

SECTION 22 14 00 - PLUMBING
DRAINAGE AND CONTAINMENT

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. SLOT shaped, non-grated, pre-engineered slot trench drains.

1.2 RELATED SECTIONS

- A. Section 33 46 19.13 - Underslab Drainage Piping.
- B. Section 33 49 23 - Storm Drainage Water Retention Structures.
- C. Section 03 15 00 - Concrete Accessories.
- D. Section 05 53 00 - Metal Gratings.
- E. Section 22 14 13 - Facility Storm Drainage Piping.
- F. Section 22 14 26.13 - Roof Drains.
- G. Section 23 05 00 - Common Work Results for HVAC.

1.3 REFERENCES

- A. Americans with Disabilities Act (ADA).

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings:
 - 1. Layout and numbering of drain sections, pit and accessories.
 - 2. Details of installation in and finishing of concrete floor.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum 5 years manufacturing drainage products.
- B. Installer Qualifications: Minimum 2 years experience installing similar systems.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under

environmental conditions outside manufacturer's recommended limits.

1.8 WARRANTY

- A. Provide manufacturer's limited one year warranty against material and fabrication defects and errors.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Specialloy Industries, dba Slot Drain Systems Inc which is located at: 1061 Notre Dame Winnipeg Manitoba, R3E 0N4; Toll Free Tel: (855) 879-1510; Tel: 204-775-2211; Fax: 204-775-2324; Email: info@slotdrainsystems.com; Web: www.Slotdrainsystems.com
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

2.2 COMMERCIAL TRENCH DRAINS

- A. Drain Type: Single slot-style mouth on top of a formed, drain body.
 - 1. Product: Slot drain Systems Slot Trench Drain as provided by Specialloy Industries.
Models:
 - a. Slot Drain Systems 9000 series - Constructed of 316 or 304 Stainless Steel, Galvanized Steel, or Fiberglass Load Rated to Class F with .5", 1" or 1 ¼" slot Opening.
 - b. 6000 series - Constructed of 316 or 304 Stainless Steel, Galvanized Steel – Load Rated to Class C .5", 1" or slot Opening.
 - c. 7000 series. - Constructed of 316 or 304 Stainless Steel, Galvanized Steel – Load Rated to Class C. Maintains a throat length of 1" suitable for drainage between paving stones .5", 1" or 1" slot Opening.
- B. Performance Characteristics:
 - 1. Flow: The computed flow capacity of a 1 inch (25 mm) slot opening is 0.040 ft/s or 18 gallons per minute (per foot of slot). Flow: The computed flow capacity of a 1/2 inch (13 mm) slot opening is 0.026 ft/s or 11.4 gallons per minute (per foot of slot). of 1-1/4 inches (38 mm) 27 gallons (per foot).
 - 2. Structural: The structural capabilities of the drain system are in direct relation to the strength of the concrete the Slot drain is supported by.
 - 3. Durability: Consideration of machinery placement is not limited by the placement of the SLOT drain.
 - 4. Sanitary: A stainless steel Slot drain system is sanitary and durable complying with the food and beverage industry stringent sanitary regulations. The only parts of the drain exposed shall be the surface angles, which are made of stainless steel.
- C. Design:
 - 1. Pre-engineered, single-slotted drains with a formed drain body.
 - 2. Layout: System shall be a single continuous flow drain connected to a single inlet sump. Provide 1 foot (305 mm), 5 foot (1524 mm), 10 foot (3050mm) and 15 foot (4572mm) sections (Fiberglass only) as applicable to fit custom lengths. Maximum sloped length of 135 feet (36.6 m). Layout: System shall be a double continuous flow drain connected to a dual inlet sump. Provide 1 foot (305 mm), 5 foot (1524 mm), 10 foot (3050mm) sections as applicable to fit custom lengths. Maximum sloped length

of 270 feet

3. Opening: Single-slot 1/2 inch (13 mm)
4. Opening: Single-slot opening of 1 inch (25 mm).
5. Opening: Single-slot opening of 1-1/4 inches (38 mm).
6. Material: 16-gauge (1.6 mm), hot dipped galvanized steel.
7. Material: 16-gauge (1.5 mm), stainless steel.
8. Material: Fiberglass
9. Material: Surface materials shall be stainless steel for all 9000 models regardless of drain body construction.
10. Slope: Metal pre-engineered slotted drains shall be modular sections that are pre-sloped 0.05 percent.
11. Joints: Mechanically locking joints, or bolt- together flanges.
12. Sump Pits: Slot drain bolts directly to sump pit.
 - a. Sump: 12 inches by 12 inches by 20 inches deep (457 mm by 457 by 580 mm).
 - b. Sump: 24 inches by 24 inches by 24 inches deep (610 mm by 610 by 610 mm).
 - c. Sump: 6 inches by 12 inches by 20 inches deep (275 mm by 457 by 580 mm).
 - d. Sump: 6 inches by 6 inches by 12 inches deep (275 mm by 275 by 457 mm).
 - e. Single Inlet Sump: A single inlet style of sump connects one line of the Slot drain and contains a drain exit pipe.
 - f. Double Inlet Sump: A dual inlet style of sump connects both lateral lines of the Slot drain exit pipe.
 - g. Strainer Basket: Used for quick removal of debris, as well as acting as a screen to the out-take line. Steel material as specified for the trench sections.
13. Oil Separator Pits:
 - a. Provide primary sump pit attached to the Slot drain which contains the solids and the oil.
 - b. Provide a secondary pit for the overflow, from the primary sump pit, which is mostly clean water collected and is then discharged to sanitary/storm pipes.
14. Sump Cover:
 - a. Provide covers at sump pits. Provide attachment to prevent cover from shifting off sump pit opening.
 - b. Provide flat plate cover.
 - c. Provide Steel Plate cover of sufficient strength to support road vehicles and forklifts.
 - d. Provide grated sump pit lid cover. Pit shall be placed to allow cover to be flush with flow to accept wash down of floor directly into pit.
15. Direct Discharge: (Sump pit alternative).
 - a. By custom fitting, provide end cap direct flow pipe can be placed to drain liquid directly from the slot drain into a pipe drain.
 - b. End caps are available for all flange types with 4-1/2 inches (114 mm) OD stubs for easy tie into ABS lines with Furnco fittings.

D. Components/Fabrication:

1. Modular Trench Section:
 - a. Metal sections in 118 inches (3 m) sections shall be pre-sloped 0.05% - 1/2 inch (13 mm) placed as required matching design and length indicated on the drawings. .
 - b. Metal sections shall be available in 1 foot, 5 feet, and 10 feet (305 mm, 1524 mm and 3050 mm) un-sloped sections placed as required matching design and length indicated on the drawings.
2. Sump Pits: Constructed as follows.
 - a. Constructed of 14 ga (1.9 mm) material same as scheduled for trench sections.
 - b. Cover type as specified and in same material as sump pit.
 - c. Mounting tabs to secure pit prior to placement of concrete.
 - d. Standard 4 inches (112 mm) discharge outlet, adaptable to smaller sizes.
 - e. Rebar weldments for structural integrity and tie-in to floor reinforcement mat.

- f. Sumps shall have single or dual inlets as scheduled and as required by design.
- E. Cleaning: System shall be provided with the following cleaning methods.
 - 1. Manual: Provide a drain cleaning paddle that is shaped to fit the bottom of the slot drain.
 - 2. Flushing: Provide a threaded nipple welded to the closed ends (1/2 inch (13 mm) standard pipe thread) of the trench to attach flush valve piping.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions and in proper relationship with adjacent construction.
- B. Commercial System Installation
 - 1. System Piece Marking:
 - a. The system begins with an "end" section (one with a sealed end) which slopes towards a sump pit (collector pit).
 - b. Sloped sections are inserted to lengthen the drain to the required length.
 - c. Each section has a coupling flange welded to it that has a numeric coded to the depth of that end of section, i.e. a "1-2" section would start with a "1" flange, and over the course of the section it drops 1/2 inch (13 mm) and ends with a "2" flange.
 - d. The next connecting piece would start with a "2" flange and slope towards a "3" flange at the other end.
 - e. The flanges are bolted together in a fourteen-bolt pattern.
 - 2. Rebar Tie-Ins:
 - a. Alongside the trench, every 24 inches (610 mm), an 8 inches (203 mm) rebar section shall be welded, bent out 3 inches (76 mm) from the side of the trench.
 - b. Provide a secure tie into the rebar grid in the concrete.
 - 3. Leveling Brackets:
 - a. Leveling bracket mounts shall be welded into place, and leveling brackets are bolted onto the side of the trench to ensure proper leveling of the drain.
 - b. A rebar length, dependent on the thickness of the slab, shall be hammered into the ground through a slot in the bracket. The rebar shall be wired to the leveling bracket to set the trench section at the proper height.
 - c. The brackets shall accommodate either #4 (13 mm) or #5 (16 mm) rebar.

3.4 PROTECTION

- A. Protect installed products until completion of project.

END OF SECTION

