

TECHNICAL SPECIFICATIONS

A. GENERAL DESCRIPTION

This work shall consist of potable water system upgrades as described in the **Scope of Work** section of the specifications. All material and workmanship shall be in accordance with the Pennsylvania Department of Environmental Protection's *Public Water Supply Manual (PWSM), Part IV: Noncommunity System Design Standards*, latest edition.

Please note that the Engineer will conduct a **mandatory** pre-construction meeting with the Owner & Contractor to review work limits and sequencing. No work shall commence prior to the pre-construction meeting being held.

The Contractor shall be responsible for payment, acquisition, storage, and installation of all material related to this project. The Contractor shall provide submittals of all material to be used for this project and receive approval from Moniteau School District (Owner) before acquisition. The Contractor will also be responsible for the disposal of any materials left over or created by the project.

All material to be used to convey water shall be NSF approved for potable water.

B. PROJECT SEQUENCING / APPROXIMATE TIMELINE (TENTATIVE)

1. July 13th, 2026 – Project Awarded at School Board Meeting
2. July 14th, 2026 – Notice to Proceed Issued
3. July 14th – 17th, 2026 – Submittals Approved
4. July 20th – 24th, 2026 – Contractor to Secure Material
5. July 27th – August 7th, 2026 – Contractor to Begin Construction
6. August 3rd – 7th, 2026 – Contractor to Plan Tie in with School and keep connection period to less than 24 hours. No outage should occur to building.
7. August 10th – 14th, 2026 – DEP Final Inspection & Restoration
8. August 17th, 2026 – Full Project Completion Hard Deadline

C. INVESTIGATIVE EXCAVATION

This work is the exposing of existing utilities to determine final elevations of proposed waterlines where there are potential utility crossings/conflicts. The work will include the following:

1. Excavation/Hydrovac
2. Maintaining adjacent utilities
3. Survey of elevations and survey point files/notes in NAD83 Pennsylvania State Plane, South Zone, US Foot coordinates to be submitted to the Engineer
4. Backfill and compaction
5. Final restoration at the conclusion of the project

This item will be included in the bidder's Lump Sum (LS) price for the overall project.

D. EROSION AND SEDIMENTATION CONTROL

This work shall consist of construction, installation and maintenance of sediment control structures to limit erosion during construction. The work includes but is not limited to interim stabilization of soils, installation of sediment fencing and silt socks.

The contractor is responsible for limiting practical disturbance to areas and restoring all disturbed areas to a suitable condition upon completion.

The contractor is to remove E&S controls once final stabilization is achieved (a uniform perennial vegetative cover of 70% or more).

The contractor shall adhere to the Erosion and Sedimentation Control Measures shown on the Site Plan and Detail Sheets as prepared by the engineer. The E&S Plan is to serve as a minimum requirement and general guideline. As such, the contractor may be required to implement additional measures for erosion and sedimentation control during the course of construction, with no additional compensation provided.

This item will be included in the bidder's Lump Sum (LS) price for the overall project.

E. DIRECTIONAL DRILLING WATER & ELECTRICAL LINES

The Contractor shall install the water line to the well field and the individual conduits from the new wells to the tie-in points by horizontal directional drilling. The minimum bury depth for the water lines will be 48". The minimum bury depth for the electrical conduits will be 36". Directional drill shots shall be continuous, and no splices shall be allowed of the waterline or electrical conduit in the directional drill shots.

DMES - 2026 Water System Upgrades Project – Tech Specs TS-2

The waterline shall be 2" SIDR-9 200psi waterline. The water line shall have Copperhead #10 CCS Blue High Strength tracer wire with 45 mil jackets installed. The electrical conduits shall be 1 1/4" DR-11 IPS poly. #10 THHN wire shall be pulled from the control panel to each wellhead. The THHN/THWN shall be color coded for 480v three phase (Brown, Orange, Yellow), with a green ground conductor.

This item will be included in the bidder's Lump Sum (LS) price for the overall project.

F. WELLHEAD CONNECTIONS

Well #4 and Well #5 will both receive Baker 2" Weld -On open hole pitless adapters – P/N 62FBEZLF. The pitless adapters shall be installed at a minimum bury depth of 48". 2" SIDR-9 200psi poly will be installed from the discharge of the well. Three feet of pipe will be installed before a 2" x 2" x 1" brass tee for a Baker 4' bury stainless hydrant – P/N 4WHMB75LFSS. Three more feet of 2" poly will extend from the hydrant tee to a Ford 2" FPT x FPT curb stop valve P/N B11-777-NL. Tyler Union Curb Boxes shall be installed. All piping shall be bedded in #57 stone to 12" above any installed utility.

Each well will receive a Royer 8" Locking Insect Proof Well Cap. From the 1.25" conduit connection on the well cap, a 1.25" rigid galvanized steel conduit riser shall be installed to at least 36" below grade. The 1.25" galvanized conduit shall be bent to make the 90 towards the directional drill shot. The connection to the DR-11 HDPE shall be made with a socket fusion male adapter and a galvanized coupling. The 1.25" galvanized riser shall be supported with Unistrut welded to the steel casing.

This item will be included in the bidder's Lump Sum (LS) price for the overall project.

G. WELL #4 PUMP SYSTEM

- Franklin Electric 2HP 460V 3 ϕ 4" stainless steel submersible motor
- Grundfos 25S20-11 Stainless Steel Submersible Pump
- 1.5" x 6" Schedule 40 304SS nipple and 1.5" x 2" 304SS reducing coupling above pump to connect to drop pipe
- 100' of Cresline 2" Sch 120 PVC Drop Pipe
- 2" Flowmatic SS VFD Rated Check Valve (P/N 4034S6VFD) installed 20' above the pump
- Rubber Torque Stop – Installed 3' above the pump
- 110' of Kalas #12-3 Ice Blue Submersible pump wire

This item will be included in the bidder's Lump Sum (LS) price for the overall project.

DMES - 2026 Water System Upgrades Project – Tech Specs TS-3

H. WELL #5 PUMP SYSTEM

- Franklin Electric 1HP 460V 3 ϕ 4" stainless steel submersible motor
- Grundfos 16S10-10 Stainless Steel Submersible Pump
- 1.25" x 6" Schedule 40 304SS nipple and 1.25" x 2" 304SS reducing coupling above pump to connect to drop pipe
- 120' of Cresline 2" Sch 120 PVC Drop Pipe
- 2" Flowmatic SS VFD Rated Check Valve (P/N 4034S6VFD) installed 20' above the pump
- Rubber Torque Stop – Installed 3' above the pump
- 130' of Kalas #12-3 Ice Blue Submersible pump wire

This item will be included in the bidder's Lump Sum (LS) price for the overall project.

I. ELECTRICAL CONTROLS

The 1.25" DR-11 IPS HDPE conduits shall be brought into the booster station pit. The concrete wall shall be diamond cored. The pipe shall be sealed with a Link-Seal centered in the wall and then hydraulic cemented. The conduits shall be routed into the water system control panel with galvanized rigid conduit. Box connections shall be made with a Myers

Hub. All LB ells or fittings shall be malleable steel to match existing conduit work in the pit.

Each well shall receive a new Siemens ESP200 Size 0 motor starter with a 120v coil. The motor starters shall be part number 14CUC32A. An auxiliary contact block will be required to integrate into the existing panel.

Contractor is to integrate the motor starters into the existing panel. Conduits exist between the booster pump pit and the control room inside the building. Contractor is to integrate both wells into the existing control system.

The pre-bid meeting will include an overview of the existing control system. The Contractor is responsible for presenting the Engineer with a tie-in plan for approval.

This item will be included in the bidder's Lump Sum (LS) price for the overall project.

J. FLOW CONTROL

Install a Flomatic CDF30, 30 gpm stainless steel flow control in the existing raw water plumbing inside WTP #301. Cut the existing 2" Sch. 80 PVC raw water piping between the 2" camlock and 2" isolation ball valve prior to the water softeners. Install with 2" FNPT PVC Sch. 80 reinforced female adapter with stainless steel collar.

This item will be included in the bidder's Lump Sum (LS) price for the overall project.

DMES - 2026 Water System Upgrades Project – Tech Specs TS-4

K. DISINFECTION, PRESSURE TESTING & START UP SAMPLING

Notify engineers at least 48 hours prior to testing, for oversight. Each well shall be disinfected with calcium chloride to reach a minimum of a 50ppm residual. The chlorinated raw water shall be pumped through the raw water line and allowed to sit for a minimum of two hours. After sitting, the chlorinated raw water shall be purged from the 2" flushing port in the building through a dechlorination diffuser. Discharged water shall be routed onto a tarp or hard surface to prevent erosion.

The raw water line shall be hydrostatically tested to a minimum of 75psi according to Section 4 of AWWA specification C600-77. Test shall be at least a 2-hour duration with no loss in pressure.

Bacteriological tests shall be collected and analyzed by Pennsylvania DEP Accredited Laboratory from each raw water sampling hydrant at the wellhead, as well as the shared raw water sample port in the building and the entry point.

This item will be included in the bidder's Lump Sum (LS) price for the overall project.

L. RESTORATION & SEEDING

Place, compact, and grade 4" minimum of topsoil. Seed, lime, fertilize, and mulch all disturbed areas. Penn State seed mixture shall be used per manufacturer recommendations, along with pelletized lime (6 tons per acre), 10-20-20 fertilizer (1,000 lb. per acre), and mulch (straw) (3 tons per acre).

The access roadways to the wells shall be topped with 4” of 2A limestone. This item will be included in the bidder’s Lump Sum (LS) price for the overall project.

M. AS-BUILT DRAWINGS & INFORMATION

The Contractor shall make redline notes on a construction drawing set and submit to the Engineer along with the following information:

1. The Contractor shall survey all underground utilities installed as part of this project utilizing an instrument that will provide sub-foot horizontal accuracy. The data must be provided to the Engineer with a point file (.txt or .csv format) in Pennsylvania State Plane South Coordinates. Each point must be identifiable by label. In addition, the Contractor must provide a legible, marked up drawing set which will be used by the Engineer to create an as-built record drawing.. The survey shall include each tie-in point and a shot every 50’ (minimum) along all installed utility lines.
2. Pictures of each tie-in point showing the utility lines/facilities bedded in stone/gravel prior to final backfill.

DMES - 2026 Water System Upgrades Project – Tech Specs TS-5

3. Labeled pictures of the final control connections

This item will be included in the bidder’s Lump Sum (LS) price for the overall project.

