - TANK CLEANING | |
| - SUBCONTRACTOR TANK CLEANING & GRIT REMOVAL - 293 TONS | 121,200.00 |
| 03000 - CONCRETE | 24,000.00 |
| 05000 - AIR PIPING SUPPORTS | 47,600.00 |
| 09000 - PAINTING | |
| - TANK INSPECTION | 1,800.00 |
| - EXTERIOR WALLS (SSPC-SP7) - 135' DIA X 16.5' H = 6,994 SF | 45,100.00 |
| - EXTERIOR CATWALKS | 30,900.00 |
| - DIP / CARBON STEEL PIPE SURFACES | 16,800.00 |
| - INTERIOR STEEL & MODIFICATIONS | 53,500.00 |
| - YELLOW NON-SKID SAFETY PAINTING ON DECK | 16,000.00 |
| 11000 - TREATMENT UNIT EQUIPMENT/AERATION | |
| MATERIAL: | |
| - COARSE BUBBLE | 90,900.00 |
| - FINE BUBBLE | 84,000.00 |
| - CLARIFIER DRIVE REHAB | 12,700.00 |
| - CLARIFIER SUPPORT CABLES | 2,500.00 |
| - WEIRS | 6,400.00 |
| - SPRAY WASH PIPING PUMP | 1,900.00 |
| LABOR & EQUIPMENT: | |
| - COARSE BUBBLE | 9,400.00 |
| - FINE BUBBLE | 28,900.00 |
| - CLARIFIER DRIVE REHAB | 13,300.00 |
| - CLARIFIER SUPPORT CABLES | 2,200.00 |
| - WEIRS | 7,000.00 |
| - SPRAY WASH PIPING PUMP | 600.00 |
| 13000 - TREATMENT UNIT COVERS AND RELATED ITEMS | |
| SUBCONTRACTOR PRICING: | |
| - ALUMINUM DIGESTER COVER | 231,600.00 |
| - COVER HANDRAIL | 45,000.00 |
| - EAST DIGESTER WALL REINFORCEMENT | 20,600.00 |
| - WEST DIGESTER WALL REINFORCEMENT | 20,600.00 |
| - HYDROSTATIC BULKHEADS REINFORCEMENT - 4EA | 72,500.00 |
| - SPLITTER BOX SUPPORT STEEL | 20,800.00 |
| 15000 - PIPING | |

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BLOWER AIR PIPING:

| | |
|---------------------|-----------|
| - PIPE | 48,100.00 |
| - VALVES | 56,900.00 |
| - FITTINGS | 86,800.00 |
| - WELDING | 47,300.00 |
| - LABOR & EQUIPMENT | 40,500.00 |

ODOR AIR PIPING:

| | |
|---------------------|----------|
| - PIPE | 5,700.00 |
| - LABOR & EQUIPMENT | 6,100.00 |

SLUDGE LINE PIPING:

| | |
|---------------------|-----------|
| - PIPE | 15,700.00 |
| - VALVES | 2,600.00 |
| - FITTINGS | 900.00 |
| - WELDING | 3,400.00 |
| - LABOR & EQUIPMENT | 6,100.00 |

CLARIFIER DRAIN / AIRLIFT PIPING:

| | |
|---------------------|-----------|
| - PIPE | 13,000.00 |
| - VALVES | 7,500.00 |
| - FITTINGS | 7,500.00 |
| - WELDING | 3,000.00 |
| - LABOR & EQUIPMENT | 4,000.00 |

SMALL PIPING:

| | |
|---------------------|-----------|
| - PIPE | 6,100.00 |
| - VALVES | 4,200.00 |
| - FITTINGS | 4,900.00 |
| - WELDING | 2,300.00 |
| - LABOR & EQUIPMENT | 10,100.00 |

SST DECANTER SWIVEL JOINT ASSEMBLY:

| | |
|------------------------------------|-----------|
| - PIPE | 1,000.00 |
| - FITTINGS | 11,100.00 |
| - LABOR & EQUIPMENT | 500.00 |
| 16000 - ELECTRICAL | 42,600.00 |
| 17000 - INSTRUMENTATION & CONTROLS | 44,100.00 |

TREATMENT UNIT 5 SUBTOTAL \$ 1,551,800.00

WEST SURGE TANK

| | |
|--------------------|----------|
| 02000 - DEMOLITION | 2,200.00 |
|--------------------|----------|

02001 - TANK CLEANING

| | |
|---|-----------|
| - SUBCONTRACTOR TANK CLEANING & GRIT REMOVAL - 290 TONS | 99,600.00 |
|---|-----------|

05000 - MISCELLANEOUS METALS

| | |
|--|----------|
| | 3,700.00 |
|--|----------|

09000 - PAINTING

| | |
|-------------------|----------|
| - TANK INSPECTION | 1,800.00 |
|-------------------|----------|

| | |
|--|-----------|
| - EXTERIOR WALLS (SSPC-SP7) - 122.34' DIA X 16.5' H = 6,338 SF | 69,300.00 |
|--|-----------|

| | |
|--|-----------|
| 11000 - AERATION (REPLACING SS DIFFUSERS ONLY) | 14,700.00 |
|--|-----------|

| | |
|----------------|-----------|
| 15000 - PIPING | 51,300.00 |
|----------------|-----------|

| | |
|--------------------|----------|
| 16000 - ELECTRICAL | 2,800.00 |
|--------------------|----------|

| | |
|------------------------------------|----------|
| 17000 - INSTRUMENTATION & CONTROLS | 6,900.00 |
|------------------------------------|----------|

WEST SURGE TANK SUBTOTAL \$ 252,300.00

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| | | |
|---|--|------------------------|
| EAST SURGE TANK | | |
| 02000 - DEMOLITION | | 2,200.00 |
| 02001 - TANK CLEANING | | |
| - SUBCONTRACTOR TANK CLEANING & GRIT REMOVAL - 113 TONS | | 37,200.00 |
| 05000 - MISCELLANEOUS METALS | | 4,300.00 |
| 09000 - PAINTING | | |
| - TANK INSPECTION | | 1,800.00 |
| - EXTERIOR WALLS (SSPC-SP7) - 74.75' DIA X 16.5' H = 3,873 SF | | 49,700.00 |
| 11000 - AERATION (REPLACING SS DIFFUSERS ONLY) | | 14,700.00 |
| 15000 - PIPING | | 39,900.00 |
| 16000 - ELECTRICAL | | 2,800.00 |
| 17000 - INSTRUMENTATION & CONTROLS | | 6,900.00 |
| EAST SURGE TANK SUBTOTAL | | \$ 159,500.00 |
| EAST INFLUENT PUMP STATION | | |
| 02000 - DEMOLITION | | 46,000.00 |
| 03000 - CONCRETE | | 16,200.00 |
| 09000 - PAINTING - PIPING, VALVES, EQUIPMENT, CONCRETE | | 16,600.00 |
| 11000 - PUMPS | | |
| - MATERIAL - 4 EA | | 145,500.00 |
| - LABOR & EQUIPMENT | | 21,800.00 |
| 14000 - CRANE & HOIST (CRANE STRUCTURE SEPARATE FROM EXISTING CANOPY) | | 54,700.00 |
| 15000 - PIPING | | |
| - PIPE | | 45,100.00 |
| - VALVES | | 143,800.00 |
| - FITTINGS | | 26,100.00 |
| - LABOR & EQUIPMENT | | 81,900.00 |
| - ASPHALT RESTORATION | | 15,000.00 |
| 16000 - ELECTRICAL | | 176,600.00 |
| 17000 - INSTRUMENTATION & CONTROLS | | 66,600.00 |
| EAST INFLUENT PUMP STATION SUBTOTAL | | 855,900.00 |
| BASE BID ALLOWANCES | | |
| MATERIAL TESTING | | 15,000.00 |
| BUILDING PERMITS | | 10,000.00 |
| LEAD & ASBESTOS REPORT | | 10,000.00 |
| SODDING | | 5,000.00 |
| SIDEWALK | | 4,900.00 |
| SURGE TANK CONCRETE INSPECTION | | 1,500.00 |
| SURGE TANK CONCRETE CRACK REPAIR - 100 LF | | 9,000.00 |
| STEEL TANK REPAIRS | | 20,000.00 |
| ODOR CONTROL FRP DUCT PAINTING - PPG PSX 700 TOP COAT (DEDUCT \$37,500 IF TNEMEC ELASTOGRIP IS USED) | | 150,000.00 |
| TARIFF ALLOWANCE | | 20,000.00 |
| SUBTOTAL | | 245,400.00 |
| BASE BID TOTAL | | \$ 4,099,900.00 |



ALTERNATES

TREATMENT UNIT 5

| | | |
|--|----|------------|
| 09000 - PAINTING OF INTERIOR WALLS (SSPC-SP7) - 6,994 SF | \$ | 332,200.00 |
| 15000 - 6" V-PORT VALVES IN LIEU OF BUTTERFLY VALVES ON AIR RISERS - ADDER | \$ | 46,800.00 |

WEST SURGE TANK

| | | |
|---|----|------------|
| 09000 - PAINTING OF INTERIOR WALLS (SSPC-SP7) - 6,338 SF | \$ | 122,100.00 |
| 11000 - AERATION EQUIPMENT FULL REPLACEMENT | \$ | 129,700.00 |

EAST SURGE TANK

| | | |
|---|----|-----------|
| 09000 - PAINTING OF INTERIOR WALLS (SSPC-SP7) - 3,873 SF | \$ | 74,600.00 |
| 11000 - AERATION EQUIPMENT FULL REPLACEMENT | \$ | 83,500.00 |

EAST INFLUENT PUMP STATION

| | | |
|--|----|-----------|
| 09000 - PAINTING OF METAL STRUCTURE (SSPC-SP10 ON CORRODED AREAS, SSPC-SP7 ON BALANCE) | \$ | 19,600.00 |
| 17000 - PRESSURE GAUGES (8EA) | \$ | 10,000.00 |

ALTERNATES BID TOTAL \$ 818,500.00

UNIT PRICING

| | | |
|--|----|---------------|
| 02001 - SAND/GRIT REMOVAL PER TON | \$ | 366.00 |
| 09000 - UNIT PRICE SPOT REPAIR (\$12K FOR THE FIRST 500 SF) *TANKS ONLY* | | \$12,000/TANK |
| 09000 - UNIT PRICE SPOT REPAIR (\$12/SF AFTER THE MINIMUM 500 SF) *TANKS ONLY* | \$ | 12.00 |
| 09000 - UNIT PRICE SPOT REPAIR (\$12/SF - NO MINIMUM) *INFLUENT PUMP STATION | \$ | 12.00 |

The following items are the basis for our pricing and include exceptions or variations to the design criteria document:

Division 1

1. Our scope includes permit and construction drawings for the mechanical, electrical, structural and process designs.
2. Allowance for payment of permit fees from building department and FDEP permits if required.
3. Efforts for permitting are included in the Base Bid cost.
4. We anticipate an issue set at the 90% & 100% permitting and record drawings.
5. We have not included any costs for wetland mitigation or delineation.
6. We exclude any detailed specifications that we have not reviewed and approved.
7. We exclude removal, disposal, or handling of hazardous or contaminated waste.
8. Allowances are included for 3rd party / independent testing as identified on the bid form.
9. We will supply 2 sets of equipment specific O&M manuals for each piece of equipment.
10. Our price is based upon complete site access at all times to facilitate our construction operations.
11. We include standard construction housekeeping and one final clean up at the end of construction.

Division 2

1. We included an allowance for sodding. We have excluded any maintenance or watering of the grass or landscaping items.
2. We included an allowance for sidewalk restoration.
3. We have included asphalt repair at the East Influent Pump Station
4. We have not included any concrete paving.
5. No existing Utilities are to be relocated.
6. We require a designated laydown area onsite.
7. We have not included any fencing.

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8. Site work is excluded other than restoration of disturbed areas.

Division 3

1. We have included 4000 psi concrete with type I/II cement with 4% air entrainment for the structures. We have not included additives for resistance to seawater or highly aggressive chemicals.
2. Concrete to be level within tolerances specified in ACI.
3. A standard float or broom finish is provided for all flatwork. An ACI smooth form finish will be provided for vertical surfaces exposed to view.
4. Non-Shrink grout is to be standard construction grade. We exclude any special non-shrink or epoxy grouts.

Division 4

- none

Division 5

1. New piping supports to be carbon steel, except those furnished with the aeration equipment to support the headers and manifolds for the coarse and fine bubble diffusers. Carbon Steel supports to be finish painted.
2. New handrail will be aluminum mill finish to match existing on Treatment Units 1-4.
3. We include covering the exposed tanks with aluminum plate cover. This covering does not have a special loading requirement.

Division 6

- none

Division 7

- none

Division 8

- none

Division 9

1. Painting included on ferrous metals not factory finish coated. We exclude coating of Galvanized or non-ferrous metals.
2. We include labeling of process piping and matching the owner's color code for piping.
3. We exclude painting of PVC pipe. We do include color-coded labels for the PVC pipe for identification purposes.
4. We exclude coating of the floors.

Division 10

- none

Division 11

1. Our cost includes start-up and training for those pieces of process equipment that we supply. Not included for items that are refurbished.
2. Influent pumps for the East Influent Pump Station are based on 100% redundancy and a total combined east plant (TU 1 & 2) flow rate of 6.5-8 mgd.



Division 12

1. We exclude any costs for any type of fire suppression, fire retardation, or fireproofing, or sprinkler systems.

Division 13

Division 14

1. *Proposal includes new structural members to carry new hoist independent from the existing pump station canopy.*

Division 15

1. Air piping to be standard wall welded carbon steel outside of Treatment Unit.
2. Air piping inside tank to be stainless steel.

Division 16

1. New exposed conduits shall be ridged aluminum.
2. We exclude any stand-by power, utility fees and usage charges for permanent power.
3. We exclude any relocation of existing utilities.


Division 17

1. SCADA and HMI programming associated with East Influent Pump Station only.

Thank you for the opportunity to provide this proposal. If you have any questions or comments, please do not hesitate to call me. We look forward to discussing the GMP proposal in detail.

Respectfully,

Cardinal Contractors, Inc.


Michael Brandao
Vice President

cc: Eric Macek/Cardinal Contractors, Inc.