SECTION 026413
BUTTERFLY VALVES FOR WATERLINES (S-85B)

1. DESCRIPTION

This specification shall govern all work necessary for furnishing and installing butterfly valves with boxes required to complete the project.

2. MATERIALS

BUTTERFLY VALVES

General:

All butterfly valves shall be tight-closing, rubber-seat type conforming to AWWA C504 and the following. Acceptable suppliers shall have a minimum of 5 years experience in the manufacturer of butterfly valves of the type specified herein. Unless indicated otherwise on the drawing, valves shall be Class 150B.

Body end connections:

Mechanical Joint ends conforming to AWWA C111 shall be required for all butterfly valves, unless indicated otherwise on the Drawing.

When flanged ends are indicated on the Drawings, valves shall have short body and flanged ends with flanges dimensioned in accordance with ANSI B16.1, class 125 cast-iron flanges.

Shaft: Shaft shall be type 304 or 316 stainless steel.

Disc: Valve disc shall be constructed of aluminum bronze ASTM A148-952 or ductile iron ASTM A536 with 316 stainless steel or Monel disc edge, or ductile iron with removable seal.

Valve Seat: The seat shall be field replaceable, and body or ring mounted and shall be adjustable for seats over 30" in diameter. Adjustment shall not require special tools.

Bearings: Bearings shall be reinforced Teflon.

Actuator: Unless indicated otherwise on drawings. The valve actuator shall be integrally mounted on the valve-mounting flange. The housing, cover and shaft shall be sealed to prevent water entry under 25' submergence. Actuator shall be designed for buried service and furnished with 2" AWWA operating nut.

When Automatic Actuator is required - electric motor

Electric motor modulating valve actuator shall comply with AWWA C540 and the following:

Rotation - 90 degree reversible
Torque rating - for 125 p.s.i. differential
Cycle time - less than 100 seconds
Duty - 15 minutes continuous
Manual operation - integral with declutching device
Hand switch - integral 5 positions to permit local operation
Mechanical stops - internal to prevent over travel
Gearing - for 30 to 60 second opening/closing
Auxiliary limit switches - 4 SPDT: 2 full open, 2 full closed

Heater - 8 watt minimum
Control wiring - 120 VAC, 1 phase, 60 Hz
Equipment actuator with zero and span adjustments
Provide actuator with a field set choice of valve position on loss of signal
Submersible design required

Electrical Characteristics:
Power: 120 VAC. 1 phase, 60 Hz
Rating: NEMA 4

Local Control:
Push button station equipped with:
Remote/local switch
Position indication lights
Reversible, intermittent contact
Close - stop - open switch
Contact closure for remote/local indication where indicated in schedule
Enclosure - NEMA 4
Mounting – at inflow and outflow valves adjacent to tank

Manual Operation:

Type: Hand wheel, lever, or (operating nut required below ground unless specified otherwise).

General:
Comply with AWWA C504
Maximum torque at 80 lb. input
Worm gear for hand wheel operation
Totally enclosed worm gear

Field Service: The equipment manufacturer shall furnish the services of a qualified factory field service engineer at the site to inspect the installation and instruct the City's Water personnel of the operation and maintenance of the unit.

O&M Manual: The manufacturer shall furnish the Engineer with 4 sets of complete operation and maintenance manuals (including wiring diagrams).

CAST IRON VALVE BOX

Valves boxes shall be provided and installed with all butterfly valves, unless indicated otherwise on the drawings. The word "Water" shall be cast in the top cover. The boots shall be hemispherical in shape and shall fit the particular valve size box, lid and boot shall be hot tar dipped. The extension pipe for the valve box assembly shall be 8" PVC with SDR of 35 or thicker. Valve box and accessories shall be designed for roadway application.

3. CERTIFICATIONS & TESTS

The valve manufacturer shall furnish an affidavit stating that valves comply with AWWA C504 and this specification with exceptions noted in affidavit. Said exceptions are subject to approval of the Engineer. The manufacturer shall furnish test records as per sections 2.3, 3.8.5.8, 3.8.5.9, 5.2.1, 5.2.2, 5.2.3, and 5.2.4 of AWWA C504.

4. SHOP DRAWINGS

The manufacturer shall submit certified shop drawings as per sections 1.4 and 1.5 of AWWA C504.

5. CONSTRUCTION METHODS

Valves shall be installed in a workman like manor and wrapped with two plies of 8-mil polyethylene.

Valve boxes in street ROW shall be set flush with pavement or surrounding ground. In cultivated areas the top of box shall be set 12" below natural ground and long enough to be raised to natural ground at a future date.

6. MEASUREMENT AND PAYMENT

Unless indicated otherwise in the Proposal, Butterfly Valves with box shall be measured as a unit for each size of valve and box assembly. Payment shall include but not be limited to furnishing and installing the valve and box complete with polyethylene wrap, concrete collar, box assembly, and all labor, materials, incidentals, etc., required for the proper 1installation.