SECTION 221319 - SANITARY WASTE PIPING SPECIALTIES

PART 1 - GENERAL

1.1 SUMMARY
A. This Section includes the following sanitary drainage piping specialties:
   1. Backwater valves.
   2. Floor drains and floor sinks.
   3. Roof flashing assemblies.
   5. Grease traps (kitchens).
   6. Sand/oil separators (vehicle wash).

1.2 SUBMITTALS
A. Product Data: For each type of product indicated, include rated capacities, materials, finishes, dimensions, required clearances, operating characteristics, and accessories.
B. Operation and maintenance data for the following:
   1. Grease traps.
   2. Grease interceptors.

1.3 QUALITY ASSURANCE
A. Drainage piping specialties shall bear label, stamp, or other markings of specified testing agency.

PART 2 - PRODUCTS

2.1 BACKWATER VALVES
A. Horizontal, PVC Backwater Valves:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. Rectorseal
      b. Sioux Chief
      c. Oatey
      d. Zurn Plumbing Products Group
   3. Size: Same as connected piping.
   4. Body: PVC.
   5. Cover: PVC.
7. Type Check Valve: Removable, swing check, factory assembled or field modified to hang closed.
8. Extension: Full-size, PVC, soil-pipe extension to field-installed cleanout at surface; replaces backwater valve cover.

2.2 FLOOR DRAINS AND FLOOR SINKS

A. Cast-Iron Floor Drains; Equipment Rooms and Unfinished Areas:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Watts Drainage Products, FD-320-5-7 or a comparable product by one of the following:
   a. Josam Company
   c. Tyler Pipe; Wade Div.
   d. Watts Drainage Products Inc.
   e. Zurn Plumbing Products Group

2. Standard: ASME A112.6.3.
5. Seepage Flange: Not required.
6. Anchor Flange: Required.
8. Outlet: Bottom.
10. Sediment Bucket: Shallow-type.
11. Top or Strainer Material: Ductile Iron.
13. Top Shape: Round.
14. Dimensions of Top or Strainer: 8 inch diameter.
15. Top Loading Classification: Heavy Duty.
16. Funnel: Not required.
17. Inlet Fitting: Gray iron, with threaded inlet and threaded or spigot outlet.

B. Cast-Iron Floor Drains; Finished Areas:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Watts Drainage Products, FD-100-A5-7 or a comparable product by one of the following:
   a. Josam Company
   c. Tyler Pipe; Wade Div.
   d. Watts Drainage Products Inc.
   e. Zurn Plumbing Products Group

2. Standard: ASME A112.6.3.
5. Seepage Flange: Required.
6. Anchor Flange: Required.
8. Outlet: Bottom.
10. Sediment Bucket: Not required.
11. Top or Strainer Material: Nickel bronze.
13. Top Shape: Square.
14. Dimensions of Top or Strainer: 6 inch by 6 inch square.
15. Top Loading Classification: Medium Duty.
16. Funnel: Not required.
17. Inlet Fitting: Gray iron, with threaded inlet and threaded or spigot outlet.

C. Cast-Iron Floor Drains; ADA Floor Drain:
1. Basis-of-Design Product: Subject to compliance with requirements, provide Watts Drainage Products, FD-100-RS-517-7 or a comparable product by one of the following:
   a. Josam Company
   c. Tyler Pipe; Wade Div.
   d. Watts Drainage Products Inc.
   e. Zurn Plumbing Products Group
2. Standard: ASME A112.6.3.
5. Seepage Flange: Required.
6. Anchor Flange: Required.
8. Outlet: Bottom.
10. Sediment Bucket: Not required.
11. Top or Strainer Material: Nickel bronze.
13. Top Shape: Rectangular.
14. Dimensions of Top or Strainer: 5 inch by 17 inch rectangular strainer.
15. Top Loading Classification: Medium Duty.
16. Funnel: Not required.
17. Inlet Fitting: Gray iron, with threaded inlet and threaded or spigot outlet.

D. Cast-Iron Shower Drain:
1. Basis-of-Design Product: Subject to compliance with requirements, provide Watts Drainage Products, FD-100-A6 or a comparable product by one of the following:
   a. Josam Company
   c. Tyler Pipe; Wade Div.
   d. Watts Drainage Products Inc.
   e. Zurn Plumbing Products Group
2. Standard: ASME A112.6.3.
5. Seepage Flange: Required.
6. Anchor Flange: Required.
8. Outlet: Bottom.
10. Sediment Bucket: Not required.
11. Top or Strainer Material: Nickel bronze.
13. Top Shape: Round.
14. Dimensions of Top or Strainer: 6 inch diameter.
15. Top Loading Classification: Medium Duty.
16. Funnel: Not required.
17. Inlet Fitting: Gray iron, with threaded inlet and threaded or spigot outlet.

E. Cast-Iron Floor Sink; Equipment Rooms and Unfinished Areas:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Watts Drainage Products, FD-760-7-150 or a comparable product by one of the following:
   a. Josam Company
   c. Tyler Pipe; Wade Div.
   d. Watts Drainage Products Inc.
   e. Zurn Plumbing Products Group

4. Seepage Flange: Required.
6. Outlet: Bottom.
8. Strainer: Dome-type.
10. Grate Finish: Acid-resistant enamel.
11. Top Shape: Square.
13. Dimensions: 12 inch square top with 10 inch deep sump.
15. Outlet Fitting: Spigot outlet.

F. Cast-Iron Floor Sink; Finished Areas:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Watts Drainage Products, FD-710-7 or a comparable product by one of the following:
   a. Josam Company
   c. Tyler Pipe; Wade Div.
   d. Watts Drainage Products Inc.
   e. Zurn Plumbing Products Group

4. Seepage Flange: Required.
6. Outlet: Bottom.
8. Strainer: Dome-type.
10. Grate Finish: Acid-resistant enamel.
11. Top Shape: Square.
13. Dimensions: 8 inch square top with 6 inch deep sump.
15. Outlet Fitting: Spigot outlet, and trap-seal primer valve connection.

2.3 ROOF FLASHING ASSEMBLIES

A. Roof Flashing Assemblies:
   1. Manufacturers: Roof flashing shall be provided by the manufacturer’s representative maintaining the warranty on the roof.

2.4 MISCELLANEOUS SANITARY DRAINAGE PIPING SPECIALTIES

A. Open Drains:
   1. Description: Shop or field fabricate from ASTM A 74, Service class, hub-and-spigot, cast-iron, soil-pipe fittings. Include P-trap, hub-and-spigot riser section; and where required, increaser fitting joined with ASTM C 564, rubber gaskets.
   2. Size: Same as connected waste piping with increaser fitting of size indicated.

B. Air-Gap Fittings:
   1. Standard: ASME A112.1.2, for fitting designed to ensure fixed, positive air gap between installed inlet and outlet piping.
   2. Body: Bronze or cast iron.
   3. Inlet: Opening in top of body.
   4. Outlet: Larger than inlet.
   5. Size: Same as connected waste piping and with inlet large enough for associated indirect waste piping.

C. Sleeve Flashing Device:
   1. Description: Manufactured, cast-iron fitting, with clamping device, that forms sleeve for pipe floor penetrations of floor membrane. Include galvanized-steel pipe extension in top of fitting that will extend 2 inches above finished floor and galvanized-steel pipe extension in bottom of fitting that will extend through floor slab.
   2. Size: As required for close fit to riser or stack piping.

D. Stack Flashing Fittings:
   1. Description: Counterflashing-type, cast-iron fitting, with bottom recess for terminating roof membrane, and with threaded or hub top for extending vent pipe.
   2. Size: Same as connected stack vent or vent stack.

E. Vent Caps:
   1. Description: Cast-iron body with threaded or hub inlet and vandal-proof design. Include vented hood and setscrews to secure to vent pipe.
   2. Size: Same as connected stack vent or vent stack.

F. Air-Admittance Valves:
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Sioux Chief Manufacturing Co., Inc.
   b. Studor, Inc.

2. Description: Plastic housing with mechanically-operated sealing diaphragm, designed to admit air into vent piping and to prevent transmission of sewer gas into building.

3. Stack Vent Valve:

4. Fixture Vent Valve:
   b. Application: Connection to a vent serving a single fixture.

### 2.5 GREASE TRAPS

#### A. Grease Traps:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Josam Company
   b. MIFAB, Inc.
   c. Rockford Sanitary Systems, Inc.
   e. Tyler Pipe; Wade Div.
   f. Watts Drainage Products Inc.
   g. Zurn Plumbing Products Group

2. Standard: ASME A112.14.3 and PDI-G101, for intercepting and retaining fats, oils, and greases from food-preparation or -processing wastewater.

3. Plumbing and Drainage Institute Seal: Required.

4. Body Material: Cast iron or steel.

5. Interior Lining: Corrosion-resistant enamel.


7. Flow Rate: See Drawings.


9. Inlet and Outlet Size: See Drawings.

10. End Connections: Flanged, hub, or threaded.


12. Mounting: Above floor or recessed, flush with floor as indicated on Drawings.

13. Flow-Control Fitting: Required.


#### B. Sand/oil Separators:

1. Manufacturers: Provide the product used as the basis of design or submit a substitution request.

4. End Connections: Flanged, hub, or threaded.
5. Cleanout: Integral.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Refer to Division 22 Section "Common Work Results for Plumbing" for piping joining materials, joint construction, and basic installation requirements.

B. All equipment and components shall be installed in accordance with their listing and manufacturer’s published installation instructions.

C. Install backwater valves in building drain piping. For interior installation, provide cleanout deck plate flush with floor and centered over backwater valve cover, and of adequate size to remove valve cover for servicing.

D. Install floor drains at low points of surface areas to be drained. Set grates of drains flush with finished floor, unless otherwise indicated.
   1. Position floor drains for easy access and maintenance.
   2. Set floor drains below elevation of surrounding finished floor to allow floor drainage. Set with grates depressed according to Architectural Drawings or to the following drainage area radii if not indicated otherwise:
      a. Radius, 30 Inches or Less: Equivalent to 1 percent slope, but not less than 1/4-inch total depression.
      b. Radius, 30 to 60 Inches: Equivalent to 1 percent slope.
      c. Radius, 60 Inches or Larger: Equivalent to 1 percent slope, but not greater than 1-inch total depression.
   3. Install floor-drain flashing collar or flange so no leakage occurs between drain and adjoining flooring. Maintain integrity of waterproof membranes where penetrated.
   4. Install individual traps for floor drains connected to sanitary building drain, unless otherwise indicated.

E. Install flashing fittings on sanitary stack vents and vent stacks that extend through roof.

F. Assemble open drain fittings and install with top of hub 2 inches above floor.

G. Install trap-seal devices on inlet to floor drains that require trap-seal.

H. Install air-gap fittings on draining-type backflow preventers and on indirect-waste piping discharge into sanitary drainage system.

I. Install sleeve flashing device with each riser and stack passing through floors with waterproof membrane.

J. Install vent caps on each vent pipe passing through roof.

K. Install grease traps, including trapping, venting, and flow-control fitting, according to authorities having jurisdiction and with clear space for servicing.
1. Above-Floor Installation: Set unit with bottom resting on floor, unless otherwise indicated.
2. Flush with Floor Installation: Set unit and extension, if required, with cover flush with finished floor.

L. Install traps on plumbing specialty drain outlets. Omit traps on indirect wastes unless trap is indicated.

M. Install escutcheons at wall, floor, and ceiling penetrations in exposed finished locations and within cabinets and millwork. Use deep-pattern escutcheons if required to conceal protruding pipe fittings.

3.2 CONNECTIONS

A. Piping installation requirements are specified in other Division 22 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to equipment to allow service and maintenance.

C. Grease Trap: Connect inlet and outlet to unit, and connect flow-control fitting and vent to unit inlet piping. Install valve on outlet of automatic draw-off type unit.

3.3 LABELING AND IDENTIFYING

A. Equipment Nameplates and Signs: Install engraved plastic-laminate equipment nameplate or sign on or near each grease trap.

B. Distinguish among multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations, in addition to identifying unit. Nameplates and signs are specified in Section 220553 "Identification for Plumbing Piping and Equipment."

3.4 PROTECTION

A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.

B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION