GLADSTONE

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City of Gladstone, MI

Staff Report

Agenda Date: April 10, 2023 **Eric Buckman, City Manager:** EWB

Department: Wastewater **Department Head Name: Rodney Schwartz**

Presenter: Rodney Schwartz **Kim Berry, City Clerk:** _____

This form and any background material must be approved by the City Manager then delivered to the City Clerk by 4:00 PM the Tuesday prior to the Commission Meeting.

AGENDA ITEM TITLE: Change Order No. 4 for Wastewater Treatment Plant Improvements.

BACKGROUND: Change order is needed to make changes to the existing contract documents. See supporting documentation for description of work.

FISCAL EFFECT: $47,909.00 decrease in contract price. This will decrease the current contract price from $17,864,547.00 to $17,816,638.00. Original contract price was $17,743,000. ($73,638.00 overall increase, 6.1% of contingency)

SUPPORTING DOCUMENTATION: Please see attached Change Order #4 from C2AE Engineering.

RECOMMENDATION: Make a motion to approve Change Order #4 as recommended by C2AE Engineering for a net decrease to the contract price of $47,909.00.

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CHANGE ORDER #4

DATE OF ISSUANCE: **04/04/2023**

EFFECTIVE DATE: **Effective Upon Funding Agency Approval**

OWNER: **City of Gladstone, MI**
CONTRACTOR: **Staab Construction Corporation**
CONTRACT: **SRF Project #5727-01**
PROJECT: **Gladstone MI, Wastewater Treatment Plant Improvements**
OWNER'S CONTRACT NO. **21-0210**
ARCHITECT/ENGINEER'S CONTRACT NO. **21-0210**
ARCHITECT/ENGINEER **C2AE, Escanaba & Lansing, MI**

You are directed to make the following changes in the Contract Documents:
Description: **See Items Below**

Reason for Change Order: **See Items Below**

Attachments: **Bulletin #2 Contractor Responses/Pricing for two items indicated below; Bulletin #7 with Contractor Change Order Requests 1 through 6, signed and Staab quotes dated 02/20/2023; Bulletin #9 with Contractor Change Order Requests 2 through 4, signed and Staab quote, dated 03/10/2023; Bulletin #11 with Contractor Change Order Request 2, signed and Staab quote, dated 02/17/2023; Bulletin #12 with Contractor Change Order Request 1, signed and Staab quote, dated 03/16/2023; Work Change Directive 3, Shop Drawing #80, Specification Section 01 7823.**

CHANGE IN CONTRACT PRICE:
Original Contract Price **$17,743,000.00**
Net increase from previous Change Orders **No. 1** to **No. 3**: **$121,547.00**
Contract Price prior to this Change Order: **$17,864,547.00**
Net decrease of this Change Order: **$(47,909.00)**
Contract Price with all approved Change Orders: **$17,816,638.00**

CHANGE IN CONTRACT TIMES:
Original Contract Times: Substantial Completion: **April 15, 2024** Ready for final payment: **June 24, 2024**
Net change from previous Change Orders **No. 1** to **No. 3**: Substantial Completion: **None** Ready for final payment: **None**
Contract Times prior to this Change Order: Substantial Completion: **April 15, 2024** Ready for final payment: **June 24, 2024**
Net increase (decrease) this Change Order: Substantial Completion: **None** Ready for final payment: **None**
Contract Times with all approved Change Orders: Substantial Completion: **None** Ready for final payment: **None**

RECOMMENDED:	APPROVED:	ACCEPTED:
By: _____	By: _____	By: _____
ARCH/ENGR (Authorized Signature)	OWNER (Authorized Signature)	CONTRACTOR(Authorized Signature)
Date: _____	Date: _____	Date: _____

EJCDC 1910-8-B (1996 Edition)
Prepared by the Engineers Joint Contract Documents Committee and endorsed by The Associated General Contractors of America and the Construction Specifications Institute.

Description:

1. Bulletin #2

   a. B2.14 Revise electrical circuiting for Hydronic Pumps. In the MCC-E & F oneline diagrams on Sheet E-113, revise the circuit sizing for hydronic pumps PU-1 and PU-2. On Sheet E-121, delete the enclosed VFD for hydronic pumps PU-5, PU-6, and PU-8 and add combination motor starters for pumps PU-3, PU-4, and PU-5. Also add a combination motor starter for pump PU-7. In the LP-E schedule on Sheet E-131, revise the hydronic pump designations from PU-5, 6, 8 to PU-3, 4, 5 and revise the load data VA as indicated. Add a 25A/3P circuit breaker at 37, 39, 41 for hydronic pump PU-7. On Sheet E-202, in enlarged plan Detail 1, add hydronic pump PU-7 and delete the VFDs shown for hydronic pumps PU-5, PU-6, and PU-8 and provide combination motor starters for hydronic pumps PU-3, PU-4, and PU-5. Refer to Sheets E-113, E-121, E-131, and E-202, dated 08/23/2022 (reissued).

      Reason: The original variable speed system was replaced by a constant speed system. Providing more simplified controls.

      Decrease the contract in the amount of:

      $(11,000.00)

   b. B2.23 Add thermostat and 3-way valve for each unit heater. Add individual thermostat and 3-way valves for each Unit Heater for greater control of individual unit heater temperatures and simpler logic control. Delete the contactors shown in the Multiple Unit Heater Connection detail on Sheet E-142 and indicated on Sheets E-202, E-701, and E-801. Refer to Sheets MH-201, MH-203, M-803, E-202, E-701, and E-801, dated 08/23/2022 (reissued), and M-802 (Revised and reissued, dated 09/27/2022.)

      Reason: By changing the hydronic system from a variable speed system to a constant speed system, the valves needed to change to prevent dead heading. The individual thermostats will provide more simplified controls.

      Increase the contract in the amount of:

      $6,704.00

2. Bulletin #7:

   a. B7.1 Provide a 120V power to existing site lift station. At load MCC-A6, revise the feeder from the circuit breaker to the existing lift station from 1"C, 3#8, 1#8G to 1"C, 4#8, 1#8G. Use this circuit at the lift station to reconnect the existing 240V, 3ph pumps and the existing 120/240V single phase loads. Refer to Sheet E-112 (reissued).

      Reason: Field verification of lift station required 120V service.

      Increase the contract in the amount of:

      $423.00

   b. B7.2 Provide an FEW system failure alarm. Delete the FEWCP RS485 Modbus connection to the MCP. Within the FEW system control panel specified in Section 22 1123.13, provide an unpowered contact for a general alarm. On Sheet E-201, in Room 002 – Secondary Effluent Pumping, revise the homerun from the FEWCP from ¾"C, RS485 to ¾"C, 2#14. On Sheet EI-104, where the FEWCP RS485 Modbus connection is shown, revise the PLC input to be a binary input (a spare input may be utilized). Delete Keynote 2. Designate the new binary input as FEW System Fault and configure the PLC/OIT system to display this alarm as FEW System Fault. Refer to Specification Section 22 1123.13 (not reissued), Sheet E-201 (reissued) and Sheet EI-104 (reissued).

      Reason: FEW is a critical system that originally would only locally alarm. This change allows for an alarm on the SCADA system.

      Increase the contract in the amount of:

      $1,306.00

c. B7.3 Add an FEW system low pressure alarm switch and control system input. On Sheet G-105, in the Final Effluent Water Schematic, furnish and install a pressure switch at the hydropneumatic tank on the same sensing line as the pressure gauge shown. The pressure switch shall have a 0 to 150 psi range and a NEMA 4 or 4X enclosure. Ashcroft or equal. Designate the pressure switch PSL-905. On Sheet E-201, in the Secondary Effluent Pumping Room 002, indicate new pressure switch PSL-905 at the FEW hydropneumatic tank. Connect this switch to the MCP with ¾"C, 2#14. These conductors may be run in the same conduit with the FEWCP system failure alarm conductors. In the SCADA Signal and Control Interconnections diagram on Sheet E-141, revise the FEWCP connection from RS285 to 2#14. On Sheet EI-104, add a field located PSL-905 symbol adjacent to LSH-904. Connect this switch to a spare binary input within the MCP and configure the PLC/OIT to display this alarm as low FEW System Pressure. Refer to Sheets G-105 (not reissued), E-141, E-201, and EI-104 (reissued).

Reason: FEW is a critical system that originally would only locally alarm. This change allows for an alarm on the SCADA system.

Increase the contract in the amount of:

$2,998.00

d. B7.4 Delete the discrete FSCP and GSCP signals to the MCP and add an Ethernet connection. Note that the FSCP and GSCP will be combined into a single control panel as indicated in Submittal C2AE-SD#94. On Sheet E-113, at MCC-E4 and F4, delete the 480V power connections and the 30A, 3PDT switch at the FSCP. The two 15A MCC circuit breakers shall remain as spares. The combined FSCP/GSCP control panel shall be connected to MCC-E5 and F5 as is currently shown for the GSCP. On Sheet E-141, in the SCADA Signal and Control Interconnections diagram and on Sheet E-113 in the MCC one line diagrams, revise the FSCP and GSCP connections from ¾"C, 16#14 from each to the MCP to ¾"C, CAT6 and ¾"C, 2-2/C#18 SH cables from the combined FSCP/GSCP to the MCP. On Sheet E-202, the combined FSCP/GSCP may be installed where the GSCP is currently shown. On Sheet EI-102, revise the 19 PLC binary inputs shown from the FSCP & GSCP to one Ethernet connection and one AO analog output. Configure the PLC/OIT to utilize the Ethernet connection to display the signals shown. Configure the AO to provide the FIT-120 raw sewage flow signal to FSCP/GSCP. Refer to Sheets E-113, E-141, E-202, and EI-103 (reissued).

Reason: Consolidated control panels into one panel.

Increase the contract in the amount of:

$247.00

e. B7.5 Add combination motor starters for the two sludge recirculation pumps and interconnect with the sludge boiler controls. On Sheet E-111 connect the sludge boiler control panel BCP-1 to the spare 20A/3P circuit breaker in PP-D. The 60A/3P circuit breaker shall remain as a spare. Furnish and install two NEMA Size 1 3 pole circuit breaker type combination motor starters for the two sludge recirculation pumps. Wall mount as indicated. Provide each motor starter with a NEMA 12 enclosure, 15A/3P circuit breaker, fused control power transformer, two NO and two NC starter auxiliary contacts and cover mounted H-O-A switch, green push to test LED running light and overload relay reset switch. Configure the starter control circuit for two-wire remote control from the boiler control panel BCP-1. Use the spare 30A/3P PP-D circuit breaker to power the pump starters as indicated. From each motor starter furnish and install 4#14 control conductors to BCP-1. Refer to Sheets E-111 and E-701 (reissued).

Reason: Pump controls needed to be added to control the flow of sludge thru the heat exchanger.

Increase the contract in the amount of:

$11,141.00

f. B7.6 Provide a 4-20 mAdc temperature signal to the boiler control panel BCP-1. On Sheet E-701 where the TE/TIT-740 signal is shown being connected to the MCP, route this signal via the boiler control panel BCP-1. Connect such that the inputs at BCP-1 and MCP in series. Refer to Sheet E-701 (reissued).

Reason: Needed for sludge heating control.

Increase the contract in the amount of:

$2,251.00

3. Bulletin #9:

a. B9.2 Room 121 Service Building interior wall finishes. Refer to Sheet A-209 (reissued). Delete new coatings that are indicated at existing glazed block in room, Headworks and Primary Treatment Room 121.

Reason: Paint manufacturer and subcontractor were concerned that the existing glazed tile and moisture conditions present in the room would cause a coating system to fail.

Decrease the contract in the amount of:

$(2,563.00)

b. B9.3 Demolition change. Refer to Sheet AD-201 (not reissued). Delete demolition of existing VCT in the Electrical Room 116.

Reason: The City executed a contract with a local contractor to complete the demolition of the existing VCT tile.

Decrease the contract in the amount of:

$(454.00)

c. B9.4 Add ceilings. Add ceilings to Wet Well Access 117 and adjacent stair enclosure space. Ceiling to be 5/8" gypsum board on metal framing system. Ceiling heights to be 1" below top of walls that do not extend to deck above. Surface mount the Type F lighting fixtures shown on Sheet E-202.

Reason: The ceiling within the Wet Well Access Room isolates the room from the Electrical Room and retains any potential hazardous gases. The ceiling within the stair enclosure ensures the ventilation does not short circuit the air handler within the electrical room which services the room and the new Administration Building.

Increase the contract in the amount of:

$5,928.00

d. B9.5 Window revisions. Refer to Sheets AD-201, A-200, A-201, A-209 (reissued). Delete replacing four windows and add replacing two other windows.

Reason: The replacement of existing windows to the north of the PST is no longer required due to the addition of alternative number 1 – PST lean-to structure. The two additional windows within the boiler room are no longer functional and need to be replaced.

Increase/Decrease the contract in the amount of:

$0 (Zero)

4. Bulletin #11:

   a. B11.1 Revisions to Sequence of Construction. Refer to Section 01 1000 Summary (reissued). Paragraph 1.12 has been modified to reflect proposed changes to the Sequence of Construction. Completed items are shown in *italics*, deleted items are struck through and added items are in ALL CAPS. Refer to Sheet G-108 (reissued). The drawing is revised to coordinate with the changes proposed to the Sequence of Construction.

      Reason: To eliminate a temporary flow control structure within the yard – Junction Manhole A.

      Decrease/Increase the contract in the amount of:

      $0 (Zero)

   b. B11.2 Delete Junction Manhole A. Junction Manhole A is not required and is deleted from the work.

      Reason: Junction Manhole A was intended to be a temporary structure to aid in the sequence of construction. Other provisions are now provided on a more permanent basis.

      Decrease the contract in the amount of:

      $(6,852.00)

5. Bulletin #12:

   a. B12.1 Reduce Service Building brick repair square footage. Reduce brick repair square footage from approximately 720 sf to 35 sf. Two courses of brick are to be replaced at the bottom of the wall north of the existing PST. Provide weep holes at maximum 2'-8" o.c., see sketch for more detail. Brick matching the Administration Building is acceptable for repairs. Refer to Sheet A-205 (Sketch attached).

      Reason: Existing 1930's brick proves difficult to match today. The samples submitted by the mason do not closely match the existing brick. The City wishes to pursue alternative rehabilitation efforts throughout the WWTP.

      Decrease the contract in the amount of:

      $(75,834.00)

6. WCD3:

   a. Field observed offset distance of the 6" drain line was measured at approximately 43.5' from the south exterior wall of the Service Building, which conflicts with the proposed MBBR Tanks. Removal of the existing Cast Iron Secondary Drain Line and replace DIP south to allow for the construction of the MBBR Tank Foundation/Base Slab. Note that the existing cleanout north of the outfall manhole is to be abandoned. Maintain a minimum of 8 feet of clearance from the proposed MBBR and Future Tank with the new drain line. Approximate quantities of materials required: 90 lineal feet of 6" DIP; 4-6" 45 degree elbows; 2-6" CI to 6" DIP coupling adapters. Purpose of this Work Change Directive: To allow Contractor to construct the foundation/base slab for the MBBR Tanks.

      Reason: After field verifying the location of the existing 6" drain line, it was determined that there was a conflict with the proposed MBBR tank foundation/base slab.

      Increase the contract in the amount of:

      $21,296.00

7. Shop Drawing #80:

   a. Delete televising. Shop Drawing #80 (Spec 33 1000 1.3B Water Utilities Field Quality Control; Spec 33 4000 3.12 Stormwater Utilities Field Quality Control; Spec 40 0513 3.6 Sanitary Sewerage Utilities Inspections and Tests). Staab requested confirmation of the influent sewer testing requirements to the appropriate testing equipment could be procured and testing performed while lines were being bypassed. Credit offered to delete televising. The City accepted the credit for eliminating the TV inspection.

      Reason: The proposed credit was offered because of the timing of the work and difficulty procuring the proper equipment for a 24" line. The proper installation of the pipe was verified by the onsite resident project representative and air testing was performed, and passed. EGLE also approved this change, see attached email from 8/26/2023 from Scott Richards.

      Decrease the contract in the amount of:

      $(2,500.00)

8. Specification Section 01 7823:

   a. Specification Section 01 7823 states the requirement for Operation and Maintenance Data and copies of all shop drawing information. The Contractor will provide one (1) PDF copy of the proposed O&M Manual for preliminary review, via email. This shall be done at least fifteen (15) days before requesting inspection of Substantial Completion. Contractor to provide two (2) final hard copies and two (2) digital copies of all required manuals. All shop drawings will be provided on two (2) flash drives. With no hard copy provided.

      Reason: The owner decided this proposal better fit the needs and available storage of the Wastewater Treatment Plant

      Decrease the contract in the amount of:

      $(1,000.00)

Total This Change Order **$(47,909.00)**