CITY OF AKRON, OHIO
DEPARTMENT OF PUBLIC SERVICE
WATER SUPPLY BUREAU

SPECIFICATIONS FOR GATE VALVES, RESILIENT SEATED, 4 TO 12 INCH DIAMETER

SPECIFICATIONS

Bidders must submit with their bids detailed drawings showing dimensions of the shell, stem, wedge, and seals for the valve the bidder proposes to furnish.

The gate valves shall conform to the latest revision of the ANSI/AWWA Standard C-509 for full-wall cast or ductile iron Resilient-Seated Gate Valves or ANSI/AWWA Standard C-515 for reduced-wall ductile iron Resilient-Seated Gate Valves, except as hereinafter specified and in accordance with the detailed drawings and specifications furnished by the bidder or subsequently approved by the Akron Water Supply Bureau (AWSB).

In considering the bids received, the AWSB may take into account the design and materials specified for the various valves as set forth in the drawings and information accompanying the bids.

TYPE

All valves shall be of best quality material and workmanship. The valves shall be iron body with inside screw design, with non-rising stem intended for ordinary waterworks purposes. Valves will be installed in a vertical position and designed to operate equally well with pressure on either side of the gate. The valves shall be designed for 400 pounds per square inch test and 200 pounds per square inch working pressure with no leakage. Shell test of 400 psi shall be applied to the body with the valve in the open position with no leakage through the metal, flanges, or stem seals. Valves are to open by turning the red two-inch square AWWA operating nut to the right (clockwise).

Valve ends shall have mechanical joints that shall conform to the latest revision of the AWWA C-111 specification. Furnish valves **without** gaskets or accessories.

Valve ends may also incorporate a stab-fit design requiring the use of only one Type 304 stainless steel fastener. The joint shall be designed such that installation torque shall be 45 ft.-lbs. or less. Joint to be configured with a one-piece full circumferential end ring and ductile iron grippers for an even distribution of thrust loads. Restraint accessories shall be factory installed.

STUFFING BOX AND PACKING

Sealing mechanism shall provide zero leakage at waterworks pressure against line flow from either direction and be designed such that no exposed metal seams, edges, screws, etc., are within the waterway in the closed position. The rubber-covered gate shall not be wedged into a pocket or slid across the seating surface to obtain a tight closure.

The O-ring seal stuffing box or cartridge stem seal shall allow repacking or replacement if necessary while the valve is in the fully open position under waterworks pressure.

Gate valve bonnet flanges shall seal using a flat gasket or an O-ring in a groove. Gate valves employing a flat gasket will be evaluated based on the number of flange bolts provided by the manufacturer for each size valve.

OPERATING MECHANISM

The stem shall be protected from external grit or dirt by a weathershield and an upper O-ring above the stem collar. An O-ring or thermoplastic thrust washer shall be provided beneath the stem collar to seal the bearing surfaces from line content. A cartridge stem seal may be employed in lieu of an additional O-ring. The area between the O-rings shall be filled with lubricant. Anti-friction washers shall be provided at the stem collar.

BOLTS AND NUTS

Bolts securing the bonnet to the valve body shall have exposed nuts to facilitate their removal without requiring a bolt extractor if frozen or galled. All bolts and nuts shall be zinc-plated steel or stainless steel, minimum bolt size shall be 5/8 inch. If unable to furnish the 5/8-inch bolts specified above, 1/2-inch diameter stainless steel bolts and nuts must be furnished. Bids for valves with 1/2 inch bolts and nuts that are not stainless steel will be rejected.

INSPECTION

Certified copies of inspection and test reports for all valves shall be furnished, upon request.

PAINTING

All internal and external ferrous surfaces of the valve, including the interior of the gate, shall be coated with epoxy having a minimum thickness of 8 mils. Coating shall be applied to castings prior to assembly to ensure that all exposed areas, including bolt holes and flange face surfaces, will be covered.