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**SECTION \_\_\_\_\_**  
**STAINLESS STEEL MUD VALVE**

**PART 1 GENERAL**

**1.01 SCOPE OF WORK**

- A. The CONTRACTOR shall furnish all labor, materials, equipment and incidentals required to install and ready for operation mud valves and appurtenances as shown on the Contract Drawings and as specified herein.

**1.02 SUBMITTALS**

- A. Provide the following information to confirm compliance with the specification in addition to the submittal requirements specified in Section \_\_\_\_\_.
  - 1. Complete description of all materials including the material thickness.
  - 2. Installation drawings showing all details of construction, details required for installation, dimensions and anchor bolt locations.
  - 3. The location of the company headquarters and the location of the principle manufacturing facility. Provide the name of the company that manufactures the equipment if the supplier utilizes an outside source.

**1.03 QUALITY ASSURANCE**

- A. Qualifications
  - 1. All of the equipment specified under this Section shall be furnished by a single manufacturer with a minimum of 10 years experience designing and manufacturing water control valves.
  - 2. The specification is based on the Series 706 Mud Valve as manufactured by Whipps, Inc. of Athol, Massachusetts.

**PART 2 EQUIPMENT**

**2.01 GENERAL**

- A. Mud valves shall be as specified herein and have the characteristics and dimensions shown on the Contract Drawings.
- B. The valve shall utilize a resilient seal mounted on the traveling cover to seal between the cover and the frame.
- C. All welds shall be performed by welders with AWS D1.6 certification.
- D. Finish: Mill finish on stainless steel. Welds shall be sandblasted to remove weld burn and scale.
- E. Materials:

Components

Frame and Cover  
Stem  
Anchor Studs, Fasteners and Nuts  
Seal  
Lift Nuts  
Bushings  
Pedestals / Wall Brackets  
Operator Housing

Materials

Stainless Steel, Type 304L, ASTM A240  
Stainless Steel, Type 304, ASTM A276  
Stainless Steel, Type 316, ASTM A276  
Urethane, Neoprene or EPDM  
Bronze ASTM B584  
UHMW or Bronze ASTM B584  
Stainless Steel, Type 304L, ASTM A276  
Cast aluminum

2.02 FRAME

- A. The mud valve frame shall be constructed of stainless steel structural members with a minimum thickness of 1/4-inch.
1. The frame shall be of a flange back design suitable for mounting to the concrete floor or to a standard pipe flange as shown on the Contract Drawings.

2.03 COVER

- A. The mud valve cover shall be constructed of stainless steel with a minimum thickness of 1/4-inch.
1. The cover shall be outfitted with a resilient seal to prevent leakage through the outlet pipe when the valve is in the closed position.

2.05 STEM

- A. A threaded operating stem shall be utilized to connect the operating mechanism to the cover. The threaded portion shall engage the operating nut in the operator.
1. The stem shall have a minimum diameter of 1-3/8 inches.
  2. The stem shall be constructed of solid stainless steel bar for the entire length, the metal having a tensile strength of not less than 75,000 psi.
  3. Maximum L/R ratio for the unsupported part of the stem shall not exceed 200.
  4. The stem shall withstand in compression at least two times the rated output of the operator with a 40 lb effort on the crank or handwheel.
  5. The threaded portion of the stem shall have machine rolled double lead threads of the full Acme type with a 16 microinch finish or better. Stub threads are not acceptable.
  6. Stems of more than one section shall be joined by stainless steel couplings. The coupling shall be threaded, pinned and bolted to the stems.

2.06 STEM GUIDES

- A. Stem guide shall be provided when necessary to ensure that the maximum L/R ratio for the unsupported part of the stem is 200 or less.
1. Stem guide brackets shall be fabricated of stainless steel and shall be outfitted with UHMW or bronze bushings.
  2. Adjustable in two directions.

2.08 MANUAL OPERATORS

- A. Unless otherwise shown on the Drawings, valves shall be operated by a manual handwheel. The operator shall be mounted on a pedestal or wall bracket as shown on the Contract Drawings.
  - 1. The valve manufacturer shall ensure that the valve can be operated with no more than a 40 lb effort.
  - 2. An arrow with the word "OPEN" shall be permanently attached or cast onto the operator to indicate the direction or rotation to open the valve.
  - 3. Handwheel operators shall be fully enclosed and shall have a cast aluminum housing.
    - a. Handwheel operators shall be provided with a threaded cast bronze lift nut to engage the operating stem.
    - b. Handwheel operators shall be equipped with roller bearings above and below the operating nut.
    - c. Positive mechanical seals shall be provided above and below the operating nut to exclude moisture and dirt and prevent leakage of lubricant out of the hoist.
    - d. The handwheel shall be removable and shall have a minimum diameter of 15 inches.
  - 4. Pedestals and wall brackets shall be constructed of stainless steel.
    - a. Wall brackets shall be used where shown on the Contract Drawings and shall be constructed of stainless steel.
    - b. Wall brackets shall be reinforced to withstand the maximum operating loads mentioned herein.
    - c. The design and detail of the brackets and anchor bolts shall be provided by the valve manufacturer and shall be approved by the ENGINEER. The valve manufacturer shall supply the bracket, anchor bolts and accessories as part of the valve assembly.
  - 5. Operators on rising stem valves shall be equipped with fracture-resistant clear butyrate or lexan plastic stem covers.
    - a. The top of the stem cover shall be closed.
    - b. The bottom end of the stem cover shall be mounted in a housing or adapter plate for easy field mounting.

## 2.09 ANCHOR BOLTS

- A. Anchor bolts shall be provided by the valve manufacturer for mounting the mud valve frame, pedestal or wall bracket and appurtenances.
  - 1. Quantity and location shall be determined by the valve manufacturer.
  - 2. If epoxy type anchor bolts are provided, the valve manufacturer shall provide the studs and nuts.
  - 3. Anchor bolts shall have a minimum diameter of 1/2-inch.

## PART 3 EXECUTION

### 3.01 INSTALLATION

- A. Installation of the valves and appurtenances shall be done in a workmanlike manner. It shall be the responsibility of the CONTRACTOR to handle, store and install the equipment specified in this Section in strict accordance with the manufacturer's recommendations.
- B. The CONTRACTOR shall review the installation drawings and installation instruction prior to installing the valves.
- C. The valve assemblies shall be installed in a true vertical plane, square and plumb.
- D. The CONTRACTOR shall fill the void in between the valve frame and the floor as shown on the installation drawing and in accordance with the manufacturer's recommendations.

- E. The CONTRACTOR shall add a mastic gasket between the valve frame and pipe flange (when applicable) in accordance with the manufacturer's recommendations.

3.02 FIELD TESTING

- A. After installation, all valves shall be field tested in the presence of the ENGINEER and OWNER to ensure that all items of equipment are in full compliance with this Section. Each valve shall be cycled to confirm that they operate without binding, scraping, or distorting.

END OF SECTION