

## 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 RELATION TO OTHER WORK

- A. Refer to the section, "General Plumbing Provisions", for related requirements. Refer to other sections of Division 22 and to all other applicable portions of the Drawings and Specifications.

#### 1.3 SUMMARY

- A. Section Includes:
  - 1. Metal roof drains.
  - 2. Miscellaneous storm drainage piping specialties.
  - 3. Cleanouts.
  - 4. Backwater valves.

#### 1.4 SUBMITTALS

- A. Submit manufacturer's data for review before any work is commenced.

#### 1.5 QUALITY ASSURANCE

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

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. Drains shall be of the type and materials as scheduled on the drawings.
- B. Provide all necessary bolts, clamping rings and appurtenances to effect a complete installation.
- C. Roof drain bearing pan where required shall be by roof drain manufacturer.

#### 2.2 METAL ROOF DRAINS

- A. Cast-Iron, General-Purpose Roof Drains:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. MIFAB, Inc.
  - b. WATTS.
  - c. Zurn
2. Standard: ASME A112.6.4.
3. Body Material: Cast iron.

## 2.3 MISCELLANEOUS STORM DRAINAGE PIPING SPECIALTIES

### A. Conductor Nozzles:

1. Description: Bronze body with threaded inlet and bronze wall flange with mounting holes.
2. Size: Same as connected conductor.

## 2.4 CLEANOUTS

### A. Cast-Iron Exposed Cleanouts:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. MIFAB, Inc.
  - b. WATTS.
2. Standard: ASME A112.36.2M.
3. Size: Same as connected branch.
4. Closure Plug Size: Same as, or not more than, one size smaller than cleanout size.

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

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. MIFAB, Inc.
  - b. WATTS.
2. Standard: ASME A112.36.2M.
3. Size: Same as connected branch.

### C. Cast-Iron Wall Cleanouts:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. MIFAB, Inc.
  - b. WATTS.
2. Standard: ASME A112.36.2M. Include wall access.
3. Size: Same as connected drainage piping.

D. Test Tees:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. MIFAB, Inc.
  - b. WATTS.
2. Standard: ASME A112.36.2M and ASTM A 74, ASTM A 888, or CISPI 301.
3. Size: Same as connected drainage piping.
4. Body Material: Hub-and-spigot, cast-iron soil-pipe T-branch or no-hub, cast-iron soil-pipe test tee as required to match connected piping.
5. Closure Plug Size: Same as, or not more than, one size smaller than cleanout size.

2.5 BACKWATER VALVES

A. Cast-Iron, Horizontal Backwater Valves:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. MIFAB, Inc.
  - b. WATTS.
2. Standard: ASME A112.14.1.
3. Size: Same as connected piping.
4. Body Material: Cast iron.
5. Cover: Cast iron with access check valve.
6. Check Valve: Removable, bronze, swing check, factory assembled or field modified  
Extension: ASTM A 74, Service class; full-size, cast-iron soil-pipe extension to field-installed cleanout at floor; replaces backwater valve cover.

B. Cast-Iron, Drain-Outlet Backwater Valves:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - a. MIFAB, Inc.
  - b. WATTS.
2. Standard: ASME A112.14.1.
3. Size: Same as floor drain outlet.
4. Body Material: Cast iron or bronze made for vertical installation in bottom outlet of floor drain.
5. Check Valve: Removable ball float.
6. Inlet: Threaded.
7. Outlet: Threaded or spigot.

## 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 conductor nozzles at exposed bottom of conductors where they spill onto grade.
- C. 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 and coordinate location with Architect.
- D. For floor cleanouts for piping below floors, install cleanout deck plates with top flush with finished floor.
- E. For cleanouts located in concealed piping, install cleanout wall access covers, of types indicated, with frame and cover flush with finished wall.
- F. Install horizontal backwater valves in floor with cover flush with floor.
- G. Install drain-outlet backwater valves in outlet of drains.
- H. Use of PVC in return air plenums and through fire rated assemblies will not be permitted.
- I. Install test tees in vertical conductors and near floor.
- J. Install wall cleanouts in vertical conductors. Install access door in wall if indicated.
- K. Install through-penetration firestop assemblies for penetrations of fire- and smoke-rated assemblies.

### 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