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SECTION 221323 - SANITARY WASTE INTERCEPTORS

1. GENERAL
   * + 1. SUMMARY
          1. Section Includes:

Interceptors, grease.

Precast-concrete manhole risers.

Manhole risers, frames, and covers.

* + - 1. DEFINITIONS

Retain terms that remain after this Section has been edited for a project. Include only essential definitions or acronyms not well understood by the affected industry or trade.

* + - * 1. FOGs: Fats, oils, greases.
        2. FRP: Fiberglass-reinforced plastic.
        3. PP: Polypropylene.
      1. ACTION SUBMITTALS

Action submittals are submittals requiring responsive action and return of reviewed documents to Contractor.

* + - * 1. Product Data: For each type and size of sanitary waste interceptor.

Include materials of fabrication, dimensions, rated capacities, retention capacities, operating characteristics, size and location of each pipe connection, furnished specialties, and accessories.

Retain subparagraph below when grease-removal devices are included in Project.

Include diagrams of power wiring.

* + - * 1. Shop Drawings: For each type and size of precast-concrete sanitary waste interceptor.

Include materials of construction, dimensions, rated capacities, retention capacities, location and size of each pipe connection, furnished specialties, and accessories.

* + - 1. INFORMATIONAL SUBMITTALS

Informational submittals are submittals that require review by Architect, but they do not require Architect's responsive action and return of reviewed documents to Contractor, provided submittals comply with requirements. If rejected, submittals with responsive action must be returned to Contractor.

Retain "Coordination Drawings" Paragraph below where coordination is required for installation of products and materials by separate installers. Preparation of coordination drawings requires participation of each trade involved; coordinate with other Sections specifying products and materials to be included. See Section 013100 "Project Management and Coordination."

* + - * 1. Coordination Drawings: Interceptors, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

Piping connections. Include size, location, and elevation of each.

Interface with underground structures and utility services.

* + - 1. CLOSEOUT SUBMITTALS
         1. Operation and Maintenance Data: For sanitary waste interceptors to include in emergency, operation, and maintenance manuals.
      2. FIELD CONDITIONS

Retain this article if interruption of existing sanitary or storm sewer service is required.

* + - * 1. Interruption of Existing Sewer Services: Do not interrupt services to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary sewer services in accordance with requirements indicated:

Notify [**Architect**] [**Construction Manager**] [**Owner**] no fewer than [**seven**] <**Insert number**> days in advance of proposed interruption of service.

Do not proceed with interruption of sewer services without [**Architect's**] [**Construction Manager's**] [**Owner's**] written permission.

1. PRODUCTS
   * + 1. INTERCEPTORS, GREASE

Copy first paragraph below and re-edit for each product.

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

* + - * 1. Interceptors, Grease - Steel :

Retain "Basis-of-Design Product" Subparagraph and list of manufacturers below to identify a specific product or a comparable product from manufacturers listed.

Basis-of-Design Product: Subject to compliance with requirements, provide **Zurn Industries, LLC; Z1170** or comparable product by one of the following:

<**Insert manufacturer's name**>

Standard:

PDI G101.

Not all manufacturers offer compliance with option in first subparagraph below. Consult manufacturers.

[**ASME A112.14.3**].

PDI certification is currently limited to 100 gpm (6.3 L/s) flow rate and 200 lb (90.7 kg) grease retention by PDI G101. However, not all manufacturers certify their units above 50 gpm (3.15 L/s) flow rate and 100 lb (45.4 kg) grease retention. Confirm availability of PDI-certified 75 gpm/150 lb and 100 gpm/200 lb units prior to selecting manufacturer if required for Project. Units exceeding 100 gpm/200 lb are available but are not certified. PDI certification/seal should be required on all units up to and including 100 gpm/200 lb capacity if available.

Retain "PDI Seal" Subparagraph below for grease interceptors up to and including 100 gpm/200 lb capacity.

PDI Seal: Required.

Description: Factory-fabricated grease interceptor for intercepting and retaining FOG from food[**-preparation**] [**or**] [**-processing**] wastewater.

Body Material: Steel.

Interior Lining: Factory-applied epoxy, polyurethane, or manufacturer's acid-resistant coating.

Exterior Coating: Factory-applied epoxy, polyurethane, or manufacturer's acid-resistant coating.

Inlet, Outlet, and Vent Piping Connections: Hub, or no-hub (hubless) unless otherwise indicated.

Retain "Body Extension" Subparagraph below if required and insert required height.

Body Extension: <**Insert inches**> height.

If more than one grease interceptor is required, delete "Capacities and Characteristics" Subparagraph below and schedule grease interceptors on Drawings.

Capacities and Characteristics:

Length by Width by Depth: <**Insert inches**>.

Number of Compartments: [**One**] [**Two**] <**Insert number**>.

Flow Rate: <**Insert gpm**>.

Retention Capacity: <**Insert lb**>.

Inlet and Outlet Pipe Size: <**Insert NPS**>.

Centerline of Inlet to Floor: <**Insert inches**>.

Centerline of Outlet to Floor: <**Insert inches**>.

Trapped Outlet: Integral.

Cleanout: Integral[ **or field installed on outlet**].

Vent Pipe Size: <**Insert NPS**>.

Mounting: [**Above floor**] [**Recessed in acid-resistant, coated steel frame and cradle**] [**Recessed, flush with floor**] <**Insert mounting**>.

Flow-Control Fitting: Required.

Operation: [**Manual cleaning**] [**Semiautomatic, manual drawoff**] <**Insert operation**>.

* + - 1. MANHOLE RISERS, FRAMES, AND COVERS

Retain this article for manhole risers for underground concrete interceptors, to provide access from grade level to interior of interceptors.

* + - * 1. Precast-Concrete Manhole Risers: [**ASTM C478**] [**ASTM C913**], with rubber-gasket joints.

Structural Design Loads:

Light-Traffic Load: Comply with ASTM C890, A-8.

Medium-Traffic Load: Comply with ASTM C890, A-12.

Heavy-Traffic Load: Comply with ASTM C890, A-16.

Walkway Load: Comply with ASTM C890, A-03.

Length: From top of underground concrete structure to grade.

Riser Sections: 3-inch minimum thickness and [**36-inch**] <**Insert dimension**> diameter.

Top Section: Eccentric cone unless otherwise indicated. Include top of cone to match grade ring size.

Gaskets: ASTM C443, rubber.

Steps: [**Individual FRP steps or FRP ladder**] [**Individual FRP steps, FRP ladder, or ASTM A615/A615M, deformed, 1/2-inch steel reinforcing rods encased in ASTM D4101, PP**] [**ASTM A615/A615M, deformed, 1/2-inch steel reinforcing rods encased in ASTM D4101, PP**] <**Insert material**>, wide enough to allow worker to place both feet on one step and designed to prevent lateral slippage off step. Cast or anchor steps into sidewalls at 12- to 16-inch intervals.

* + - * 1. Grade Rings: Reinforced-concrete rings, 6- to 9-inch total thickness, diameter matching manhole frame and cover, and height as required to adjust the manhole frame and cover to indicated elevation and slope.

Retain "Manhole Frames and Covers" Paragraph below only if required. Underground structures with risers to grade only require manhole frames and covers at top of riser.

* + - * 1. Manhole Frames and Covers: Ferrous; 24-inch ID by 7- to 9-inch riser with 4-inch- minimum-width flange and 26-inch- diameter cover.

Ductile Iron: ASTM A536, Grade 60-40-18, unless otherwise indicated.

Gray Iron: ASTM A48/A48M, Class 35, unless otherwise indicated.

Include indented top design with lettering cast into cover, using wording equivalent to the following:

Lettering in first two subparagraphs below, such as "INTERCEPTOR" and "SANITARY SEWER," should be simple and must be short enough to fit on cover. Custom lettering costs more than standard lettering.

Grease Interceptors in Sanitary Sewerage System: "[**INTERCEPTOR**] [**GREASE INTERCEPTOR**] [**SANITARY SEWER**]" <**Insert lettering**>.

Oil Interceptors in Sanitary Sewerage System: "[**INTERCEPTOR**] [**OIL INTERCEPTOR**] [**SANITARY SEWER**]" <**Insert lettering**>.

Sand Interceptors in Sanitary Sewerage System: "[**INTERCEPTOR**] [**SAND INTERCEPTOR**] [**SANITARY SEWER**]" <**Insert lettering**>.

Sand and Oil Interceptors in Sanitary Sewerage System: "[**INTERCEPTOR**] [**SAND & OIL INTERCEPTOR**] [**SANITARY SEWER**]" <**Insert lettering**>.

1. EXECUTION
   * + 1. EARTHWORK
          1. Excavating, trenching, and backfilling are specified in Section 312000 "Earth Moving."
       2. INSTALLATION OF SANITARY WASTE INTERCEPTORS
          1. Equipment Mounting:

Retain first subparagraph below to require equipment to be installed on cast-in-place concrete equipment bases.

Install [**grease interceptors**] [**grease-removal devices**] [**and**] [**solids interceptors**] on cast-in-place concrete equipment base(s).

Comply with requirements for equipment bases and foundations specified in Section 033000 "Cast-in-Place Concrete."

* + - * 1. Install precast-concrete interceptors in accordance with ASTM C891.
        2. Set interceptors level and plumb.
        3. Install manhole risers from top of underground concrete interceptors to manholes and gratings at finished grade.
        4. Set tops of manhole frames and covers flush with finished surface in pavements.

Set tops [**3 inches**] <**Insert dimension**> above finish surface elsewhere unless otherwise indicated.

* + - * 1. Set tops of grating frames and grates flush with finished surface.
        2. Set [**metal**] [**and**] [**plastic**] interceptors level and plumb.
        3. Set tops of metal interceptor covers flush with finished surface in pavements.

Set tops [**3 inches**] <**Insert dimension**> above finish surface elsewhere unless otherwise indicated.

* + - * 1. Install captured waste oil piping and waste oil storage tanks in accordance with the requirements of the Authority Having Jurisdiction.
        2. Install grease interceptors, including trapping, venting, and flow-control fitting, in accordance with authorities having jurisdiction and with clear space for servicing.

Above-Floor Installation: Set unit with bottom resting on floor unless otherwise indicated.

Flush with Floor Installation: Set unit and extension, if required, with cover flush with finished floor.

Recessed Floor Installation: Set unit in receiver housing having bottom or cradle supports, with receiver housing cover flush with finished floor.

Install cleanout immediately downstream from interceptors not having integral cleanout on outlet.

* + - * 1. Install grease-removal devices on floor. Install trap, vent, and flow-control fitting in accordance with authorities having jurisdiction.

Install control panel adjacent to unit unless otherwise indicated.

* + - * 1. Install oil and sand & oil interceptors, including trapping, venting, and flow-control fitting, in accordance with authorities having jurisdiction and with clear space for servicing.

Coordinate captured waste oil storage tank and/or gravity drain with the Authority Having Jurisdiction.

* + - * 1. Install solids interceptors with cleanout immediately downstream from interceptors that do not have integral cleanout on outlet.

Install trap on interceptors that do not have integral trap and are connected to sanitary drainage and vent systems.

* + - 1. PIPING CONNECTIONS

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

* + - * 1. Piping installation requirements are specified in Section 221316 "Sanitary Waste and Vent Piping." Drawings indicate general arrangement of piping, fittings, and specialties.
        2. Make piping connections between interceptors and piping systems.
      1. ELECTRICAL CONNECTIONS

Retain this article if grease-removal devices are included in the project.

* + - * 1. Connect wiring in accordance with Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
        2. Ground equipment in accordance with Section 260526 "Grounding and Bonding for Electrical Systems."
        3. Install electrical devices furnished by manufacturer, but not factory mounted, in accordance with NFPA 70 and NECA 1.
        4. Install nameplate for each electrical connection, indicating electrical equipment designation and circuit number feeding connection.

Retain one of two subparagraphs below. First subparagraph cross-references Section 260553 "Identification for Electrical Systems" and should be retained for consistent electrical identification. Second subparagraph is an abbreviated version of the product specified in Section 260553 "Identification for Electrical Systems."

Nameplates to be laminated acrylic or melamine plastic signs, as specified in Section 260553 "Identification for Electrical Systems."

Nameplates to be laminated acrylic or melamine plastic signs with a black background and engraved white letters at least 1/2 inches high.

* + - 1. IDENTIFICATION
         1. Identification materials and installation are specified in Section 312000 "Earth Moving."

Arrange for installation of green warning tapes directly over piping and at outside edges of underground interceptors.

Use warning tapes or detectable warning tape over ferrous piping.

Use detectable warning tape over nonferrous piping and over edges of underground structures.

* + - * 1. Equipment Nameplates and Signs: Install engraved plastic-laminate equipment nameplate or sign on or near each of the following:

Grease interceptors.

Grease-removal devices.

Oil and sand, and oil interceptors.

Solids interceptors.

Sampling ports.

* + - 1. PROTECTION
         1. Protect sanitary waste interceptors from damage during construction period.
         2. Repair damage to adjacent materials caused by sanitary waste interceptor installation.

END OF SECTION 221323