

4 October 2016

ADDENDUM NO. 1

RE: City of Argonia, Kansas
Water System Improvements
KDHE Project No. 2702
WCI File: 09-200-513-00/05/8670/8600

To All Prospective Bidders:

The Contract Documents for the referenced project are hereby amended in the following particulars only, with all other conditions remaining unchanged.

A. PROJECT MANUAL

1. Section 00200, Instructions to Bidders, Page 00200-10:
14.; 14.2.; 14.1.1.; DELETE the third sentence of Paragraph 14.1.1 that reads as follows:

“In the comparison of Bids, alternates (if any).....order as listed in the Bid form.”

2. Section 00200, Instructions to Bidders, Page 00200-13:
DELETE Paragraph 26 – Water Rate Usage in its entirety.
3. Section 02610, Water Pipe and Appurtenances, Page 02610-3 & 02610-4:
ADD the following paragraph after D. Encasement Pipe:

“E. Well Column Drop Pipe:

1. 3-inch and larger:
 - a. Materials:
 - 1) Unplasticized PVC utilizing minimum cell classification 12454 in ASTM D1784.
 - 2) Hydrostatic Design Basis of 4000 psi for water at 73.4°F in accordance with ASTM D2837.
 - b. NSF 61 approved.
 - c. Performance: ASTM D1785 for Sch. 80 pipe (min.).
 - d. Joints: Restrained, spline lock joint.

- e. Adapters: Drop pipe shall be joined to adjacent equipment using stainless steel drop pipe adapters provided by same manufacturer that provides the drop pipe using the same spline lock joint as used in the drop pipe.
 - f. Marking: Shall permanently be marked with manufacturer; nominal size & schedule rating; manufacturing date code; and NSF 61 approval.
 - g. Size: To match pump discharge connection.
 - h. Maximum pump/Motor power: 30 HP (min.).
 - i. Maximum pressure rating: 309 psi (min.).
 - j. Manufacturer:
 - 1) Certa-Lok PVC Drop Pipe; North American Pipe Corp.; Houston, TX or approved equal.”
4. Section 08110, Metal Doors and Frames, Page 08110-2:
Part 2; 2.1; ADD the following paragraph “G. Substitutions: Under provisions of Section 01600.”
5. Section 08220, FRP Doors and Frames, Page 08220-3:
Part 2; 2.1; ADD the following paragraphs “B. Chase Industries, Inc.; Cincinnati, OH.” and “C. Substitutions: Under provisions of Section 01600.”
6. Section 10425, Signs, Page 10425-3:
Part 2; 2.4 Non-Potable Water Sign; A. REPLACE the last sentence of paragraph A with the following:

“This sign is only required if Alternate No. 1 is accepted.”
7. Section 11260, Gas Chlorination Equipment and Appurtenances, Page 11260-3:
Part 2; 2.1; REPLACE paragraph “B. No Substitutions” with “B. Superior Gas Chlorinators; Fort Pierce, Florida.”
8. Section 11260, Gas Chlorination Equipment and Appurtenances, Page 11260-3:
Part 2; 2.1; ADD paragraph “E. No Substitutions.”
9. Section 11260, Gas Chlorination Equipment and Appurtenances, Page 11260-6:
Part 3; 3.3; A.; DELETE paragraph 2. which reads as follows:

“1. Provide the services of a qualified representative of the manufacturer of the chlorine analyzer for a minimum of four (4) hours on site to:
a. Verify proper installation of equipment.
b. Perform the following:
 - 1) Field testing and start-up.
 - 2) Initial performance testing.
 - 3) Instruct Owner's personnel in the proper operation and maintenance of the equipment.
c. Provide field report and O&M manual under provisions of Sections 01400 and 01650.”

10. Section 11295, Valves, Hydrants and Appurtenances, Page 11295-5 through 11295-7:
Part 2; 2.1; F.; ADD the following paragraphs:
 - “8. Valve Operating Characteristics:
 - a. Typical Flow Range: 120-250 gpm.
 - b. Typical Pressure Differential Across Valve: 35-55 psi.
 - c. Typical Inlet Pressure: 46-67 psi. ”

11. Section 11295, Valves, Hydrants and Appurtenances, Page 11295-8:
Part 2; 2.1; J.; Paragraph 4. Orifice Area; DELETE the sentence that reads as follows:

“1-inch valve = .155 sq. inches.”

12. Section 11295, Valves, Hydrants and Appurtenances, Page 11295-12:
Part 2; 2.3; C. Pressure Gauges; ADD the following paragraph: “10. NSF61 approved for potable water service where required.”

13. Section 11320, Grinder Pump Station, Pages 11320-1 through 11320-13:
REPLACE entire Section 11320 Grinder Pump Station with the attached 11320 Grinder Pump Station specification.

14. Section 11400A, Exhibit – Treatment Equipment, Page 11400A-1:
CLARIFICATION; actual Layne Christensen Bill of Materials (BOM) and Process and Instrumentation Diagram (P&ID) will be provided as part of shop drawing review after Purchase Order from Contractor. Provided BOM and P&ID for reference only.
ADD the attached drawings of the Layne Christensen equipment skids for reference only.
Actual treatment skid sizes will be provided by Layne during shop drawing review after Purchase Order from Contractor.

15. Section 11600, Bolted Steel Tank, Page 11600-9:
Part 3; ADD the following paragraph after paragraph 3.7:

“3.8 ONE YEAR INSPECTION
 - A. Provide manufacturer’s representative to inspect the tank 11 months after the Substantial Completion date.
 - B. Inspector will perform a comprehensive evaluation of the interior and exterior conditions of the standpipe with it empty and full.
 - C. Inspection shall be conducted with the tank shall be completed with minimal disruption to the supply and/or distribution system.
 - D. All equipment used in the standpipe must be sprayed with a chlorine solution, at a concentration of 200-mg/L, in accordance with AWWA C652 Section 4.2.
 - E. Inspector shall provide high quality color High Definition DVR (or equal) digital video recording inspection of 100% of all internal surfaces, including the roof, walls, floor, hatches, joints, gaskets, etc. through closed circuit TV.
 - F. Inspector shall be able during the inspection to remove coatings and corrosion products on the internal submerged surfaces for direct examination of metal loss, pit depth coating failure, and water loss issues.

- G. Inspector shall review, evaluate and provide a written report of any issues identified in the inspection.
- H. Based on the inspection results, determine any improvements required.”

16. Section 11700, Glass-Fused-To-Steel Bolted Tank, Page 11700-1:
Part 1; 1.6; A.; REPLACE with the following paragraph:

“B. The Tank Contractor or Tank Manufacturer shall provide documentation that they have previously designed, fabricated, and erected a minimum of five (5) potable water storage tanks of similar size that have been operating satisfactorily for a minimum of five (5) years, including the name and telephone number of OWNER and ENGINEER.”

17. Section 11700, Glass-Fused-To-Steel Bolted Tank, Page 11700-10:
Part 3; ADD the following paragraph after paragraph 3.7:

- “3.8 ONE YEAR INSPECTION
- A. Provide manufacturer’s representative to inspect the tank 11 months after the Substantial Completion date.
 - B. Inspector will perform a comprehensive evaluation of the interior and exterior conditions of the standpipe with it empty and full.
 - C. Inspection shall be conducted with the tank shall be completed with minimal disruption to the supply and/or distribution system.
 - D. All equipment used in the standpipe must be sprayed with a chlorine solution, at a concentration of 200-mg/L, in accordance with AWWA C652 Section 4.2.
 - E. Inspector shall provide high quality color High Definition DVR (or equal) digital video recording inspection of 100% of all internal surfaces, including the roof, walls, floor, hatches, joints, gaskets, etc. through closed circuit TV.
 - F. Inspector shall be able during the inspection to remove coatings and corrosion products on the internal submerged surfaces for direct examination of metal loss, pit depth coating failure, and water loss issues.
 - G. Inspector shall review, evaluate and provide a written report of any issues identified in the inspection.
 - H. Based on the inspection results, determine any improvements required.”

18. Section 13121, Pre-Engineered Steel Building, Page 13121-2:
Part 1; 1.2; A.; ADD the following immediately after paragraph 30.:

“31. SSPC-SP15 – Steel Structures Painting Council, Paint 15, Steel Joist Shop Primer/Metal Building Primer”

19. Section 13121, Pre-Engineered Steel Building, Page 13121-6:
Part 2; 2.3; A; 4.; REPLACE with the following:

“4. Prime Coat Paint: All primary and secondary structural steel and framing shall be coated with a rust inhibitive primer that meets SSPC-Paint 15, Steel Joist Shop Primer/Metal Building Primer and cleaned per SSPC-SP 2, Hand Tool Cleaning requirements. Primer shall be a minimum 1.0 mil dry film thickness on the structural steel and minimum 0.7 mil dry film thickness on the secondary framing.”

20. Section 13121, Pre-Engineered Steel Building, Page 13121-7 and 13121-8:
Part 2; 2.4; A.; ADD the following after paragraph 3.:

“4. Roof panels to be FM4471 approved.”

21. Section 15128, Gages and Meters, Page 15128-1:
Part 2; 2.1; B.; ADD the following:

“5. All potable water gauges to be NSF61 approved.”

22. Appendix C, Davis-Bacon Wage Rate Determination:

REPLACE with the attached Wage Rates for Sumner County, KS.

*Note: Per the funding requirements, the wage determination will be checked within 10 days of the bid opening. If the wage determination has been modified (at the time they are checked), another addendum will be sent updating the determination.

B. DRAWINGS

1. Sheet No. CS-504, Well Improvements

Detail E4; Well 6 Improvements – Plan; ADD the following sentence to existing note; Provide Pipe Supports As Necessary:

“Seal penetration through wall.”

2. Sheet No. A-101, Water Treatment Plant Floor Plan

Under “Notes” section, DELETE Note 6 (referencing 6” PVC Drains) in its entirety.

3. Sheet No. A-201, Water Treatment Plant Exterior Elevations

REPLACE detail A1 Water Treatment Plant – South Elevation with the attached detail A1 Water Treatment Plant – South Elevation on Sheet No. A-201A1.

4. Sheet No. E-502, Electrical Details.

DELETE detail E8; Building Electrical Rack Construction Detail; in its entirety.

5. Sheet No. E-702, Well No. 5 One Line Diagram.

In detail A7; Well No. 5 – Proposed One Line Diagram; REPLACE note that reads as follows:

“Provide NEMA 3R Box with generator connections. Coordinate requirements for portable generator connections with Owner.”

WITH the following note:

“Provide generator connections (plug). Coordinate requirements for connections with Owner.”

6. Sheet No. E-802, Well No. 6 One Line Diagram.

In detail A4; Well No. 6 – Proposed One Line Diagram; REPLACE note that reads as follows:

“Provide NEMA 3R Box with generator connections. Coordinate requirements for portable generator connections with Owner.”

WITH the following note:

“Provide generator connections (plug). Coordinate requirements for connections with Owner.”

This ADDENDUM is hereby made a part of the Bidding Documents to the same extent as though contained in the original documents. Work to be included shall not be limited to narrative description contained herein, but shall also include adjustments or revisions to other work not mentioned, in order to accomplish the Work described.

Each Bidder shall acknowledge receipt of this ADDENDUM in the space provided on the Bid Form.

WILSON & COMPANY

A handwritten signature in blue ink, appearing to read "G. Stockebrand".

Craig Stockebrand
Civil Engineer

SECTION 11320

GRINDER PUMP STATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Sewage grinder pumps.
- B. Pump accessories.
- C. Pump control system.

1.2 GENERAL REQUIREMENTS

- A. Contractor shall furnish all labor, materials, equipment, and incidentals required to provide a simplex pumping system as specified herein (a spare pump shall be provided as part of system). The system components shall be supplied by a single supplier so as to ensure suitability and assurance of experience in matching the equipment together and to ensure single source responsibility for the equipment.
- B. System shall consist of two (2) sewage grinder pumps (one is a spare), level control switches, discharge plumbing, stainless steel lifting cables, rail guides, guide rails, and pump controls.

1.3 SUBMITTALS

- A. Submit under provisions of Section 01300.
 - 1. Letter certifying that equipment and materials comply with the Bidding Documents.
 - 2. Grinder pump station shop drawings: Provide plan and sectional drawings for grinder station showing individual subassemblies, fabricated pieces, mounting information, outline dimensions, and other pertinent dimensions necessary for construction, installation and maintenance.
 - 3. Grinder pump station manufacturers installation instructions: Provide instructions, assembly diagrams, and lists of assembly components.
 - 4. Product Data:
 - a. Pump performance curves throughout operating range:
 - 1) Head capacity.
 - 2) Efficiency.
 - 3) Brake horsepower.
 - 4) Net positive suction head.
 - b. Manufacturer's name and catalog cuts listing type, model number, catalog number, styles, finish, and information describing operating principles and fundamentals.
 - c. Pump and motor starting current, torque, and power factor.
 - 5. Pump electrical power and control system:
 - a. Schematic diagrams of electrical power systems.
 - b. Control schematics and one-line diagrams.
 - c. Manufacturer's name and catalog cuts listing type, model number, catalog number, styles, finish, and information describing operating principles and fundamentals.
 - d. Provide product information describing electrical characteristics such as volts, amps, watts, horsepower, whether single or three phase, and other pertinent data.
 - e. Provide interconnection drawings which show all wiring in detail, including terminal block numbers, terminal numbers, and wire identification.

- f. Control panel outline dimensions, mounting information, and other pertinent dimensions.
- 6. Provide product data and materials of construction for other grinder pump accessories.

- B. Submit under provisions of Section 01400.
 - 1. Manufacturer's field reports: As noted within section.

1.4 PROJECT RECORD DOCUMENTS

- A. Submit record documents under provisions of Section 01700.
- B. Accurately record exact location of all buried piping and fittings.
- C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.5 OPERATION AND MAINTENANCE DATA

- A. Submit operation and maintenance data under provisions of Section 01700.

1.6 REGULATORY REQUIREMENTS

- A. Conform to Kansas Department of Health and Environment (KDHE), *Minimum Standards of Design for Water Pollution Control Facilities*, 1978.
- B. Conform to applicable plumbing code.

1.7 PROJECT ENVIRONMENTAL CONDITIONS

- A. Pump station area classifications:
 - 1. Comply with NFPA 820 for wastewater facilities.
 - 2. The transfer structure is classified as a Class I, Group D, Division 1 hazardous location.
 - 3. Provide equipment and materials suitable for these locations.

1.8 EXTRA MATERIALS

- A. Provide the following spare parts:
 - 1. 1 – Seal kit with bearings
 - 2. 2 – Spare fuses of each size and type
 - 3. 2 – Spare relays of each size and type
 - 4. 2 – Spare incandescent pilot lights lamps (no spares required for LED lamps)
 - 5. 1 – Spare alternator module
 - 6. 2 – Spare float type level switches

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and protect products under provisions of Section 01600.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. The equipment specified shall be a product of a company experienced in the design and manufacture of grinder pumps.
- B. ITT Flygt Corporation.
- C. ABS Pumps, Inc.
- D. Substitutions: Under provisions of Section 01600.

2.2 EQUIPMENT

- A. Nameplates:
 - 1. Each major component of equipment shall have the manufacturer's name, address, and catalog number on a nameplate securely affixed in a conspicuous place.
 - 2. The nameplate of a distributing agent only will not be acceptable.
 - 3. Nameplates shall be fabricated from 18-8 stainless steel and shall be stamped with the following information.
 - a. Pump manufacturer and model.
 - b. Serial number.
 - c. Capacity, gpm at rated TDH in feet.
 - d. Impeller size and model number.
 - e. Rotating speed.
 - f. Driver horsepower and voltage (electric).
 - g. Type and size of bearings.
 - h. Type and part number of shaft seals.

2.3 GRINDER PUMPS

- A. General:
 - 1. Furnish two submersible non-clog grinder pumps for the grinder pump station as indicated on the Drawings. Install only one grinder pump. Second pump is a spare to be placed on shelf by Owner.
 - 2. Each pump shall be capable of handling raw unscreened sewage and other similar solids-laden fluids. Shall be able to pass a minimum 1 3/4" solid.
 - 3. Each pump and motor power cable shall be approved for use in areas classified as hazardous locations in accordance with the NEC Class I, Division 1, Group C and D service as determined and approved by the U.S. nationally recognized testing agency (U.L., FM) at the time of the bidding of this project.
 - 4. Each pump shall be equipped with a submersible electric motor, 3505 rpm connected for operation on 208 volts, 3 phase, 60 Hz power service. The pump service factor shall be 1.15.
 - 5. The pumps shall be capable of the following capacities and operating characteristics:
 - a. Design Point: 162 GPM at Total Head of 63 feet.
 - b. Shut off head: 90 feet (min).
 - c. Motor Horsepower: 11.0 HP (max).
 - d. Operating Speed: 3520 rpm (max).
 - e. Pump Efficiency @ Design Point: 23% (min.).
 - f. System curve:

<u>Flow (GPM)</u>	<u>TDH (FT)</u>
0	9
20	10
40	13
60	18
80	24
100	31
120	40
140	50
160	62
180	74
200	89

- 1) Discharge Size: 2.0" (min.) 3.0" (max)

2.4 CONSTRUCTION

- A. Centrifugal type with the rotating and stationary cutter elements.
- B. Major pump components shall be of grey cast iron, ASTM A-48, Class 30, Class 35B, or Class 40 with smooth surfaces devoid of blow holes or other irregularities. The lifting handle shall be of stainless steel. All exposed nuts or bolts shall be AISI type 304 stainless steel construction. All metal surfaces coming into contact with the pumpage, other than stainless steel or brass, shall be protected by a factory applied spray coating of acrylic dispersion zinc phosphate primer with a polyester resin paint finish on the exterior of the pump.
- C. Critical mating surfaces where watertight sealing is required shall be machined and fitted with Nitrile rubber O-rings. Fittings will be the result of controlled compression of rubber O-rings in two planes and O-ring contact of four sides without the requirement of a specific torque limit.

2.5 ELECTRICAL POWER CORD

- A. Power cord shall be sized in accordance with NEC and CSA standards.
- B. The cable plug and sealed entry system as part of the motor shall be FM and CSA approved for use in NEC Class I, Division I, Groups C & D hazardous locations. The system shall be anti wicking by design, and shall prevent any water that enters the cable through damage to the jacket from entering the motor.
- C. The outer jacket of the cable shall be oil and water resistant and shall be capable of continuous submerged operation underwater to a depth of 65 feet.
- D. The power cable shall be of sufficient length to reach the junction box without the need of any splices. Provide a braided, stainless steel cord grip for support of the cable.

2.6 MOTOR

- A. The pump motor shall be a NEMA B design, induction type with a squirrel cage rotor, shell type design, housed in an air filled, watertight chamber. The stator windings shall be insulated with moisture resistant Class H or Class F insulation. The stator shall be heat-shrink fitted into the cast iron stator housing. The motor shall be designed for continuous duty handling pumped media of 40°C (104° F) and capable of no less than 10 evenly spaced starts per hour. The rotor bars and short circuit rings shall be made of cast

aluminum. Thermal switches shall be embedded in the stator end coils to monitor the temperature of each phase winding. These thermal switches shall be used in conjunction with and supplemental to external motor overload protection and shall be connected to the control panel. Alarm shall initiate and motor stop if excessive temperature occurs. The junction chamber containing the terminal board, shall be hermetically sealed from the motor by an elastomer seal. Connection between the cable conductors and stator leads shall be made with threaded compression type binding posts permanently affixed to a terminal board. The motor and the pump shall be produced by the same manufacturer.

- B. The combined service factor (combined effect of voltage, frequency and specific gravity) shall be a minimum of 1.15. The motor shall have a voltage tolerance of plus or minus 10%. The motor shall be designed for operation up to 40°C (104°F) ambient and with a temperature rise not to exceed 80°C. A performance chart shall be provided upon request showing curves for torque, current, power factor, input/output kW and efficiency. This chart shall also include data on starting current and no-load characteristics.
- C. The power cable shall be sized according to the NEC and ICEA standards and shall be of sufficient length to reach the junction box without the need of any splices. The outer jacket of the cable shall be oil resistant chlorinated polyethylene rubber. The motor and cable shall be capable of continuous submergence underwater without loss of watertight integrity to a depth of 65 feet or greater.
- D. The motor horsepower shall be adequate so that the pump is non-overloading throughout the entire pump performance curve from shut-off through run-out.

2.7 BEARINGS AND SHAFT

- A. The pump shaft shall rotate on two bearings (upper and lower).
- B. Motor bearings shall be permanently lubricated.
- C. The lower bearing shall be a two row angular contact bearing to compensate for axial thrust and radial forces. The minimum L10 bearing life shall be 50,000 hours at any usable portion of the pump curve for both bearings.

2.8 PUMP SHAFT

- A. Pump and motor shaft shall be the same unit. The pump shaft is an extension of the motor shaft. Couplings shall not be acceptable. The shaft shall be stainless steel – ASTM A479 S43100-T or AISI 420 Stainless Steel.

The shaft construction of sufficient quality to prevent seal or bearing failure due to vibration.

2.9 SEALS

- A. Each pump shall be provided with a tandem mechanical shaft seal system consisting of two totally independent seal assemblies. The seals shall operate in a lubricant reservoir that hydro-dynamically lubricates the lapped seal faces at a constant rate. The lower, primary seal unit, located between the pump and the lubricant chamber, shall contain one stationary and one positively driven rotating, corrosion and abrasion resistant tungsten-carbide or silicon-carbide ring. The upper, secondary seal unit, located between the lubricant chamber and the motor housing, shall contain one stationary and one positively driven rotating, corrosion and abrasion resistant tungsten-carbide or carbon steel seal ring.

- B. Each seal interface shall be held in contact by its own spring system. The seals shall require neither maintenance nor adjustment nor depend on direction of rotation for sealing. The position of both mechanical seals shall depend on the shaft.
- C. Each pump shall be provided with a lubricant chamber for the shaft sealing system. The lubricant chamber shall be designed to prevent overfilling and to provide lubricant expansion capacity. The drain and inspection plug, with positive anti-leak seal shall be easily accessible from the outside. The seal system shall not rely upon the pumped media for lubrication. The motor shall be able to operate dry without damage while pumping under load.
- D. Where a seal cavity is present in the seal chamber, the area about the exterior of the lower mechanical seal in the cast iron housing shall have cast in an integral concentric spiral groove. This groove shall protect the seals by causing abrasive particulate entering the seal cavity to be forced out away from the seal due to centrifugal action.

2.10 IMPELLER

- A. The impeller(s) shall be of gray cast iron, ASTM A 48, Class 30, Class 35B, or Class 40 dynamically balanced, single or double shrouded, non-clogging design having a long throughlet without acute turns. Impeller(s) shall be keyed to pump shaft and retained with an Allen head bolt. All impellers shall be coated with primer.

2.11 VOLUTE

- A. Pump volute(s) shall be single-piece grey cast iron, ASTM A 48, Class 30, Class 35B, or Class 40 non-concentric design with smooth passages large enough to pass any media that may enter the impeller.

2.12 COOLING SYSTEM

- A. Motors are sufficiently cooled by the environmental atmosphere or pumped media.

2.13 PUMP ACCESSORIES

- A. Base/Discharge Elbow Assembly:
 1. Pump discharge connection elbow and discharge piping shall be installed such that pump will automatically connect and seal to discharge connection elbow when lowered into place without bolts.
 2. Integral with guide rail.
 3. Cast or ductile iron.
 4. Provide adaptor bracket to transition from pump discharge size to base elbow size, if the sizes are different.
 5. The discharge connection and/or steel support stand shall be anchored to the floor with stainless steel bolts.
 6. Each anchor bolt shall be of the diameter and length required for the equipment supplied. Each anchor bolt shall be complete with stainless steel nuts and washers.
- B. Rail Guides:
 1. Connected to access hatch frame and threaded to base elbow to insure they cannot be pulled out.
 2. 304 stainless steel.

- C. Guide Rails:
 - 1. Stainless-steel pipe.
 - 2. 304 stainless steel, including rails, brackets, and anchor bolts.
 - 3. Size as recommended by pump manufacturer.
 - 4. Shall not support any portion of the pump weight.
 - 5. Provide stainless steel upper guide rail brackets with buna isolation bushings and chain hooks for each pump .

- D. Pump Lifting: Provide a lifting system for each pump, designed for use with the specified hoist and crane.
 - 1. Provide one 304 stainless steel wire rope designed to work with the provided davit hoist.
 - 2. Each wire rope will be attached to a stainless steel grip-eye with a chain hook.
 - 3. A nylon rope will be attached to a short section of stainless steel chain via a 304 stainless steel clevis. The chain shall be supplied sufficient in length to allow the grip-eye to connect and pull the pump safely from the wet well without anyone having to enter the space.

- E. Power and Control Cable Holder:
 - 1. 304 stainless steel, with mounting bracket.
 - 2. Provide stainless steel grip holders (Kellem grips) for pump and control cables.
 - 3. Cables shall be easily adjusted to pumping level without splices.
 - 4. Provide power and control cables which are sealed at the motor and continuous from the motor to the intermediate junction box for removing submersible pump for maintenance.

2.14 SIMPLEX CONTROL PANEL

- A. General.
 - 1. Provide a complete pump control system for the grinder pump station.
 - 2. The system shall high level alarm, provide start and stop pump as required, and provide status indication on equipment.

- B. Listing and Marking.
 - 1. Control systems shall conform to third party safety certification.
 - 2. Control panel shall be listed under UL 508A – Industrial Control Panels and shall bear a UL label.
 - 3. Enclosure and all components shall conform to UL descriptions and procedures.
 - 4. Control panel shall comply with NEC 409 and shall be marked in accordance with NEC 409.110.

- C. Component Manufacturer.
 - 1. Circuit breakers shall be manufactured by Square D – No Substitutions.
 - 2. Motor starters shall be manufactured by Square D – No Substitutions.

- D. Enclosure.
 - 1. Provide a NEMA 3R, steel enclosure sized as required to contain the components.
 - 2. Enclosure size shall be mounted to the building.
 - 3. Enclosure shall be suitable for installation outdoors, unprotected with ambient temperature of –20° F to 110° F.
 - 4. Provide heaters, vents, exhaust fans, and cooling as required by equipment.

- E. Fabrication.
 - 1. Control devices, pilot lights, and switches shall be mounted on the inner deadfront door. Outer door shall be blank and have provisions for padlocking.
 - 2. The panel shall contain the required control components with all necessary power supplies or other auxiliary components to perform the functions.

3. Arrange components for functional operation and ease of servicing, operation, and calibration.
4. Centerline of the uppermost items on the panel shall not be more than 66 inches above grade and the bottom of lower items not less than 36 inches above grade. Submit layout for review. Drawing shall indicate intended mounting height of panel above grade.

F. Power Source.

1. Controls: Power source for the controls shall be derived from the main power connection and shall be nominal 120 volts, 60 Hz and unregulated. All power conditioning, transformation, conversion, and/or regulation equipment as required to provide reliable and accurate service of the control system shall be furnished as a part of the system.
2. Pumps: Power source for pump motors shall be 208 volts, 3 phase, 60 Hz with a single point connection.
3. Disconnect: Provide a main disconnect for the pump control panel with an operating handle that extends through the door. The disconnect shall prevent opening the door when the disconnect is in the ON position and shall be provided with a defeat mechanism for use by authorized maintenance personnel.
4. Motor Starter Disconnect: Provide a circuit breaker for power to each motor starter. Breaker shall be capable of being padlocked in the "OFF" position with the enclosure door open or shut. Breaker shall not have a thru door operating handle.
5. Auxiliary Equipment: Provide a switched light fixture and a GFCI receptacle inside the control panel for servicing the panel. Light and receptacle shall be connected to a separate circuit breaker from any other equipment.

G. Control Power.

1. Motor starter shall have a separate 120-volt control power derived from the main power connection.
2. This control power shall not be used to operate any common equipment in the control panel.

H. Control Circuit.

1. Motor starter shall have a H-O-A switch.
2. The control panel will contain isolated contacts for start-stop control when the H-O-A switches are in the "automatic" position.
3. The circuits shall be designed so that the pump may be operated on "Hand" in the event that the common portion of the controls (such as level control) have failed.

I. Wiring.

1. The control panel general wiring shall be No. 14 AWG minimum stranded type THW, MTW, THWN, or THHN and shall be neatly bundled and tied or installed in open-slot type plastic wiring ducts with snap-on covers.
2. Ac and dc wiring shall be separated and shall not be run in the same wiring duct or bundle or connected on the same terminal block.
3. Analog and discrete wiring shall be separated and shall not be run in the same wiring duct or bundle or connected on the same terminal block.
4. All wiring shall be tagged with numbered markers at each terminal, and all wiring leaving the control panels shall terminate on numbered terminal strips.
5. Each device remote from the control panel shall be separately wired to the control panel.
6. Each device requiring power shall be wired so that when wires are removed from any one device, power will not be disrupted to any other device.
7. Terminations on screw terminals shall be made with compression type lugs.
8. Terminations made by looping the wire around a terminal screw are not acceptable.

9. No wiring diagrams are shown on the Drawings for the indicators, recorders, controller, summing amplifier, etc., in the control panels. These items shall be connected as recommended by the manufacturer of each item furnished.

J. Wiring and Protective Devices.

1. Wiring and protective devices shall be arranged to provide reliable service.
2. Circuits shall be protected by fuses or circuit breakers.
3. A maximum of ten circuits (ladder rungs) shall be fed from any circuit breaker or fuse.
4. Provide four spare fuses for each fuse installed.

K. Pilot Lights.

1. Provide in heavy duty, oil tight type with LED or incandescent lamps. Incandescent lamps shall be low voltage type with a transformer built into the unit. Lamps shall be replaceable from the front of the unit.
2. Provide with a push-to-test feature or other means to identify failed lamps.

L. Push Buttons and Selector Switches.

1. Provide heavy duty, oil tight type.

M. Painting.

1. After fabrication including cutouts, steel panels shall be filled, sanded and cleaned, and finished inside and outside in accordance with Section 09900 - PAINTING.
2. Exterior color shall be light gray.
3. Interior color shall be white.
4. Stainless steel panels do not require painting.

N. Nameplates.

1. Provide in accordance with Section 16075 – ELECTRICAL IDENTIFICATION.

O. Motor Starters.

1. General: Provide a motor starter. Starter shall be installed within the pump control panel.
2. Starter: Provide solid-state "soft-start/stop" or "across the line" starter as required by pump size.
3. For Solid State Unit provide the following:
 - a. Control: Provide a unit with microprocessor based controls.
 - b. Starting/Stopping: Provide unit with soft start and soft stop control of the motor. Other selectable features shall include current limit mode and full voltage starting. In soft start mode, the unit shall provide an adjustment for initial torque of 5 to 90 percent of locked rotor torque. The unit shall then ramp the voltage up to full voltage with an adjustable ramp time of 2 to 30 seconds. The unit shall also have a "kick start" feature to provide 500 percent of full load current for an adjustable time period at the beginning of the start sequence and have an off setting. When stopping, the unit shall ramp the voltage down with an adjustable ramp time of 2 to 30 seconds.
 - c. Faults: The unit shall sense phase failure, start faults, line faults, installed motor, and over temperature. The unit shall shut down or inhibit start when a fault is sensed. Each fault condition shall be indicated on the unit.
 - d. Status: Provide indicators for power on, starting, and running. The unit shall have an SPDT contact to indicate status.
 - e. Power: Provide power unit suitable for the voltage and horsepower as shown on the Drawings. The SCR's and heat sinks shall be rated for 400 percent of motor current for 20 seconds operation.
 - f. Surge Protection: Provide metal oxide varistors for surge protection.

- g. Temperature: The unit shall be suitable for operation in 0 degrees C to +50 degrees C ambient environment.
 - h. Remote Display: Provide a control display remote mounted on the control panel door.
 - i. Isolation Contactor: Provide a contactor installed upstream of the solid state unit to provide complete voltage isolation from the power source.
 - j. Manufacturer: Provide Square D Altistart 48.
 - k. Shorting Contactor: Provide a contactor to bypass the SCR's when the motor is running at full speed.
4. For Across-the-Line Unit, provide the following:
 - a. Provide an open frame, across-the-line NEMA rated magnetic motor starter for pump motor, full voltage, non-reversing. IEC type design starters are not acceptable.
 - b. Power contacts shall be double-break and be made of cadmium oxide.
 - c. Coils shall be epoxy molded for protection from moisture and corrosive atmospheres.
 - d. Motor starter contacts and coils shall be replaceable without removing the motor starter.
 - e. Provide an overload reset button mounted through the control panel door to permit resetting the overload.
 5. Overload Protection: Provide an overload relay for motor protection. Connect the overload relay to stop the motor on an overload condition. Shall be solid state type with visual indication and trip free operation.
 6. Disconnect: Provide a disconnect for the motor starter assembly.
 7. NEMA Design: All contactors and overloads shall be of NEMA type design; IEC type design is not acceptable. Overloads shall be non-adjustable, ambient temperature compensated, manual reset type. Contactors shall have replaceable, inspectable contacts. The starter components shall conform to the applicable requirements of NEMA ICS 2.
- P. Phase Monitor:
1. Provide a phase monitor for each pump to sense low voltage, phase loss, and phase reversal.
 2. Phase monitor shall prevent pump operation during fault condition and shall automatically reset when power source is restored to proper parameters.
- Q. Transient Voltage Surge Suppressor:
1. Provide a metal oxide varistor type surge suppressor on the power connection and a second suppressor on the 120 volt control power connection.
- R. Level Controls:
1. General: Provide a control system to start and stop pumps based on wet well level and provide alarm indication upon high wet well level.
 2. Sequence of Operation.
 - a. Controls on Automatic: The wet well will cycle between the All Pump Off level and the Pump Start level. Pump will operate once activated until the Pumps Off level is reached. If the wet well rises to the High Level Alarm level, the high level alarm pilot light, the external alarm light, and the external alarm horn will operate.
 - b. Controls on Hand: The pump will operate regardless of the wet well level and will continue to run until the switch is placed in Off or Automatic.
 - c. Controls on Off: The pump will not operate.
- S. Control Relays:
1. Control relays shall be plug-in type with matching base. Contacts shall be rated 10 amperes at 120 or 240 volts and suitable for 1/6 hp load at 120 volts. Coil shall be rated for continuous duty.

Provide relay with pilot light or mechanical “flag” to indicate when relay is energized. Relay shall be Square D, Class 8501, Type KP, IDEC series RH, or equal.

T. Level Switches:

1. General. Provide level switches for control of the pumps and high level alarm. Level switches shall include:
 - a. LSM1902: Pump Start
 - b. LSL1903: Pump Stop
 - c. LSH1904: High Level Alarm
 - d. LS1905: Backwash Permissive
2. Switches shall be mechanical tilt switch type - mercury not allowed. Provide switch rated 3 amperes at 120 volts. Switches shall be normally-open, normally-closed or SPDT as required.
3. Power Cord shall be insulated 300-volt, 2 or 3 conductor, No. 18 AWG minimum, flexible cord, type SO or SJO. Provide length as required by the installation to reach the junction box without splices.
4. Floats. Switches shall be enclosed in a leak proof, shockproof, corrosion-resistant float. Float shall be constructed of polypropylene or polyethylene. Float may include a built-in eccentric weight in lieu of a separate cord weight.
5. Mounting:
 - a. Free Hanging Type. Provide an epoxy-painted cast iron cord weight for each level switch. Provide support brackets for mounting the level switches, spaced to prevent tangling. Provide each level switch with a braided, stainless steel cord grip or cord snubber for height adjustment. Support bracket shall be stainless steel or nonmetallic.
6. Intrinsically Safe Relays. Connect each lift station control float switch to an intrinsically safe relay. The wet well is a Class I, Group D, Division 1 hazardous location. Intrinsically safe circuits shall be separated from all other circuits in the control panel by a metal barrier. Intrinsically safe circuits shall be routed in separate conduits from any other circuits.

U. Indicators. Provide the following indicators on the control panel.

1. Pilot Lights.

<u>Legend</u>	<u>Color</u>
Control Power On	White
Pump No. 1901 On	Red
Pump No. 1901 Motor High Temp.	Amber
Pump No. 1901 Water in Motor	Amber
High Level Alarm	Amber

2. Elapsed Time Indicators. Provide a synchronous motor driven display, 9,999.9 hours, non-resettable for each pump.

V. Status Indication: Control panel shall provide the following isolated dry contacts to indicate system status. Contacts shall be SPDT and rated 3 amperes, 120-volts. Wire contacts to a numbered terminal strip.

Contact

Control Power On
Pump No. 1901 On
Pump No. 1901 Fail
Pump No. 1901 Available **

Wet Well High Level

** Indicates H-O-A in automatic and starter control power present.

- W. The seal leak probes installed in each motor shall be connected to a seal failure alarm board located in panel and then connected to the seal failure indicator light on outside of panel.
- X. Alarms. Provide the following alarms:
 - 1. Audible: Provide a vibrating horn loose for field mounting on the building to alarm on high level. Horn does not require any backup power source. Provide a silence pushbutton loose for field mounting on the control building. Unit shall provide a 100 dB signal at 10 feet and shall have adjustment to reduce output by 25 dB.
 - 2. Visual: Provide a red xenon strobe light to alarm on high level. Strobe light shall be 12 volts dc and shall have battery backup in the lift station control panel for a minimum of 90 minutes of operation during power failure. Alarm light shall be provided loose for field mounting on the building.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify field measurements are as shown on Shop Drawings.

3.2 PREPARATION

- A. Protect surrounding surfaces and equipment from damage or disfiguration.

3.3 INSTALLATION

- A. Install equipment in accordance with written manufacturer's instructions and recommendations.
- B. Comply with the Standards of the Hydraulic Institute for leveling, alignment, and running fit.
- C. Provide all tools and other equipment required for the complete installation of the lift station.

3.4 TESTING

- A. Commercial testing shall be required and include the following:
 - 1. The pump shall be visually inspected to confirm that it is built in accordance with specification as to HP, voltage, phase, and hertz.
 - 2. The motor and seal housing chambers shall be hi-potted to test for moisture content and/or insulation defect.
 - 3. Pump shall be allowed to run dry to check for proper rotation.
 - 4. Discharge piping shall be attached, the pump submerged in water, and amp reading shall be taken in each leg to check for an imbalanced stator winding. If there is a significant difference in readings, the stator windings shall be checked with a bridge to determine if an unbalanced resistance exists. If so, the stator will be replaced.

3.5 FIELD QUALITY CONTROL

- A. Field testing will be performed under the provisions of Section 01400.

- B. Provide a field representative for a minimum of 1 day (8 hours) to:
1. Both pumps shall be tested.
 2. Verify proper installation of equipment.
 3. Prepare and start systems under the provisions of Section 01650.
 4. Field test all pumps throughout performance range to demonstrate satisfactory operation without excessive noise, vibration, cavitation or over-heating. Excessive end thrust, vibration, and noise that cannot be eliminated by manufacturer's adjustment recommendations is sufficient cause to reject equipment.
 5. Provide field service report, operation, and maintenance manual under the provisions of Section 01400 and 01650.
 6. Provide adequate training to Owner's personnel in the proper operation and maintenance of the equipment.
 7. Any pump, component, or accessory which fails to meet any of the contract specifications will be modified, repaired, or replaced by the contractor at no additional cost to the Owner.
 8. Field representative to inspect the following items after complete pump installation:
 - a. Meggor stator and power cables.
 - b. Check seal lubrication.
 - c. Check for proper rotation.
 - d. Check power supply voltage.
 - e. Measure motor operating load and no load current.
 - f. Check level control operation and sequence.
 9. Perform full current tests on pumps with and without load. Present results to Engineer for approval.
 10. Check positioning of pump after selected pump have been approved by Engineer.
- C. Contractor will assume responsibility for the readiness of the equipment when service technician is requested. All costs of additional time required by the technician due to incomplete equipment readiness will be paid by the Contractor.
- D. Field representative will provide certification in report form to the Engineer. Include in the report date of inspection, inspections made, testing of equipment and any deficiencies.

3.6 SIX-MONTH INSPECTION

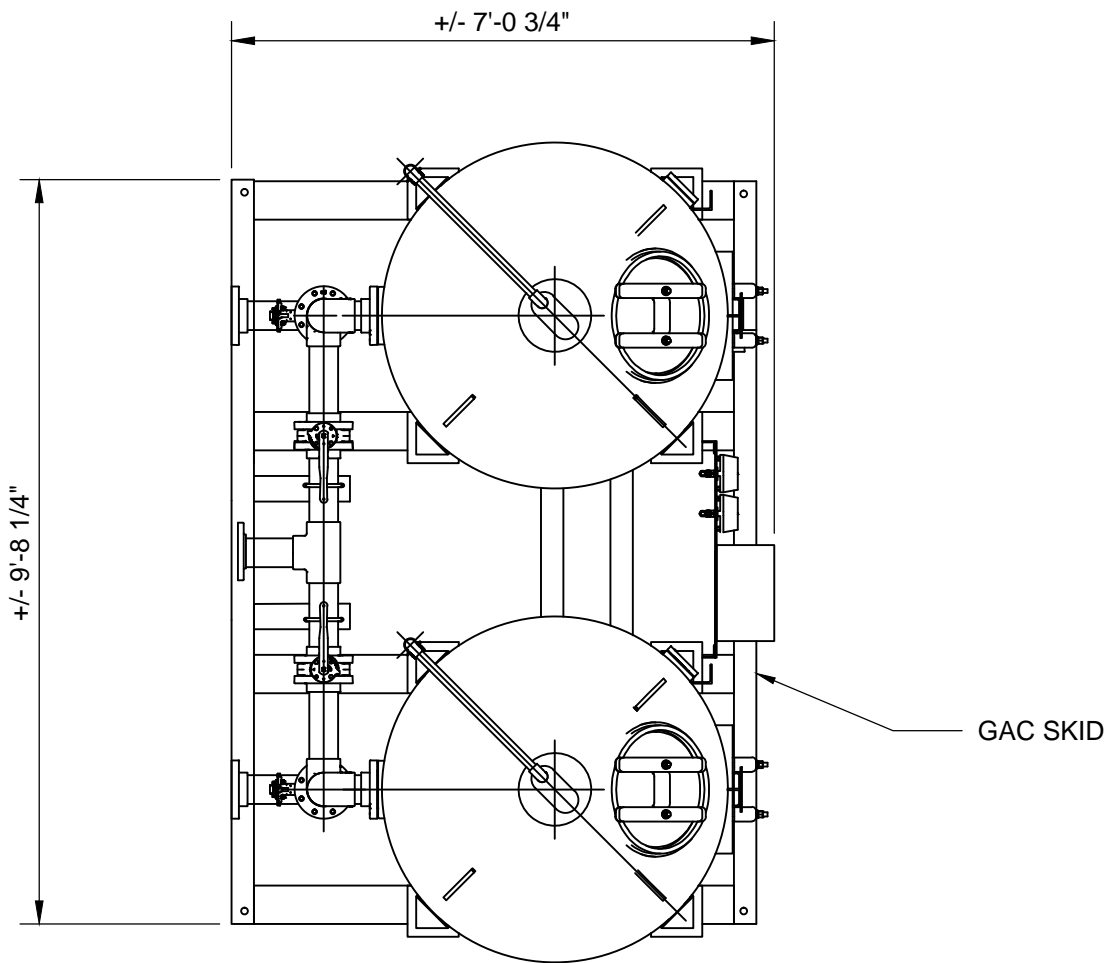
- A. Provide manufacturer's representative to inspect the pumps six months after the Substantial Completion date.
- B. The inspection includes checking pump for proper operation and removing pump from wet well to inspect for proper maintenance.
- C. Based on the inspection results, determine any improvements required.
- D. Submit letter report through ENGINEER to OWNER.

3.7 ADJUSTING

- A. Adjust Work under the provisions of Section 01650.

END OF SECTION

10/3/2016 M:\WWW\09-200-513-00\DOCS\PROJECT MANUAL\Addendum No. 1\GAC Example.dwg



FOR REFERENCE ONLY.

LAYNE CHRISTENSEN TO PROVIDE ACTUAL DESIGN AS PART OF SHOP DRAWING REVIEW AND SUBMITTAL.

WILSON & COMPANY

1700 EAST IRON AVE.
SALINA, KS 67401
PHONE: 785-827-0433
FAX: 785-827-5949
www.wilsonco.com

PROJECT NAME

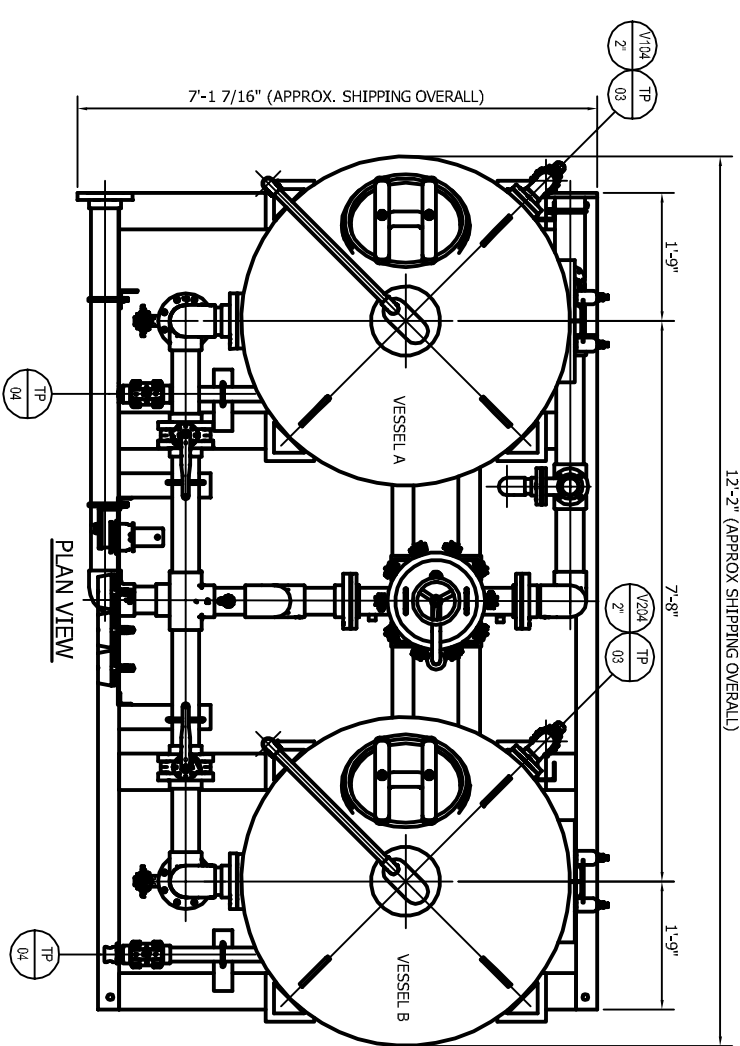
CITY OF ARGONIA
WATER SYSTEM
IMPROVEMENTS

SEAL

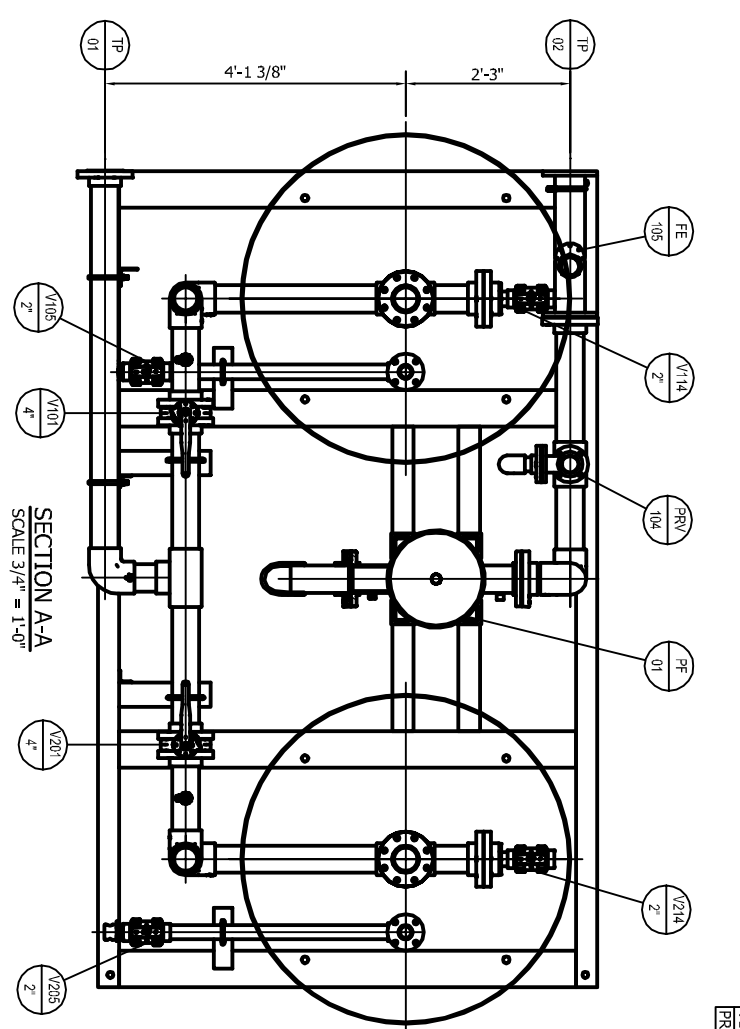
SHEET TITLE

GAC SKID

PROJECT NO:	0920051300	SHEET NO:
DESIGNED BY:		
DRAWN BY:		
CHECKED BY:		
DATE:		



12'-2" (APPROX SHIPPING OVERALL)



SECTION A-A
SCALE 3/4" = 1'-0"

MARK	QTY	EA.	SIZE	TYPE	DESCRIPTION
V100, V200	1	1	4"	BUTTERFLY	INFLUENT VALVE
V101, V201	1	1	4"	BUTTERFLY	EFFLUENT VALVE
V102, V202, V103, V203	1	1	4"	BUTTERFLY	CROSSOVER VALVE
V104, V204	1	1	2"	BALL	MEDIA SLURRY INLET VALVE
V105, V205	1	1	2"	BALL	MEDIA SLURRY OUTLET VALVE
V106, V206	1	1	1"	AIR RELEASE	AIR RELEASE VALVE
V109, V209	1	1	1"	BALL	AIR RELEASE VALVE
V114, V214	1	1	2"	BALL	DRAIN
RV104	1	1	1 1/2"	PRESSURE RELEASE	PRESSURE RELEASE

NOTES:

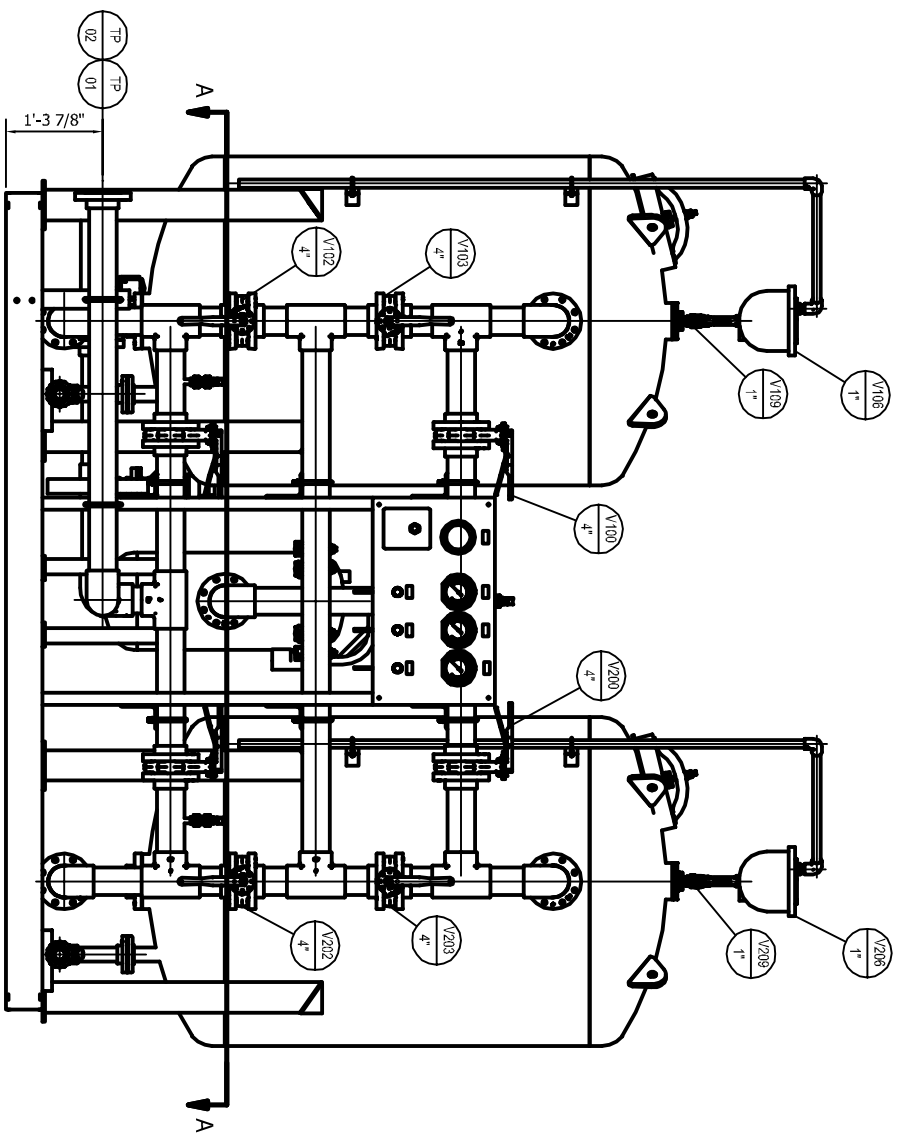
- ONE (1) SYSTEM REQUIRED AS SHOWN.
- ALL DIMENSIONS ARE AS SHOWN.
- PURCHASER'S RESPONSIBILITY SHALL INCLUDE:
 - A. ALL CONCRETE AND FOUNDATIONS, PADS, ANCHOR BOLTS, SUMPS, TRENCHES, ECT.
 - B. UNLOADING, ALIGNING AND ANCHORING OF THE VERTICAL VESSELS, VALVE RACK, BAG FILTER AND OTHER SHIPPED LOOSE EQUIPMENT.
 - C. INSTALLATION OF SHIPPED LOOSE MEDIA.
- MATERIALS OF CONSTRUCTION:
 - A. VESSEL = SA516 Gr. 70 CSFL.
 - B. PIPE RACK = GALVANIZED C/S TL.
 - C. 4" - 2" PIPE = SCH 80 PVC.
 - D. 1" AIR RELEASE PIPE = ASTM A120 SCH 40 THREADED GALVANIZED STEEL.
 - E. GASKETS = 1/8" FULL FACE EPDM.
 - F. EXTERNAL BOLTING = 18-8 STAINLESS STEEL.

APPROVALS

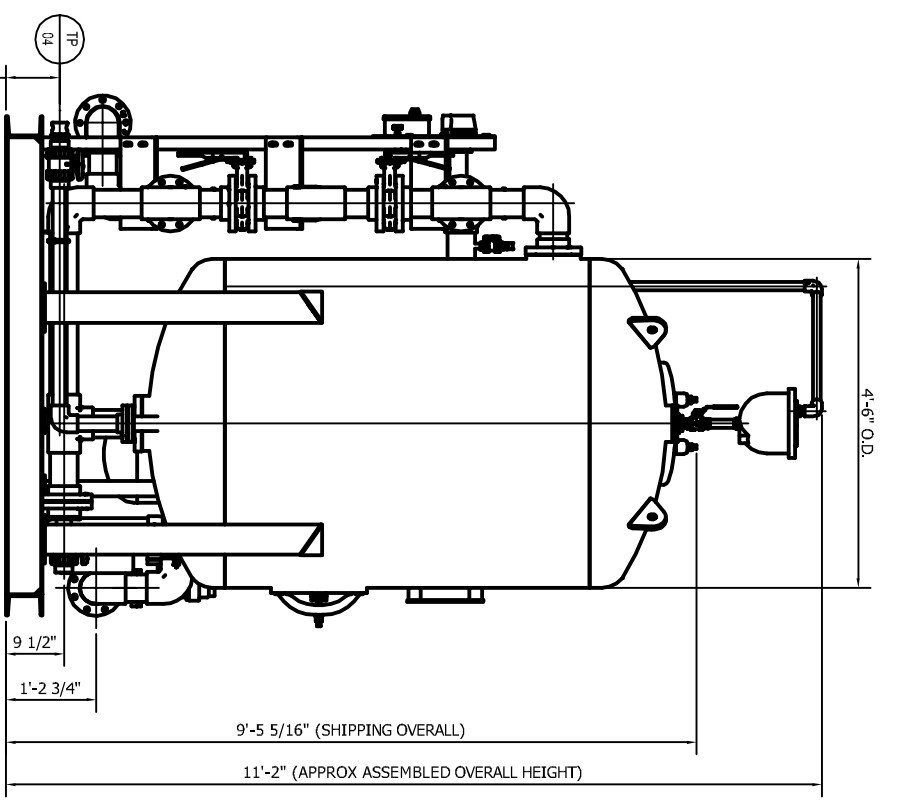
DRAWN BY _____

ENG APP BY _____

MNG APP BY _____



FRONT ELEVATION VIEW
SCALE 3/4" = 1'-0"



RIGHT SIDE VIEW

FOR REFERENCE ONLY

NOT FOR CONSTRUCTION

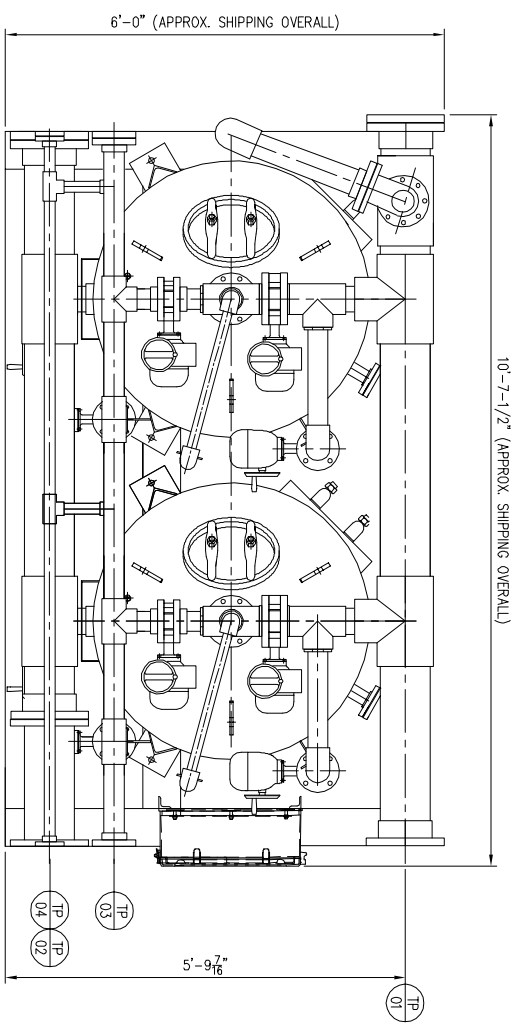
DRAWING NO.: ARG-A160		OWNER: CITY OF ARGONIA, KS		INSTALLATION LOCATION: ARGONIA, KS	
D-SIZE SCALE: NTS		CUSTOMER: WILSON & COMPANY		MODEL NO.: PES54	
JOB NO.:		EQUIPMENT TYPE: PES SYSTEM		TITLE: EQUIPMENT ARRANGEMENT #GPM PES-54 SYSTEM	

WATER TECHNOLOGIES
WATER RESOURCES DIVISION

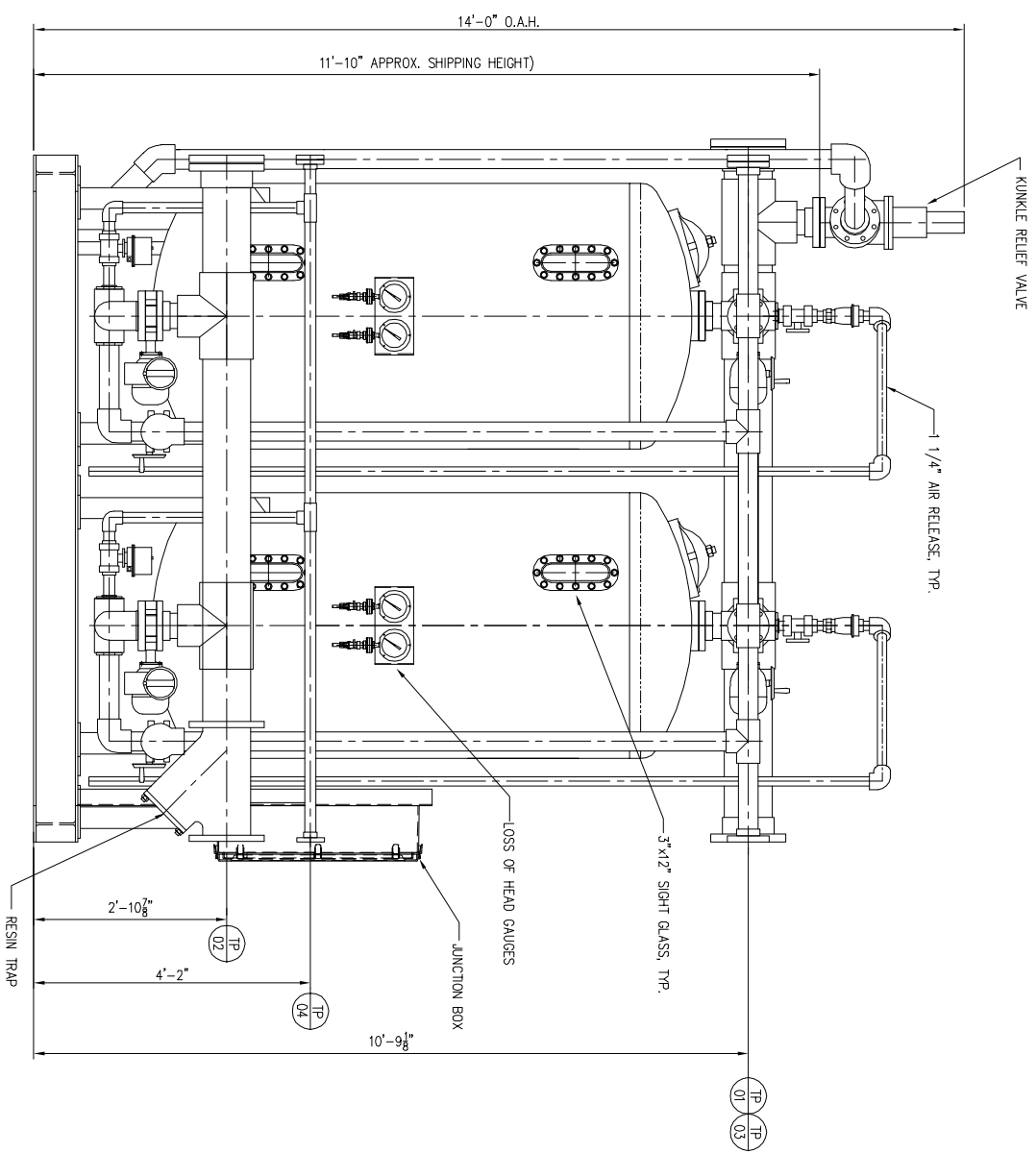
3804 East Watkins Street | Phoenix, AZ | 85034 | (502) 345-8600

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NO.	REVISIONS	BY	DATE
6			
5			
4			
3			
2			
1	ISSUE FOR REVIEW	ALH	10/27/14



PLAN VIEW



ELEVATION VIEW

SCALE: 1/8" = 1'-0"

APPROVALS:
 DRAWN BY:
 ENG APP BY:
 MNG APP BY:

FOR REFERENCE ONLY

APPROXIMATE WEIGHTS

SKID
 EMPTY - XX,XXX LBS
 OPERATING - XX,XXX LBS

FLOWS

SYSTEM SKID SERVICE RATE : 540 gpm

MARK	QTY	SIZE	TYPE	DESCRIPTION
V1100.V1200	1	4"	BUTTERFLY EXCHANGER	INLET
V1101.V1201	1	4"	BUTTERFLY EXCHANGER	OUTLET
V1102.V1202	1	3"	BUTTERFLY COMPACTOR & BACKWASH	INLET
V1103.V1203	1	3"	BUTTERFLY COMPACTOR/BRINE	OUTLET
V1104.V1204	1	3"	BUTTERFLY FAST RINSE	OUTLET
V1105.V1205	1	1 1/2"	BUTTERFLY BRINE	INLET
V113	1	4"	FLANGED EXCHANGER	INLET LIQUID RELIEF
RT	1	6"	EXCHANGER	OUTLET RESIN TRAP

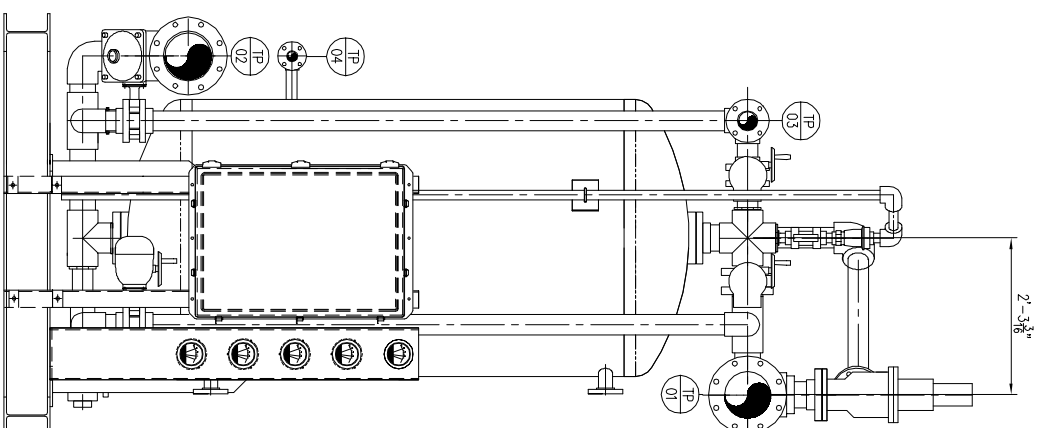
THE POINT NUMBER	CONN. TYPE	RATE	SERVICE
TP-01	6" FLANGED	150#	INFLUENT
TP-02	6" FLANGED	150#	EFFLUENT
TP-03	3" FLANGED	150#	WASTE
TP-04	1 1/2" FLANGED	150#	BRINE INLET

NOTES:

- ONE (1) SKID ASSEMBLY REQUIRED AS SHOWN.
- ALL DIMENSIONS ARE ± 1/8"
- ALL PIPING, VALVES AND EQUIPMENT TO BE SHOP ASSEMBLED AS SHOWN.
- ALL CONCRETE FOUNDATIONS, PADS, ANCHOR BOLTS, DRAINS, Sumps, TRENCHES, ETC. SHALL BE THE RESPONSIBILITY OF THE PURCHASER.

MATERIALS OF CONSTRUCTION

- VESSEL:
 - SHELL = SA-516 GRADE 70
 - HEADS = SA-516 GRADE 70, TORISPHERICAL FLANGED AND DISHED
 - EXTERNAL STRUCTURALS = SA-36
- EXTERNAL FACE PIPING & FITTINGS:
 - 1 1/2", 3", 4", 6" PIPE = PVC
 - EXTERNAL BOLTING = 18-8 STAINLESS STEEL
 - GASKETS = 1/8" FULL FACE EPDM
- STRUCTURAL STEEL SKID:
 - STEEL = SA-36 STEEL - GALVANIZED PER ASTM A123
 - VESSEL/SKID BOLTING = A325 HOT DIPPED GALVANIZED



RIGHT SIDE ELEVATION VIEW



3804 East Watkins Street | Phoenix, AZ | 85034 | (602) 345-8500
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OWNER: ARGONIA, KS	INSTALLATION LOCATION: ARGONIA, KS
CUSTOMER: ARGONIA, KS	MODEL NO.:
EQUIPMENT TYPE: LOW WASTE UPCORE TECHNOLOGY	IX-48.72.SBA
TITLE: EQUIPMENT ARRANGEMENT LOW WASTE NITRATE REMOVAL - UPCORE TECHNOLOGY	

DRAWN DATE: 7/25/13	VESSSEL CHK'D. DATE: 7/25/13	PROCESS CHK'D. DATE: 7/25/13	APPROVED DATE: 7/25/13
BY: AJS	BY: AJS	BY: AJS	BY: AJS

DWG NO.:	70150006
DRAWING NO.:	701S150006
SHEET TOTAL:	1 / 1
REV.:	P0

NO.	REVISIONS	BY	DATE
1	ISSUE FOR REVIEW	AH	7/25/13

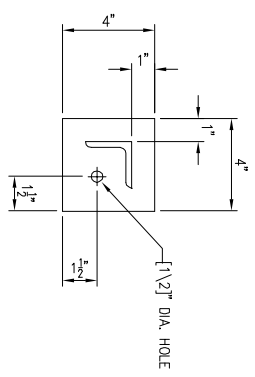
APPROXIMATE WEIGHTS

BRINE SKID: 560 LBS. (EMPTY)
 RECYCLE SKID: 335 LBS. (EMPTY)

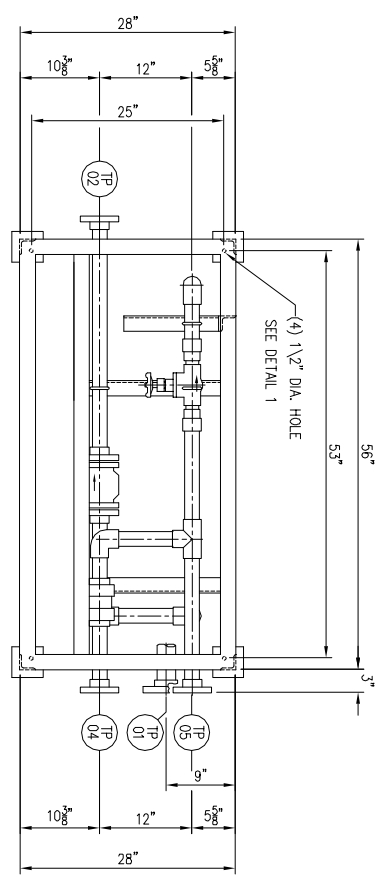
TIE POINT SCHEDULE

TIE POINT NUMBER	SIZE	CONN. TYPE	RATE	DESCRIPTION
TP-01	2"	FLANGED	150#	FROM BRINE TANK
TP-02	1 1/2"	FLANGED	150#	TO UPPORE REGEN MANIFOLD
TP-04	1 1/2"	FLANGED	150#	TO RECYCLE TANK
TP-05	1 1/2"	FLANGED	150#	FROM SOFTENER TREATED WATER
TP-06	2"	FLANGED	150#	FROM RECYCLE TANK
TP-07	1 1/2"	FLANGED	150#	TO SOFTENER SUPPLY

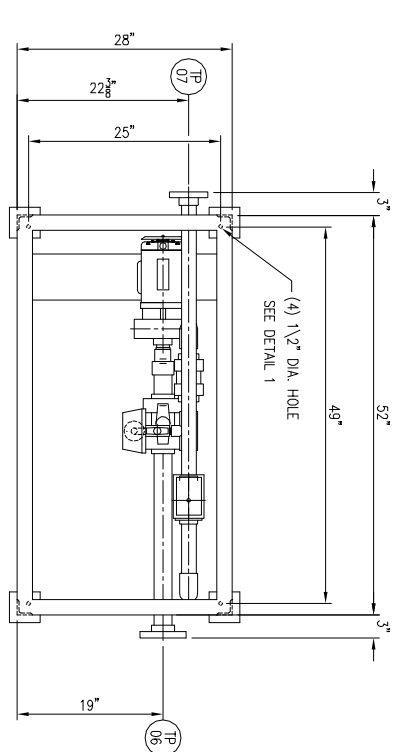
DETAIL 1
SCALE: 3"=1'-0"



PLAN
SCALE: 1"=1'-0"



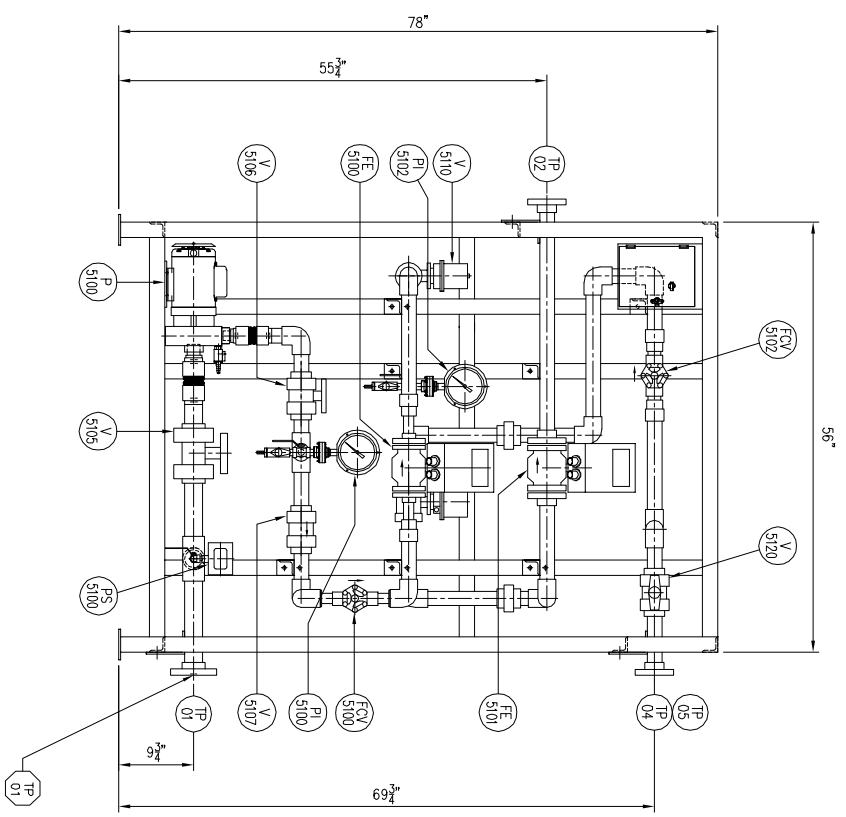
PLAN
SCALE: 1"=1'-0"



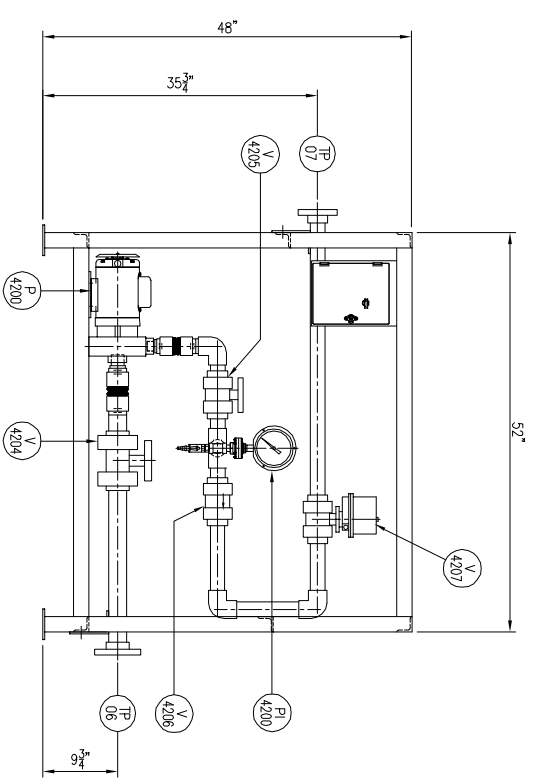
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APPROVALS:
 DRAWN BY: _____
 ENG APP BY: _____
 MNG APP BY: _____

BRINE SKID
SCALE: 1"=1'-0"
(1 REQUIRED)



RECYCLE SKID
SCALE: 1"=1'-0"
(1 REQUIRED)



NO.	REVISIONS	BY	DATE	NO.	REVISIONS	BY	DATE
01	ISSUE FOR REVIEW	ALH	7/25/13				

Layne WATER TECHNOLOGIES WATER RESOURCES DIVISION
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OWNER: ARGONIA, KS	INSTALLATION LOCATION: ARGONIA, KS
CUSTOMER: ARGONIA, KS	MODEL NO.: IX-48.72.SBA
EQUIPMENT TYPE: LOW WASTE NITRATE REMOVAL	TITLE: EQUIPMENT ARRANGEMENT PUMP SKIDS - BRINE & RECYCLE

DRAWN BY: ALH	DATE: 7/25/13
APPROVED BY: _____	DATE: _____
DWG NO: 70190001	DRAWING NO: 70LS190001
SHEET 1	TOTAL 1

**General Davis-Bacon
Wage Rate Determination**

DATE: September 27, 2016
TO: Rose Mary Saunders
FROM: Salih Doughramaji
GRANTEE: City of Argonia
GRANT NUMBER: 16-PF-001

Enclosed is a copy of General Wage Determination Number **KS160064** that was published on August 26, 2016.

This determination is issued without a time limitation and will be effective until such time the Department of Labor issues either a new determination or modification. Any modification or new determination shall be effective for any project to which the determination applies. **Ten days prior to bid opening, you must contact this office to confirm if wage rates are current or whether they have been modified or replaced.**

Grantee responsibilities are explained in the Labor Standard's section of the Grantee Handbook. Responsibilities include:

- Forwarding the Verification of Construction Contractor Eligibility form that includes the name of the appointed Labor Standards Officer and the date of the Pre-Construction Conference.
- Ensuring the wage decisions and Federal Labor Standards Provisions (HUD-4010) are included in bid documents, contracts, and subcontracts.
- Requesting additional classifications that are not listed in the decision.
- Displaying the wage decision and posters, and conducting the Pre-Construction Conference.
- Submit the Notice of Start of Construction form to KDOC.

If you have any questions regarding labor standards requirements, please contact me at (785) 296-3610.

Salih Doughramaji

Enclosures: Wage Rates

General Decision Number: KS160064 08/26/2016 KS64

Superseded General Decision Number: KS20150064

State: Kansas

Construction Type: Building

County: Sumner County in Kansas.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/08/2016
1	02/26/2016
2	03/04/2016
3	03/11/2016
4	04/15/2016
5	06/10/2016
6	06/24/2016
7	07/29/2016
8	08/19/2016
9	08/26/2016

ASBE0027-005 10/01/2015

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR (MECHANICAL (Duct, Pipe & Mechanical System Insulation)).....	\$ 33.97	24.58

BRKS0015-011 06/01/2014

	Rates	Fringes
TILE SETTER.....	\$ 33.76	13.16

BRKS0015-014 06/01/2015

	Rates	Fringes
TILE FINISHER.....	\$ 16.70	7.55

 ELEC0271-002 06/01/2015

	Rates	Fringes
ELECTRICIAN (including Alarm Installation).....	\$ 31.15	12.34

 ELEV0012-004 01/01/2013

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 42.34	25.185+a+b

a. VACATION PAY: 6% for 6 months to 5 years service; 8%
with 5 or more years of service.

b. PAID HOLIDAYS: Memorial Day, Independence Day, Labor
Day, Thanksgiving Day and Friday after, and Christmas Day.

 ENGI0101-040 04/01/2016

	Rates	Fringes
POWER EQUIPMENT OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 37.63	15.97
Oiler.....	\$ 32.08	15.97
Paver (Asphalt, Aggregate, and Concrete).....	\$ 38.44	15.97

 * IRON0010-018 04/01/2016

	Rates	Fringes
IRONWORKER (Ornamental/Reinforcing).....	\$ 32.00	28.15

 PAIN2012-008 05/01/2012

	Rates	Fringes
PAINTER (Brush, Roller, and Spray).....	\$ 22.93	11.51

 PLUM0441-013 06/01/2016

	Rates	Fringes
PLUMBER.....	\$ 32.06	15.64

 PLUM0441-014 06/01/2016

	Rates	Fringes
PIPEFITTER (HVAC Pipe Installation Only).....	\$ 32.06	15.64

PLUM0533-012 06/01/2016

	Rates	Fringes
PIPEFITTER (Excludes HVAC Pipe Installation).....	\$ 45.33	19.32

SFKS0669-002 04/01/2016

	Rates	Fringes
SPRINKLER FITTER (Fire Sprinkler).....	\$ 31.97	17.90

TEAM0541-010 04/01/2016

	Rates	Fringes
TRUCK DRIVER (Lowboy Truck).....	\$ 32.04	13.45

TEAM0541-011 04/01/2016

	Rates	Fringes
TRUCK DRIVER (Semi-Trailer Truck).....	\$ 32.04	13.45

SUKS2015-028 07/08/2015

	Rates	Fringes
BRICKLAYER, Excludes Tile Finisher and Tile Setter.....	\$ 21.85	3.04
CARPENTER.....	\$ 17.62	1.93
CEMENT MASON/CONCRETE FINISHER...	\$ 17.17	2.23
IRONWORKER, STRUCTURAL.....	\$ 20.34	5.76
LABORER: Common or General.....	\$ 13.00	1.36
LABORER: Mason Tender - Brick...	\$ 19.91	6.88
LABORER: Mason Tender - Cement/Concrete.....	\$ 12.99	1.67
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 20.50	3.49
OPERATOR: Bulldozer.....	\$ 33.12	13.96

OPERATOR: Crane.....	\$ 33.19	14.16
OPERATOR: Forklift.....	\$ 34.83	14.16
OPERATOR: Grader/Blade.....	\$ 29.58	11.51
OPERATOR: Loader.....	\$ 30.35	12.04
OPERATOR: Roller.....	\$ 33.78	13.64
ROOFER.....	\$ 13.46	1.51
SHEET METAL WORKER (HVAC Duct Installation Only).....	\$ 24.77	6.75
SHEET METAL WORKER, Excludes HVAC Duct Installation.....	\$ 22.44	4.70
TRUCK DRIVER: Dump (All Types)...	\$ 19.63	5.26

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number,

005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination

- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

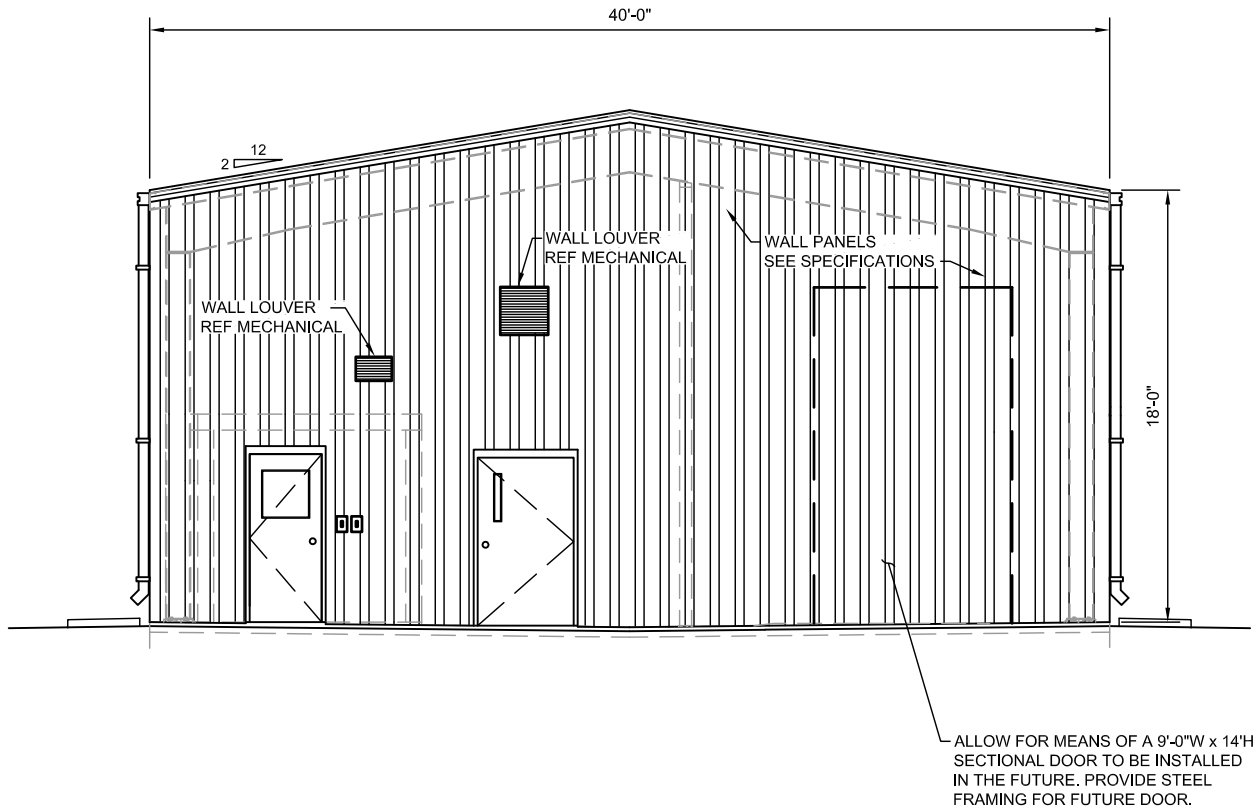
Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

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A1 WATER TREATMENT PLANT - SOUTH ELEVATION

SCALE: 1/8" = 1'-0"

**WILSON
& COMPANY**

1700 EAST IRON AVE.
SALINA, KS 67401
PHONE: 785-827-0433
FAX: 785-827-5949
www.wilsonco.com

PROJECT NAME

CITY OF ARGONIA

WATER SYSTEM
IMPROVEMENTS

SEAL

SHEET TITLE

WATER TREATMENT
PLANT EXTERIOR
ELEVATIONS

PROJECT NO: 0920051300

SHEET NO:

DESIGNED BY:

DRAWN BY:

CHECKED BY:

DATE:

A-201A1