BUTTERFLY VALVES

PART 1 – GENERAL

1.01 SECTION COVERS

A. The design, manufacture, and testing of 3” through 84” butterfly valves of the resilient seated design, for the purpose of providing isolation or throttling control as indicated.

1.02 REFERENCES & STANDARDS

A. AWWA C504 “Rubber Seated Butterfly Valves”
B. ASTM A536 "Standard Specification for Ductile Iron Castings"
C. ANSI B16.1 "Pipe Flanges and Flanged Fittings"
D. AWWA C111 “Rubber-Gasketed Joints for Ductile-Iron Pressure Pipe and Fittings”
E. NSF 61/372 “Drinking Water System Components – Health Effects”

1.03 QUALITY ASSURANCE

A. Valves shall be warranted by the manufacturer for defects in materials and workmanship for a period of one year (12 months) from date of shipment from MPI.
B. Each valve and actuator shall be assembled, adjusted and tested as a unit by the valve manufacturer.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. McWane Plant & Industrial (MPI)
B. M&H Valve Company
C. Kennedy Valve
D. Clow Valve

2.02 SEAT ON DISC BUTTERFLY VALVES

A. Valve body shall be ductile iron per ASTM A536 with ASTM A276 T316 stainless steel seat ring.
B. Valve disc shall be ductile iron per ASTM A536.
C. The vertical centerline of the valve disc shall be offset from the axial centerline of the valve shaft.
D. Valve seat shall be EPDM and securely fastened to the valve disc utilizing a T304 stainless steel retaining ring and fasteners. The seat must be easily field adjustable and replaceable without the need for special tools.
E. Valve shafts shall be ASTM A276 T304 stainless steel for class 150B or ASTM A564 T630 stainless steel for class 250B. Shafts shall be of one-piece design for valve sizes 12” and smaller, and two-piece design for valves 14” and larger.
F. Shaft seal shall consist of EPDM multiple V-ring type packing for valve sizes 3”-24”. 30” and larger valves may utilize V-packing or O-ring type shaft seal.
G. Bearings shall be sleeve type, permanently lubricated nylatron for 3”-24” sizes and stainless steel-backed PTFE for 30” and larger.

H. Thrust bearings shall be provided on valve sizes 30" and larger and shall be adjustable.
I. Pressure ratings shall be 150 psi for class 150B and 250 psi for class 250B. Valves shall be hydrostatically shell tested to 2 times the rated pressure per AWWA C504.
J. Valve actuator for valve sizes 24" and smaller shall be of the traveling nut type, sealed and lubricated for underground or in-plant service. Buried service actuators shall be packed with grease and sealed for temporary submergence to 20 feet of water. Actuator shall be capable of withstanding an overload input torque of 450 ft-lbs. at full-open or full-closed position without damage to the valve operator. Operators for valves 14 inches and larger must be equipped with externally adjustable T304 stainless steel position stops. Certification of proof of design and torque requirements shall be submitted to the owner upon request.
K. Valve sizes 30" and larger shall be installed with worm gear actuators. All gearing shall be enclosed in a ductile iron housing, with outboard seals to protect the bearings and other internal components. The actuator shaft and gear quadrant shall be supported on permanently lubricated bearings.
L. All valve and actuator fasteners shall be stainless steel.
M. The interior and exterior of the valve shall be coated with an NSF-61 approved fusion bonded epoxy coating.

PART 3 – INSTALLATION

A. For use within water applications that have been screened and are free of debris or suspended solids.
B. The preferred orientation is with system pressure applied to the backside of the valve disc in the closed position so that seat adjustments can be made as necessary.