SECTION 221319.13 - SANITARY DRAINS

Revise this Section by deleting and inserting text to meet Project-specific requirements.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
   * + 1. RELATED DOCUMENTS

Retain or delete this article in all Sections of Project Manual.

* + - * 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
      1. SUMMARY
         1. Section Includes:

Floor drains.

Floor sinks.

Trench drains.

Channel drainage systems.

* + - 1. DEFINITIONS

Retain terms that remain after this Section has been edited for a project.

* + - * 1. ABS: Acrylonitrile-butadiene styrene.
        2. FRP: Fiberglass-reinforced plastic.
        3. HDPE: High-density polyethylene.
        4. PE: Polyethylene.
        5. PP: Polypropylene.
        6. PVC: Polyvinyl chloride.
      1. SUBMITTALS
         1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
         2. Manufacturer’s installation instructions shall be provided along with product data.
         3. Submittals shall be provided in the order in which they are submitted and tabbed (for combined submittals).
         4. Product Data: For each type of product.

1. PRODUCTS

Manufacturers and products listed in SpecAgent and MasterWorks Paragraph Builder are neither recommended nor endorsed by the AIA or Deltek. Before inserting names, verify that manufacturers and products listed there comply with requirements retained or revised in descriptions and are both available and suitable for the intended applications.

* + - 1. DRAIN ASSEMBLIES
         1. Sanitary drains shall bear label, stamp, or other markings of specified testing agency.
         2. Sanitary drain connection type for connection to Cast Iron Soil Pipe: Push-on type with manufacturers compression gasket.
         3. Sanitary drain connection type for connection to PVC/ABS piping: Socket welded with manufacturers recommended adhesive cement.
      2. FLOOR DRAINS

Copy paragraphs below and re-edit for each product.

Insert drawing designation for each product required. Use these designations on Drawings to identify each product.

* + - * 1. Cast-Iron Floor Drains <Insert drawing designation if any>:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=2189) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Jay R. Smith Mfg Co; a division of Morris Group International.

[Josam Company](http://www.specagent.com/Lookup?uid=123457131369).

[MIFAB, Inc](http://www.specagent.com/Lookup?uid=123457131366).

[Wade; a subsidiary of McWane Inc](http://www.specagent.com/Lookup?uid=123457131374).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457131371).

Or equal.

Standard: ASME A112.6.3[**with backwater valve].**

Pattern: [Area] [Floor] [Funnel floor] [Sanitary] <Insert pattern> drain.

Body Material: [Gray iron] <Insert material>.

Seepage Flange: [Not required] [Required].

Anchor Flange: [Not required] [Required].

Clamping Device: [Not required] [Required].

Outlet: [Bottom] [Side] <Insert type>.

Backwater Valve: [Drain-outlet type] [Integral, ASME A112.14.1, swing-check type] [Not required].

Coating in "Coating on Interior and Exposed Exterior Surfaces" Subparagraph below is usually used only on sanitary floor drains.

Coating on Interior and Exposed Exterior Surfaces: [**Acid-resistant enamel**] [**Not required**] <**Insert material**>.

Sediment Bucket: [Not required] <Insert description>.

Top or Strainer Material: [Bronze] [Gray iron] [Nickel bronze] [Stainless steel] <Insert material>.

Top of Body and Strainer Finish: [Nickel bronze] [Polished bronze] [Rough bronze] [Stainless steel] <Insert finish>.

Top Shape: [Round] [Square] <Insert shape>.

Dimensions of Top or Strainer: <Insert dimensions and describe body, sump, and grate>.

Top Loading Classification: [Extra Heavy Duty] [Heavy Duty] [Light Duty] [Medium Duty] <Delete if not applicable>.

Funnel: [Not required] [Required] <Insert description and dimensions>.

Inlet Fitting: [Not required] [Gray iron, with threaded inlet and threaded or spigot outlet, and trap-seal primer valve connection].

Trap Material: [Bronze] [Cast iron] [Copper] [Not required] <Insert material>.

Trap Pattern: [Deep-seal P-trap] [Standard P-trap] [Not required] <Insert pattern>.

Trap Features: [Cleanout] [Trap-seal primer valve drain connection] [Cleanout and trap-seal primer valve drain connection] [Not required] <Insert type>.

* + - * 1. Stainless-Steel Floor Drains, ASME A112.3.1 <**Insert drawing designation if any**>:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=2189) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

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[Josam Company](http://www.specagent.com/Lookup?uid=123457131369).

[MIFAB, Inc](http://www.specagent.com/Lookup?uid=123457131366).

[Wade; a subsidiary of McWane Inc](http://www.specagent.com/Lookup?uid=123457131374).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457131371).

Or equal.

Outlet: [Bottom] [Side] <Insert type>.

Top or Strainer Material: [Stainless steel] <Insert material>.

Top Shape: [Round] [Square] <Insert shape>.

Dimensions of Top or Strainer: <Insert dimensions and describe body, sump, and grate>.

Seepage Flange: [Not required] [Required].

Anchor Flange: [Not required] [Required].

Clamping Device: [Not required] [Required].

Trap-Primer Connection: [Not required] [Required].

Trap Material: [Cast iron] [Stainless steel] [Not required] <Insert material>.

Trap Pattern: [Deep-seal P-trap] [Standard P-trap] [**Not required**] <Insert pattern>.

* + - * 1. Stainless-Steel Floor Drains, ASME A112.6.3 <**Insert drawing designation if any**>:

Outlet: [Bottom] [Side] <Insert type>.

Top or Strainer Material: [Stainless steel] <Insert material>.

Top Shape: [Round] [Square] <Insert shape>.

Dimensions of Top or Strainer: <Insert dimensions and describe body, sump, and grate>.

Seepage Flange: [Not required] [Required].

Anchor Flange: [Not required] [Required].

Clamping Device: [Not required] [Required].

Trap-Primer Connection: [Not required] [Required].

Trap Material: [Cast iron] [Stainless steel] [Not required] <Insert material>.

Trap Pattern: [Deep-seal P-trap] [Standard P-trap] [Not required] <Insert pattern>.

* + - 1. FLOOR SINKS

Copy paragraphs below and re-edit for each product.

Insert drawing designation for each product required. Use these designations on Drawings to identify each product.

* + - * 1. Cast-Iron Floor Sinks <Insert drawing designation if any>:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=2189) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Jay R. Smith Mfg Co; a division of Morris Group International.

[Josam Company](http://www.specagent.com/Lookup?uid=123457131369).

[MIFAB, Inc](http://www.specagent.com/Lookup?uid=123457131366).

[Wade; a subsidiary of McWane Inc](http://www.specagent.com/Lookup?uid=123457131374).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457131371).

Or equal.

Standard: ASME A112.6.7.

Pattern: [Floor] [Funnel floor] <Insert pattern> drain.

Body Material: Cast iron.

Anchor Flange: [Not required] [Required][, with seepage holes].

Clamping Device: [Not required] [Required].

Outlet: Bottom, [no-hub] <Insert type> connection.

Coating on Interior Surfaces: [Not required] [Acid-resistant enamel] <Insert coating>.

Sediment Bucket: [Not required] <Insert description>.

Internal Strainer: [Not required] [Dome] [Flat].

Internal Strainer Material: [Aluminum] <Insert material>.

Top Grate Material: [Cast iron] <Insert material>[, loose][, hinged].

Top of Body and Grate Finish: [Nickel bronze] [Acid-resistant enamel] <Insert finish>.

Top Shape: [Round] [Square] <Insert shape>.

Dimensions of Top Grate: <Insert dimensions and describe grate pattern>.

Top Loading Classification: [**No traffic**] <**Insert traffic loading**>.

Funnel: [Not required] [Required]. <Insert material, shape and dimensions>.

<Insert additional options here>.

* + - * 1. Stainless-Steel Floor Sinks, ASME A112.6.7 <**Insert drawing designation if any**>:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=2189) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Jay R. Smith Mfg Co; a division of Morris Group International.

[Josam Company](http://www.specagent.com/Lookup?uid=123457131369).

[MIFAB, Inc](http://www.specagent.com/Lookup?uid=123457131366).

[Wade; a subsidiary of McWane Inc](http://www.specagent.com/Lookup?uid=123457131374).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457131371).

Or equal.

Standard: ASME A112.6.7.

Pattern: [Floor] [Funnel floor] <Insert pattern> drain.

Body Material: Stainless steel.

Anchor Flange: [Not required] [Required][, with seepage holes].

Clamping Device: [Not required] [Required].

Outlet: Bottom, [no-hub] <Insert type> connection.

Sediment Bucket: [Not required] <Insert description>.

Internal Strainer: [Not required] [Dome] [Flat].

Internal Strainer Material: [Stainless steel] <Insert material>.

Top Grate Material: [Stainless steel] <Insert material>[, loose][, hinged].

Top of Body and Grate Finish: [Satin nickel] [Stainless steel] <Insert finish>.

Top Shape: [Round] [Square] <Insert shape>.

Dimensions of Top Grate: <Insert dimensions and describe grate pattern>.

Top Loading Classification: [No traffic] <Insert traffic loading>.

Funnel: [Not required] [Required]. <Insert material, shape and dimensions>.

<Insert additional options here>.

* + - 1. TRENCH DRAINS

Copy paragraph below and re-edit for each product.

Insert drawing designation for each product required. Use these designations on Drawings to identify each product.

* + - * 1. Trench Drains <Insert drawing designation if any>:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=2189) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Jay R. Smith Mfg Co; a division of Morris Group International.

[Josam Company](http://www.specagent.com/Lookup?uid=123457131369).

[MIFAB, Inc](http://www.specagent.com/Lookup?uid=123457131366).

[Wade; a subsidiary of McWane Inc](http://www.specagent.com/Lookup?uid=123457131374).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457131371).

Or equal.

Standard: ASME A112.6.3 for trench drains.

Material: Ductile or gray iron.

Flange: [Anchor] [Seepage] [Not required].

Clamping Device: [Not required] [Required].

Outlet: [Bottom] [End] [Side] <Insert location>.

Grate Material: [Ductile iron] [Ductile iron or gray iron] [Gray iron] [Stainless steel] <Insert material>.

Grate Finish: [Painted] [Not required] <Insert finish>.

Dimensions of Frame and Grate: <Insert dimensions and describe body, sump, and grate if required>.

Top Loading Classification: [Extra Heavy Duty] [Heavy Duty] [Light Duty] [Medium Duty] <Delete if not applicable>.

Trap Material: [Cast iron] [Stainless steel] [Not required] <Insert material>.

Trap Pattern: [Standard P-trap] [Not required] <Insert pattern>.

* + - 1. CHANNEL DRAINAGE SYSTEMS

Copy paragraphs below and re-edit for each product.

Insert drawing designation for each product required. Use these designations on Drawings to identify each product.

* + - * 1. Stainless-Steel Channel Drainage Systems, ASME A112.3.1 <**Insert drawing designation if any**>:
        2. Description: Modular system of stainless-steel channel sections, grates, and appurtenances; designed so grates fit into channel recesses without rocking or rattling.

Standard: ASME A112.3.1 for trench drains.

Channel Sections: Interlocking joint, stainless steel with level invert.

Dimensions: [**5.8 inches**] [**11.7 inches**] wide. Include number of units required to form total lengths indicated.

Grates: Manufacturer's designation "[heavy] [medium] duty," with slots or perforations, and of width and thickness that fit recesses in channels.

Material: [Ductile iron] [Fiberglass] [Galvanized steel] [Gray iron] [Stainless steel] <Insert material>.

Locking Mechanism: [Manufacturer's standard device for securing grates to channel sections] [Not required].

Show locations and lengths of covers on Drawings.

Covers: Solid [ductile or gray iron] [stainless steel] <Insert material>, of width and thickness that fit recesses in channels, and of lengths indicated.

Supports, Anchors, and Setting Devices: Manufacturer's standard, unless otherwise indicated.

Channel-Section Joining and Fastening Materials: As recommended by system manufacturer.

* + - * 1. Stainless-Steel Channel Drainage Systems, Non-ASME A112.3.1 <Insert drawing designation if any>:

Description: Modular system of stainless-steel channel sections, grates, and appurtenances; designed so grates fit into channel recesses without rocking or rattling.

Channel Sections: Interlocking joint, stainless steel with level invert.

Dimensions: [**6 inches**] [**12 inches**] wide. Include number of units required to form total lengths indicated.

Grates: Manufacturer's designation "[heavy] [medium] duty," with slots or perforations, and of width and thickness that fit recesses in channels.

Material: [Ductile iron] [Fiberglass] [Galvanized steel] [Gray iron] [Stainless steel] <Insert material>.

Locking Mechanism: [Manufacturer's standard device for securing grates to channel sections] [Not required].

Show locations and lengths of covers on Drawings.

Covers: Solid [ductile or gray iron] [stainless steel] <Insert material>, of width and thickness that fit recesses in channels, and of lengths indicated.

Supports, Anchors, and Setting Devices: Manufacturer's standard, unless otherwise indicated.

Channel-Section Joining and Fastening Materials: As recommended by system manufacturer.

* + - * 1. Narrow, Sloped-Invert, Polymer-Concrete Channel Drainage Systems <Insert drawing designation if any>:

Description: Modular system of channel sections, grates, and appurtenances; designed so grates fit into channel recesses without rocking or rattling.

Channel Sections: Narrow, interlocking-joint, sloped-invert, polymer-concrete modular units with end caps.

Include rounded bottom, with built-in invert slope of 0.6 percent and with outlets in number, sizes, and locations indicated.

Include extension sections necessary for required depth.

Dimensions: 4-inch inside width. Include number of units required to form total lengths indicated.

Frame: [Gray-iron or galvanized steel for grates] [Not required].

Grates: Manufacturer's designation "[heavy] [medium] duty," with slots or perforations, and of width and thickness that fit recesses in channel sections.

Material: [Ductile iron] [Fiberglass] [Galvanized steel] [Gray iron] [Stainless steel] <Insert material>.

Locking Mechanism: [Manufacturer's standard device for securing grates to channel sections] [Not required].

Show locations and lengths of covers on Drawings.

Covers: Solid [ductile or gray iron] <Insert material>, of width and thickness that fit recesses in channel sections, and of lengths indicated.

Supports, Anchors, and Setting Devices: Manufacturer's standard, unless otherwise indicated.

Channel-Section Joining and Fastening Materials: As recommended by system manufacturer.

* + - * 1. Narrow, Level-Invert, Polymer-Concrete Channel Drainage Systems <Insert drawing designation if any>:

Description: Modular system of channel sections, grates, and appurtenances; designed so grates fit into channel recesses without rocking or rattling.

Show locations and lengths of covers on Drawings.

Channel Sections: Narrow, interlocking-joint, precast, polymer-concrete modular units with end caps.

Include rounded bottom, with level invert and with NPS 4 outlets in number and locations indicated.

Dimensions: [**5-inch**] <**Insert dimension**> inside width and [**9-3/4 inches**] <**Insert dimension**> deep. Include number of units required to form total lengths indicated.

Frame: [Gray-iron or galvanized steel for grates] [Not required].

Grates: Manufacturer's designation "[heavy] [medium] duty," with slots or perforations, and of width and thickness that fit recesses in channel sections.

Material: [Ductile iron] [Fiberglass] [Galvanized steel] [Gray iron] [Stainless steel] <Insert material>.

Locking Mechanism: [Manufacturer's standard device for securing grates to channel sections] [Not required].

Show locations and lengths of covers on Drawings.

Covers: Solid [ductile or gray iron] <Insert material>, of width and thickness that fit recesses in channel sections, and of lengths indicated.

Supports, Anchors, and Setting Devices: Manufacturer's standard, unless otherwise indicated.

Channel-Section Joining and Fastening Materials: As recommended by system manufacturer.

Show locations and lengths of covers on Drawings.

* + - * 1. Wide, Level-Invert, Polymer-Concrete Channel Drainage Systems <Insert drawing designation if any>:

Description: Modular system of channel sections, grates, and appurtenances; designed so grates fit into channel recesses without rocking or rattling.

Channel Sections: Wide, interlocking-joint, precast, polymer-concrete modular units with end caps.

Include flat or rounded bottom, with level invert and with outlets in number, sizes, and locations indicated.

Dimensions: [**8-inch**] <**Insert dimension**> inside width and [**13-3/4 inches**] <**Insert dimension**> deep. Include number of units required to form total lengths indicated.

Frame: [Gray-iron or galvanized steel for grates] [Not required].

Grates: Manufacturer's designation "[heavy] [medium] duty," with slots or perforations, and of width and thickness that fit recesses in channel sections.

Material: [Ductile iron] [Fiberglass] [Galvanized steel] [Gray iron] [Stainless steel] <Insert material>.

Locking Mechanism: [Manufacturer's standard device for securing grates to channel sections] [Not required].

Show locations and lengths of covers on Drawings.

Covers: Solid [ductile or gray iron] <Insert material>, of width and thickness that fit recesses in channel sections, and of lengths indicated.

Supports, Anchors, and Setting Devices: Manufacturer's standard, unless otherwise indicated.

Channel-Section Joining and Fastening Materials: As recommended by system manufacturer.

* + - * 1. FRP Channel Drainage Systems <Insert drawing designation if any>:

Description: Modular system of channel sections, grates, and appurtenances; designed so grates fit into channel recesses without rocking or rattling.

Channel Sections: Interlocking-joint, sloped-invert, FRP modular units, with end caps. Include flat, rounded, or inclined inside bottom, with outlets in number, sizes, and locations indicated.

Dimensions: [**4 inches**] [**4 or 6 inches**] [**6 inches**] [**6 or 8 inches**] [**8 inches**] wide. Include number of units required to form total lengths indicated.

Frame: [Galvanized steel] [Stainless steel] [Manufacturer's standard metal] <Insert material> for grates.

Grates: With slots or perforations and widths and thickness that fit recesses in channel sections.

Material: [Fiberglass] [Galvanized steel] [Gray iron] [Stainless steel] <Insert material>.

Locking Mechanism: [Manufacturer's standard device for securing grates to channel sections] [Not required].

Covers: Solid [ductile or gray iron] <Insert material>, of width and thickness that fit recesses in channel sections, and of lengths indicated.

Supports, Anchors, and Setting Devices: Manufacturer's standard, unless otherwise indicated.

Channel-Section Joining and Fastening Materials: As recommended by system manufacturer.

* + - * 1. HDPE or PE Channel Drainage Systems <Insert drawing designation if any>:

Description: Modular system of channel sections, grates, and appurtenances; designed so grates fit into channel recesses without rocking or rattling.

Channel Sections: Interlocking-joint, HDPE or PE modular units, with end caps. Include flat, rounded, or inclined bottom, with level invert and with outlets in number, sizes, and locations indicated.

Dimensions: 4 inches wide. Include number of units required to form total lengths indicated.

Grates: With slots or perforations and widths and thickness that fit recesses in channel sections.

Material: [Fiberglass] [Galvanized steel] [Gray iron] [Stainless steel] <Insert material>.

Color: <Insert color or delete subparagraph>.

Supports, Anchors, and Setting Devices: Manufacturer's standard, unless otherwise indicated.

Channel-Section Joining and Fastening Materials: As recommended by system manufacturer.

* + - * 1. PP Channel Drainage Systems <Insert drawing designation if any>:

Description: Modular system of channel sections, grates, and appurtenances; designed so grates fit into channel recesses without rocking or rattling.

Channel Sections: Interlocking-joint, PP modular units, with end caps. Include flat, rounded, or inclined bottom, with level invert and with outlets in number, sizes, and locations indicated.

Dimensions: 4 inches wide. Include number of units required to form total lengths indicated.

Grates: With slots or perforations and widths and thickness that fit recesses in channel sections.

Material: [Fiberglass] [Galvanized steel] [Gray iron] [Stainless steel] <Insert material>.

Color: <Insert color or delete subparagraph>.

Supports, Anchors, and Setting Devices: Manufacturer's standard, unless otherwise indicated.

Channel-Section Joining and Fastening Materials: As recommended by system manufacturer.

* + - * 1. PVC Channel Drainage Systems <Insert drawing designation if any>:

Description: Modular system of channel sections, grates, and appurtenances; designed so grates fit into channel recesses without rocking or rattling.

Channel Sections: Interlocking-joint, PVC modular units, with end caps. Include flat, rounded, or inclined bottom, with level invert and with outlets in number, sizes, and locations indicated.

Dimensions: 4 inches wide. Include number of units required to form total lengths indicated.

Grates: With slots or perforations and widths and thickness that fit recesses in channel sections.

Material: [Fiberglass] [Galvanized steel] [Gray iron] [Stainless steel] <Insert material>.

Color: <Insert color or delete subparagraph>.

Supports, Anchors, and Setting Devices: Manufacturer's standard, unless otherwise indicated.

Channel-Section Joining and Fastening Materials: As recommended by system manufacturer.

1. EXECUTION
   * + 1. INSTALLATION

In this article, retain only those sanitary piping specialties that are specified in Part 2. Additional instructions may be required for special applications. Show locations of specialties in plans, details, and schematics on Drawings.

* + - * 1. Install floor drains at low points of surface areas to be drained. Set grates of drains flush with finished floor, unless otherwise indicated.

Coordinate first three subparagraphs below with Drawings.

Position floor drains for easy access and maintenance.

Set floor drains below elevation of surrounding finished floor to allow floor drainage.

Set with grates depressed according to the following drainage area radii:

Radius, 30 Inches or Less: Equivalent to 1 percent slope, but not less than 1/4-inch total depression.

Radius, 30 to 60 Inches: Equivalent to 1 percent slope.

Radius, 60 Inches or Larger: Equivalent to 1 percent slope, but not greater than 1-inch total depression.

Coordinate first subparagraph below with Drawings.

Install floor-drain flashing collar or flange, so no leakage occurs between drain and adjoining flooring.

Maintain integrity of waterproof membranes where penetrated.

Install individual traps for floor drains connected to sanitary building drain, unless otherwise indicated.

* + - * 1. Install trench drains at low points of surface areas to be drained.

Set grates of drains flush with finished surface, unless otherwise indicated.

Retain first paragraph below if stainless-steel channel drains complying with ASME A112.3.1 are required.

* + - * 1. Comply with ASME A112.3.1 for installation of stainless-steel channel drainage systems.

Install on support devices, so that top will be flush with adjacent surface.

* + - * 1. Install FRP channel drainage system components on support devices, so that top will be flush with adjacent surface.
        2. Install open drain fittings with top of hub [1 inch] [2 inches] <Insert dimension> above floor.
      1. CONNECTIONS

Coordinate piping installations and specialty arrangements with schematics on Drawings and with requirements specified in piping systems. If Drawings are explicit enough, these requirements may be reduced or omitted.

* + - * 1. Comply with requirements in Section 221316 "Sanitary Waste and Vent Piping" for piping installation requirements. Drawings indicate general arrangement of piping, fittings, and specialties.
        2. Comply with requirements in Section 221319 "Sanitary Waste Piping Specialties" for backwater valves, air admittance devices and miscellaneous sanitary drainage piping specialties.
        3. Comply with requirements in Section 221323 "Sanitary Waste Interceptors" for grease interceptors, grease-removal devices, oil interceptors, sand interceptors, and solid interceptors.
        4. Install piping adjacent to equipment to allow service and maintenance.
        5. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."
        6. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
      1. LABELING AND IDENTIFYING
         1. 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."
      2. PROTECTION
         1. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.
         2. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION 221319.13