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**SECTION 40\_XX\_XX**  
**SURGE CHECK VALVES**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Section Includes:
  - 1. Surge Check Valves
  
- B. Related Sections:
  - 1. (provided by the engineer)
  - 2. (provided by the engineer)
  - 3. (provided by the engineer)

**1.02 REFERENCES**

- A. AWWA C-512 Air Release, Air/Vacuum, & Combination Air Valves for Waterworks Service
- B. ASME B16.5 Steel Pipe Flanges and Flanged Fittings
- C. ASME B16.42 Ductile Iron Pipe Flanges and Flanged Fittings

**1.03 SUBMITTALS**

- A. (provided by the engineer)

**1.04 WARRANTY**

- A. Valves shall be warranted by the manufacturer for defects in materials and workmanship for a period of two years (24 months) from date of shipment.

**PART 2 - PRODUCTS**

**2.01 GENERAL**

- A. (provided by the engineer)

**2.02 SURGE CHECK VALVES**

- A. Manufacturers: APCO CSV or pre-approved equal
- B. Design:
  - 1. Surge Check Valve shall have a field proven design to provide an automatic reduction of surge pressure in the valve
  - 2. General:
    - a. Valve shall be normally open and bolted to the inlet of the Air/Vacuum Valve
    - b. Valve shall operate on the interphase between the kinetic energy in the relative velocity flows of air and water. The valve will allow air to pass through but water shall actually close the surge check, reducing the rate of water flow by means of throttling orifices in the plug to prevent shock closure of the Air/Vacuum Valve.
    - c. Surge check orifices may be threaded to allow adjustment of flow in the field

**APCO SURGE CHECK VALVES (CSV)  
1-18" (25-450mm)  
SUGGESTED SPECIFICATION**

**APPLICATION DATA 9000.01-1**  
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C. Materials:

1. Body: Ductile Iron ASTM A536, Carbon Steel ASTM A216, or 316 Stainless Steel ASTM A743
2. Plug: 316 Stainless Steel ASTM A743
3. Seat: 316 Stainless Steel ASTM A743
4. Bushing: 316 Stainless Steel ASTM A213

D. Testing:

1. Certified test reports shall be available upon request.

**PART 3 - EXECUTION**

**3.01 INSTALLATION**

- A. Install valves as specified in section (filled in by the engineer) and the manufacturer's instructions.
- B. (verbiage by engineer instructing how discharge piping should be installed)

**3.02 COMMISSIONING**

- A. Field testing (verbiage by engineer)