ADDENDUM NO. TWO

THORNTON WATER PROJECT
SOURCE WATER PUMP STATION

PROJECT NO. 12-777XP

CITY OF THORNTON, CO

TO: Prospective Bidders and all others concerned

DATE: July 2, 2026

PURPOSE: To provide additional information and clarification to the solicitation documents for the above-referenced Project.

1. The following shall Add to, Modify, and/or Delete portions of the Project Manual and Drawings for the Project-noted above.

   A. The Invitation for Bid Proposals shall be modified as follows:

      a. Due to the extension of the due date for bids, questions will be received until **5:00 p.m**. local time on **Monday, July 13, 2026**.

   B. The Source Water Pump Station Drawings shall be modified as follows:

      a. The following drawings are deleted in their entirety and replaced with the attached revised drawings: 30GC02 and 30M03.

   C. The Source Water Pump Station Technical Specifications shall be modified as follows:

      a. Section 01 11 00, Summary of Work, Paragraph 1.04.B: Add the following:
         "5. Owners Programmer: Programmer and SCADA integrator retained by the Owner to provide programming and SCADA integration for the facilities under this contract."

      b. Section 01_11_00 - Summary of Work, Paragraph 1.06.D.1.d: Add new paragraph:

         "d. Hydrogate:

            1) 54-inch by 54-inch Slide Gates with lifting assembly (Tag Nos. GAT-340, GAT-341):

               a) Model No. HG560.

b) Excluding: hydraulic actuators, hydraulic lines, hydraulic power unit, miscellaneous hydraulic system components.

c) Estimated Delivery November 2026."

c. Section 01_20_20 - Measurement and Payment, Paragraph 1.03.H:
   i. Delete paragraph in its entirety and replace with the following:

"H. Item 8: Intake Structures, Hydraulic system 54-inch Intake Pipeline:

1. Measurement:
   a. Includes work for, but is not limited to, the following:
   1) Includes work for laydown areas, protection and support of utilities adjacent to the Work, exploratory excavation, excavation, soil stabilization, soil hauling, pipe bedding, CLSM, installation of reservoir intake structures, intake structure gates, intake structure hydraulic actuators, hydraulic lines, hydraulic power unit, miscellaneous hydraulic system components, 54-inch intake pipeline, connections to piping outside of structures, screens, all excavation support and protection as specified in Section 31_50_00 - Excavation Support and Protection, work for dewatering and other appurtenant work and materials as specified in Section 31_23_19 - Dewatering for all excavation activities, and all other related and necessary materials, work and equipment necessary to satisfactorily perform this item, complete in accordance with the Contract Documents.
   2) For Owner procured gates and lifting assemblies [Tag Numbers GAT-340, GAT-341], includes installation of intake structure gates, lifting assemblies, equipment necessary to satisfactorily perform, install, and test this item resulting in working hydraulically actuated slide gate systems, complete in accordance with the Contract Documents.
   b. Measurement for payment will be lump sum and shall be based on a percent complete of this item. Percentages shall be as determined by the Construction Manager.
2. Payment:
   a. Lump sum."

d. Section 26_05_03 - Utility Coordination, Paragraph 2.02.A.: Add new paragraph:

"3. The contractor shall coordinate all utility work with PVREA. A

minimum 60-day notification is required before permanent service installation and temporary service cutover."

e. Section 40_05_59_33 - Cast-Iron Slide Gates, Paragraph 2.05: Delete paragraph in its entirety.

f. Section 40_05_59.33 - Cast-Iron Slide Gates, Gate Schedule:
   i. Delete the words "Self-Contained w/ Pedestal Mount" and replace with the words "Pedestal Mount".
   ii. Delete the words "Non-Rising Stem" and replace with the words "Rising Stem".

g. Section 43_42_21.08 - Hydropneumatic Pressure Control System Including Tank: Delete Section in its entirety.

h. Section 43_42_21.12 - Hydropneumatic Surge Control System Including Tank: ADD attached Section.

2. The Pre-Bid Conference Sign-In Sheet is attached for general information.

3. This Addendum becomes part of the Contract Documents. All other conditions and requirements of the Contract Documents will remain unchanged. Receipt of this Addendum must be acknowledged in the space provided on the Bid Proposal Form in the Project Manual.

END OF ADDENDUM NO. TWO

DocuSigned by:
Patrick Hinterberger
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Patrick Hinterberger
Contracts Supervisor

THORNTON WATER PROJECT

Source Water Pump Station – Chemical Building Pre-Bid Conference

ARDEC Taylor Center Rm 101 - June 18, 2026 1:00pm

	Name	Firm	E-Mail	Phone
1)	Dustin Foss	Rice Lake West	Estimating@RLWEST.ORG	303-339-2442
2)	Josh Hutto	Filanc	Josh.Hutto@Filanc.com	303-710-2018
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THORNTON WATER PROJECT

Source Water Pump Station – Chemical Building Pre-Bid Conference

ARDEC Taylor Center Rm 101 - June 18, 2026 1:00pm

	Name	Firm	E-Mail	Phone
1)	Curtis Miller	Loenbro	cdmiller@loenbro.com	303-669-3702
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9)				
10)				

New Section

SECTION 43_42_21.12[AD2]

HYDROPNEUMATIC SURGE CONTROL SYSTEM INCLUDING TANK

PART 1 GENERAL

1.01 SUMMARY

A. Section includes design, furnishing, testing, and installation of ASME-rated hydropneumatic surge control systems for the treated water transmission system. Each system shall include a pressure vessel, liquid level control system, air compressor assembly, and all piping, valves, instrumentation, controls, and accessories required for a complete and operable system meeting the specified performance requirements.

B. Each hydropneumatic surge control system shall be provided by a single manufacturer. The manufacturer shall furnish a complete, fully integrated system and shall be solely responsible for system design, component compatibility, controls integration, and compliance with specified surge performance requirements.

C. The manufacturer's responsibility includes proper operation of the system under all specified operating conditions. Coordination of installation by the Contractor shall not relieve the manufacturer of responsibility for system performance.

1.02 REFERENCES

A. American Society of Mechanical Engineers (ASME):
   1. B31.1 - Power Piping.
   2. B31.3 - Process Piping.
   3. Boiler and Pressure Vessel Code (BPVC) Section VIII - Rules for Construction of Pressure Vessels, Division 1.

B. American Water Works Association (AWWA):
   1. AWWA M11 - Steel Pipe: A Guide for Design and Installation.

C. ASTM International (ASTM):
   1. A269 - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
   2. A516 - Specification for Pressure Vessel Plates, Carbon Steel, for Moderate and Lower Temperature Service.

D. National Electrical Manufacturers Association (NEMA):
   1. 250 - Enclosures for Electrical Equipment (1000 V Maximum).
   2. MG-1 - Motors and Generators.

E. NSF International (NSF):
   1. 61 - Drinking Water System Components - Health Effects.

F. International Building Code (IBC).

G. Underwriters Laboratories (UL):
   1. UL 508A - Industrial Control Panels.

H. International Society of Automation (ISA):
   1. ISA 5.1 - Instrumentation Symbols and Identification.

1.03 SYSTEM DESCRIPTION

A. System Requirements:
   1. Each hydropneumatic surge control system shall include a surge vessel, level control system, air compressor assembly, and all valves, piping, instrumentation, and accessories required for a complete and fully functional system.
   2. The system shall be designed and furnished to meet the performance criteria specified in this Section. Compliance shall be demonstrated through submittals in accordance with 1.04.
   3. Reciprocating air compressors and receivers shall be provided as part of the system and shall be fully integrated with the surge vessel and control system to ensure proper operation under all specified operating conditions.
   4. The manufacturer shall furnish the complete system, including all vessels, compressors, controls, appurtenances, and accessories, and shall be solely responsible for system integration and performance. Coordination of installation by others shall not relieve the manufacturer of responsibility for system functionality and compliance with specified performance requirements.

1.04 SUBMITTALS

A. Submit as specified in Section 01_33_00 - Submittal Procedures and Section 46_05_10 - Common Work Results for Mechanical Equipment.

B. Surge Vessels and Hydropneumatic System Appurtenances:
   1. Shop Drawings:
      a. Detailed vessel fabrication drawings indicating vessel dimensions, wall thicknesses, vessel supports and anchorage details, and overall system assembly drawings.
      b. Provide dimensional drawings and layouts for sight gauges, valves, level monitoring devices, pressure sensing devices, and flanged connections.
      c. Indicate weight of vessel when empty.
   2. Product data: Specifications for system components, accessories, and protective coatings.
   3. Design calculations: Submit structural design calculations for the pressure vessel, including the following:
      a. Pressure vessel design calculations:
         1) Include calculations demonstrating that vessel deflection does not exceed 2 percent and that buckling criteria are not exceeded under all applicable load cases, including burial, H-20 loading, and operating pressure conditions.

4. Prepare a Form U-1 “Manufacturers’ Data Report for Unfired Pressure Vessels” certifying the hydropneumatic vessel was fabricated in accordance with ASME Code Rules for the Construction of Unfired Pressure Vessels and inspected by a certified inspector:
    a. Following Contractor’s Engineer’s acceptance of form, submit copies to the National Board of Boiler and Pressure Vessel Inspectors and to the Department of Industrial Relations, Division of Industrial Safety, Pressure Vessel Section.
5. Operation and maintenance manuals: Submit as specified in Section 01_78_24 - Operation and Maintenance Manuals. Include:
    a. Certification and ASME Code data reports in accordance with ASME Code, documenting post-welding heat treatment, joint radiography, and hydrostatic testing.
    b. Fabrication drawings.
    c. Complete electrical diagrams.
    d. Form U-1 “Manufacturers’ Data Report for Unfired Pressure Vessels”.
    e. Shop Testing: Vessel ASME Form U-1A.
    f. Control system description, logic narratives, and setpoint definitions.
    g. Recommended maintenance procedures and inspection intervals.
6. Surge Design Basis Information:
    a. Provide documentation confirming that the hydropneumatic surge control system has been designed using the surge design basis information specified in this Section.
    b. The following surge-related parameters define the basis of design for the system:
        1) Maximum transient system pressure: 330 psig.
        2) Required minimum air volume: 8,000 gallons within the surge vessel at operating conditions. The system shall be designed to maintain this minimum air volume during all operating and transient conditions.
    c. Provide tank sizing calculations, air volume calculations, and compressor sizing calculations demonstrating that the system has been designed to meet the above requirements.

C. Air compressor and receiver:
1. General:
    a. Air compressor submittal shall be included as part of the hydropneumatic surge control system package.
2. Product Data and Shop Drawings:
    a. Provide product data and Shop Drawings for each compressor and receiver.
    b. Include schematics and data indicating compressor type, horsepower, displacement, receiver volume, cooling system, motor speed, maximum operating temperature, and accessories.
3. Performance Requirements:
    a. Submit flow versus pressure curves for each compressor.
    b. Submit manufacturer test data demonstrating performance over the full operating range.
4. Sizing:
    a. Provide compressor and receiver sizing calculations demonstrating that the equipment is capable of maintaining the required minimum air volume specified in this Section under all operating conditions.

b. Letters of compliance without supporting calculations and test data will not be accepted.

5. Field Testing:
   a. Field testing shall reproduce air delivery versus pressure performance and demonstrate performance within ±5 percent of submitted curves.

D. Hydropneumatic Surge Control System Testing and Start-Up Plan:
   1. Provide a detailed testing and start-up plan for the complete surge control system.
   2. Testing Plan:
      a. Provide procedures for field testing of the air compressor system to verify air delivery versus pressure performance.
   3. Start-Up Plan:
      a. Provide a startup plan for initial air charging. Initial air charge shall be provided using an external, oil-free air source suitable for the application. The system air compressor shall not be used for initial charging.
      b. Startup procedures shall include establishing the required minimum air volume specified in this Section and verifying proper operation of the level control system.
   4. Control System Verification:
      a. Provide procedures for testing level control system operation, including:
         1) Automatic air addition.
         2) Automatic air release.
         3) Verification of alarm setpoints.
         4) Demonstration of stable level control without sustained oscillation.
   5. Manufacturer's Representative:
      a. A qualified representative of the system manufacturer shall perform system startup, testing, and initial adjustment of control setpoints in the presence of the Construction Administrator.

E. Manufacturer shall demonstrate compliance and integration with the following Division 40 specifications:
   1. Section 40_61_00 - Common Work Results for Process Control and Instrumentation System.
   2. Section 40_64_01 - Control Systems: Programmable Logic Controllers.
   3. Section 40_64_21 - Control Systems: Local Operator Interface (LOI).
   4. Section 40_67_01 - Control Systems: Panels, Enclosures, and Panel Components.
   5. Section 40_72_76 - Level Measurement: Switches.

F. Operation and Maintenance Manuals:
   1. Submit draft and final operation and maintenance manuals in accordance with Section 01_78_24 - Operation and Maintenance Manuals.
   2. Manuals shall include complete system documentation, including equipment data, control descriptions, wiring diagrams, and maintenance requirements.

G. Commissioning Submittals:
   1. Provide Manufacturer's Certificate of Source Testing as specified in Section 01_75_17 - Commissioning.
   2. Provide Manufacturer's Certificate of Installation and Functionality Compliance as specified in Section 01_75_17 - Commissioning.

3. Provide commissioning procedures and checklists demonstrating verification of system operation.

H. Project Closeout Documents:
   1. Provide final operation and maintenance manuals in accordance with Section 01_78_24 - Operation and Maintenance Manuals.
   2. Provide confirmation of submittal of Form U-1 to the National Board of Boiler and Pressure Vessel Inspectors.

1.05 WARRANTY

A. Provide warranty as specified in Section 01_78_36 - Warranties and Bonds.

1.06 QUALITY ASSURANCE

A. Regulatory Requirements:
   1. Comply with all applicable plumbing codes.
   2. The vessel system shall conform to the International Building Code (IBC) and local amendments to the Pikes Peak Regional Building Code.
   3. All electrical work shall comply with the National Electrical Code (NEC).

B. Unit Responsibility:
   1. For each surge control system, the entire system, including the surge vessel, air compressor, receiver, and all controls, shall be provided by a single manufacturer.
   2. The manufacturer shall be responsible for furnishing a complete, integrated system as specified herein.
   3. Delivery of equipment as skid-mounted or panel-mounted assemblies shall be as indicated on the Drawings.
   4. The Contractor shall remain responsible for installation, coordination, and completion of the Work.

C. Manufacturer Qualifications:
   1. The system manufacturer shall have a minimum of 10 years documented experience in the design and supply of potable air-over-water hydropneumatic surge control systems.
   2. Submit a list of at least 3 installations of similar size and complexity demonstrating compliance with this requirement.

D. Manufacturer Services:
   1. Provide operation and maintenance manuals as specified.
   2. Provide a qualified manufacturer’s representative for installation support, startup, testing, and operator training.
   3. Perform field verification of installation and system operation during startup and testing.

PART 2 PRODUCTS

2.01 DESIGN AND PERFORMANCE CRITERIA

A. Design criteria:
   1. Vessel sizes: As shown in the table below and as indicated on the Drawings.

I.D. No.	Service	Diameter (inches)	Barrel Length, minimum (inches)	Capacity, minimum (gallons)	Maximum Operating Pressure (psig)
TNK-321	Raw Water	144	760	50,000	350
TNK-322	Raw Water	144	760	50,000	350

   2. Vessel Orientation: Horizontal installation.
   3. Vessel ends: Semi-elliptical dished heads.
   4. Inlet/Outlet:
      a. Provide one 18-inch inside diameter inlet/outlet connection.
      b. Provide a 90-degree downward-facing elbow with vortex suppressor.
      c. Maintain a minimum clearance of 8 inches from the bottom of the vessel.
      d. Provide a flanged connection for pipe connection to the exterior manifold.
      e. Inlet/outlet configuration shall be designed to prevent entrainment or release of air through the connection at minimum operating water level.
      f. Inlet/outlet loss coefficient (K) shall not exceed 2.
      g. Provide supports for the inlet/outlet piping and elbow as required.
   5. Drain: Provide 8-inch drain connection with 8-inch plug valve.
   6. Pressure Rating:
      a. All surge vessels shall be designed, fabricated, and stamped in accordance with ASME BPVC Section VIII, Division 1.
      b. Minimum design pressure shall be not less than 75 psig above the maximum transient system pressure specified in this Section.
      c. In no case shall the design pressure be less than 1.2 times the maximum operating pressure.
   7. Corrosion Allowance: Provide a minimum corrosion allowance of 1/16 inch for shell, heads, and attachments.
   8. Buried Design:
      a. Design vessel for buried installation with a minimum soil cover of 6 feet.
      b. Design for H-20 surface loading.
      c. Design shall prevent excessive deflection greater than 2 percent and prevent buckling under all loading conditions.
      d. Assume soil modulus (E') of 1,000 psi unless otherwise demonstrated.
   9. Pressure Design Basis: Vessel components and pressure-containing appurtenances shall be designed for not less than the vessel design pressure unless otherwise specified.
   10. Service Conditions:
      a. Elevation: 5,130 feet above sea level.
      b. Buried environment:
         1) Soil temperature: 40 to 85 degrees Fahrenheit.
         2) Relative humidity: 10 to 100 percent (non-condensing).

11. Air Volume Requirement: The system shall maintain a minimum air volume of 8,000 gallons within the surge vessel during all operating and transient conditions.

2.02 PRESSURE TANK

A. Manufacturers:
   1. Pressure tank shall be provided by the surge control system manufacturer and shall be one of the following or approved equal:
      a. Pulsco.
      b. Pressure Vessel Technologies/Wagner Plat Works West.

B. Materials:
   1. Construct tank using ASTM A516 steel unless otherwise indicated on the Drawings.

C. Components:
   1. Lifting lugs: Provide lifting lugs designed for safe handling of the fully fabricated vessel.
   2. Anchor bolts:
      a. Anchor bolts shall have a minimum nominal diameter of 3/4-inch unless otherwise indicated.
      b. Anchor system shall be designed to transfer the full ultimate strength of the anchor bolts to the supporting concrete.
      c. Anchor bolt chairs or rings shall be provided and shall be designed to transfer not less than 125 percent of the bolt ultimate strength or 150 percent of the calculated load, whichever is less.
   3. Nameplate and code stamp:
      a. Design, fabrication, and testing shall comply with ASME BPVC Section VIII, Division 1.
      b. Tank shall bear a stainless steel ASME nameplate with applicable code symbol.
      c. Manufacturer shall be authorized by ASME to apply the code stamp.
   4. Fittings and attachments:
      a. Provide fittings as indicated on the Drawings.
      b. Openings larger than 1 inch shall be flanged.
      c. Openings 1 inch and smaller shall be NPT.
      d. Reinforce all openings in accordance with ASME BPVC.
      e. Weld shell attachments for pipe supports, tank gages, instruments, and other items as indicated on the Drawings before application of the tank lining.

D. Inspection openings:
   1. Provide one 42-inch diameter minimum inspection opening.
   2. Provide bolted cover with gasket rated for the full design pressure of the vessel.
   3. Provide lifting lugs on both cover and shell to facilitate safe removal.

E. Ground lug:
   1. Provide grounding lug suitable for 2/0 electrical cable.
   2. Locate near bottom of the tank.

F. Appurtenances:
   1. Provide all required nozzles, flanges, and connections as indicated on the Drawings.

G. Fabrication:
   1. Welding:
      a. Welds shall comply with ASME BPVC requirements.
      b. Excessive weld reinforcement shall be removed as required for coating application.
      c. All internal edges and corners shall be ground to a minimum 1/8-inch radius or as required by the coating system.
   2. Protective Coating:
      a. Interior surfaces shall be factory-coated with NSF 61 compliant high solids epoxy in accordance with Section 09_96_01 - High-Performance Coatings.
      b. Minimum interior coating thickness shall be 10 to 12 mils.
      c. Exterior coating shall be as specified in Section 09_96_01 - High Performance Coatings.

2.03 LEVEL CONTROL SYSTEMS

A. System Description:
   1. Each surge control system shall include a dedicated level control system provided in a vendor control panel (CP) located in the pump room.
   2. The system shall automatically control water level within the surge vessel through controlled addition and release of air.
   3. Level measurement shall be provided by a radar level transmitter mounted on the vessel and rated for not less than the vessel design pressure.
   4. Provide one independent high/low level switch as a backup level indication and alarm device.

B. Materials: Refer to Section 2.05 for level instrumentation.

C. Control Requirements
   1. General:
      a. Level control shall maintain stable operation of the surge system and support maintenance of the minimum required air volume specified in this Section.
      b. All control setpoints and time delays shall be field adjustable.
   2. Control Setpoints:
      a. Steady-State Operating Level: Defined as the normal operating liquid level established during commissioning.
      b. Add Air:
         1) Initiate when water level rises above the steady-state level plus adjustable offset (nominal 2 inches).
         2) After an adjustable time delay (0 to 20 minutes), the CP shall open the air addition solenoid valve to admit compressed air to the vessel.
         3) If the condition persists for an additional adjustable period (0 to 60 minutes), generate a high-high level alarm to SCADA.

c. Release Air:
    1) Initiate when water level falls below the steady-state level minus adjustable offset (nominal 2 inches).
    2) After an adjustable time delay (0 to 20 minutes), the CP shall open the air release solenoid valve to vent air.
    3) If the condition persists for an additional adjustable period (0 to 60 minutes), generate a low-low level alarm to SCADA.
d. Stop Add Air:
    1) When water level falls to steady-state level.
    2) After an adjustable delay (nominal 1 minute), close air addition valve.
e. Stop Release Air:
    1) When water level rises to steady-state level.
    2) After an adjustable delay (nominal 1 minute), close air release valve.

3. Coordination with Air System: The air compressor and receiver shall operate independently based on receiver pressure; however, capacity shall be sufficient to maintain the required minimum air volume in the surge vessel.

D. Vendor Control Panels (CPs):
1. Each PLC based vendor control panel shall house a PLC per Section 40_64_01 - Control Systems: Programmable Logic Controllers. The panel shall be NEMA 4X and operate on 120 volt, 60 Hz, 20-amp electrical service. The enclosed electronic unit associated with the radar level indicating transmitter shall be mounted in the panel. One dedicated CP shall control each surge control system. The control panel shall be constructed per Section 40_67_01 - Control Systems: Panels, Enclosures, and Panel Components. The reciprocating air compressor shall be controlled by a separate CP.
2. CP system shall be built and installed per Section 26_42_13 - Cathodic Protection and as shown in the contract Drawings.
3. Hydropneumatic Surge System Controls:
    a. Each Vendor Control panel shall be equipped with a door mounted 15-inch LOI in accordance with Section 40_64_21 - Control Systems: Local Operator Interface (LOI) for a continuous indication of volume of water and corresponding water level in real time, and all required level control and alarm setpoints:
        1) All graphic screens and logic resident in operator interface stations shall be programmed using FactoryTalk View Studio for FT View ME applications.
        2) Vendor control panel shall be supplied pre-programmed for field mounting and wiring to pump station PLC Owner by Contractor.
    b. PLC based unit control panel and small bore air valves shall be housed in NEMA 4X outer enclosure.
    c. PLC shall be Allen-Bradley CompactLogix with Allen Bradley RS Studio 5000 programming software per Section 40_64_01 - Control Systems: Programmable Logic Controllers:
        1) PLC shall output signals and alarms as shown in the P&IDs via EtherNet/IP communication protocol.
            a) At minimum the following output signals and alarms shall be provided:
                (1) Level
                (2) Low level alarm

(3) High level alarm
(4) Add Air Status
(5) Release Air Status
(6) HOA Status
(7) System Fail Alarm

d. Amber indicating lights shall be provided on the control panel to indicate the following alarm conditions:
1) "High Level Alarm."
2) "Low Level Alarm."

e. Push button Switch for ADD AIR at CP.

f. Push button Switch for RELEASE AIR at CP.

2.04 AIR COMPRESSOR

A. Manufacturers: One of the following or equal:
1. Ingersoll-Rand.
2. Quincy Compressor.
3. Gardner Denver.

B. Type:
1. The manufacturer shall size the compressor and receiver.
2. Supplier is responsible for a complete working system.
3. Submit design catalog cut sheets, schematics, and sketches that include compressor size/type, horsepower, the displacement, receiver volumes, and motor speeds for the compressor.
4. Compressor and receiver sizing shall be based on maintaining the required minimum air volume specified in this Section and restoring system air volume following transient events.

C. Compressor unit, including crankshaft, cylinders, flywheel, and motor shall be air cooled, and completely sealed against dirt.
1. Compressor shall be oil lubricated and suitable for continuous compressed air service associated with potable water systems.
2. A finned, multi-tube intercooler shall be provided between stages and shall include a safety valve to prevent over pressurization.
a. A dry-type 10-micron filter silencer shall be provided on the air inlet.
3. An air-cooled aftercooler shall lower the discharge air temperature to within 25 degrees Fahrenheit of the ambient air temperature.
4. Compressor shall be driven by an electric motor integral with the compressor.

D. Receiver:
1. Air receiver shall be ASME, National Board coded, and tested to 1.3 times the design working pressure.
2. Receiver shall be provided with pressure gauge, safety valve, and automatic condensate drain trap.
3. All taps shall be National Pipe Thread threaded, and receivers shall be provided with sturdy, steel mounting feet.
4. Size compressor and receiver to maintain required system air volume and support system operation under all operating conditions.
a. Minimum capacity shall be 80 gallons.

E. Motor:
   1. Compressor motor: 460 volt, 3-phase, 60-hertz, TEFC, 1.15 service factor, severe duty, energy efficient, with self-lubricated ball bearings.
   2. Designed, manufactured, and tested in accordance with NEMA MG-1.

F. Equipment identification plates:
   1. A 16-gauge stainless steel identification plate shall be securely mounted on the compressor and receiver in a readily visible location.
   2. The plate shall bear the 1/4-inch die-stamped equipment number indicated in this Section.

G. Piping:
   1. General:
      a. All interconnecting piping and tubing between components of the equipment package shall be shop installed, except as indicated on the Drawings.
      b. Piping from the compressor discharges to the receiver shall be sized not less than the compressor discharge connection size and shall be as specified in 40_05_00.01 - Common Work Results for General Piping and as indicated on the Drawings.
         1) Close nipples will not be acceptable.
   2. Pneumatic control and instrument tubing:
      a. Manufacturers: One of the following or equal:
         1) Parker-Hannifin.
         2) Ferulok.
         3) Crawford.
         4) Swagelock.
      b. In accordance with ASTM A269, Type 316, stainless steel tubing, Type 316 stainless steel flareless double ferrule compression fittings.
      c. Tubing shall not be less than 1/4-inch OD with a wall thickness of 0.028 inch.
   3. All piping and tubing shall be run in vertical and horizontal planes.
      a. Piping shall be arranged to ensure that undue stresses, from thermal expansion, are not transmitted to equipment components.
   4. All control and instrument tubing shall be continuously supported.

H. Control equipment:
   1. All control equipment for the compressor shall be furnished as required for a complete installation, requiring only field connection of the electrical power supply and alarm output signals.
   2. Equipment shall include the following:
      a. All control switches, pressure switches, timing relays, auxiliary relays, elapsed time meters, circuit breaker combination magnetic motor starters, and other accessories required for control of the compressor.
      b. Each starter shall include a thermal magnetic circuit breaker with external operating handle.
      c. Starter overloads shall be matched to motor current and shall be provided with a reset pushbutton.
   3. All control equipment for the compressor package shall be housed in a control panel mounted on the receiver.

4. All system wiring shall be shop installed to terminal blocks in the control panel. Wiring from the panel to system components shall be completely enclosed in liquid-tight flexible conduit.
5. All pneumatic tubing shall be shop installed to bulkhead fittings at the control panel.
    a. All field connections shall be made to the fittings at the panel.
6. Control panel enclosure:
    a. The control panel shall be NEMA Type 12 construction, fabricated from 14 USS gauge or heavier steel and shall be equipped with a full-size gasketed door with chromium-plated or stainless steel 3-point latch and hinges.
    b. A screened vent shall be provided in the bottom of the control panel.
    c. All control devices shall be rigidly mounted within the enclosure except for breaker handles, selector switches, pushbuttons, and indicating lights, which shall be mounted on the panel door.
7. Internal panel tubing shall be run in horizontal and vertical planes and shall be rigidly supported to withstand handling and shipping without damage.
    a. Compression type bulkhead fittings shall be provided through the panel for all connections.
8. Panel wiring:
    a. Internal panel wiring shall be neatly bundled and tied and identified with suitable wire markers.
    b. Terminal blocks for external connections shall be furnished complete with marking strips, covers, and pressure connectors.
    c. A terminal shall be provided for each conductor of external circuits.
    d. All wiring shall be grouped or cabled and securely attached to the panel.
    e. Clearance for field wiring shall be provided between the terminal strips and base.
9. Compressor control:
    a. The control panel shall be provided with a power on light, Hand-Off-Automatic (HOA) switch, run light, motor thermal overload alarm light and low oil level alarm light.
        1) The panel shall contain combination magnetic motor starter and circuit breaker for the air compressor.
    b. The air compressor shall start and stop based on pressure in the air receiver.
        1) Dry contacts shall be provided in the panel for remote indication of running conditions for the compressor.
        2) The compressor shall be shutdown by motor thermal overload, or low oil level.
        3) An alarm condition shall energize a local alarm light.
    c. The compressor shall start automatically, provided its HOA hand switch is in the AUTO position.
        1) The compressor shall run continuously if its HOA hand switch is in the HAND position and shall shut down if its HOA hand switch is in the OFF position.
    d. The manufacturer shall select compressor volumetric capacity and discharge pressure to maintain the required minimum air volume specified in this Section and support system operation under all operating conditions.

I. Accessories:
1. The compressed air equipment package shall be provided with the following accessory equipment:
a. Safety valves:
1) Manufacturers: One of the following, or equal:
a) Kunkle: Series 6000.
b) Conbraco: 19-Series.
2) Safety valves with manual lifting levers shall be installed in the compressor discharge piping and on the receiver.
3) Valves in the compressor discharge piping shall be capable of protecting the compressor from damage when operating against a closed discharge valve and shall be suitable for the maximum compressor discharge air temperature.
4) The safety valve on the receiver shall be capable of protecting the receiver from excessive pressure.
5) Relief pressure setting shall be coordinated with system design pressure and shall not exceed the maximum allowable pressure of the receiver or connected piping system.
6) Safety guard: Compressor cooling fan shall be provided with safety guards.
b. Intake filter muffler:
1) Provide each compressor with a dry type intake filter muffler supported by the suction pipe and close coupled to the compressor intake connection.
2) Intake filter muffler shall have an outer cover and replaceable filter element.
c. Discharge check valve:
1) A line-mounted check valve shall be provided in the discharge piping leading from compressor.
2) Check valve shall be sized in accordance with the manufacturer's recommendations and shall be suitable for service with reciprocating compressors at the maximum compressor discharge air temperature.
d. Shutoff valves:
1) Type: All shutoff valves shall be ball valves.
2) Valves in steel piping shall have carbon steel bodies, chrome-plated or stainless steel balls, and reinforced Teflon™ seals and seats.
3) Valves in the compressor discharge piping shall be suitable for the maximum compressor discharge air temperature.
e. Receiver vent valve:
1) Provide a globe type vent valve with bronze body and brass stem on receiver.
f. Air pressure regulating valve: As specified in Section 40_05_67.37 - Pressure Control Valves.
g. Pressure gauge:
1) Pressure gauge shall have a phenol case, adjustable pointer, stainless steel rotary geared movement, and shall be accurate to within 2 percent of full-scale.
2) Gauge shall have a minimum dial size of 4-1/2 inches, and a range equal to approximately twice the normal operating pressure at the point of installation.
a) The units of measurement shall be indicated on the dial face.

h. Gauge shall have a 1/4-inch NPT connection.
    1) All other gauges shall have 1/2-inch NPT connection.
    2) All gauges shall be provided with a shutoff valve.
i. Pressure switch:
    1) Pressure switch shall have SPDT contacts rated 10 amperes at 120 volts AC and shall be complete with shutoff valve.
    2) Pressure switch shall have NEMA Type 1 housings.
j. Thermometers:
    1) Remote reading or gas actuated dial type.
    2) Does not contain mercury.
    3) Minimum dial size of 4-1/2 inches, adjustable pointer, and shall be accurate within 1 percent of full-scale.
    4) Completely furnish with a uniformly graduated dial indicator, armored capillary tube, bulb or temperature sensor, and thermal well.
    5) Ranges shall be such that the normal operating reading will be near the midpoint of the range.
        a) The units of measurement shall be indicated on the dial face.
        b) Spare capillary length shall be neatly coiled and tied.
k. Air piping shall be increased in size at the thermal well location so that the area between the well and pipe is not less than the cross-sectional area of the original size piping.
    1) The entire sensitive length of the temperature sensor shall be installed within the air flow stream.
l. Temperature switches:
    1) Temperature switches shall be remote bulb type with SPDT contacts rated 10 amperes at 120 volts AC.
    2) Temperature switches shall have NEMA Type 1 housings, stainless steel thermal well assemblies, and armored capillaries.
        a) Capillary length shall be sufficient for mounting the switch inside the control panel.
        b) Spare capillary length shall be neatly coiled and tied.
m. Finishes:
    1) Shop and field painting of piping and equipment shall be as specified in Section 09_96_01 - High-Performance Coatings.

2.05 ACCESSORIES

A. The surge control system shall be provided with the following accessory equipment:
    1. Safety Valves:
        a. Safety valves with manual lifting levers shall be installed on the surge vessel.
        b. Safety valves shall be sized by the manufacturer and shall have sufficient relieving capacity to protect the vessel under all operating and transient conditions.
        c. Materials:
            1) Body: Bronze.
            2) Spring: Stainless Steel.
            3) Seat: Teflon.
        d. Relief pressure setting: 350 psig unless otherwise required by ASME BPVC or vessel design. Relief setting shall not exceed the maximum allowable working pressure of the vessel

e. Manufacturers: One of the following, or equal:
1) Kunkle: Series 6030.
2) Conbraco: 19-Series.

2. Ball Valves:
a. Materials:
1) Body: Bronze.
2) Lever: Zinc plated steel with vinyl cover.
b. Pressure Rating: Not less than the vessel design pressure.
c. See Section 40_05_63 - Ball Valves for additional requirements.

3. Vessel Vent Valve:
a. Provide a globe type vent valve with bronze body and brass stem on each vessel.

4. Muffler:
a. Provide muffler downstream of solenoid valve.

5. Shop and field painting of piping and equipment shall be as specified in Section 09_96_01 - High-Performance Coatings.

2.06 LEVEL INDICATOR INSTRUMENTS

A. Level Indicating Radar Level Transducer and Transmitter:
1. One of the following or equal:
a. Endress+Hauser, Micropilot M.Level Switch:
b. Pulse Time of Flight:
1) General:
a) Instrument emits radar pulses via a transmitter, with a frequency range of 6.3 GHz to 26 GHz.
b) The pulses reflect from the surface being measured and are received back at the instrument via a sensor.
c) The instrument measures the pulse travel time between the transmitter, surface, and receiver to calculate the level.
d) Safety:
(1) Shall not generate frequency waves with power levels hazardous to humans.
2) Performance requirements:
a) Accuracy: Level:
(1) 0.25-inch.
3) Element:
a) Level element must conform to the process material compatibility as indicated in Attachment A - ISA Data Sheet - Level Measurement: Radar Pulse Time of Flight (PTOF) or the Instrument Index.
b) Connections:
c) Process: The antenna design shall be suitable for mounting in a nozzle as indicated in Attachment A - ISA Data Sheet - Level Measurement: Radar Pulse Time of Flight (PTOF) or the Instrument Index.
d) The design shall be such that product condensation on the antenna shall not affect the performance of the gauge. It shall be possible to choose between either parabolic-, cone-, rod-shaped antennas.
4) Transmitter:

a) Microprocessor-based signal converter/transmitter.
b) Power supply:
(1) 24 VDC - 2-wire loop powered.
(2) Power consumption: 15 VA maximum.
c) Outputs:
(1) Isolated 4-20 mA DC with HART communication protocol.
d) Backlit digital display for level or volume.
e) Self-diagnostics and automatic data checking.
f) Signal integrity:
(1) Immune to radio frequency and electromagnetic interference with field strength of 15 volts/meter or less over a frequency range of 50 Hz to 460 MHz.
(2) Able to ignore momentary level spikes or momentary loss of echo and indicate loss of echo condition on indicating transmitter unit.
g) Protected terminals and fuses in a separate compartment, which isolates field connection from electronics.
(1) Indication: Local - 5-digit display.
h) Enclosure:
(1) Non-hazardous area:
(a) NEMA Type 4X.
(2) For more information, see Attachment A - ISA Data Sheet - Level Measurement: Radar Pulse Time of Flight (PTOF).
i) Electrical connection: 1/2-inch male NPT.

c. ACCESSORIES
1) Software: Provide Windows based PC software for configuration and echo mapping.
2) WProvide sun shield for outdoor installations.

B. Level Switches
1. As specified in Section 40_72_76 - Level Measurement: Switches.

2.07 SOLENOID VALVES

A. 2-way solenoid valves:
1. Manufacturers: One of the following or equal:
a. Automatic Switch Co., Series 8210.
1) Contractor shall provide external bypass to solenoid valve. External bypass shall use pipe of same material and size as main line and include a ball valve for manual operation.
b. Skinner Electric Valve Division, Series C.

B. 3-way solenoid valves:
1. Manufacturers: One of the following or equal:
a. Automatic Switch Co., Series 8320.
b. Skinner Electric Valve Division, Type A4.

C. 4-way solenoid valves:
1. Manufacturers: One of the following or equal:
a. Automatic Switch Co., Bulletin 8344.
b. Skinner Electric Valve Division, Series V9.

D. Design:
   1. Valves: Suitable for service under the following conditions:
      a. Fluid compressed air.
      b. Pressure rating shall not be less than the maximum system pressure specified in this Section and shall be suitable for system test pressure.
      c. Unless otherwise indicated on the Drawings, provide valves that meet the following requirements:
      d. Minimum NEMA Type 4 enclosure.
      e. 120 VAC operation.
      f. Suitable for use as indicated on the Drawings.
      g. Minimum Class F coil insulation.
   2. 2-way valves: Furnish with openings of size equal to or larger than the nominal size designation of the valve.
   3. Furnish with manual/bypass operators.

E. Materials:
   1. Body: Brass or bronze.
   2. Seats: Resilient material.

2.08 SPARE PARTS AND SPECIAL TOOLS

A. As specified in Section 01_60_01 - Product Requirements.

B. Spare parts:
   1. Three air filters for the air compressor.

2.09 DELIVERY, STORAGE, AND HANDLING

A. Package sight glass assembly, safety relief valves, pressure gauge and similar breakable components separately from tank for shipment.
   1. Suitably store these components at the project site and install after hydropneumatic tank has been anchored.

B. Suitably seal tank openings to prevent entry of dust, dirt, and other contaminants until connections are made in the field.

PART 3 EXECUTION

3.01 GENERAL

A. As specified in Section 46_05_10 - Common Work Results for Mechanical Equipment.

3.02 INSTALLATION

A. Install piping in such a manner as to not place any strain on any part of the equipment.

3.03 COMMISSIONING

A. As specified in Sections 01_75_17 - Commissioning and 46_05_94 - Mechanical Equipment Testing, and this Section.

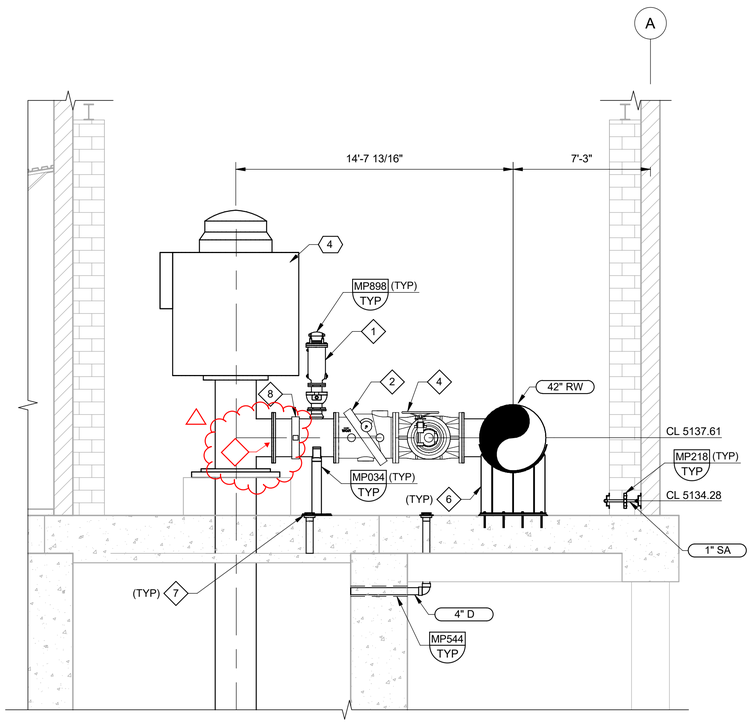
B. Manufacturer services:
   1. Provide certificates:
      a. Manufacturer's Certificate of Source Testing.
      b. Manufacturer's Certificate of Installation and Functionality Compliance.
   2. Manufacturer's Representative onsite requirements:
      a. Installation: 1 trip, 3-day minimum.
      b. Functional Testing: 1 trip, 3-day minimum each.
   3. Training:
      a. Maintenance: 2 hours per session, 1 session.
      b. Operation: 2 hours per session, 1 session.

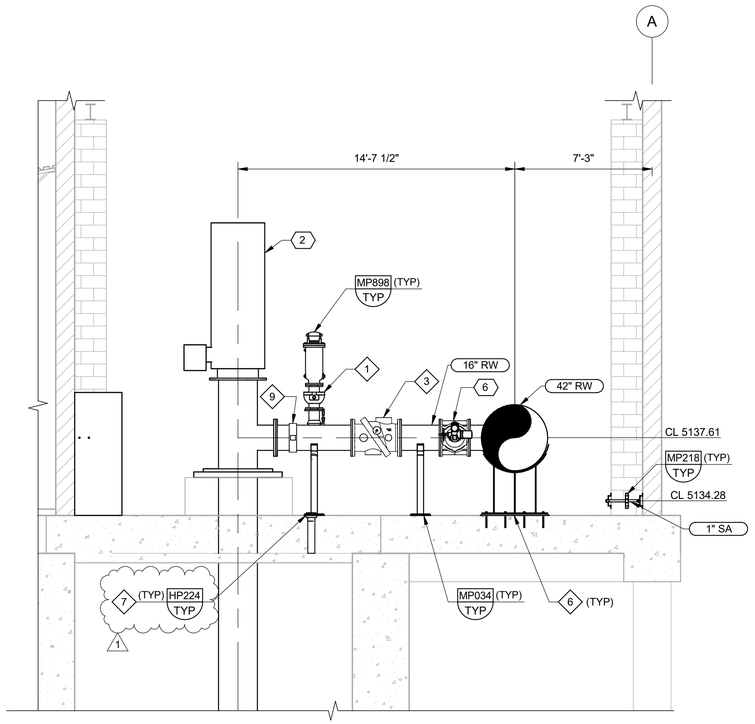
C. Source testing:
   1. Prepare a Form U-1 "Manufacturers' Data Report for Unfired Pressure Vessels" certifying the hydropneumatic tank was fabricated in accordance with ASME BPVC Rules for the Construction of Unfired Pressure Vessels and inspected by a certified inspector.
   2. Test as specified in Section 46_05_94 - Mechanical Equipment Testing.
   3. Compressor:
      a. Test witnessing: Not witnessed.
      b. Conduct Level 1 General Equipment Performance Test.
   4. Conduct Level 1 Vibration Test.
   5. Conduct Level 1 Noise Test.
   6. Electrical Instrumentation and Controls:
      a. Test witnessing: Not witnessed.
      b. Conduct testing as specified in Section 40_80_01 - Commissioning for Instrumentation and Controls.

D. Functional testing:
   1. Prior to testing, piping systems shall be inspected for conformance with the Contract Documents and applicable piping code requirements.
   2. Tank:
      a. Test witnessing: Witnessed.
   3. Electrical Instrumentation and Controls:
      a. Test witnessing: Witnessed.
      b. Conduct testing as specified in Section 40_80_01 - Commissioning for Instrumentation and Controls.
   4. System:
      a. Fully charge with air in accordance with the manufacturer's instructions prior to field-testing the system.
      b. Test the level control system and perform simulated power failure testing in accordance with the approved commissioning plan.

END OF SECTION

[AD2] Addendum No. 2

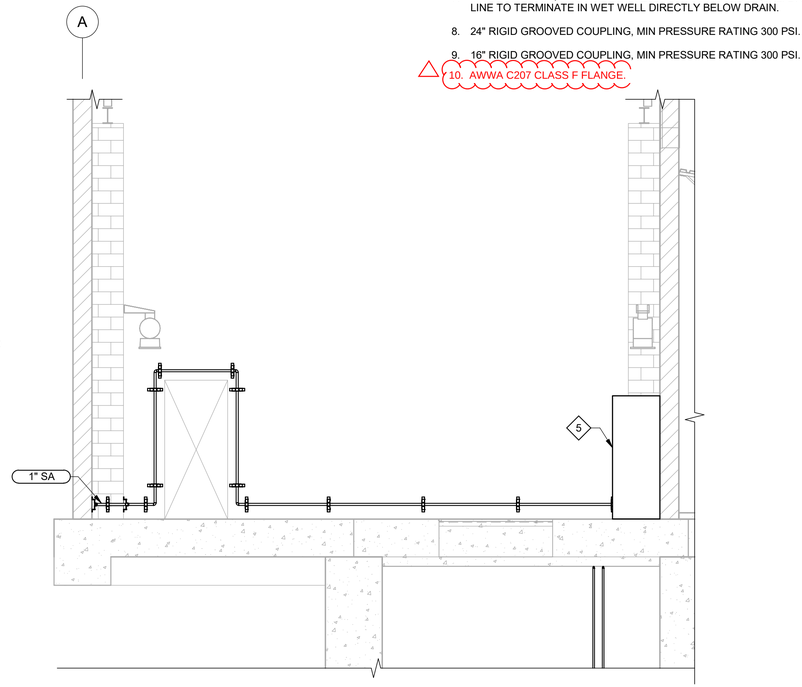


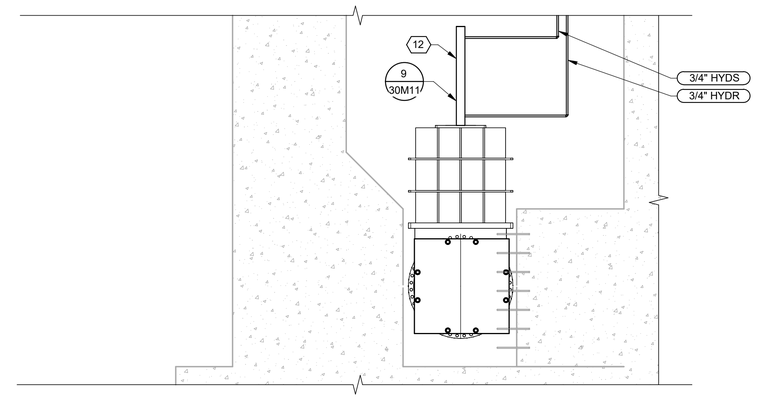


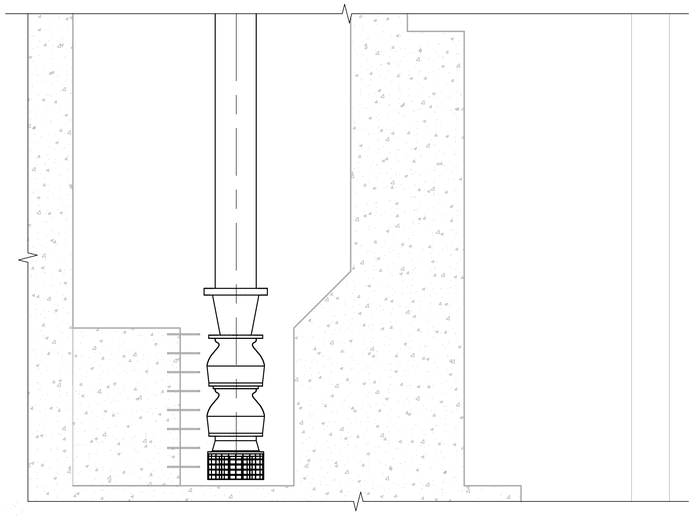
#	KEY TAGS:	
2	PMP-303	600 HP PUMP
3	PMP-305	3000 HP PUMP
6	VAL-303	16" PLUG MODULATING VALVE
12	VAL-320	54" KNIFE GATE VALVE

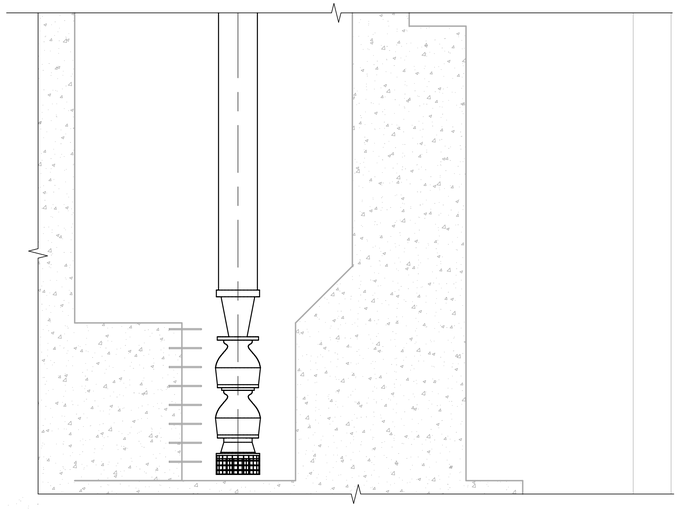
KEY NOTES:

1. 6" AIR VACUUM VALVE
2. 24" TILTED DISC CHECK VALVE
3. 16" TILTED DISC CHECK VALVE
4. 24" PLUG VALVE W/ HANDWHEEL
5. SAMPLING PANEL SEE INSTRUMENTATION DETAILS.
6. 42" STEEL PIPE SUPPORT SEE DETAIL 5 ON SHEET 30M09.
7. 4" FLOOR DRAIN, PROVIDE ZURN Z521 OR APPROVED EQUAL. DRAIN LINE TO TERMINATE IN WET WELL DIRECTLY BELOW DRAIN.
8. 24" RIGID GROOVED COUPLING, MIN PRESSURE RATING 300 PSI.
9. 16" RIGID GROOVED COUPLING, MIN PRESSURE RATING 300 PSI.
10. AWWA C207 CLASS F FLANGE.









C SECTION (30M01) SCALE: 1/4" = 1'-0"

D SECTION (30M01) SCALE: 1/4" = 1'-0"

E SECTION (30M01) SCALE: 1/4" = 1'-0"

REV	DATE	BY	DESCRIPTION
2	6/30	JK	ADDENDUM NO. 2
1	6/26	JK	ADDENDUM NO. 1

BID SET

DESIGNED MP | DRAWN LRG | CHECKED MZ | DATE MAY 2026

COLORADO LICENSED MATTHEW E. ZOLTEK 0049708 PROFESSIONAL ENGINEER

CITY OF THORNTON
THORNTON WATER PROJECT
SOURCE WATER PUMP STATION
MECHANICAL
PUMP STATION SECTIONS 2

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 203505
DRAWING NO. 30M03
SHEET NO. 75 OF 168

PLOT DATE: 6/2/2026 2:05:29 PM

FILE NAME: Autodesk Docs://Thornton - 203505/203505_30M0801.rvt

ABBREVIATIONS

	△	DELTA, DEFLECTION ANGLE, OR CENTRAL ANGLE
	#	NUMBER (REBAR Ø)
	@	AT (MEASUREMENT)
	+/-	PLUS/MINUS
A	ABC	AGGREGATE BASE COURSE
	ABND	ABANDONED
	AC	ASPHALTIC CONCRETE
	ACI	AMERICAN CONCRETE INSTITUTE
	ACP	ASBESTOS CEMENT PIPE
	ADDL	ADDITIONAL
	ADJ	ADJACENT, ADJUST(ABLE)
	AL	ALUMINUM
	APPROX	APPROXIMATE(LY)
	ARV	AIR RELEASE VALVE
	ASSY	ASSEMBLY
	ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
	AVG	AVERAGE
	AVV	AIR AND VACUUM VALVE
B	BC	BEGIN CURB
	BF	BLIND FLANGE
	BFP	BACK FLOW PREVENTER
	BFV	BUTTERFLY VALVE
	BH	BOREHOLE
	BLDG	BUILDING
	BM	BENCH MARK
	BO	BLOW OFF
	BOC	BACK OF CURB
	BOP	BOTTOM OF PIPE
	BOT	BOTTOM
	BV	BALL VALVE
	BVC	BEGINNING OF VERTICAL CURVE
	BYP	BYPASS
C	CATV	CABLE TV
	CAV	COMBINATION AIR VALVE
	CB	CATCH BASIN
	CC	CENTER OF CURVATURE, CENTER TO CENTER, CONCRETE CURB
	CDT	CONDUIT
	CF	CUBIC FEET
	CFM	CUBIC FOOT PER MINUTE
	CFS	CUBIC FEET PER SECOND
	CI	CAST IRON
	CIP	CAST IRON PIPE
	CIPP	CURED IN PLACE PIPE
	CJ	CONSTRUCTION JOINT
	CL	CENTER LINE
	CLK	CHAIN LINK
	CLR	CLEAR / CLEARANCE
	CLSM	CONTROL LOW STRENGTH MATERIAL
	CMLC	CEMENT MORTAR LINED AND COATED
	CMP	CORRUGATED METAL PIPE
	CMU	CONCRETE MASONRY UNIT
	CO	CLEANOUT
	CONC	CONCRETE
	CONN	CONNECT, CONNECTION
	CONST	CONSTRUCTION
	CONT	CONTINUOUS OR CONTINUATION OR (D)
	COORD	COORDINATE
	CP	CONTROL POINT
	CPLG	COUPLING
	CSP	CORRUGATED STEEL PIPE
	CTJ	CONTROL JOINT
	CTL	CONTROL
	CTR	CENTER, CENTERED
	CU	CUBIC
	CULV	CULVERT
	CY	CUBIC YARD
D	D	DRAIN, DEPTH
	D/W	DRIVEWAY APRON
	DEG or °	DEGREE
	DEMO	DEMOLISH, DEMOLITION
	DET	DETAIL
	DI	DROP INLET
	DIA or Ø	DIAMETER
	DIFF	DIFFERENCE
	DIM	DIMENSION
	DIP	DUCTILE IRON PIPE
	DIST	DISTANCE
	DR	DRIVE, DRAIN
	DWG(S)	DRAWING(S)
E	E	ELECTRICAL, EAST
	EA	EACH
	EC	END OF CURB
	ECC	ECCENTRIC REDUCER
	EG	EXISTING GROUND
	EL	ELEVATION
	ELL	ELBOW
	ELEC	ELECTRICAL
	EMH	ELECTRICAL MANHOLE
	EOP	END OF PIPE
	EP	EDGE OF PAVEMENT
	EQ	EQUAL
	EQUIP	EQUIPMENT
	ES	EACH SIDE
	ESMT	EASEMENT
	EVC	END OF VERTICAL CURVE
	EW	EACH WAY
	EX/EXIST	EXISTING
	EXP	EXPANSION
	EXT	EXTERIOR
F	FC	FLEXIBLE COUPLING
	FCA	FLANGE COUPLING ADAPTER
	FF	FINISHED FLOOR
	FG	FINISHED GRADE
	FH	FIRE HYDRANT
	FIN	FINISH
	FL	FLOOR, FLOW LINE
	FLEX	FLEXIBLE
	FLG	FLANGE(D)
	FM	FORCE MAIN
	FND	FOUNDATION
	FO	FIBER OPTIC
	FOB	FLAT ON BOTTOM
	FOC	FACE OF CURB
	FOT	FLAT ON TOP
	FPM	FEET PER MINUTE
	FS	FIRE SERVICES
	FSP	FABRICATED STEEL PIPE
	FT or '	FOOT, FEET
	FTG	FOOTING
G	G	GAS, GUTTER
	GA	GAUGE
	GAL	GALLONS
	GALV	GALVANIZE(D)
	GB	GRADE BREAK
	GC	GROOVED COUPLING
	GEN	GENERAL, GENERATOR
	GM	GAS METER
	GND	GROUND
	GPD	GALLONS PER DAY
	GPM	GALLONS PER MINUTE
	GR	GRADE
	GRTG	GRATING
	GSP	GALVANIZED STEEL PIPE
	GV	GATE VALVE
H	HDPE	HIGH DENSITY POLYETHYLENE
	HORIZ	HORIZONTAL
	HP	HIGH POINT
	HPGM	HIGH PRESSURE GAS MAIN
	HW	HEADWALL, HOT WATER
	HWL	HIGH WATER LEVEL
	HWY	HIGHWAY
	HYD	HYDRANT
I	ID	INSIDE DIAMETER
	IE	INVERT ELEVATION
	IN or "	INCHES
	INCL	INCLUDE, INCLUDING
	INSTR	INSTRUMENTATION
	INV	INVERT
	IP	IRON PIPE
	IRR	IRRIGATION
J	JT	JOINT
L	L	LENGTH
	LAT	LATERAL, LATITUDE
	LB(S)	POUND(S)
	LF	LINEAL FEET
	LH	LEFT HAND
	LONG	LONGITUDINAL
	LP	LOW POINT
	LT	LEFT
	LWL	LOW WATER LEVEL
M	MATL	MATERIAL
	MAX	MAXIMUM
	MECH	MECHANICAL
	MFR	MANUFACTURER
	MGD	MILLION GALLONS PER DAY
	MH	MANHOLE
	MIN	MINIMUM
	MISC	MISCELLANEOUS
	MJ	MECHANICAL JOINT
	MON	MONUMENT
N	N	NORTH, NORTHING
	NA	NOT APPLICABLE
	NE	NORTHEAST
	NG	NATURAL GAS
	NIC	NOT IN CONTRACT
	NO. or #	NUMBER
	NOM	NOMINAL
	NW	NORTHWEST
O	O.F.	OUTSIDE FACE
	OC	ON CENTER
	OD	OUTSIDE DIAMETER, OUTSIDE DIMENSION
	OHE	OVERHEAD ELECTRIC
P	PB	PULLBOX
	PC	POINT OF CURVATURE
	PCC	POINT OF COMPOUND CURVE
	PERP	PERPENDICULAR
	PH	POTHOLE
	PI	POINT OF INTERSECTION
	PL	PLATE, PROPERTY LINE
	POB	POINT OF BEGINNING
	PP	POWER POLE
	PRC	POINT OF REVERSE CURVATURE
	PROP	PROPERTY
	PL	PROPERTY LINE
	PSI	POUNDS PER SQUARE INCH
	PT	POINT, POINT OF TANGENCY
	PV	PLUG VALVE
	PVC	POINT OF VERTICAL CURVATURE
	PVC	POLYVINYL CHLORIDE
	PVI	POINT OF VERTICAL INTERSECTION
	PVMT	PAVEMENT
	PVT	POINT OF VERTICAL TANGENCY
Q	QTY	QUANTITY
R	R	RADIUS
	RAD	RADIAL
	RCB	REINFORCED CONCRETE BOX CULVERT
	RCP	REINFORCED CONCRETE PIPE
	RED	REDUCER
	REF	REFERENCE
	REINF	REINFORCE(D)(ING)(MENT)
	REQ'D	REQUIRED
	REV	REVISION
	RFCA	RESTRAINED FLEX COUPLING ADAPTER
	RH	RIGHT HAND
	R/W or ROW	RIGHT OF WAY
	RR	RAILROAD
	RT	RIGHT
S	S	SLOPE, SOUTH
	SCH	SCHEDULE
	SD	STORM DRAIN
	SDDI	STORM DRAIN DROP INLET
	SDMH	STORM DRAIN MANHOLE
	SE	SOUTHEAST
	SECT	SECTION
	SHLD	SHOULDER
	SHT	SHEET
	SIM	SIMILAR
	SL	SLOPE
	SPEC(S)	SPECIFICATION(S)
	SQ	SQUARE
	SS	SANITARY SEWER
	SSCO	SANITARY SEWER CLEANOUT
	SSMH	SANITARY SEWER MANHOLE
	SST	STAINLESS STEEL
	ST	STREET
	STA	STATION
	STD(S)	STANDARD(S)
	STL	STEEL
	STRUCT	STRUCTURAL
	SW	SOUTHWEST
	SWK	SIDEWALK
	SWPS	SOURCE WATER PUMP STATION
	SYM	SYMMETRICAL
T	TB	THRUST BLOCK
	TC	TOP OF CURB
	TEL	TELEPHONE
	TOG	TOP OF GRATING
	TMH	TELEPHONE MANHOLE
	TOC	TOP OF CONCRETE
	TOP	TOP OF PIPE
	T.O.W. or TW	TOP OF WALL
	TRD	TREAD
	TYP	TYPICAL
U	UC	UNDERCUT
	UG	UNDERGROUND
	UGE	UNDERGROUND ELECTRIC
	UNKN	UNKNOWN
	UNO	UNLESS NOTED OTHERWISE
	USA	UNDERGROUND SERVICE ALERT
V	V	VERTICAL, VALVE
	VAR	VARIES
	VB	VALVE BOX
	VC	VERTICAL CURVE, VICTAULIC COUPLER
	VCP	VITRIFIED CLAY PIPE
	VERT	VERTICAL
	VLT	VAULT
	VPI	VERTICAL POINT OF INTERSECTION
W	W	WATER, WIDTH OR WEST
	W/	WITH
	W/O	WITHOUT
	WL	WATER LEVEL
	WM	WATER METER
	WS	WATER SURFACE
	WSP	WELDED STEEL PIPE
	WSSC	WATER STORAGE AND SUPPLY COMPANY
	WSTP	WATERSTOP
	WV	WATER CONTROL VALVE
	WW	WASTEWATER
X	XFMR	TRANSFORMER
Y	YD	YARD

NOTES

GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL SURVEY MONUMENTS AND CORNER MARKERS. SURVEY MONUMENTS AND PROPERTY CORNER MARKERS DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REESTABLISHED BY A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF THE WORK.
2. DIMENSIONS TO STRUCTURES, REFERENCED PIPING, PAVING, AND OTHER IMPROVEMENTS ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND CONDITIONS 14 DAYS IN ADVANCE OF CONSTRUCTION. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER.
3. ALL PLANIMETRIC FEATURES AND STRUCTURES SUCH AS CURBS AND GUTTERS, ACCESS DRIVES, WALKWAYS, PAVING BRICKS, FENCING, RETAINING WALLS, SIGNS, POSTS, MARKERS, MAIL BOXES, ETC. SHALL BE RESTORED TO PRECONSTRUCTION CONDITIONS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE TO EXISTING ROADS, BUILDINGS, STRUCTURES, OR ANY OTHER FEATURE RESULTING FROM CONTRACTORS CONSTRUCTION ACTIVITIES. REPAIRS SHALL BE MADE TO THE SATISFACTION OF THE OWNER AND THE ENGINEER OR CONSTRUCTION MANAGER OR OWNER'S REPRESENTATIVE AT NO COST TO THE OWNER.
5. CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING TREES, SHRUBS, AND PLANTS, UNLESS OTHERWISE NOTED.
6. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. IF PROVIDED BY THE OWNER, STAGING AREAS SHOWN ON THE PLANS ARE AVAILABLE FOR THE CONTRACTOR'S USE. ANY ADDITIONAL STAGING AREAS REQUIRED FOR THE WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
8. CONTRACTOR SHALL INSTALL PIPELINES, PAVING, WALKWAYS, AND CURB AND GUTTER AT UNIFORM GRADE BETWEEN ELEVATIONS DEPICTED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS TO ALL ADJOINING PROPERTIES ACCESSIBLE TO THE PUBLIC AND EMERGENCY VEHICLES. DESIGNS FOR MAINTAINING ACCESS WILL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE CONTROLLING AGENCY FOR REVIEW AND APPROVAL.
10. CONTRACTOR SHALL COMPLY WITH TRENCH PLATE REQUIREMENTS OF THE GOVERNING JURISDICTION. IF TRENCH PLATE REQUIREMENTS ARE NOT SPECIFIED, THE CONTRACTOR SHALL APPLY SKID RESISTANT COATING ON THE TRENCH PLATES AND COLD MIX ASPHALT CONCRETE AT THE EDGES. THE TRENCH PLATES SHALL BE NOTCHED INTO THE ASPHALT CONCRETE OR TRAVELED SURFACE TO PREVENT SLIPPAGE AND ROCKING UNDER TRAFFIC.
11. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, COUNTY, AND LOCAL LAWS AND ORDINANCES RELATING TO THE SAFETY AND CHARACTER OF WORK, EQUIPMENT, AND PERSONNEL. THIS INCLUDES, BUT IS NOT LIMITED TO SHEETING, SHORING, BRACING, VENTILATION, CONFORMANCE WITH TRAFFIC CONTROL AND MAINTENANCE OF BARRICADES AND WARNING DEVICES.
12. CONTRACTOR SHALL KEEP COMPLETE AND ACCURATE RECORD DRAWINGS OF THE WORK, UTILITY POTHOLE DATA, AND EXISTING CONDITIONS THAT HAVE CHANGED OR ARE DIFFERENT THAN SHOWN ON THE PLANS.
13. FIRE LANES AND PRIVATE DRIVES USED FOR FIRE LANES SHOWN ON THESE PLANS ARE DESIGNED TO BE FLAT, HARD, ALL-WEATHER DRIVING SURFACES CAPABLE OF SUPPORTING 80,000 POUNDS TO MEET POUDRE FIRE AUTHORITY REQUIREMENTS AND INTERNATIONAL FIRE CODE (IFC) 2021 APPENDIX D102.1 AMENDMENT.
14. INSTALL THREE (3) 15-MPH SPEED LIMIT SIGNS EACH DIRECTION ALONG THE ACCESS ROAD BETWEEN HIGHWAY 1 AND THE SOURCE WATER PUMP STATION.

GENERAL UTILITY NOTES:

1. ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE BASED ON A COMBINATION OF UTILITY MAPS, RECORD DRAWINGS, SURVEY, AND UTILITY LOCATION SERVICES AND REPRESENTS THE BEST AVAILABLE INFORMATION AT THE TIME OF DESIGN. THE CONTRACTOR SHALL VERIFY AND VALIDATE LOCATIONS AND ELEVATIONS OF UTILITIES USING THEIR OWN UTILITY LOCATE INVESTIGATIONS AND/OR SUBSURFACE UTILITY ENGINEERING (SUE). THE CONTRACTOR SHALL UPDATE AS-BUILT DRAWINGS MONTHLY WITH UPDATE UTILITY LOCATIONS AND ELEVATIONS.
2. THE CONTRACTOR SHALL CONTACT 811 AND ANY KNOWN PRIVATE UTILITIES TO IDENTIFY AND LOCATE ALL KNOWN BURIED UTILITIES. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH ALL KNOWN UTILITY OWNERS TO DEFINE THE REQUIREMENTS AND METHODS TO ACCOMMODATE THE PROTECTION, TEMPORARY SUPPORT, ADJUSTMENT, OR RELOCATION OF ANY UTILITIES AFFECTED BY THE PROPOSED WORK. ADDITIONALLY, THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR UTILITY OWNER INSPECTIONS, IF REQUIRED, PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL CONTACT ALL KNOWN OVERHEAD ELECTRIC UTILITY OWNERS PRIOR TO CONSTRUCTION AND MAKE ARRANGEMENTS FOR ANY SPECIAL OWNER REQUIREMENTS, ENCROACHMENT PERMITS, AND UTILITY OWNER INSPECTIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL ABIDE BY THE NATIONAL ELECTRIC CODE WHILE IN PROXIMITY TO OVERHEAD ELECTRIC LINES.

GENERAL PIPELINE NOTES:

1. ALL PIPELINES SHALL HAVE A MINIMUM COVER OF 4'-0" UNLESS THE DEPTH IS SPECIFICALLY INDICATED ON THE DRAWINGS. PIPES SHALL BE ROUTED AS SHOWN UNLESS MINOR REVISIONS ARE NECESSARY TO MISS EXISTING PIPES, STRUCTURES, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL FITTINGS AND ADAPTERS REQUIRED TO MAKE THE ROUTING CHANGES.
2. ADJUST ALL VALVE BOXES, VAULTS, PULL BOXES, AND MANHOLES TO FINISHED GRADE UNLESS OTHERWISE SHOWN OR DIRECTED. MANHOLES AND VAULTS IN OPEN FIELDS SHALL BE SET SIX INCHES ABOVE FINISHED GRADE.
3. THE CONTRACTOR SHALL VERIFY THAT PIPING SCHEDULED FOR ABANDONMENT, OR ABANDONED PREVIOUSLY, IS NO LONGER IN SERVICE. FOR IN-SERVICE PIPING SCHEDULED FOR ABANDONMENT, PROTECT OR RELOCATE AS NEEDED TO MAINTAIN IN-SERVICE UNTIL NO LONGER NEEDED.
4. CONTRACTOR SHALL REROUTE EXISTING PIPING, AS REQUIRED, TO AVOID CONFLICTS WITH NEW UTILITIES, STRUCTURES, OR OTHER FACILITIES. THE EXISTING PIPE SHALL REMAIN IN SERVICE UNTIL NEW PIPING IS READY TO BE PLACED INTO SERVICE. DOWNTIME SHALL BE A MAXIMUM OF 2 HOURS, UNLESS OTHERWISE SPECIFIED.
5. PRIOR TO MAKING NEW TO EXISTING UTILITY TIE-INS, EXPOSE AND VERIFY LOCATION AND ELEVATION OF THE TIE-IN POINT. CONFIRM THE EXISTING PIPE MATERIAL, DIAMETER, COATING, CONDITION, AND ANY OTHER INFORMATION REQUIRED TO MAKE THE CONNECTION. SURVEY AND ACCURATELY RECORD THE LOCATION AND ELEVATION OF TIE-IN POINT ON THE RECORD DRAWINGS.
6. SCHEDULE TIE-INS IN ACCORDANCE WITH THE SEQUENCING REQUIREMENTS OF THE CONTRACT AND THE OWNER'S OPERATIONAL REQUIREMENTS AND LIMITATIONS. ADVANCE NOTICE SHALL BE GIVEN TO THE ENGINEER PRIOR TO COMMENCEMENT OF ANY TIE-IN WORK.
7. SUPPORT ALL EXISTING UTILITIES AT CROSSING LOCATIONS. PROTECT EXISTING UTILITIES RUNNING PARALLEL TO NEW TRENCHES TRENCHES FROM UNDERMINING OF EXISTING UTILITY BACKFILL AND BEDDING.
8. FOR CONTINUATION OF PIPING AT STRUCTURES, SEE MECHANICAL PLANS.

EARTHWORK NOTES:

1. CLEAR THE CONSTRUCTION AREA OF NATURAL OBSTRUCTIONS EXISTING FOUNDATIONS, BUILDINGS, FENCES, LUMBER, WALLS, STUMPS, BRUSH, WEEDS, RUBBISH, TREES, BOULDERS, AND ANY OTHER ITEMS WHICH INTERFERES WITH CONSTRUCTION OPERATIONS OR ARE DESIGNATED FOR REMOVAL.
2. GRUB OUT AND DISPOSE OF TREE TRUNKS AND ROOT MATERIAL BELOW THE GROUND SURFACE REMAINING AFTER CLEARING.
3. DISPOSE OF THE UNACCEPTABLE BACKFILL MATERIAL FROM THE CLEARING AND GRUBBING OPERATIONS AT NO ADDITIONAL COST TO THE OWNER.
4. STRIP AND STOCKPILE THE TOPSOIL. THE DEPTH OF STRIPPING SHALL BE ESTIMATED TO BE 12-INCHES BUT WILL BE DETERMINED IN THE FIELD AS SOIL CONDITIONS DICTATE.
5. REPLACE STOCKPILED SOIL AND RESTORE SITE AS SPECIFIED.
6. ROCK AND AGGREGATE STORAGE AREAS SHALL BE RESTORED BY EXCAVATING ANY SOILS CONTAINING ROCK OR AGGREGATE AND BACKFILLING WITH TOPSOIL. SOIL REMOVED MAY BE USED FOR TRENCH BACKFILL ABOVE THE PIPE ZONE AND 3 FEET BELOW FINISHED GRADE.

LARIMER COUNTY RURAL AREA ROAD NOTES

GENERAL NOTES:

1. LARIMER COUNTY WILL NOT BE PROVIDING ONGOING MANAGEMENT, MONITORING, INSPECTION OR SUPERVISION OF THIS PROJECT TO INSURE COMPLIANCE WITH THE APPROVED CONSTRUCTION DRAWINGS, AND ALL APPLICABLE STANDARDS AND SPECIFICATIONS. THIS RESPONSIBILITY FALLS UPON THE DEVELOPER/OWNER, THEIR MANAGERS, ENGINEERS, AND CONTRACTORS. UPON PROJECT COMPLETION, LARIMER COUNTY WILL REQUIRE EXTENSIVE DOCUMENTATION, SUCH AS PROFESSIONAL ENGINEER'S SITE/DRAINAGE/MATERIAL TESTING CERTIFICATION LETTERS, MATERIAL TESTING RECORDS, RECORD DRAWINGS, AND FIELD INSPECTION REPORTS, TO DEMONSTRATE THAT THIS PROJECT IS IN COMPLIANCE WITH THE APPROVED CONSTRUCTION DRAWINGS, AND ALL APPLICABLE STANDARDS AND SPECIFICATIONS. THESE DOCUMENTS MUST BE PREPARED BY LICENSED ENGINEERS AND LAND SURVEYORS.
2. THE PROPERTY OWNER, OWNER'S REPRESENTATIVE, DEVELOPER, DESIGN ENGINEER, GENERAL CONTRACTOR, SUB-CONTRACTORS, OR SIMILAR TITLE FOR THE DEVELOPING ENTITY (HEREAFTER REFERRED TO AS THE DEVELOPER) SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM ALL APPLICABLE AGENCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE DEVELOPER SHALL NOTIFY THE LARIMER COUNTY ENGINEERING DEPARTMENT (498-5700) AT LEAST 2 WORKING DAYS PRIOR TO THE START OF ANY EARTH DISTURBING ACTIVITY, OR CONSTRUCTION ON ANY AND ALL PUBLIC IMPROVEMENTS. IF THE LARIMER COUNTY ENGINEERING DEPARTMENT IS NOT AVAILABLE AFTER PROPER NOTICE OF CONSTRUCTION ACTIVITY HAS BEEN PROVIDED, THE DEVELOPER MAY COMMENCE WORK IN THE ENGINEER DEPARTMENTS ABSENCE. HOWEVER, THE LARIMER COUNTY ENGINEERING DEPARTMENT RESERVES THE RIGHT NOT TO ACCEPT THE IMPROVEMENT IF SUBSEQUENT TESTING REVEALS AN IMPROPER INSTALLATION.
3. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION OF PUBLIC IMPROVEMENTS SHALL MEET OR EXCEED THE STANDARDS AND SPECIFICATIONS SET FORTH IN THE LARIMER COUNTY RURAL AREA ROAD STANDARDS AND APPLICABLE STATE AND FEDERAL REGULATIONS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS AND THE SPECIFICATIONS, OR ANY APPLICABLE STANDARDS, THE MOST RESTRICTIVE STANDARD SHALL APPLY.
4. ALL REFERENCE TO ANY PUBLISHED STANDARDS SHALL REFER TO THE LATEST REVISION OF SAID STANDARD, UNLESS SPECIFICALLY STATED OTHERWISE.
5. THESE PUBLIC IMPROVEMENT CONSTRUCTION PLANS SHALL BE VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF APPROVAL BY THE LARIMER COUNTY ENGINEERING DEPARTMENT. USE OF THESE PLANS AFTER THE EXPIRATION DATE MAY REQUIRE A NEW REVIEW AND APPROVAL PROCESS BY THE LARIMER COUNTY ENGINEERING DEPARTMENT PRIOR TO COMMENCEMENT OF ANY WORK SHOWN IN THESE PLANS.
6. ALL SANITARY SEWER, STORM SEWER, AND WATER LINE CONSTRUCTION, AS WELL AS POWER AND OTHER "DRY" UTILITY INSTALLATIONS, SHALL CONFORM TO THE GOVERNING AUTHORITY STANDARDS AND SPECIFICATIONS CURRENT AT THE DATE OF APPROVAL OF THE PLANS BY THE LARIMER COUNTY ENGINEERING DEPARTMENT.
7. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK BEFORE COMMENCING NEW CONSTRUCTION. THE DEVELOPER SHALL BE RESPONSIBLE FOR UNKNOWN UNDERGROUND UTILITIES.
8. THE DEVELOPER SHALL BE RESPONSIBLE FOR PROTECTING ALL UTILITIES DURING CONSTRUCTION AND FOR COORDINATING WITH THE APPROPRIATE UTILITY COMPANY FOR ANY UTILITY CROSSINGS REQUIRED OR UTILITY RELOCATION DUE TO A UTILITY CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. THE DEVELOPER SHALL COMPLETE ANY UTILITY WORK IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE AND SHALL BE RESPONSIBLE FOR CONTACTING, IN ADVANCE, ALL PARTIES AFFECTED BY ANY DISRUPTION OF ANY UTILITY SERVICE AS WELL AS THE UTILITY COMPANIES. THE DEVELOPER SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 1-800-922-1987, AT LEAST 2 WORKING DAYS PRIOR TO BEGINNING EXCAVATION OR GRADING, TO HAVE ALL REGISTERED UTILITY LOCATIONS MARKED. OTHER UNREGISTERED UTILITY ENTITIES (I.E. DITCH / IRRIGATION COMPANY) ARE TO BE LOCATED BY CONTACTING THE RESPECTIVE REPRESENTATIVE. IF A CONFLICT EXISTS BETWEEN EXISTING AND PROPOSED UTILITIES AND/OR A DESIGN MODIFICATION IS REQUIRED, THE DEVELOPER SHALL COORDINATE WITH THE ENGINEER TO MODIFY THE DESIGN. DESIGN MODIFICATION(S) MUST BE APPROVED BY THE LARIMER COUNTY ENGINEERING DEPARTMENT PRIOR TO BEGINNING CONSTRUCTION.
9. THE DEVELOPER SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO, EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY. REFER TO OSHA PUBLICATION 2226, EXCAVATING AND TRENCHING.
10. THE WORK HOURS FOR ANY WORK REQUIRING AN ENGINEERS INSPECTION SHALL BE 7:00 A.M. TO 6:00 P.M.- MONDAY THROUGH FRIDAY. MORE RESTRICTIVE HOURS OF OPERATION (9:00 A.M. TO 3:00 P.M.) MAY BE IN PLACE FOR MAINLINE COUNTY ROAD IMPROVEMENTS DEPENDING ON THE LOCATION AND NATURE OF THE IMPROVEMENTS BEING CONSTRUCTED. WORK REQUIRING AN ENGINEERS INSPECTION WILL NOT BE PERMITTED ON WEEKENDS OR HOLIDAYS, UNLESS REQUESTED IN WRITING BY THE CONTRACTOR AND APPROVED BY THE COUNTY IN WRITING.
11. THE DEVELOPER IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETION OF THE INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS, OR DESIGNATED TO BE PROVIDED, INSTALLED, OR CONSTRUCTED, UNLESS SPECIFICALLY NOTED OTHERWISE.
12. DIMENSIONS FOR LAYOUT AND CONSTRUCTION ARE NOT TO BE SCALED FROM ANY DRAWING. IF PERTINENT DIMENSIONS ARE NOT SHOWN, CONTACT THE DESIGNER FOR CLARIFICATION, AND ANNOTATE THE DIMENSION ON THE RECORD DRAWINGS.
13. THE DEVELOPER SHALL HAVE, ONSITE AT ALL TIMES, ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB. IF, DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE DEVELOPER SHALL CONTACT THE DESIGNER AND THE LARIMER COUNTY ENGINEERING DEPARTMENT IMMEDIATELY.
14. ALL STATIONING IS BASED ON CENTERLINE OF ROADWAYS UNLESS OTHERWISE NOTED.
15. UPON COMPLETION OF CONSTRUCTION, THE SITE SHALL BE CLEANED AND RESTORED TO A CONDITION EQUAL TO, OR BETTER THAN, THAT WHICH EXISTED BEFORE CONSTRUCTION, OR TO THE GRADES AND CONDITION AS REQUIRED BY THESE PLANS. ANY EXISTING IMPROVEMENTS DESTROYED, DAMAGED OR REMOVED DUE TO CONSTRUCTION OF THIS PROJECT, SHALL BE REPLACED OR RESTORED IN LIKE KIND AT THE DEVELOPER'S EXPENSE, UNLESS OTHERWISE INDICATED ON THESE PLANS, PRIOR TO THE ACCEPTANCE OF COMPLETED IMPROVEMENTS.
16. THE LARIMER COUNTY ENGINEERING DEPARTMENT SHALL NOT BE RESPONSIBLE FOR THE MAINTENANCE OF ROADWAY AND APPURTENANT IMPROVEMENTS, INCLUDING STORM DRAINAGE STRUCTURES AND PIPES.

REV	DATE	BY	DESCRIPTION
1	7/2026	JK	ADDENDUM NO. 2

BID SET

DESIGNED RJF
DRAWN RJF
CHECKED JJK
DATE MAY 2026

CITY OF THORNTON
THORNTON WATER PROJECT
SOURCE WATER PUMP STATION
GENERAL
CIVIL GENERAL NOTES AND ABBREVIATIONS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 203505
DRAWING NO. 30GC02
SHEET NO. 7 OF 169

Plot Date: 4/28/2026 3:44 PM
LAST SAVED BY: JJACOBSEN
PROJECT NO. 203505
FILE NAME: 203505_30GC02.DWG

Certificate Of Completion

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Patrick Hinterberger Patrick.Hinterberger@ThorntonCO.gov Sr. Contract Administrator SHI OBO City of Thornton Security Level: Email, Account Authentication (None)	DocuSigned by:  6DA8F281E4154C8... Signature Adoption: Pre-selected Style Using IP Address: 199.117.212.4	Sent: 7/2/2026 2:31:58 PM Viewed: 7/2/2026 2:32:02 PM Signed: 7/2/2026 2:32:12 PM Freeform Signing

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Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	7/2/2026 2:31:58 PM
Certified Delivered	Security Checked	7/2/2026 2:32:02 PM
Signing Complete	Security Checked	7/2/2026 2:32:12 PM
Completed	Security Checked	7/2/2026 2:32:12 PM

Payment Events	Status	Timestamps