

**San Antonio Water System Standard Specifications for Construction**

**ITEM NO. 830**

**Butterfly Valves**

**830.1 DESCRIPTION:** This item shall consist of butterfly valves installed in accordance with these specifications and as directed by the Engineer. **This specification is to be used for onsite production projects only.**

**830.2 REFERENCED STANDARDS:** Reference standards cited in this Specification Item No. 830 refer to the current reference standard published at the time of the latest revision date.

1. San Antonio Water System (SAWS):
  - a. Specifications for Water and Sanitary Sewer Construction
  - b. SAWS Materials Specifications
2. City Of San Antonio (COSA) Standard Specifications for Construction
3. Texas Commission of Environmental Quality (TCEQ) Chapter 290 Public Water Supply
4. American Society for Testing and Materials (ASTM) International:
  - a. ASME B 16.1 - Cast Iron Pipe Flanges and Flanged Fittings.
  - b. ASTM A 126 - Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
  - c. ASTM A 536 – Standard Specification for Ductile Iron Castings.
  - d. ASTM A 564 – Standard Specification for Hot-Rolled and Cold-Finished Age-Hardening Stainless Steel Bars and Shapes
5. American Water Works Association (AWWA)
  - a. AWWA C 504 - Standard for Rubber-Seated Butterfly Valves.
  - b. AWWA C 516 – Large-Diameter Rubber-Seated Butterfly Valves, Sizes 78 in. (2,000mm) and Larger.
  - c. NSF/ANSI 61 – Drinking Water System Components – Health Effects.
  - d. AWWA C 550 - Standard for Protective Interior Coatings for Valves and Hydrants.

**830.3 SUBMITTALS:** Contractor shall submit manufacturer's product data, instructions, recommendations, shop drawings, and certifications. All submittals shall be in accordance with Engineer's requirements and submittals shall be approved prior to delivery.

**830.4 MATERIALS:** The materials for all butterfly valves shall conform to the specifications contained within the latest revision of SAWS' Material Specification Item No. 21-05 "Hand - Operated Butterfly Valves," and "Rubber- Seated Butterfly Valves 3 inches Through 72 inches."

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### **830.5 CONSTRUCTION:**

1. Butterfly valve installation shall include; butterfly valve, coated and wrapped steel pipe nipple with reaction stop ring, concrete reaction blocking, cast-iron boot, valve box extension (ductile iron riser pipe), valve box and lid, concrete collar constructed with No 3 rebar all around all couplings and all coupling adapters required to complete the connection.
2. The entire valve, except for the operating nut, shall be coated with an approved SAWS sewer structural fused epoxy coated and wrapped with Polywrap. See SAWS Approved Products List (APL).
3. The valve box shall be placed in such a manner to prevent shock or stress being transmitted to the valve.
4. All valves located 6 feet and deeper shall include valve key extensions inside the valve box.
5. "All valves shall have operational nut within six feet of finished elevation.
6. The Contractor shall install fully adjustable valve box and valve key extension systems on all valves located between 6 feet and 13 feet.
7. Adjustable valve box and valve key extension systems shall be centered over the valve's operating nut with the box cover flush with the finished pavement surface or located at another level as directed by the Engineer.
8. All valves outside of pavement area maybe subject valve marker at the direction of inspector at no additional payment.
9. Valve boxes located in streets or other areas subject to vehicular traffic shall be provided with concrete collars as shown in the DD-830 Standard Drawing Series.
10. Collars around such valve boxes shall be formed and finished off neatly.
11. All valves open right.
12. Any damage to valve coating shall be repaired or replaced at the expense of the Contractor to meet manufacturer's specification.

**830.6 MEASUREMENT:** Butterfly valves and boxes will be measured by the unit of each such assembly of the various sizes of butterfly valves and boxes approved and installed.

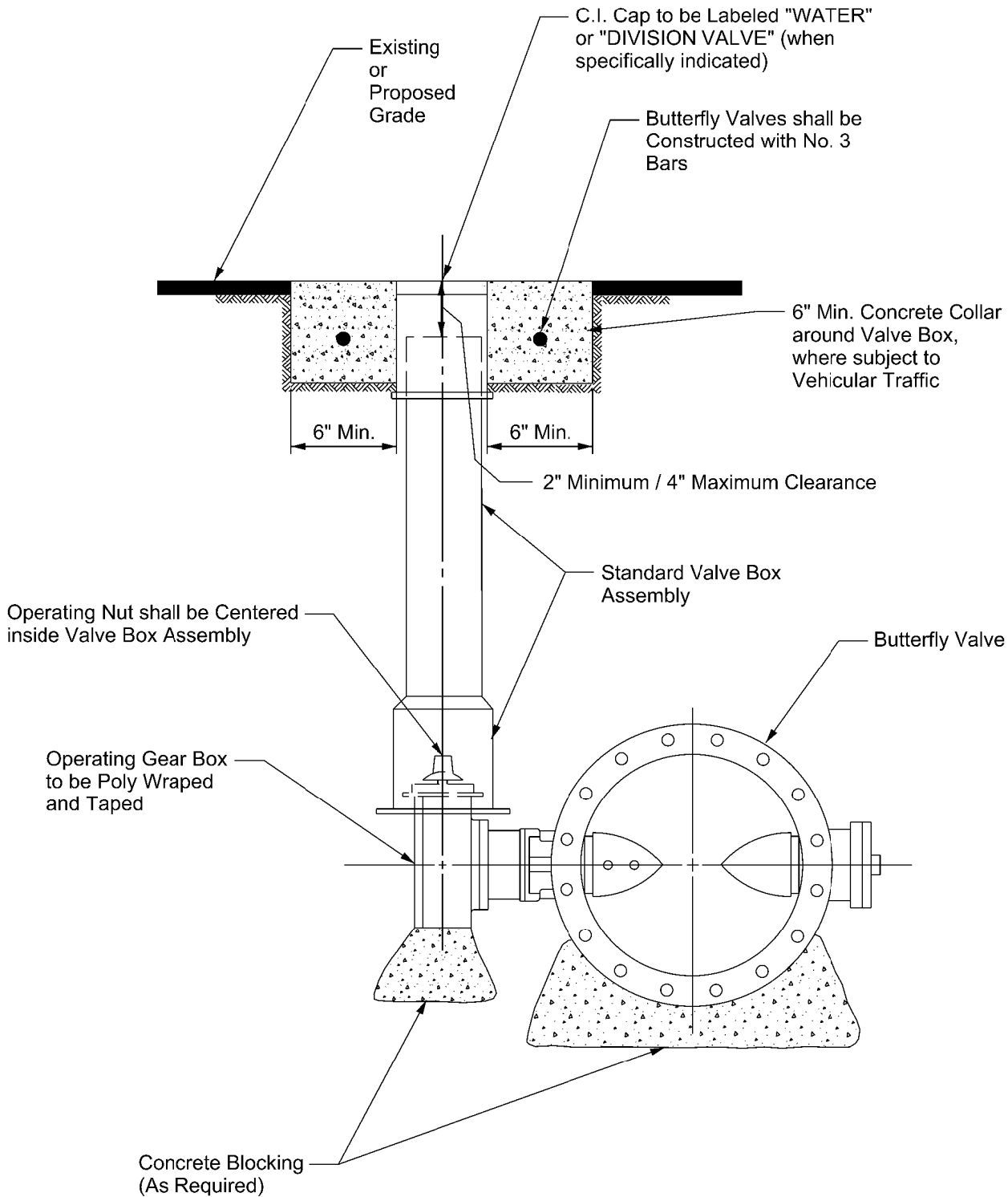
**830.7 PAYMENT:** Payment for butterfly valves, complete with box, will be made at the unit price bid for each assembly of the various types and sizes of valves and valve boxes installed.

1. Payment shall also include excavation, selected embedment material, anti-corrosion embedment, hauling, and disposition of excavated surplus material, backfill, concrete collar at the valve box with No 3 rebar all around ductile iron riser pipe, cast iron boot, packing, concrete grout, concrete reaction blocking, protective coating material for bolts, nuts, and ferrous surfaces, and polyethylene sleeve.
2. Payment shall also include mechanical and transition couplings, coupling adapters, coated and wrapped steel pipe and nipples required to complete the connection.
3. Materials paid on site will be in accordance with Table 1 of Specification Item

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No. 100 Mobilization

**- End of Specification -**



NOTE: All Concrete to be 3,000 psi

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SAN ANTONIO WATER SYSTEM  
SAN ANTONIO, TEXAS

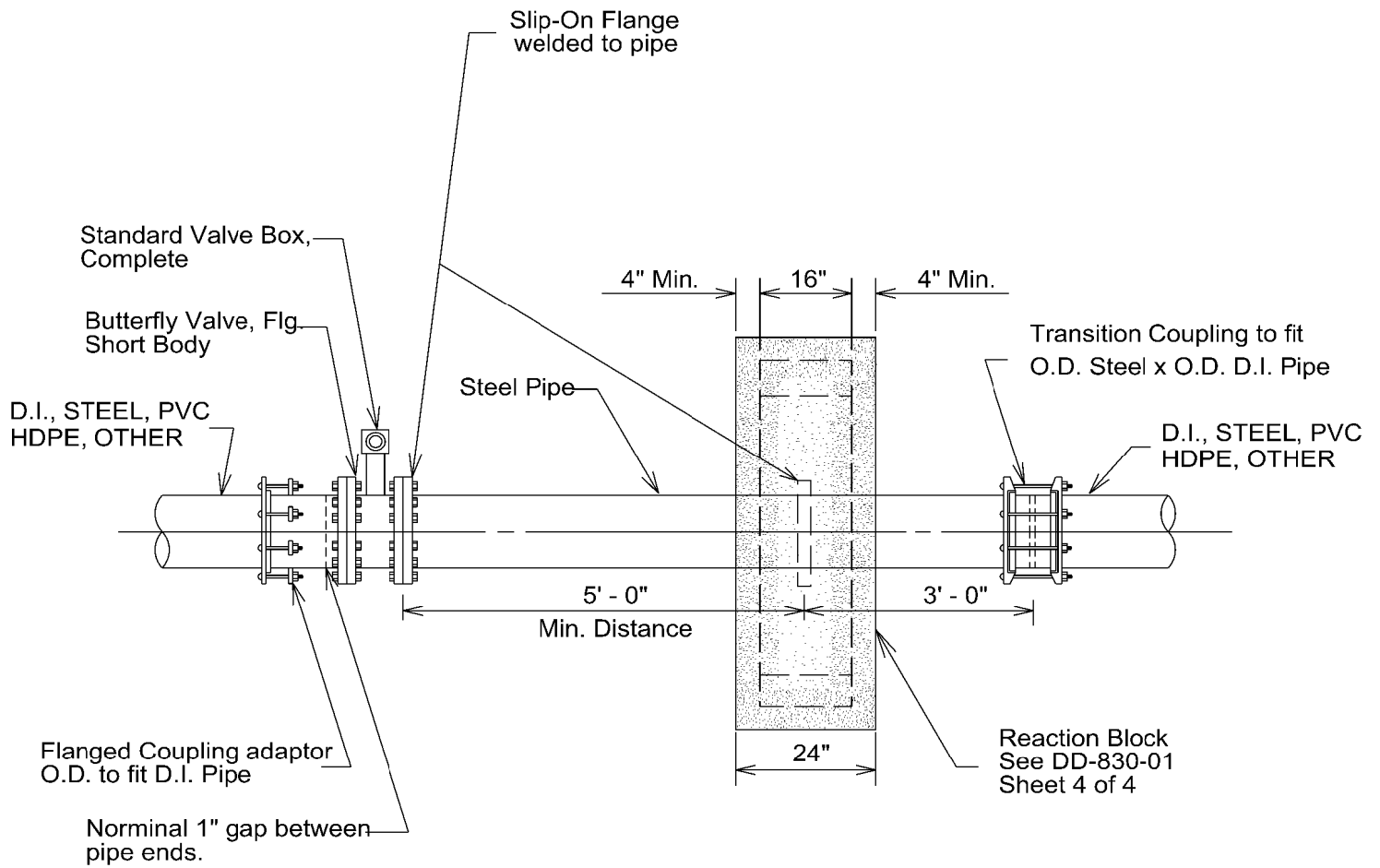
INSTALLATION OF BURIED  
BUTTERFLY VALVE WITH  
VALVE BOX COMPLETE

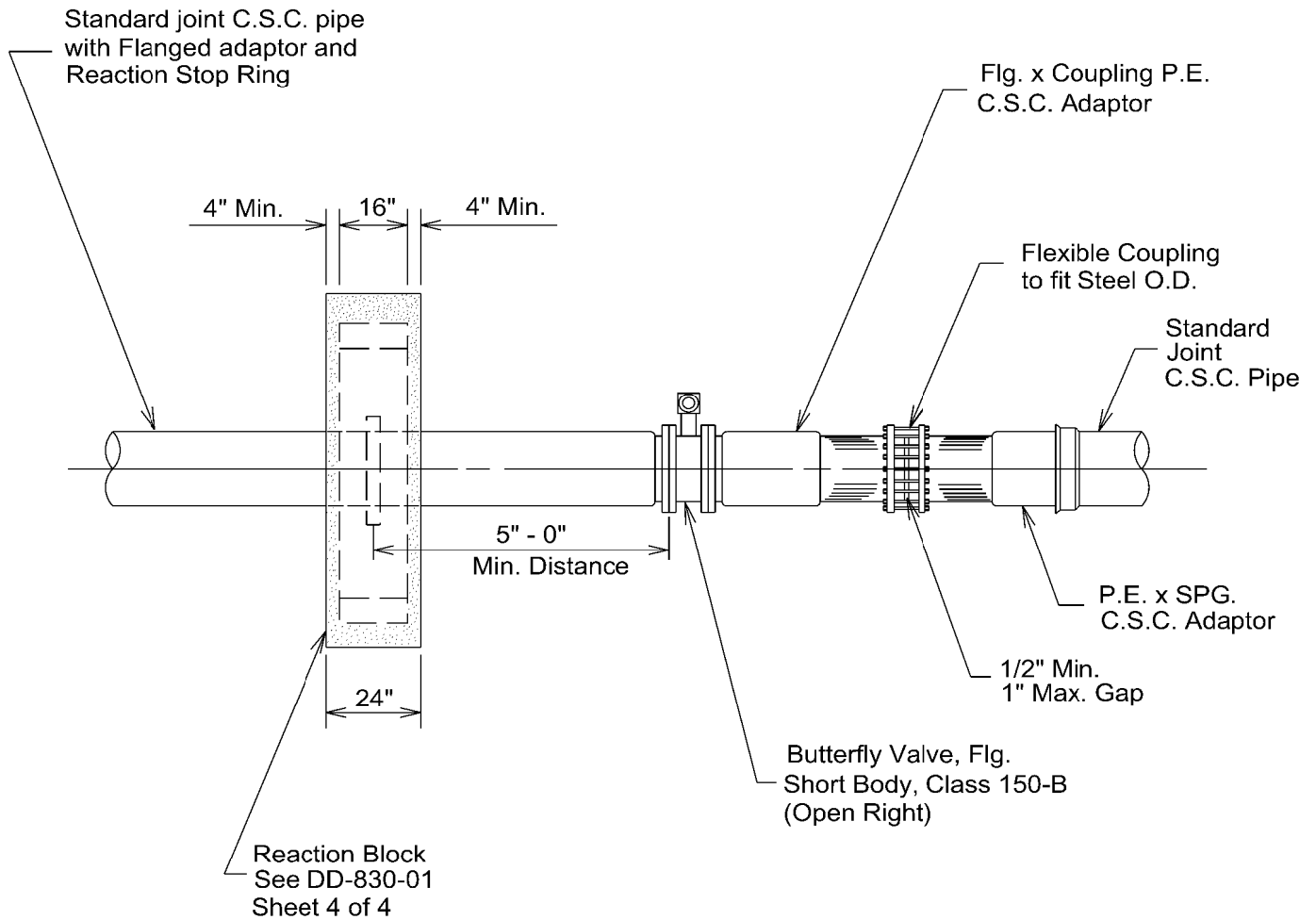
APPROVED  
MARCH 2008

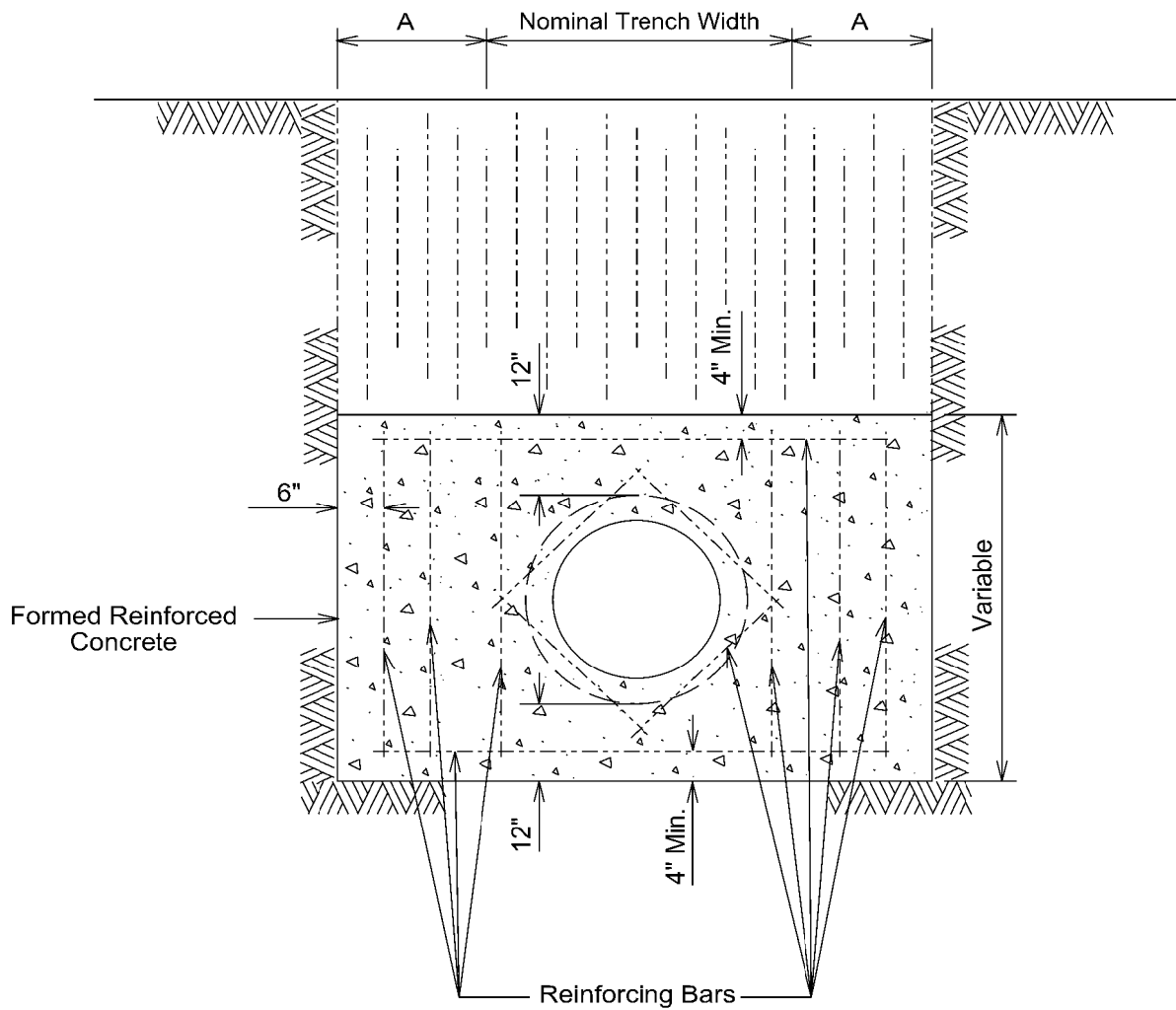
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**DD 830-01**

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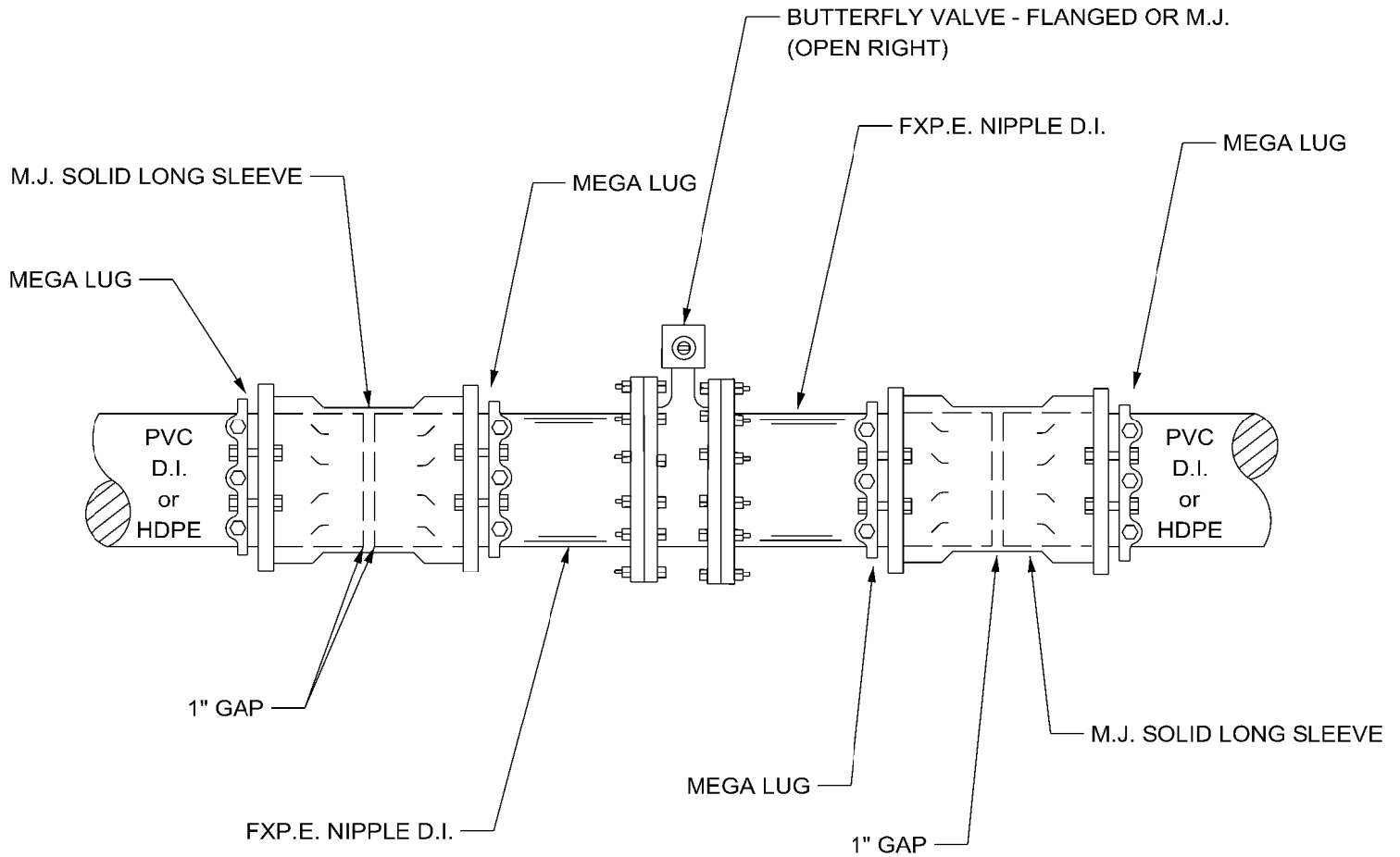


**END VIEW OF REACTION BLOCK**

Main Size	A (Min.)	Reinforcing Bar Size	Bearing Surface Required (in Sq. Ft.)
6"	12"	#4	3
8"	12"	#4	5
12"	18"	#4	8
16"	18"	#4	12
20"	28"	#5	16
24"	28"	#5	23
30"	36"	#5	35
36"	36"	#5	50
42"	36"	#5	70

Note: Concrete shall be 3,000 psi

PROPERTY OF <b>SAN ANTONIO WATER SYSTEM</b> SAN ANTONIO, TEXAS	<b>CONCRETE REACTION BLOCK          FOR BUTTERFLY VALVES &amp;          BLOW-OFF ASSEMBLIES ON          D.I. &amp; C.S.C. MAINS</b>		APPROVED MARCH 2008	REVISED AUG 2019
	<b>DD-830-01</b>			SHEET 4 OF 4



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BUTTERFLY VALVE  
 ASSEMBLY  
 ON PVC OR D.I. PIPE  
 N.T.S.

APPROVED  
 MARCH 2008

REVISED  
 AUG 2019

**DD-830-02**

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