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TRANSMITTAL COVER SHEET

DATE: **AUGUST 11, 2025**

TO: **ALL CONTRACTORS**

FROM: **DUSTIN TILL, P.E.**

PROJECT: **RAW WATER INTAKE UPGRADE**
CHATTAHOOCHEE VALLEY WATER SUPPLY DISTRICT
GMC PROJECT NO: CMGM220052

RE: **ADDENDUM #2**

PLEASE COMPLETE BELOW AND EMAIL IMMEDIATELY TO:

patsy.stinson@gmcnetwork.com

I, the undersigned, hereby acknowledge receipt of this Addendum.

_____ _____
Authorized Representative of Contractor Date

_____ _____ _____
Company Name Telephone Fax

_____
Contractor's License Number (if applicable)

ADDENDUM NUMBER 2

RAW WATER INTAKE UPGRADE

FOR

CHATTAHOOCHEE VALLEY WATER SUPPLY DISTRICT

GMC PROJECT NO. CMGM220052

1. General

1.1 The following revisions are hereby added as Addendum No. 2 to the referenced Project Manual and Plans and shall be considered when preparing bids.

1.2 The bid date has been postponed to Thursday, September 11 at 10:00 am EST.

2. Revisions to Project Manual

2.1 Specification 43 23 13 – Vertical Turbine Pumps has been revised and is included as an attachment to this addendum.

- Section 2.1.H.3 – Impellers shall be Type 316 stainless steel or aluminum bronze.
- Section 2.1.G.1.g – Column diameter has been changed to 14".

2.2 Peerless is an approved manufacturer for vertical turbine pumps.

2.3 Ross is an approved manufacturer for surge anticipator valves.

3. Attachments

3.1 Revised Specification 43 23 13 – Vertical Turbine Pumps

4. Questions

4.1 **Question: I noticed in the general notes under the heading "Pre-Engineered Light Gauge Steel Roof Truss" that there is a mention of wood trusses. Additionally, section 05 44 00 specifies cold-formed steel trusses. Please clarify whether the roof trusses are intended to be steel or wood.**
Answer: The trusses shall be steel.

4.2 **Question: Please confirm that copper/nickel coated intake screens are acceptable.**
Answer: Copper/nickel coated screens are acceptable.

5. Acknowledgement of Receipt

5.1 Receipt of Addendum No. 2 shall be acknowledged in two ways:

5.1.1 Note on (EJCDC C-410) Bid Form – Bidder acknowledges receipt of "Addendum No. 2" and date of "August 11, 2025".

AND

5.1.2 EMAIL GMC immediately at patsy.stinson@gmcnetwork.com and confirm that addendum has been received and is legible with signed Acknowledgement attached.

6. Conclusion

6.1 This is the end of Addendum No. 2, dated Monday, August 11, 2025.

SECTION 43 23 13 – VERTICAL TURBINE PUMPS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Vertical Turbine Pumps for raw water pump station

B. Related Requirements:

1. Section 03 20 00 – Anchorage in Concrete
2. Section 09 96 00 - High-Performance Coatings: Surface Preparation and coating requirements for pump column and body
3. Section 26 05 93 - Common Motor Requirements for Process Equipment

1.2 REFERENCE STANDARDS

A. American Bearing Manufacturers Association:

1. ABMA 9 - Load Ratings and Fatigue Life for Ball Bearings.
2. ABMA 11 - Load Ratings and Fatigue Life for Roller Bearings.

B. ASME International:

1. ASME B16.5 – Pipe Flanges and Flanged Fittings: NPS ½ through NPS 24, Metric/Inch Standard.

C. ASTM International:

1. ASTM A29 - Standard Specification for General Requirements for Steel Bars, Carbon and Alloy, Hot-Wrought.
2. ASTM A536 - Standard Specification for Ductile Iron Castings.
3. ASTM A744 - Standard Specification for Castings, Iron-Chromium-Nickel, Corrosion Resistant, for Severe Service.

D. American Water Works Association:

1. AWWA E103 – Horizontal and Vertical Line Shaft Pumps.

1.3 COORDINATION

A. Section 01 31 00 – Project Management and Coordination: Requirements for coordination.

B. Coordinate installation and startup of Work of this Section with Owner

1.4 SCHEDULING

A. Section 01 31 00 – Project Management and Coordination: Requirements for scheduling.

B. Schedule Work of this Section to install pumps prior to connecting piping Work. Start-up stall be scheduled at the convenience of the Owner.

1.5 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit manufacturer information for materials of construction and fabrication.

C. Shop Drawings:

1. Submit detailed dimensions for materials and equipment, including wiring and control diagrams, performance charts and curves, installation and anchoring requirements, fasteners, and other details.
2. Include manufacturer's specified displacement tolerances for vibration at operational speed specified for pumps.

D. Critical speed calculations and analysis.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Manufacturer Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures, anchoring, and layout.

G. Source Quality-Control Submittals: Indicate results of shop/factory tests and inspections.

H. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

I. Manufacturer Reports: Certify that equipment has been installed according to manufacturer instructions.

1.6 QUALITY ASSURANCE

A. Provide equipment and appurtenances in contact with potable water complying with NSF 61 and AWWA E103.

B. Equipment specified in this section shall be the product of a single manufacturer.

C. The manufacturer shall be solely and fully responsible for the warranty and mechanical design adequacy of all the provided components under this section.

D. The pump manufacturer shall be certified to the ISO 9001 standard for the design and manufacturer of vertical turbine pumps.

E. Pressure containing fabrications shall be welded only by those whom are qualified on ASME code Section IX.

1.7 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.

B. Project Record Documents: Record actual locations and final orientation of equipment and accessories.

1.8 WARRANTY

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for warranties.

B. The Manufacturer shall warrant their pumps to be free of defects for a period of one (1) year after the product is put into operation.

PART 2 - PRODUCTS

2.1 VERTICAL TURBINE PUMPS

A. Manufacturers:

1. The equipment, a vertical turbine pump, shall be manufactured by:

a. Goulds Water Technology
b. Peerless
c. Or Approved Equal

B. Description: Vertical multi-stage type, consisting of a fabricated steel discharge head, vertical hollow shaft motor, discharge column and shafting, and bowl assembly, and motor equipped for variable speed operation. The pumps shall be product lubricated.

C. The manufacturer shall make a thorough analysis of the proposed pump installations with respect to physical locations of pumps, configurations of suction and discharge piping, elevations of piping, pump mounting and any other features or factors that might directly or indirectly affect the operation and/or performance of the pumps to be furnished.

D. The general design shall be such that the components can be easily disassembled; that replacement parts are of standard design and readily available; and that all components and parts are suitable for the service required.

E. The materials for construction shall be generally as hereinafter specified. It is recognized that the standard metallurgy of a particular pump manufacturer may vary from that specified, but the quality of materials shall, however, equal or exceed that specified; and the assembly of materials shall result in a product equal to or exceeding all the requirements of these Specifications.

F. Pump Designation:

1. Raw Water Pumps

a. P1010
b. P1020
c. P1030

G. Performance and Design Criteria:

1. Raw Water Pumps (P1010, P1020, P1030)

a. Design Capacity and Head (1 pump): 5.2 MGD @ 78 ft. TDH
b. Min. Capacity and Head (1 pump): 3.2 MGD @ 115 ft. TDH
c. Max Capacity and Head (1 pump): 5.8 MGD @ 63 ft. TDH
d. Minimum Efficiency at Design Point: 72%
e. Maximum Motor Speed: 1180 rpm
f. Pumps shall be capable of producing 12 MGD @ 100 ft. TDH with 3 pumps operating in parallel at full speed. While operating individually, pumps shall operate efficiently under the installed conditions over the entire range of operating speeds.
g. Column Diameter: 14 in.
h. Pump Discharge Diameter: 12 in.
i. Minimum Lineshaft Diameter: 1 in.
j. VFD driven
k. Motor: 125 hp

H. Bowl Assembly:

1. Suction Bell:

a. Suction bowl shall be designed to provide conservative entrance velocities and direct the flow to the first stage impeller. The inner surface of the suction bowl shall be smooth and free of sharp projections which could cause turbulence or cavitation.
b. Shall be constructed of cast iron and machined for bolting to the bowls.
c. The suction bell shall be a smooth bell-shaped entrance as a waterway to the impellers, and shall incorporate an integrally cast suction manifold bearing housing. The housing shall have an ASTM B584 lead-free bronze bearing and a cast iron suction manifold plug.
d. Bowl inlet shall include a Type 316L stainless steel inlet strainer.

2. Pump Bowls:

a. Shall be constructed of ASTM A48 Class 30 close grained cast iron with integrally cast diffusion vanes. The bottom bowl shall be machined to bolt to the suction bell. Each bowl shall be equipped with an ASTM B584 lead-free bronze bearing.
b. Bowl sizes 6” – 15” shall be porcelain enameled on the bowl interior. Bowl sizes 16” and larger shall be epoxy lined.

3. Impellers:

a. Shall be enclosed type, constructed of Type 316 stainless steel or aluminum bronze, dynamically and statically balanced.

b. The impeller vanes shall be machined to match the contours of the suction bell, and also the contour of the series case.
c. Impeller shall be secured by means of ASTM A582 Type 416 stainless steel taper lock collet to the bowl shaft. The impeller shaft shall be of 416 stainless steel. The total hydraulic down-thrust for pump shall be minimized. Up-thrust developed upon starting shall be acceptable, but pumps that operate in continuous up thrust shall not be acceptable. Verification of thrust values shall be provided and documented with standard manufacturers published information. Failure to verify thrust calculations shall be basis for rejection of equipment.

I. Column Assembly:

1. The Column Assembly:

a. The pump shall be of open lineshaft construction designed for lubrication by the pumped media.
b. Column pipe shall be flanged and shall be fabricated of ASTM A53 Grade B, carbon steel. Maximum length of one column section shall be 10 feet. Column sections located directly below the discharge head and directly above the pump bowl assembly shall not generally exceed 5'-0" in length. Column sections shall be secured by means of ASTM F593-Gr. CW1 stainless bolts and ASTM F594-Gr.CW1 stainless steel nuts.
c. Column assembly shall have stainless steel bearing retainers that are clamped between registers machined into adjoining column pipe flanges. Each guide shall contain a water lubricated cutless bearing designed for open line shaft, vertical turbine service.
d. Bearing spacing shall be selected to insure operation at a minimum of 25% above or below the first critical speed. Bearing spacing shall not exceed 10 feet. Bearings above static water level shall be constructed of Vesconite bearing material, allowing dry run for at least 60 seconds without any damage to bearings.
e. The interior of the column shall be free of offsets, burrs, discontinuities and irregularities.

2. Line Shafting:

a. Shall be of ASTM A582-88a Type 416 stainless steel, ground and polished.
b. Shafting shall have threaded joints and shall have left hand threads that tighten during pump operation. Ends of shafting shall be machined square to axis of shaft for butt fit, threaded and designed with a safety factor of 1.5 times the shaft safety factor.
c. Lineshaft lengths shall not exceed 10 ft.
d. Shafting size shall be determined from the thrust characteristics of the particular pump bowl under consideration, but shall in no case be less than determined by ANSI/AWWA Specification E101 Section A4.15 line shaft selection, and shall be adequate size to transmit the full motor horsepower without slip, excessive vibration or elongation. Undersized shafting shall be basis for rejection of the pump. Pump supplier shall submit manufacturer's published data to verify shafting selection. Failure to verify shaft sizing shall be basis for rejection of the equipment.
e. A flanged non-spacer coupling shall be furnished to facilitate removal of the motor. The flanged coupling shall be a Type CPAT design with flanged ends and a

threaded pump coupling to facilitate field adjustment. The coupling shall be dynamically balanced for smooth operation. Threaded and coupled shafting is not acceptable. The top shaft and the line shaft shall be of ASTM A582-95b Type 416 stainless steel and of adequate size for the HP to be transmitted.

J. Discharge Head

1. The pump discharge head shall be fabricated steel type. The head shall be suitable for floor mounting and shall be furnished with a steel sole plate to facilitate future removal. Sole plate mounting surface shall be fully machined to provide a perfectly flat base for accurate leveling of the discharge head, and the sole plate shall be accurately leveled to the tolerances specified by the manufacturer prior to installation of the pump. The discharge head base shall be machined to accept the sole plate and shall include a Class 150 integral discharge flange.
2. The head shall have provisions for the mounting and securing of a vertical hollow-shaft motor. The motor mounting flange shall be machined for a perfect fit and angular misalignment shall not be allowed. Head design shall permit the drive shaft be coupled to the motor shaft above the stuffing incorporated in the head using a flanged, adjustable coupling.
3. The head shaft shall be 416 stainless steel and shall be turned and ground. The head shaft or top shaft shall not exceed 10 feet in length. The pump manufacturer shall include a method of adjusting the impellers at the top of the head shaft.
4. Discharge nozzle shall provide smooth flow transition from the head cavity and shall incorporate vertical vane for minimizing turbulence.
5. Lifting lugs shall be integrally cast on the discharge head and shall be capable of supporting the entire weight of the pump.
6. A 1-inch NPT drain connection shall be provided.
7. The pump discharge flange shall be provided. The pump discharge flange shall conform to CL 150 ANSI standard drilling for pipe flanges.
8. The stuffing box shall be cast iron and designed for 6 rings of packing and lantern ring. An extra-long bearing shall be located below the packing in the stuffing box. Packing lubrication leakage through the stuffing box shall be drained back to the sump. The packing gland shall be of a two piece design.
9. A removable coupling guard fabricated from stainless steel shall be provided to protect operating personnel from accidental contact with the shaft or flanged coupling during operation.
10. Discharge head shall include a tap on the packing gland for connection to external water lubrication source.
11. The pump discharge head shall be provided with shaft critical speed calculations, and a structural dynamics analysis shall be performed on the pump assembly to ensure low-vibration operation.

K. Motor

1. Each turbine pump shall be driven by a vertical hollow shaft motor suitable for 460 volts, 3 phase, 60 hertz. The motor shall be an integral part of the pumping unit, and shall be suitable for mounting as shown on the plans. All motors shall be sized so that they will not be overloaded at their rated capacity at any point on the pump performance curves. Motors shall be TEFC with Class F insulation and shall have a minimum service factor of 1.15.
2. Temperature rise at maximum load shall not be greater than Class F limits.

3. Motors shall be U.S. Motors or equal.
4. Each motor shall have thrust bearing(s) capable of carrying the weight of all rotating parts of the pump plus the maximum hydraulic thrust incurred during operation.
5. Motor shall be vertical hollow shaft, squirrel cage induction type and shall conform to IEEE and NEMA standards.
6. Each motor shall be equipped with a non-reverse coupling. A coupling at the top of the motor shall facilitate vertical adjustment of the impellers of the pump. The motor shall also be furnished with a protective cap. All bearings shall be oil or grease lubricated, with proper provisions made to guard against the escape of lubricant.
7. Motors shall be "inverter duty rated" and shall conform to the NEMA "High" standard for premium efficiency. The nameplate on the motor shall also indicate the motor is "inverter duty rated" to the NEMA "High" standard for premium efficiency. A 120v space heater shall be supplied with the motor.
8. Thermostats shall be provided in the windings of each phase to afford protection of the motor against excessive operating temperature. Thermostats shall be normally closed, suitable for operations on 120 VAC, with leads from the same routed to an accessory conduit box for connections separate from the power wiring. One thermostat shall be provided for each phase of the motor windings.
9. Space heaters and thermostat leads shall be directed to a separate junction box, for field wiring by the contractor. These leads shall not be routed through the primary junction box.
10. Shaft grounding rings shall be provided for each motor.
11. Motor bearings shall be oil lubricated and shall be rated for a minimum AMBA 9, L-10 life of 10,000 hours.

L. Pump Vibration

1. The completed installation of pump and driver shall be smooth-running and vibration free.
2. Vibration testing shall be in accordance with HI standards and measured at the pump/motor interface.

M. Miscellaneous

1. Data Plates: Each pump shall be equipped with a data plate securely fastened to the pump that contains the manufacturer's name, pump size and type, serial number, pump speed, impeller data, capacity and head rating, and any other pertinent information.
2. A fabricated steel sole plate shall be provided with each pump to facilitate installation and future removal. The plate shall be provided with min. 1" diameter holes for anchor bolts and tapped holes corresponding to drilling of the pump discharge head base bolting. A suitably-sized hole shall be accurately cut in the center of the plate to allow passage of the pump, and the top surface shall be accurately machined to provide a perfectly flat surface for mounting the discharge head. Raw or mill finished steel plate is not considered acceptable. The base plate shall be grouted in place by the Contractor, in the position as indicated on the Plans. The sole plate shall be supplied with stainless steel anchor bolts by the Manufacturer. The Manufacturer shall confirm size requirements for concrete pad and in no case shall there be less than 2 inches clearance/coverage between edge of anchor bolts and edge of pad.
3. Testing: The pump shall be performance tested prior to shipment to confirm pump performance. Test shall comply with ANSI/HI 14.6 Grade 1U requirements, and shall include, but not be limited to, checking the unit at its rated speed, capacity, head,

efficiency, and brake horsepower at such conditions of head and capacity so as to properly establish the actual performance curve. Certified copies of the test reports shall be submitted for review prior to shipment. The Standards of the Hydraulic Institute shall govern the procedures and calculations for the prescribed testing.

4. All pumps shall be completely assembled, less motors, at the manufacturer's facility prior to shipment, and shall be shipped in one (1) piece.

N. Painting

1. All equipment comprising each pumping unit shall be painted with a potable epoxy finish by the pump manufacturer prior to shipment.
2. The bowl assembly exterior shall be coated with Tnemec 141; minimum 8 mils DFT.
3. The column OD and ID assembly exterior shall be coated with Tnemec 141; minimum 8 mils DFT
4. Head assembly interior and exterior shall be coated with Tnemec 141; minimum 8 mils DFT.
5. The suction can exterior shall be coated with Tnemec 141; minimum 8 mils DFT.
6. Coatings shall be NSF 61 certified.

O. Operation:

1. Electrical Characteristics: As specified in Division 26 – Electrical and the following:

   a. Voltage: 480V, three phase, 60 Hz.

2. Control Panel: VFD/SCADA
3. Operation Sequences

   a. The purpose of the Raw Water Pumps is to pump screened raw water from the wetwell to the water treatment plant. The pumps shall be controlled by SCADA or at the VFD. The operator shall be able to manually turn on/off the pumps via SCADA or at the VFD when desired to run and be able to adjust the speed of the pumps via SCADA or at the VFD. The low-level float in the pump station wetwell shall shut down the pumps if low level is reached in the wetwell.

P. Fabrication

1. Shaft Guard: Enclose shaft and universal joint with enclosed-type metal shaft guard complying with OSHA standards. Also, install a reverse ratchet to prevent the impeller from loosening if the motor turns in reverse.
2. Pump and Drive Mating Surfaces: Machine finished.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install pumps where indicated on Drawings and according to manufacturer instructions.

B. The pump sole plate shall be grouted in place, in the position as indicated on the Plans. Anchor bolts shall be provided by the Contractor, and shall be fabricated of 304 stainless steel.

C. Provide and connect piping, power and control conduit, and wiring to make system operational and ready for startup.

D. Flush piping with clean water.

3.2 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements: Requirements for inspecting and testing.

B. Section 01 70 00 - Execution and Closeout Requirements: Requirements for testing, adjusting, and balancing.

C. Preoperational Check: Before operating system or components, perform following:

1. Check pump and motor alignment.
2. Check for proper motor rotation.
3. Check pump and drive units for proper lubrication.

D. Startup and Performance Testing:

1. Operate pump on clear water at design point for continuous period of two hours, under supervision of manufacturer's representative and in presence of Engineer.

E. Manufacturer Services: Furnish services of manufacturer's representative experienced in installation of products furnished under this Section for not less than two (2), eight (8) hour days on site for installation, inspection, startup, field testing, and instructing Owner's personnel in maintenance of equipment. The manufacturer’s representative shall inspect the installation of the pump and control system prior to energizing and configure the controls for operation under the specified conditions. The manufacturer’s representative shall conduct the initial startup and operation of each VFD. The manufacturer’s representative shall revisit the project site as often as necessary to ensure that all issues are corrected and that the installation and operation of the pump and controls are satisfactory

F. Verify pump performance by performing time-fill test.

G. Check pump and motor for excessive vibration according to manufacturer instructions. Check for motor overload by taking ampere readings.

H. Equipment Acceptance:

1. Adjust, repair, modify, or replace system components that fail to perform as specified and rerun tests.
2. Make final adjustments to equipment under direction of manufacturer's representative.

END OF SECTION 43 23 13

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