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**SECTION 40\_XX\_XX**  
**AIR RELEASE VALVES FOR CLEAN SERVICE**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Section Includes:
  - 1. Air release valves for clean service
  
- B. Related Sections:
  - 1. (provided by the engineer)
  - 2. (provided by the engineer)
  - 3. (provided by the engineer)

**1.02 REFERENCES**

- A. ASME B16.42 "Ductile Iron Pipe Flanges and Flanged Fittings"
- B. ASME B16.5 "Steel Pipe Flanges and Flanged Fittings"
- C. AWWA C512 "Air Release, Air/Vacuum and Combination Air Valves for Waterworks Service"

**1.03 SUBMITTALS**

- A. (provided by the engineer)

**1.04 QUALITY ASSURANCE**

- 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 AIR RELEASE VALVES FOR CLEAN SERVICE**

- A. Manufacturers: APCO ARV or pre-approved equal
- B. Design:
  - 1. Air Release Valve shall have a small venting orifice
  - 2. General:
    - a. Valve shall automatically release small pockets of air which accumulate at the high points of a system after it is filled and under pressure.
    - b. Valve shall have the ability to open against internal pressure because it has a small orifice and a leverage mechanism which multiplies the force of the float. This force must be greater than the internal pressure across the orifice to open the valve when a pocket of air needs to be vented.
    - c. Valve needle and seat shall be replaceable and resilient seat seals shall provide drop tight shut off to the full valve pressure rating.
    - d. Mechanical linkage shall provide sufficient mechanical advantage for the valve to open under full operating pressure.

- e. Valve cover shall be bolted to the valve body and sealed with a flat gasket
  - f. Simple lever designs shall consist of a single pivot arm and compound lever designs shall consist of multiple levers
- C. Materials:
- 1. Body: Ductile Iron ASTM A536 Gr 65-45-12, Bronze ASTM B505/B427, Carbon Steel ASTM A216 or 316 Stainless Steel ASTM A351 CF8M
  - 2. Cover: Ductile Iron ASTM A536 Gr 65-45-12, Bronze ASTM B505/B427, Carbon Steel ASTM A216 or 316 Stainless Steel ASTM A351 CF8M
  - 3. Float & Float Lever: 316 Stainless Steel ASTM A276
  - 4. Seat: 316 Stainless Steel ASTM A276 or Acrylonitrile-Butadiene (NBR)
  - 5. Needle: 316 Stainless Steel ASTM A276, Acrylonitrile-Butadiene (NBR), Terpolymer of Ethylene, Propylene and A Diene (EPDM) or Fluoro Rubber (FKM)
- D. Specifications for optional accessories:
- 1. AEC: An external check valve installed in the threaded outlet for inflow protection
  - 2. MRC: A mushroom cap installed in the threaded outlet for discharge protection
- E. Testing:
- 1. Each valve shall be shop tested as a complete assembly in accordance with AWWA C512.
  - 2. 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)

### **3.01 COMMISSIONING**

- A. Field testing (verbiage by engineer)