

**SECTION 221423 STORM DRAINAGE PIPING SPECIALTIES**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

- 1. Metal roof drains.
- 2. Miscellaneous storm drainage piping specialties.
- 3. Cleanouts.

B. Related Requirements:

- 1. Section 076200 "Sheet Metal Flashing and Trim" for penetrations of roofs.
- 2. Section 078413 "Firestops and Smokestops" for firestopping roof penetrations.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.4 QUALITY ASSURANCE

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

PART 2 - PRODUCTS

2.1 METAL ROOF DRAINS

- A. Cast-Iron, Combination Roof Drain and Secondary Overflow Drain:

- 1. Basis-of-Design Product: Subject to compliance with requirements, provide Zurn Z163 Series or a comparable product by one of the following:
  - a. MIFAB, Inc.
  - b. Wade; a subsidiary of McWane Inc.
  - c. Watts.
  - d. Or approved equal

2. Description: Combination roof drain and overflow roof drain with epoxy coated cast iron drain bodies, flashing clamps with integral gravel guards, 2-inch high internal standpipe, self-locking polyethylene domes (standard), and no hub (standard) outlets.
3. Standard: ASME A112.6.4.
4. Body Material: Cast iron.
5. Combination Flashing Ring and Gravel Stop: Required.
6. Outlet: Bottom.
7. Outlet Type: No hub.
8. Sump Receiver Plate: Required.
9. Dome Material: Poly.
10. Overflow with Internal Standpipe: 2 inches high.

## 2.2 MISCELLANEOUS STORM DRAINAGE PIPING SPECIALTIES

### A. Downspout Boots:

1. Basis-of-Design Product: Subject to compliance with requirements, provide WATTS; RD-970 or a comparable product by one of the following:
  - a. J.R. Hoe & Sons Inc.
  - b. Neenah Foundry Company.
  - c. Zurn.
  - d. Or approved equal
2. Description: Manufactured, ASTM A 48/A 48M, gray-iron casting, with strap or ears for attaching to building; NPS 4 outlet; and shop-applied bituminous coating.
3. Size: Inlet size to match downspout and NPS 4 outlet.

### B. Downspout Nozzles:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Zurn Z199-DC or a comparable product by one of the following:
  - a. MIFAB, Inc.
  - b. Wade; a subsidiary of McWane Inc.
  - c. Watts
  - d. Or approved equal
2. Description: Cast-nickel-bronze downspout nozzle with anchor flange, countersunk mounting holes, and IPS threaded (standard), no hub, or push-on connection.
3. Outlet Type: No hub.
4. Size: Same as connected conductor.

## 2.3 CLEANOUTS

### A. Cast-Iron Exposed Floor Cleanouts:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Zurn Z1400 Series or a comparable product by one of the following:

- a. Josam Company.
  - b. Oatey.
  - c. Watts.
  - d. Or approved equal
2. Standard: ASME A112.36.2M.
  3. Size: Same as connected branch.
  4. Type: Adjustable housing.
  5. Body Material: Epoxy-coated cast iron.
  6. Closure: Plastic plug.
  7. Adjustable Housing Material: Cast iron with threads.
  8. Frame and Cover Material and Finish: Painted cast iron.
  9. Frame and Cover Shape: Round.
  10. Top Loading Classification: Extra-Heavy Duty.
  11. Riser: ASTM A 74, Service class, cast-iron drainage pipe fitting and riser to cleanout.
  12. Access Housing, CO-300-MF: Epoxy coated cast-iron access housing with two fixed anchor flanges, and extra-heavy-duty ductile iron (standard) access cover.
  13. Isolation Cleanout, CO-600-R: Neoprene movement compensator coupling.

**B. Cast-Iron Wall Cleanouts:**

1. Basis-of-Design Product: Subject to compliance with requirements, provide Zurn Z1446 or a comparable product by one of the following:
  - a. MIFAB, Inc.
  - b. Wade; a subsidiary of McWane Inc.
  - c. Watts.
  - d. Or approved equal
2. Standard: ASME A112.36.2M. Include wall access.
3. Size: Same as connected drainage piping.
4. Body: No hub, cast-iron soil pipe test tee as required to match connected piping.
5. Closure Plug:
  - a. ABS.
  - b. Raised head.
  - c. Drilled and threaded for cover attachment screw.
  - d. Size: Same as, or not more than, one size smaller than cleanout size.
6. Wall Access: Round, flat, stainless-steel cover plate with screw.

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- A. Install roof drains at low points of roof areas according to roof membrane manufacturer's written installation instructions.
  1. Install flashing collar or flange of roof drain to prevent leakage between drain and adjoining roofing. Maintain integrity of waterproof membranes where penetrated.
  2. Install expansion joints, if indicated, in roof drain outlets.

3. Position roof drains for easy access and maintenance.
- B. Install downspout adapters on outlet of back-outlet parapet roof drains and connect to sheet metal downspouts.
- C. Install downspout boots at grade with top 6 inches above grade. Secure to building wall.
- D. Install conductor nozzles at exposed bottom of conductors where they spill onto grade.
- E. Install cleanouts in aboveground piping and building drain piping according to the following instructions unless otherwise indicated:
  1. Use cleanouts the same size as drainage piping up to NPS 4. Use NPS 4 for larger drainage piping unless larger cleanout is indicated.
  2. Locate cleanouts at each change in direction of piping greater than 45 degrees.
  3. Locate cleanouts at minimum intervals of 50 feet for piping NPS 4 and smaller and 100 feet for larger piping.
  4. Locate cleanouts at base of each vertical storm piping conductor.
- F. For floor cleanouts for piping below floors, install cleanout deck plates with top flush with finished floor.
- G. For cleanouts located in concealed piping, install cleanout wall access covers, of types indicated, with frame and cover flush with finished wall.
- H. Install wall cleanouts in vertical conductors. Install access door in wall if indicated.
- I. Install through-penetration firestop assemblies for penetrations of fire- and smoke-rated assemblies.
  1. Comply with requirements in Section 078413 "Penetration Firestopping."

### 3.2 CONNECTIONS

- A. Comply with requirements for piping specified in Section 221413 "Facility Storm Drainage Piping." Drawings indicate general arrangement of piping, fittings, and specialties.

### 3.3 FLASHING INSTALLATION

- A. Fabricate flashing from single piece of metal unless large pans, sumps, or other drainage shapes are required.
- B. Install sheet flashing on pipes, sleeves, and specialties passing through or embedded in floors and roofs with waterproof membrane.
- C. Set flashing on floors and roofs in solid coating of bituminous cement.
- D. Secure flashing into sleeve and specialty clamping ring or device.

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 221423