

**ADDENDUM NO. 2**  
**06/18/2024**

**PROJECT: CITY OF VERNON**  
**FERRELL STREET LIFT STATION RECONSTRUCTION**

**BID DATE: June 20<sup>th</sup>, 2024, at 11:00 AM**

The following changes and/or additions shall be made to the Plans, Specifications, and Contract Documents for the above-referenced project. The bidder shall acknowledge receipt of this Addendum by signing below and returning this Addendum with the Bid.

**1) SPECIFICATIONS**

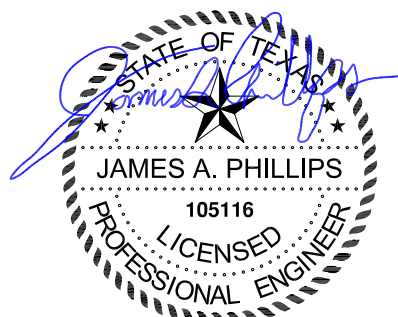
33 02 05 – Plug Valves – This specification has been added and is attached to this addendum.

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**Bidder's Acknowledgment**

\_\_\_\_\_  
**Date**

**Prepared by:**

**JACOB | MARTIN**  
**TBPE Firm No. 2448**



## SECTION 33 02 05 - PLUG VALVES

### PART 1 GENERAL

#### 1.1 REFERENCE STANDARDS

- ASTM A126 - Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings; 2004 (Reapproved 2014).  
AWWA C105/A21.5 - Polyethylene Encasement for Ductile-Iron Pipe Systems; 2010.  
AWWA C504 - Rubber-Seated Butterfly Valves 3 In. (75 mm) Through 72 In. (1,800 mm); 2010.  
AWWA C509 - Resilient-Seated Gate Valves for Water Supply Service; 2009.  
NSF 61 - Drinking Water System Components - Health Effects; 2014 (Errata 2015).

#### 1.2 WORK INCLUDED

Furnishing eccentric, resilient seated plug valves, operators and appurtenances, complete as shown on the Plans and specified herein.

#### 1.3 QUALITY ASSURANCE

- A. The valve manufacturer shall furnish test results for hydrostatic and cycle tests conducted per AWWA C504 with all adjustments noted for the valve sizes furnished.
- B. Each valve shall have manufacturer's nameplate in stainless steel showing the pressure ratings, serial and model numbers, year manufactured and other pertinent data.
- C. Manufacturers of plug valves shall demonstrate a minimum of 5 years of experience in similar applications for sizes of valves being furnished. References shall be furnished upon request.
- D. Valve supplier shall maintain a complete stock of spare parts in the State of Texas or shall indicate that parts will be delivered upon 48 hours of receipt of request.
- E. All surfaces and materials in contact with water, or in contact with a chemical being added to water that is being treated for potable use, shall conform to NSF 61 and be certified by an organization accredited by ANSI, or shall meet the TCEQ requirements for contact with potable water.

#### 1.4 SUBMITTALS

- A. Shop Drawings and Product Data:
  1. Comply with the general requirements of Section 01 04 01, SUBMITTALS, and the supplemental requirements below.
  2. Submit one drawing or illustration showing unit construction for each type and size valve used.
  3. Submit the following information for each valve:
    - a. Specific application in plant expressed in terms of service and contract drawing number where shown.
    - b. Description including type of valve, type of operator and accessories included.
    - c. Size and end connections.
    - d. Maximum non-shock working pressure for which valve is designed.
    - e. Materials of construction and coatings for valves, operators and accessories.
    - f. K or Cv value.
    - g. Manufacturer's make and model.
  4. Submit the following information for geared operators:
    - a. Type of gearing.
    - b. Type of lubrication.
    - c. Size of handwheel, lever or crank.
    - d. Input torque required to develop required output torque.
    - e. Orientation and dimensions of operator.
    - f. Manufacturer's make and model.
  5. If catalog bulletins are used to communicate above information, mark out inapplicable information.
- B. Affidavits:

1. Submit affidavits of compliance with the reference standards.
- C. Operation and Maintenance Data:
  1. Comply with the requirements of Section 01 04 01, SUBMITTALS.

#### **1.5 DELIVERY, STORAGE AND HANDLING**

Comply with the requirements of the General Conditions and manufacturer's recommendations.

### **PART 2 PRODUCTS**

#### **2.1 GENERAL**

- A. Obtain all plug valves, extensions, and associated manual operators from a single manufacturer.
- B. Valve operators to turn to left, counter clockwise, to open and to right, clockwise, to close. All valves shall have position indicators.
- C. End connections to be compatible with those specified for pipe.
- D. All flanges shall conform to the standard specification of the American National Standards Institute (ANSI), Class 125 unless otherwise shown, Bell ends for valves shall be mechanical joint, or rubber gasketed push-on joints.
- E. Paint valves and operators as shown on the Plans and specified in Section 09 06 60, COATING SYSTEMS FOR PRIMARY WASTEWATER STRUCTURES, colors to be selected by OWNER. Buried valves shall have epoxy exterior coating.
- F. Furnish geared operators for all valves in pressure piping systems and valves 8 inches and larger, unless otherwise specified.
- G. Geared operators for quarter turn valves may be geared or traveling nut type.
- H. Furnish chain-wheel operators for valves six feet or more above floor unless otherwise specified.
- I. Furnish geared operators with the following features unless otherwise specified.
  1. Weatherproof enclosure.
  2. Grease lubricated design.
  3. Position indicator.
- J. Buried valves shall utilize solid 316 stainless steel shaft extensions with 2-inch square nuts within 18 inches of grade, 316 stainless steel for all hardware and fasteners, and valve boxes with covers.
- K. Exposed valves shall utilize handwheel or chainwheel operators unless otherwise shown.
- L. Valves in submerged service shall utilize 316 stainless steel hardware and bolts.
- M. Fasteners in valve that are buried or in vaults or manholes shall be 316 stainless steel for MJ joints, flanges, and restraints. Buried MJ fitting bolts may be Corten.

#### **2.2 PLUG VALVE DETAILS**

- A. Valve type: Eccentric Plug non-lubricated, resilient seated with port area not less than 90 percent of pipe area.
- B. Nonshock working pressure at 100 Degrees F.
  1. 175 psig 4-inch to 12-inch.
  2. 150 psig, 14-inch to 36-inch.
- C. Valve construction:
  1. Body: Cast iron. ASTM A126 Class B with ANSI 16.1 Class 125 flanges (in accordance with AWWA C504 or AWWA C509).
  2. Plug: Stainless steel, neoprene or Buna-N rubber faced (in accordance with AWWA C504).
  3. Bearings: Oil impregnated stainless steel and Teflon.
  4. Shaft seal: Nitrile-butadiene chevron V-type packing, or bronze cartridge with Buna-N O-rings.
  5. Body seat: Nickel steel machined.
  6. Furnish grit seats in upper and lower journals.

7. Interior coating: 4 - 6 mil of 2-part hi build epoxy.
  8. Valve shaft: Solid 316 stainless steel.
- D. Manufacturers and figure numbers:
1. DeZurik, Figure 118.
  2. Valmatic Series 5000.
  3. Or equivalent by Clow.

### 2.3 ACCESSORIES

- A. Floor boxes shall have cast iron bodies and bronze bushings.
- B. Valve boxes for buried service:
1. Three piece screw type 5-1/2-inch diameter, cast iron construction.
  2. Concrete pad 2'-0" diameter x 6-inch thick around valve box at ground surface.
  3. Other features as shown on Drawings.
- C. Stem guides to be made of cast iron with bronze bushings and to have adjustable offset.
- D. All components of shaft extensions shall be 316 stainless steel including nut shaft, shaft housing and guides. Minimum shaft diameter shall be 1-inch or diameter of valve shaft, whichever is larger. All components shall have continuous welded joints. Provide stem guides or rock shields at 5-foot intervals.
- E. Acceptable Manufacturers:
1. Floor boxes: Clow, Model F-5695.
  2. Valve boxes for buried service: Clow, Model F-2454.
  3. Stem guides: Clow, Model F-5660.
  4. Floor stands: Clow, Model F-5515.
  5. Or approved equivalent.

## PART 3 EXECUTION

### 3.1 INSTALLATION (GENERAL CONTRACTOR)

- A. Install all valves, floorstands, and appurtenances in complete accordance with the Plans, approved shop drawings and manufacturers instructions and recommendations.
- B. Install valves and valve operators to provide for ease of access and operation.
- C. Install buried valve by carefully lowering into position in such a manner to prevent damage to any part of the valves. The valve shall be placed in proper position and shall be securely held until all connections have been made. All buried pipe and appurtenances shall be wrapped in polyethylene encasement in accordance with AWWA C105/A21.5.
- D. All buried valves 8 inches and larger shall rest on a concrete pad. Pad shall extend for the full width of the trench and from back-to-back of hub (or flange). Care shall be taken to not interfere with the jointing. Concrete shall be Class B.

### 3.2 FIELD QUALITY CONTROL

- A. Retain a qualified representative of the manufacturer to perform the following services:
1. Inspect the completed installation and note deficiencies.
  2. Assist the CONTRACTOR during start-up, adjusting, and site testing of completed installation as required.
  3. Instruct OWNER personnel in the operations and maintenance of the equipment.
- B. FIELD TESTING:
1. Check proper electric connections.
  2. Check proper start, cycle, and stop operations in each hand and auto mode.
  3. Check proper display of instruments, both locally and in SCADA (percent open and movement).
  4. Check for leakage.
- C. All valves shall be operated over the full range of travel without excessive force for at least two complete cycles; open-closed-open-closed. Valve shall not hang and shall seat and unseat to/from fully closed position. Testing shall be done after actuators and stem extensions are

installed. Verify valve tag is installed and correct. Verify valve position indicator correctly reflects valve positions and limit switches (if used) are set correctly. Valves with motor or pneumatic actuators shall be operated with handwheel as well as automatic actuator.

**-- END OF SECTION --**