

**SECTION 22 1006**  
**PLUMBING PIPING SPECIALTIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Drains.
- B. Cleanouts.
- C. Hose bibbs.
- D. Hydrants.
- E. Backflow preventers.
- F. Double check valve assemblies.
- G. Water hammer arrestors.
- H. Sumps and interceptors.
- I. Mixing valves.
- J. Catch basins and manholes.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary: Product requirements for Owner furnished kitchen equipment.
- B. Section 01 6000 - Product Requirements: Procedures for Owner-supplied products.
- C. Section 03 3000 - Cast-in-Place Concrete: Manhole bottoms.
- D. Section 03 3000 - Cast-in-Place Concrete: Execution requirements for concrete catch basin bases.
- E. Section 22 1005 - Plumbing Piping.
- F. Section 22 3000 - Plumbing Equipment.
- G. Section 22 4000 - Plumbing Fixtures.
- H. Section 26 2717 - Equipment Wiring: Electrical characteristics and wiring connections.
- I. Section 33 0513 - Manholes and Structures.

**1.03 REFERENCE STANDARDS**

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- B. ASME A112.6.3 - Floor and Trench Drains; 2001 (R2007).
- C. ASME A112.6.4 - Roof, Deck, and Balcony Drains; 2003.
- D. ASSE 1011 - Hose Connection Vacuum Breakers; 2004.
- E. ASSE 1012 - Backflow Preventer with Intermediate Atmospheric Vent; 2009.
- F. ASSE 1013 - Reduced Pressure Principle Backflow Preventers and Reduced Pressure Principle Fire Protection Backflow Preventers; 2011.
- G. ASSE 1019 - Performance Requirements for Wall Hydrant with Backflow Protection and Freeze Resistance; 2011.
- H. ASTM C478 - Standard Specification for Circular Precast Reinforced Concrete Manhole Sections; 2015.
- I. ASTM C478M - Standard Specification for Circular Precast Reinforced Concrete Manhole Sections [Metric]; 2015.
- J. NSF 61 - Drinking Water System Components - Health Effects; 2014 (Errata 2015).
- K. NSF 372 - Drinking Water System Components - Lead Content; 2011.
- L. PDI-WH 201 - Water Hammer Arresters; 2010.

#### **1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide component sizes, rough-in requirements, service sizes, and finishes.
- C. Shop Drawings: Indicate dimensions, weights, and placement of openings and holes.
- D. Certificates: Certify that grease interceptors meet or exceed specified requirements.
- E. Manufacturer's Instructions: Indicate Manufacturer's Installation Instructions: Indicate assembly and support requirements.
- F. Operation Data: Indicate frequency of treatment required for interceptors.
- G. Maintenance Data: Include installation instructions, spare parts lists, exploded assembly views.
- H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 6000 - Product Requirements, for additional provisions.
  - 2. Extra Loose Keys for Outside Hose Bibbs: One.

#### **1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than three years documented experience.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Accept specialties on site in original factory packaging. Inspect for damage.

### **PART 2 PRODUCTS**

#### **2.01 GENERAL REQUIREMENTS**

- A. Specialties in Potable Water Supply Systems: Provide products that comply with NSF 61 and NSF 372 for maximum lead content.

#### **2.02 DRAINS**

- A. Manufacturers:
  - 1. Jay R. Smith Manufacturing Company; \_\_\_\_\_: [www.jayrsmith.com](http://www.jayrsmith.com).
  - 2. Josam Company; \_\_\_\_\_: [www.josam.com](http://www.josam.com).
  - 3. Zurn Industries, LLC; \_\_\_\_\_: [www.zurn.com](http://www.zurn.com).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Roof Drains:
  - 1. Assembly: ASME A112.6.4.
  - 2. Body: Lacquered cast iron with sump.
  - 3. Strainer: Removable polyethylene dome with vandal proof screws.
  - 4. Accessories: Coordinate with roofing type, refer to Section \_\_\_\_\_:
    - a. Membrane flange and membrane clamp with integral gravel stop.
    - b. Adjustable under deck clamp.
    - c. Roof sump receiver.
    - d. Waterproofing flange.
    - e. Leveling frame.
    - f. Adjustable extension sleeve for roof insulation.
- C. Roof Overflow Drains:
  - 1. Lacquered cast iron body and clamp collar and bottom clamp ring; pipe extended to 2 inches above flood elevation.
- D. Downspout Nozzles:
  - 1. Bronze round with straight bottom section.
- E. Floor Drain (FD-1):
  - 1. ASME A112.6.3; lacquered cast iron or stainless steel, two piece body with double drainage flange, weep holes, reversible clamping collar, and round, adjustable nickel-bronze strainer.

- F. Floor Drain (FD-2):
  1. ASME A112.6.3; lacquered cast iron or stainless steel, two piece body with double drainage flange, weep holes, reversible clamping collar, and round, adjustable round nickel bronze strainer with removable perforated sediment bucket.
- G. Floor Drain (FD-3):
  1. ASME A112.6.3; lacquered cast iron or stainless steel, two piece body with double drainage flange, weep holes, reversible clamping collar, and round, adjustable nickel-bronze strainer with polished bronze funnel or anti-splash rim.
- H. Floor Drain (FD-4):
  1. ASME A112.6.3; lacquered cast iron or stainless steel, two piece body with double drainage flange, weep holes, reversible clamping collar, and round, adjustable nickel-bronze extra heavy duty strainer.
- I. Floor Drain (FD-5):
  1. ASME A112.6.3; lacquered cast iron or stainless steel, two piece body with double drainage flange, weep holes, reversible clamping collar, and round, adjustable nickel-bronze extra heavy duty strainer with hinged grate and sediment bucket.
- J. Floor Drain (FD-6):
  1. Lacquered cast iron or stainless steel, two piece body with drainage flange, heavy duty grate 6 inches wide, 12 inches long, dome strainer, end plates with gaskets.
- K. Prefabricated Trench Drain (TD-1): Trench drain system assembled from factory fabricated, polymer concrete castings in standard lengths and variable depths, with integral joint flanges and integral grating support rails; includes joint gaskets and grating.
  1. Trench Width: 12 inches.
  2. Trench Section Length: 39 inches, and 19-1/2 inches.
  3. Grating Support Rail: Stainless steel.
- L. Floor Sink (FS-1):
  1. Lacquered cast iron body with dome strainer and seepage flange.
- M. Floor Sink (FS-2):
  1. Round lacquered cast iron body with integral seepage pan, epoxy coated interior, aluminum dome strainer, nickel bronze frame, full grate.

### **2.03 CLEANOUTS**

- A. Manufacturers:
  1. Jay R. Smith Manufacturing Company; \_\_\_\_\_: [www.jayrsmith.com](http://www.jayrsmith.com).
  2. Josam Company; \_\_\_\_\_: [www.josam.com](http://www.josam.com).
  3. Zurn Industries, LLC; \_\_\_\_\_: [www.zurn.com](http://www.zurn.com).
  4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Cleanouts at Exterior Surfaced Areas (CO-1):
  1. Round cast nickel bronze access frame and non-skid cover.
- C. Cleanouts at Exterior Unsurfaced Areas (CO-2):
  1. Line type with lacquered cast iron body and round epoxy coated gasketed cover.
- D. Cleanouts at Interior Finished Floor Areas (CO-3):
  1. Lacquered cast iron body with anchor flange, reversible clamping collar, threaded top assembly, and round gasketed scored cover in service areas and round gasketed depressed cover to accept floor finish in finished floor areas.
- E. Cleanouts at Interior Finished Wall Areas (CO-4):
  1. Line type with lacquered cast iron body and round epoxy coated gasketed cover, and round stainless steel access cover secured with machine screw.
- F. Cleanouts at Interior Unfinished Accessible Areas (CO-5): Calked or threaded type. Provide bolted stack cleanouts on vertical rainwater leaders.

## **2.04 HOSE BIBBS**

- A. Manufacturers:
  - 1. Jay R. Smith Manufacturing Company; \_\_\_\_\_: [www.jayrsmith.com](http://www.jayrsmith.com).
  - 2. Watts Regulator Company; \_\_\_\_\_: [www.wattsregulator.com](http://www.wattsregulator.com).
  - 3. Zurn Industries, LLC; \_\_\_\_\_: [www.zurn.com](http://www.zurn.com).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Interior Hose Bibbs:
  - 1. Bronze or brass with integral mounting flange, replaceable hexagonal disc, hose thread spout, chrome plated where exposed with handwheel, integral vacuum breaker in conformance with ASSE 1011.
- C. Interior Mixing Type Hose Bibbs:
  - 1. Bronze or brass, wall mounted, double service faucet with hose thread spout, integral stops, chrome plated where exposed with handwheels, and vacuum breaker in conformance with ASSE 1011.

## **2.05 HYDRANTS**

- A. Manufacturers:
  - 1. Arrowhead Brass & Plumbing, LLC; \_\_\_\_\_: [www.arrowheadbrass.com](http://www.arrowheadbrass.com).
  - 2. Jay R. Smith Manufacturing Company; \_\_\_\_\_: [www.jayrsmith.com](http://www.jayrsmith.com).
  - 3. Zurn Industries, LLC; \_\_\_\_\_: [www.zurn.com](http://www.zurn.com).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Wall Hydrants:
  - 1. ASSE 1019; freeze resistant, self-draining type with chrome plated wall plate hose thread spout, handwheel, and integral vacuum breaker.

## **2.06 BACKFLOW PREVENTERS**

- A. Manufacturers:
  - 1. Conbraco Industries, Inc; \_\_\_\_\_: [www.apollovalves.com](http://www.apollovalves.com).
  - 2. Watts Regulator Company, a part of Watts Water Technologies; \_\_\_\_\_: [www.wattsregulator.com](http://www.wattsregulator.com).
  - 3. Zurn Industries, LLC; \_\_\_\_\_: [www.zurn.com](http://www.zurn.com).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Reduced Pressure Backflow Preventers:
  - 1. ASSE 1013; bronze body with bronze internal parts and stainless steel springs; two independently operating, spring loaded check valves; diaphragm type differential pressure relief valve located between check valves; third check valve that opens under back pressure in case of diaphragm failure; non-threaded vent outlet; assembled with two gate valves, strainer, and four test cocks.

## **2.07 DOUBLE CHECK VALVE ASSEMBLIES**

- A. Manufacturers:
  - 1. Conbraco Industries, Inc; \_\_\_\_\_: [www.apollovalves.com](http://www.apollovalves.com).
  - 2. Watts Regulator Company, a part of Watts Water Technologies; \_\_\_\_\_: [www.wattsregulator.com](http://www.wattsregulator.com).
  - 3. Zurn Industries, LLC; \_\_\_\_\_: [www.zurn.com](http://www.zurn.com).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Double Check Valve Assemblies:
  - 1. ASSE 1012; Bronze body with corrosion resistant internal parts and stainless steel springs; two independently operating check valves with intermediate atmospheric vent.

## **2.08 WATER HAMMER ARRESTORS**

- A. Manufacturers:
  - 1. Jay R. Smith Manufacturing Company; \_\_\_\_\_: [www.jayrsmith.com](http://www.jayrsmith.com).

2. Watts Regulator Company, a part of Watts Water Technologies; \_\_\_\_\_: [www.wattsregulator.com](http://www.wattsregulator.com).
  3. Zurn Industries, LLC; \_\_\_\_\_: [www.zurn.com](http://www.zurn.com).
  4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Water Hammer Arrestors:
1. Stainless steel construction, bellows type sized in accordance with PDI-WH 201, precharged suitable for operation in temperature range minus 100 to 300 degrees F and maximum 250 psi working pressure.

## 2.09 SUMP AND INTERCEPTORS

- A. Grease Interceptors:
1. Construction:
    - a. Material: Epoxy coated fabricated steel.
    - b. Rough-in: On floor.
    - c. Accessories: Multi-weir baffle assembly, integral deep seal trap, removable integral flow control, sediment bucket.
    - d. Cover: Steel, epoxy coated, non-skid with gasket, securing handle, and enzyme injection port, recessed for floor finish.
  2. Unit Rating: \_\_\_\_\_ gpm flow and \_\_\_\_\_ lbs grease capacity.
- B. Sediment Interceptors:
1. Epoxy coated cast iron body and secured cover with removable stainless steel sediment bucket.

## 2.10 MIXING VALVES

- A. Thermostatic Mixing Valves:
1. Manufacturers:
    - a. Honeywell International Inc; \_\_\_\_\_: [yourhome.honeywell.com](http://yourhome.honeywell.com).
    - b. Leonard Valve Company; \_\_\_\_\_: [www.leonardvalve.com](http://www.leonardvalve.com).
    - c. Substitutions: See Section 01 6000 - Product Requirements.
  2. Valve: Chrome plated cast brass body, stainless steel or copper alloy bellows, integral temperature adjustment.
  3. Capacity: \_\_\_\_\_ gpm at \_\_\_\_\_ psi differential.
  4. Accessories:
    - a. Check valve on inlets.
    - b. Volume control shut-off valve on outlet.
    - c. Stem thermometer on outlet.
    - d. Strainer stop checks on inlets.
  5. Cabinet: 16 gage, 0.0598 inch prime coated steel, for recessed mounting with keyed lock.
- B. Pressure Balanced Mixing Valves:
1. Manufacturers:
    - a. Delta Faucet Company; \_\_\_\_\_: [www.deltafaucet.com](http://www.deltafaucet.com).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
  2. Valve: Chrome plated cast brass body, stainless steel cylinder, integral temperature adjustment.
    - a. Capacity: \_\_\_\_\_ gpm at \_\_\_\_\_ psi differential.
  3. Accessories:
    - a. Volume control shut-off valve on outlet.
    - b. Stem thermometer on outlet.
    - c. Strainer stop checks on inlets.
    - d. Cabinet: 16 gage, 0.0598 inch prime coated steel, for recessed mounting with keyed lock.

## 2.11 CATCH BASINS AND MANHOLES

- A. Catch Basins:

1. Barrel: ASTM C478 (ASTM C478M); precast concrete sections laid on cast-in-place reinforced concrete foundation pad, 36 inches or 48 inches diameter with precast concrete top.
  2. Inlet Assembly: Two piece heavy duty cast steel or cast iron frame and grate with ground or machined grate and frame bearing surfaces.
  3. Curb and gutter style: Rectangular grate and storm back:
    - a. Capacity 247 cu ft/s.
  4. Standard: Round frame and grate:
    - a. Capacity 194 cu ft/s.
  5. Manhole frame: Grated top:
    - a. Capacity 141 cu ft/s.
  6. Slope bottom slab 10 percent to outlet invert.
  7. Provide minimum 2 feet sump below outlet.
- B. Manholes: Formed-bottom type, laid on cast-in-place reinforced concrete foundation pad; concrete as specified in Section 03 3000.
1. Construction: Concrete masonry units.
  2. Size: \_\_\_\_\_ inch diameter.
  3. Cover: Standard cast iron with minimum sized pick hole, and frame. Use heavy duty cover and frame in vehicular traffic areas.
  4. Manufacturers:
    - a. Campbell Group; \_\_\_\_\_: [www.campbellfoundry.com](http://www.campbellfoundry.com).
    - b. Neenah Enterprises, Inc; \_\_\_\_\_: [www.nfco.com](http://www.nfco.com).
    - c. Substitutions: See Section 01 6000 - Product Requirements.
  5. Steps: 3/4 inch diameter galvanized steel on 16 inch centers.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for rodding of drainage system.
- C. Encase exterior cleanouts in concrete flush with grade.
- D. Install floor cleanouts at elevation to accommodate finished floor.
- E. Install approved portable water protection devices on plumbing lines where contamination of domestic water may occur; on boiler feed water lines, janitor rooms, fire sprinkler systems, premise isolation, irrigation systems, flush valves, interior and exterior hose bibbs.
- F. Pipe relief from backflow preventer to nearest drain.
- G. Install water hammer arrestors complete with accessible isolation valve on hot and cold water supply piping to lavatory sinks, washing machine outlets, or other quick closing valves..

**END OF SECTION 22 1006**