

ADDENDUM NO. 2
TO
CONTRACT DOCUMENTS AND SPECIFICATIONS
FOR
COTTONWOOD RANCH BROAD-SCALE RECHARGE

DATE OF ISSUE: September 13, 2018

TO: PROSPECTIVE BIDDERS AND OTHER INTERESTED PARTIES

THE CONTRACT DOCUMENTS AND SPECIFICATIONS, INCLUDING THE CONTRACT DRAWINGS, ARE HEREBY MODIFIED BY THE FOLLOWING ITEMS:

CHANGES TO SPECIFICATIONS

AD-2 Item 1 SECTION 15100 – VALVES BASIC REQUIREMENTS

- A. Add this Section in its entirety.

AD-2 Item 2 SECTION 16130 – RACEWAYS AND BOXES

- A. Add the following to Section 16130 Raceways and Boxes Part 2 – Products, Paragraph 2.3 RIGID NON METALLIC CONDUIT

For Section 2.3.

B. Coilable Conduit:

1. Extruded from virgin High Density Polyethylene (HDPE) resin, in accordance to the requirements of ASTM D3350 with cell classification 345440C.
2. Stabilized against thermal and UV degradation.
3. Conduit to be of a continuous length, smooth walled with a low friction internal surface containing no welds or joints and coiled on a reel.
4. Dimensions: Schedule 40.
5. Suitable for the following installation methods: Direct bury, plow, directional bore and concrete encased.
6. The conduit to be provided:
 - a. Containing a pull string.
7. Conduit color:
 - a. Power applications: Black.
8. Standards: NFPA 70 Type HDPE, ASTM D3350, ASTM D3485, UL 651A.

- B. Add the following to Section 16130 Raceways and Boxes Part 3 – Execution, Paragraph 3.3 RACEWAY APPLICATIONS

For Section 3.3.C.2.e

- a. Coilable HDPE Conduit (Schedule 40).

CHANGES TO DRAWINGS

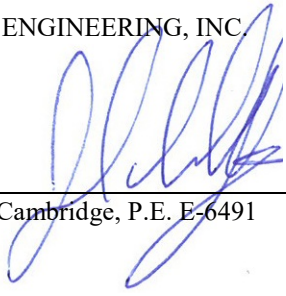
AD-2 Item 3 Add the following to the end of note on Sheet C-21 and Sheet C-22 that reads “INSTALL:
Concrete Headwall w/Stainless Steel Screen over piping.”

Headwall shall be a precast fiber reinforced concrete headwall with stainless steel grating as manufactured by Althon Swale Inlet Headwall-150 or approved equal with a sloping front and hinged mild steel galvanized grate to allow for cleaning.

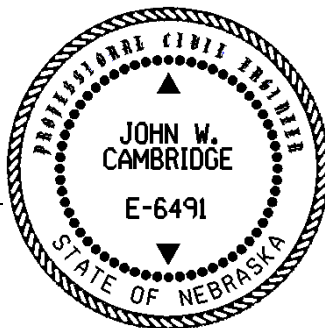
ALL ITEMS IN CONFLICT WITH THE ADDENDA ARE HEREBY DELETED.

THIS ADDENDUM IS MADE PART OF THE CONTRACT DOCUMENTS AND SHALL BE NOTED ON THE PROPOSAL.

HDR ENGINEERING, INC



John Cambridge, P.E. E-6491



SECTION 15100ADM2
VALVES - BASIC REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Valving, actuators, and valving appurtenances.
- B. Related Sections include but are not necessarily limited to:
 - 1. Division 0 - Procurement and Contracting Requirements.
 - 2. Division 1 - General Requirements.
 - 3. Section 15060 - Pipe and Pipe Fittings: Basic Requirements.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. American Society of Mechanical Engineers (ASME):
 - a. B16.1, Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.
 - 2. ASTM International (ASTM):
 - a. A126, Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
 - b. D2240, Standard Test Method for Rubber Property-Durometer Hardness.
 - 3. American Water Works Association (AWWA):
 - a. C504, Standard for Rubber-Seated Butterfly Valves.
 - b. C507, Standard for Ball Valves, 6 IN through 48 IN (150 MM through 1200 MM).
 - c. C509, Standard for Resilient-Seated Gate Valves for Water Supply Service.
 - d. C542, Standard for Electric Motor Actuators for Valves and Slide Gates.
 - e. C550, Standard for Protective Coatings for Valves and Hydrants.
 - 4. American Water Works Association/American National Standards Institute (AWWA/ANSI):
 - a. C111/A21.11, Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
 - 5. National Electrical Manufacturers Association (NEMA):
 - a. 250, Enclosures for Electrical Equipment (1000 Volts Maximum).
 - b. MG 1, Motors and Generators.
 - 6. National Fire Protection Association (NFPA):
 - a. 70, National Electrical Code (NEC).

1.3 DEFINITIONS

- A. The following are definitions of abbreviations used in this Specification Section or one (1) of the individual valve sections:
 - 1. CWP: Cold water working pressure.
 - 2. SWP: Steam working pressure.
 - 3. WOG: Water, oil, gas working pressure.
 - 4. WWP: Water working pressure.

1.4 SUBMITTALS

- A. Shop Drawings:
 - 1. See Section 01300 for requirements for the mechanics and administration of the submittal process.
 - 2. Product technical data including:
 - a. Acknowledgement that products submitted meet requirements of standards referenced.
 - b. Manufacturer's installation instructions.
 - c. Valve pressure and temperature rating.

- d. Valve material of construction.
 - e. Special linings.
 - f. Valve dimensions and weight.
 - g. Valve flow coefficient.
 - h. Wiring and control diagrams for electric or cylinder actuators.
 - i. Short Circuit Current Rating (SCCR) nameplate marking per NFPA 70.
3. Test reports.
- B. Contract Closeout Information:
- 1. Operation and Maintenance Data:
 - a. See Section 01300 for requirements for the mechanics, administration, and the content of Operation and Maintenance Manual submittals.
- C. Informational Submittals:
- 1. Verification from valve actuator manufacturer that actuators have been installed properly, that all limit switches and position potentiometers have been properly adjusted, and that the valve actuator responds correctly to the valve position command.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with the Contract Documents, refer to individual valve Specification Sections for acceptable manufacturers.

2.2 MATERIALS

- A. Refer to individual valve Specification Sections.

2.3 VALVE ACTUATORS

- A. Valve Actuators - General:
 - 1. Provide actuators as shown on Drawings or specified.
 - 2. Counter clockwise opening as viewed from the top.
 - 3. Direction of opening and the word OPEN to be cast in handwheel or valve bonnet.
 - 4. Size actuator to produce required torque with a maximum pull of 80 LB at the maximum pressure rating of the valve provided and withstand without damage a pull of 200 LB on handwheel or chainwheel or 300 FT-pounds torque on the operating nut.
 - 5. Unless otherwise specified, actuators for valves to be buried, submerged or installed in vaults or manholes shall be sealed to withstand at least 20 FT of submergence.
- B. Buried Valve Actuators:
 - 1. Provide screw or slide type adjustable cast iron valve box, 5 IN minimum diameter, 3/16 IN minimum thickness, and identifying cast iron cover rated for traffic load.
 - 2. Box base to enclose buried valve gear box or bonnet.
 - 3. Provide 2 IN standard actuator nuts complying with AWWA C500, Section 3.16.
 - 4. Extension stem:
 - a. Provide for buried valves greater than 4 FT below finish grade.
 - b. Extend to within 6 IN of finish grade.
 - 5. Provide concrete pad encasement of valve box as shown for all buried valves unless shown otherwise.
- C. Electric Actuators (240 V, 1 PH):
 - 1. General:
 - a. Conform to AWWA C542.
 - b. Self-contained including motor, gearing, torque switch, limit switches and cast housing.
 - c. Electrical enclosure: NEMA 4 to comply with area rating classification shown on Drawings.
 - d. Factory assembled requiring only field connection of power and control wires.
 - e. Temperature rating: -20 DegF to 150 DegF.

2. Motors:
 - a. Produce 1.5 times the required torque.
 - b. Sized for continuous modulation without overheating.
 - c. One (1) fully closed to fully open cycle to occur within 60 SEC.
 - d. Class F insulation.
 - e. Operate at plus or minus 10 percent voltage.
 - f. 240 Volt, single phase, 60 Hz.
 - g. Provide thermal cutout switch and internal heater for actuator enclosure.
3. Gearing:
 - a. Provide separate drive nut/thrust bearing assembly:
 - 1) Mounted to base of actuator.
 - 2) High tensile bronze.
 - 3) Quarter turn actuator: Provide 90 degree mounting intervals.
 - 4) Provide grease fitting on drive assembly.
4. Controls:
 - a. Provide pre-piped, pre-wired control:
 - 1) Pipe with corrosion-resistant metal.
 - 2) Provide open-closed signal limit switches.
 - a) Provide minimum of two normally open contacts and two normally closed contacts at each end of valve travel.
 - 3) Provide control enclosure to accept Remote Open/Close switches.
 - 4) Provide "In Remote" output contact.
 - 5) Speed control valves, to independently control opening and closing speed between 10 and 60 SEC.
 - 6) For modulating valves, provide a positioner, input signal 4-20 mA, including signal converter.
 - 7) For modulating valves, provide valve position transmitter, 4-20 mA, including signal converter, where shown.
 - b. Push-to-test indicating lights shall include:
 - 1) Open.
 - 2) Closed.
 - 3) Remote.
 - c. Selector switches shall include:
 - 1) Local-Remote.
 - 2) Open-Close.
 - d. Provide continuously energized space heating elements sized to prevent condensation in both motor and geared limit switch compartment(s). Powered from internal connection.
 - e. Wire all components to an internal terminal strip and include mounted wiring diagram inside enclosure.
5. Provide equipment or control panels with Short Circuit Current Rating (SCCR) labeling as required by NFPA 70 and other applicable codes.

D. Valve Lockout Devices:

1. Device manufactured from same material as valve operator, preventing access to valve operator, to accept lock shackle.

2.4 FABRICATION

A. End Connections:

1. Provide the type of end connections for valves shown on the Drawings.
2. Comply with the following standards:
 - a. Flanged: ASME B16.1, Class 125 unless otherwise noted or AWWA C207.
 - b. Bell and spigot or mechanical (gland) type: AWWA/ANSI C111/A21.11.

- B. Refer to Drawings and valve Specification Sections for specifications of each type of valve used on Project.

- C. Nuts, Bolts, and Washers:
 - 1. Wetted or internal to be bronze or stainless steel.
 - a. Exposed to be zinc or cadmium plated.
- D. On Insulated Piping: Provide valves with extended stems to permit proper insulation application without interference from handle.
- E. Epoxy Interior Coating: Provide epoxy interior coating for all ferrous surfaces in accordance with AWWA C550.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Setting Buried Valves:
 - 1. Locate valves installed in pipe trenches where buried pipe indicated on Drawings.
 - 2. Set valves and valve boxes plumb.
 - 3. Place valve boxes directly over valves with top of box being brought to surface of finished grade.
 - 4. Install in closed position.
 - 5. Place valve on firm footing in trench to prevent settling and excessive strain on connection to pipe.
 - 6. After installation, backfill up to top of box for a minimum distance of 4 FT on each side of box.
- C. Support exposed valves and piping adjacent to valves independently to eliminate pipe loads being transferred to valve and valve loads being transferred to the piping.
- D. Install electric or cylinder actuators above or horizontally adjacent to valve and gear box to optimize access to controls and external handwheel.
- E. Install valves accessible for operation, inspection, and maintenance.

3.2 ADJUSTMENT

- A. Adjust valves, actuators and appurtenant equipment.
 - 1. Operate valve, open and close at system pressures.
- B. For all 240 VAC electric actuators, employ and pay for services of valve actuator manufacturer's field service representative to:
 - 1. Inspect valve actuators covered by this Specification Section.
 - 2. Supervise adjustments and installation checks:
 - a. Open and close valves electrically under local manual and demonstrate that all limit switches are properly adjusted and that switch contacts are functioning properly by verifying the inputs are received at the remote input/output (RIO) panels or local control panel as appropriate.
 - b. Position modulating valves electrically under local manual control and demonstrate that the valve position feedback potentiometer is properly adjusted and that the feedback signal is received at the RIO panels or local control panel as appropriate.
 - c. Simulate a valve position command signal at the RIO panel or local control panel as appropriate and demonstrate that the valve is controlled to the desired position without excessive hunting.
 - 3. Provide Owner with a written statement that the valve actuator manufacturer has verified that the actuators have been installed properly, that all limit switches and position potentiometers have been properly adjusted and that the valve actuator responds correctly to the valve position command.

END OF SECTION