SECTION 22 14 00

FACILITY STORM DRAINAGE

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\*\* NOTE TO SPECIFIER \*\* Zurn Industries LLC; Engineered Water Solutions.
This section is based on the products of Zurn Industries LLC, which is located at:
511 W. Freshwater Way
Milwaukee, WI 53204
Toll Free Tel: 855-663-9876
Email: [request info (zurn-info@zurn.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Zurn+Industries+LLC&coid=50102&rep=&fax=&message=RE:%20Spec%20Question%20(15147zur):%20%20&mf=)
Web: <http://www.zurn.com>

 [ [Click Here](https://www.arcat.com/arcatcos/cos50/arc50102.html) ] for additional information.

Zurn Engineered Water Solutions' is a recognized leader in commercial, municipal, and industrial markets. Zurn manufactures the largest breadth of engineered water solutions in the industry, including a wide spectrum of sustainable plumbing products.
Zurn delivers total building solutions for new construction and retrofit applications that enhance any building's environment.
Knowledge - Technically competent factory field team and rep network.
Reliability - innovative, value-add designs are focused on the end user and installer to provide ease of installation and low life-cycle costs.
Serviceability - with over 50 distribution centers across the U.S. and in all major markets, you can count on getting product when you need it!
Accountability and Service - One company to provide a total building solution for drainage and point-of-use water control products.
Plumbing fixtures listed in this specification may fall under jurisdiction of the Federal Reduction of Lead in Drinking Water Act (42 USC 300G). Effective January 4, 2014: Wetted surfaces of valves, fittings or fixtures contacting potable water must have a weighted-average lead content of no more than 0.25 percent. The specifier should be aware of requirements by authorities having jurisdiction and specify lead free products when necessary. For additional information online: [www.zurn.com/leadfree](http://www.zurn.com/leadfree).

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Dielectric Fittings.
		2. Metal Roof Drains.
		3. Cleanouts.
		4. Backwater Valves.
		5. Trench Drains.
	1. RELATED SECTIONS:

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 23 05 00 - Common Work Results for HVAC.
		2. Section 22 10 00 - Plumbing Piping.
		3. Section 22 14 26.13 - Roof Drains.
		4. Section 22 15 19 - General Service Packaged Air Compressors and Receivers.
		5. Section 22 43 00 - Healthcare Plumbing Fixtures.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American Society of Mechanical Engineers (ASME):
			1. ASME A112.6.4 - Roof, Deck, and Balcony Drains.
			2. ASME A112.14.1 - Backwater Valves.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data: Each valve type.
		3. Product Data: For each type of product.
	2. QUALITY ASSURANCE
		1. Manufacturer Qualifications:
			1. Minimum 5 years manufacturing similar products.

\*\* NOTE TO SPECIFIER \*\* Delete paragraph below if the Contractor is not to be responsible for the design of fire-suppression standpipes.

* + 1. Installer Qualifications:
			1. Minimum 2 years installing similar products.

\*\* NOTE TO SPECIFIER \*\* Delete subparagraph below if the Contractor is not required to be responsible for the engineering design.

* + - 1. Installer's responsibilities:
				1. Design, fabrication, and installation of fire-suppression standpipes.
				2. Professional engineering services to assume engineering responsibility.

Working plans.

Calculations.

Field test report.

* + 1. Regulatory Compliance Requirements:
			1. Backflow prevention.
				1. Authorities having jurisdiction: Materials, installation, and testing.

\*\*NOTE TO SPECIFIER\*\* By the very nature of "storm drainage" blockages may occur causing pressure to build up in a gravity flow drainage system. Delete the "Performance Requirements: Article below in its' entirety if this is not an issue with the system being specified.

* + 1. Minimum working pressure for storm drainage piping and components:
			1. 50 psi (345 kPa).
			2. 100 psi (690 kPa)
			3. 150 psi (1035 kPa).
			4. \_\_\_\_\_\_ (psi/kPa).
	1. DELIVERY, STORAGE, AND HANDLING
		1. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
			1. Protect internal parts, valve ends, inlets, outlets, and specialties against corrosion, dirt, and damage.
			2. Store valves set in closed position.
			3. Storage:
				1. Indoors: Higher than ambient dew point temperature.
				2. Outdoors: Watertight enclosures off ground.
		2. Handling: Comply with manufacturer's recommendations. Avoid damaging components.

\*\* NOTE TO SPECIFIER \*\* Delete article below if interruption of water distribution is not necessary.

* 1. PROJECT CONDITIONS
		1. Interruption of Storm Drainage Piping:
			1. Notify Owner or Owner's representative no fewer than two business days in advance of proposed interruption.
				1. Proceed upon written permission.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Zurn Industries LLC, which is located at: 511 W. Freshwater Way; Milwaukee, WI 53204; Toll Free Tel: 855-663-9876; Email: [request info (zurn-info@zurn.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Zurn+Industries+LLC&coid=50102&rep=&fax=&message=RE:%20Spec%20Question%20(15147zur):%20%20&mf=); Web: <http://www.zurn.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
	1. DIELECTRIC FITTINGS
		1. Dielectric Unions NPS 2 (DN 50) and smaller:
			1. Separate copper and ferrous materials with nonconductive insulating material.
			2. Basis of Design: Zurn Industries, LLC; Wilkins.
				1. Model DUXL (Lead Free).
				2. Model DUXLC (Lead Free).
				3. Model DUXLM (Lead Free).
			3. Pressure Rating: 250 psig (1725 kPa).
			4. End Connections: Compatible with pipes being joined.
				1. Solder-joint copper ASME B1.20.1, (inch / mm): \_\_\_\_\_\_ diameter.
				2. Threaded ferrous ASME B16.22, (NPS / DN): \_\_\_\_\_\_.
		2. Dielectric Flanges:
			1. Separate copper and ferrous materials with nonconductive insulating material.
			2. Basis of Design: Zurn Industries, LLC:
				1. Model DUXLC (Lead Free).
			3. Pressure Rating: 250 psig (1725 kPa).
			4. End Connections: Compatible with pipes being joined.
				1. Copper solder-joint (inch / mm): \_\_\_\_\_\_ diameter.
				2. Threaded ferrous (NPS / DN): \_\_\_\_\_\_.
	2. METAL ROOF DRAINS
		1. Cast-Iron, Large-Sump, General-Purpose Roof Drains NPS 2 to NPS 12 (DN 50 to DN 305).
			1. Basis of Design: Zurn Industries, LLC:

\*\* NOTE TO SPECIFIER \*\*
Main Roof: Z100, Z104, Z105
Water Insulated Main Roof: Z101
Overflow: Z163
Siphonic: Z130, Z131.

* + - * 1. Model Z100.
				2. Model Z101.
				3. Model Z104.
				4. Model Z105.
				5. Model Z130.
				6. Model Z131.
				7. Model Z163.
			1. Standard: ASME A112.6.4.
			2. Pipe Size (NPS / DN): \_\_\_\_\_\_.
			3. Material: Cast iron:
				1. Acid resistant epoxy coating.
				2. Dura-coated.
				3. Galvanized.
			4. Nominal Body Diameter:
				1. 15 inch (381 mm).
				2. 20 inch (508 mm).
				3. 14- 9/32-inch (362mm).
			5. Combination Flashing Clamp and Gravel Guard:
				1. Stainless steel perforated gravel guard.
			6. Low Profile Dome Material:
				1. Aluminum.
				2. Cast iron: Galvanized.
				3. Polyethylene.
				4. Stainless steel.

\*\* NOTE TO SPECIFIER \*\* Available only on Z105

* + - 1. Flow-Control Weirs.

\*\* NOTE TO SPECIFIER \*\* Available only on Z100 and Z104 with cast iron dome and sizes NPS 3/4 (DN 19) and NPS 4 (DN 100).

* + - 1. Water Level Regulator:
			2. Outlet:
				1. Configuration:

Bottom.

\*\* NOTE TO SPECIFIER \*\* The side outlet is only available with a threaded outlet NPS 2 through NPS 6 (DN 50 through DN 150)

Side.

* + - * 1. Type:

Inside caulk.

Threaded.

No-hub.

Neo-loc.

\*\* NOTE TO SPECIFIER \*\* See individual product data for full range of available options.

* + - 1. Options:
				1. Extension:

Perforated stainless steel.

Static

Adjustable

* + - * 1. Underdeck clamp.

\*\* NOTE TO SPECIFIER \*\* Replaces dome

* + - * 1. Flush grate.
				2. Dome:

Solid top.

Vandal-proof.

High profile.

* + - * 1. Mesh Screen over dome:

Bronze.

Stainless steel.

* + - * 1. Water dam:

Internal:

2 inch (51 mm) high.

3 inch (76 mm) high.

4 inch (102 mm) high.

External:

2 inch (51 mm) high.

* + - * 1. Roof sump receiver.
				2. Underdeck clamp.
				3. Top-set deck plate

\*\* NOTE TO SPECIFIER \*\* Medium Area: Z121
Combination Primary/Overflow: Z164

* + 1. Cast-Iron, Medium-Sump, General-Purpose Roof Drains NPS 2 to NPS 6 (DN 50 to DN 150).
			1. Basis of Design: Zurn Industries, LLC:

\*\* NOTE TO SPECIFIER \*\* Medium area applications

* + - * 1. Model Z121.

\*\* NOTE TO SPECIFIER \*\* Combination Primary/Overflow applications

* + - * 1. Model Z164.
			1. Standard: ASME A112.6.4.
			2. Pipe Size (NPS / DN): \_\_\_\_\_\_.
			3. Material: Cast iron.
				1. Acid resistant epoxy coating.
				2. Dura-coated.
				3. Galvanized.
			4. Dimension of Body: Nominal:
				1. 12 inch (304 mm).
			5. Combination Flashing Clamp and Gravel Guard.
				1. Stainless steel perforated gravel guard.
			6. Dome Material:
				1. Aluminum.
				2. Cast iron.

Galvanized.

* + - * 1. Polyethylene.
			1. Outlet
				1. Configuration:

Bottom.

\*\* NOTE TO SPECIFIER \*\* The side version is only available with a threaded outlet NPS 2 through NPS 4 (DN 50 through DN 100)

Side.

* + - * 1. Type:

Inside caulk.

Threaded.

No-hub.

Neo-loc.

\*\* NOTE TO SPECIFIER \*\* \*\* NOTE TO SPECIFIER \*\* See individual product data for full range of available options.

* + - 1. Options:
				1. Extension:

Perforated stainless steel.

Static

Adjustable

* + - * 1. Underdeck clamp.

\*\* NOTE TO SPECIFIER \*\* Replaces dome

* + - * 1. Flush Grate.
				2. Dome:

Vandal-proof.

* + - * 1. Mesh Screen over dome:

Bronze.

Stainless steel.

* + - * 1. Water Dam: External, 2 inch (51 mm) high.
				2. Roof sump receiver.
				3. Underdeck clamp.
				4. Vertical expansion joint.
				5. Top-set deck plate

\*\* NOTE TO SPECIFIER \*\* Penthouse and Small Area: Z125
Combination Primary/Overflow: Z165

* + 1. Cast-Iron, Small-Sump, General-Purpose Roof Drains NPS 2 to NPS 4 (DN 50 to DN 100).
			1. Basis of Design: Zurn Industries, LLC:

\*\* NOTE TO SPECIFIER \*\* Penthouse and Small Area: Z125
Combination Primary/Overflow: Z165.

* + - * 1. Model Z125.
				2. Model Z165.
			1. Standard: ASME A112.6.4.
			2. Pipe Size (NPS / DN): \_\_\_\_\_\_.
			3. Material: Cast iron.
				1. Acid resistant epoxy coating.
				2. Dura-coated.
				3. Galvanized.
			4. Dimension of Body: Nominal:
				1. 8-3/8 inch (212 mm).
			5. Combination Flashing Clamp and Gravel Guard.
				1. Stainless steel perforated gravel guard.
			6. Dome Material:
				1. Aluminum.
				2. Cast iron.

Galvanized.

* + - * 1. Polyethylene.
			1. Outlet
				1. Configuration:

Bottom.

\*\* NOTE TO SPECIFIER \*\* The side version is only available with a threaded outlet NPS 2 through NPS 4 (DN 50 through DN 100)

Side.

* + - * 1. Type:

Inside caulk.

Threaded.

No-hub.

Neo-loc.

\*\* NOTE TO SPECIFIER \*\* See individual product data for full range of available options.

* + - 1. Options:
				1. Extension:

Perforated stainless steel.

Static.

Adjustable.

* + - * 1. Underdeck clamp.

\*\* NOTE TO SPECIFIER \*\* Replaces dome.

* + - * 1. Flush Grate.
				2. Dome:

Vandal-proof.

High profile.

* + - * 1. Mesh Screen over dome:

Bronze.

Stainless steel.

* + - * 1. Water Dam: External, 2 inch (51 mm) high.
				2. Roof Sump Receiver.
				3. Underdeck clamp.
				4. Vertical expansion joint.
				5. Top-set deck plate.

\*\* NOTE TO SPECIFIER \*\* Canopy and Terrace: Z180, Z181, Z182, Z185

* + 1. Metal Cornice Roof Drains NPS 2 to NPS 4 (DN 50 to DN 100).
			1. Basis of Design: Zurn Industries, LLC:
				1. Model Z180.
				2. Model Z181.
				3. Model Z182.
				4. Model Z185.
			2. Standard: ASME A112.6.4.
			3. Pipe Size (NPS / DN): \_\_\_\_\_\_.
			4. Material: Cast iron.
				1. Dura-coated.
				2. Galvanized.
			5. Dimension of Body: Nominal:
				1. 4-1/2 inch (114 mm).
				2. 6 inch (152 mm).
			6. Membrane Flashing Clamp.
			7. Dome, Bronze:
				1. Plain finish.
				2. Polished.
				3. Polished nickel.
			8. Outlet
				1. Configuration:

Bottom.

\*\* NOTE TO SPECIFIER \*\* The side version is only available with a threaded outlet.

Side:

45 degrees.

90 degrees.

* + - * 1. Type:

Threaded.

No-hub.

\*\* NOTE TO SPECIFIER \*\* See individual product data for full range of available options.

* + - 1. Options:

\*\* NOTE TO SPECIFIER \*\* Z181

* + - * 1. Underdeck clamp.

\*\* NOTE TO SPECIFIER \*\* Replaces dome.

* + - * 1. Flat Strainer.
				2. Dome:

Vandal-proof.

High profile.

\*\* NOTE TO SPECIFIER \*\* Z181

* + - * 1. Mesh Screen over dome:

Bronze.

Stainless steel.

\*\* NOTE TO SPECIFIER \*\* Z181

* + - * 1. Roof sump receiver.
				2. Cornice height:

2 inch (51 mm).

4 inch (102 mm).

8. Inch ((203 mm).

\*\* NOTE TO SPECIFIER \*\* Parapet Scupper - Z187, Z189

* + 1. Scupper Roof Drains NPS 2 to NPS 8 (DN 50 to DN 200)
			1. Basis of Design: Zurn Industries, LLC:
				1. Model Z187.
				2. Model Z189.
			2. Standard: ASME A112.6.4.
			3. Pipe Size (NPS / DN): \_\_\_\_\_\_.
			4. Material: Cast iron.
				1. Dura-coated.
				2. Galvanized.
			5. Dimension of Body: Nominal:

\*\* NOTE TO SPECIFIER \*\* Model Z161

* + - * 1. 3 x 3 x 10 inch (75 x 75 x 254 mm).

\*\* NOTE TO SPECIFIER \*\* Model Z160

* + - * 1. 135-degree x 12 inch (305 mm).

\*\* NOTE TO SPECIFIER \*\* Model Z189

* + - * 1. 5 x 6 x 11 inch (127 x 152 x 279 mm).

\*\* NOTE TO SPECIFIER \*\* Both options below are for Model Z187.

* + - * 1. 6 x 6 x 7 inch (152 x 152 x 178 mm).
				2. 8 x 8 x 12 inch (203 x 230 x 305 mm).
			1. Membrane Flashing clamp.

\*\* NOTE TO SPECIFIER \*\* Choose one of the three grate options below. The material options apply to both types of grates.

* + - 1. Grate: Oblique with 90-degree combination frame.
			2. Grate: Flush.
			3. Grate: 135 degrees.
				1. Aluminum.
				2. Plain bronze.
				3. Polished bronze.
				4. Polished nickel bronze.
			4. Outlet
				1. Configuration:

Bottom.

Side.

45 degrees.

90 degrees.

* + - * 1. Type:

Threaded.

No-hub.

\*\* NOTE TO SPECIFIER \*\* See individual product data for full range of available options.

* + - 1. Options:
				1. Bronze mesh screen over grate.
				2. Downspout adapter.
				3. Top:

Secured.

Vandal-proof.

\*\* NOTE TO SPECIFIER \*\* Promenade and Patio: Z150, Z150-DT

* + 1. Metal, Large-Sump, Square Top, Promenade Roof Drains NPS 2 to NPS 8 (DN 50 to DN 200
			1. Basis of Design: Zurn Industries, LLC:
				1. Model Z150.
				2. Model Z150-DT.
			2. Standard: ASME A112.6.4.
			3. Pipe Size (NPS / DN): \_\_\_\_\_\_.
			4. Material: Cast iron:
				1. Acid resistant epoxy coating.
				2. Dura-coated.
				3. Galvanized.
			5. Dimension of Body: Nominal: 15 inch (381 mm).
			6. Rotatable square promenade frame, with seepage holes, and frame clamps.
			7. Top Heel-Proof Grate:
				1. Cast iron:

Dura-coated.

* + - * 1. Polished bronze.
				2. Polished nickel bronze.
			1. Outlet:
				1. Configuration:

Bottom.

\*\* NOTE TO SPECIFIER \*\* The side version is only available with a threaded outlet NPS 2 through NPS 6 (DN 50 through DN 150)

Side.

* + - * 1. Type:

Inside caulk.

Threaded.

No-hub.

Neo-loc.

\*\* NOTE TO SPECIFIER \*\* See individual product data for full range of available options.

* + - 1. Options:
				1. Extension collars:

Adjustable.

Perforated stainless steel.

Static.

* + - * 1. Underdeck clamp.
				2. Vandal-proof top.
				3. Secondary strainer.
				4. Sediment bucket.
				5. Roof sump receiver.
				6. Vertical expansion joint.
				7. Top-set deck plate.

\*\* NOTE TO SPECIFIER \*\* Promenade and Patio: Z154, Z154-DT

* + 1. Metal, Medium-Sump, Promenade Roof Drains NPS 2 through NPS 6 (DN 50 through DN 150).
			1. Basis of Design: Zurn Industries, LLC:
				1. Model Z154.
				2. Model Z154-DT.
			2. Standard: ASME A112.6.4.
			3. Pipe Size (NPS / DN): \_\_\_\_\_\_.
			4. Material: Cast iron:
				1. Acid resistant epoxy coating.
				2. Dura-coated.
				3. Galvanized.
			5. Dimension of Body: Nominal: 12 inch (305 mm).
			6. Rotatable square promenade frame, with seepage holes, and frame clamps.
			7. Top Heel-Proof Grate:
				1. Cast iron:

Dura-coated.

* + - * 1. Polished bronze.
				2. Polished nickel bronze.
			1. Outlet:
				1. Configuration:

Bottom.

\*\* NOTE TO SPECIFIER \*\* The side version is only available with a threaded outlet NPS 2 through NPS 4 (DN 50 through DN 100)

Side.

* + - * 1. Type:

Inside caulk.

Threaded.

No-hub.

Neo-loc.

\*\* NOTE TO SPECIFIER \*\* See individual product data for full range of available options.

* + - 1. Options:
				1. Extension collars:

Adjustable.

Perforated stainless steel.

Static.

* + - * 1. Underdeck clamp.
				2. Vandal-proof top.
				3. Secondary strainer.
				4. Sediment bucket.
				5. Roof sump receiver.
				6. Vertical expansion joint.
				7. Top-set deck plate.

\*\* NOTE TO SPECIFIER \*\* Promenade and Patio: Z158, Z158-DT

* + 1. Metal, Small-Sump, Promenade Roof Drains.
			1. Basis of Design: Zurn Industries, LLC:
				1. Model Z158.
				2. Model Z158-DT.
			2. Standard: ASME A112.6.4.
			3. Pipe Size (NPS / DN): \_\_\_\_\_\_.
			4. Material: Cast iron:
				1. Acid resistant epoxy coating.
				2. Dura-coated.
				3. Galvanized.
			5. Dimension of Body: Nominal: 8-3/8 inch (212 mm) square.
			6. Rotatable square promenade frame, with seepage holes, and frame clamps.
			7. Top Heal-Proof Grate:
				1. Cast iron:

Dura-coated.

* + - * 1. Polished bronze.
				2. Polished nickel bronze.
			1. Outlet:
				1. Configuration:

Bottom.

\*\* NOTE TO SPECIFIER \*\* The side version is only available with a threaded outlet NPS 2 through NPS 4 (DN 50 through DN 100)

Side.

* + - * 1. Type:

Inside caulk.

Threaded.

No-Hub.

Neo-Loc.

\*\* NOTE TO SPECIFIER \*\* See individual product data for full range of available options.

* + - 1. Options:
				1. Extension collars:

Adjustable.

Perforated stainless steel.

Static.

* + - * 1. Underdeck clamp.
				2. Vandal-proof top.
				3. Secondary strainer.
				4. Sediment bucket.
				5. Roof Sump Receiver.
				6. Vertical expansion joint.
				7. Top-Set Deck Plate.

\*\* NOTE TO SPECIFIER \*\* Main Roof: Z107, Z108. Medium Area: Z111, Z122. Overflow: Z108.

* + 1. Metal, Medium-Sump, Deck Flange Roof Drains NPS 2 to NPS 8 (DN 50 to DN 200).
			1. Basis of Design: Zurn Industries, LLC:
				1. Model Z107.
				2. Model Z108.
				3. Model Z111.
				4. Model Z122.
			2. Standard: ASME A112.6.4.
			3. Pipe Size (NPS / DN): \_\_\_\_\_\_.
			4. Material: Cast iron:
				1. Acid resistant epoxy coating.
				2. Dura-coated.
				3. Galvanized.
			5. Dimension of Body: Nominal:
				1. 12 inch (508 mm )
				2. 15 inch (381 mm).
				3. 20 inch (508 mm).
			6. Combination Flashing Clamp.

\*\* NOTE TO SPECIFIER \*\* Choose one of the two subparagraphs below.

* + - * 1. Gravel guard:

Stainless steel perforated gravel guard.

* + - * 1. Deck receptor frame.
			1. Dome Material:
				1. Aluminum.
				2. Cast iron:

Galvanized.

* + - * 1. Polyethylene.
			1. Outlet:
				1. Configuration:

Bottom.

\*\* NOTE TO SPECIFIER \*\* The side version is only available with a threaded outlet NPS 2 through NPS 6 (DN 50 through DN 150) Model z108 and NPS 2 through NPS 4 (DN 50 through DN 100) Model Z122.

Side.

* + - * 1. Type:

Inside caulk.

Threaded.

No-hub.

Neo-loc.

\*\* NOTE TO SPECIFIER \*\* See individual product data for full range of available options.

* + - 1. Options:
				1. Extension Collars:

Perforated stainless steel.

Static

Adjustable

* + - * 1. Underdeck clamp.

\*\* NOTE TO SPECIFIER \*\* Replaces dome

* + - * 1. Flush Grate.
				2. Dome:

Solid top.

Vandal-proof.

High profile.

* + - * 1. Mesh Screen over dome:

Bronze.

Stainless steel.

* + - * 1. Water Dam:

Internal:

2 inch (51 mm) high.

3 inch (76 mm) high.

4 inch (102 mm) high.

External:

2 inch (51 mm) high.

* + - * 1. Roof sump receiver.
				2. Vertical expansion joint.
				3. Top-set deck plate
		1. Metal, Small-Sump, Deck Roof Drains NPS 2 to NPS 4 (DN 50 to DN 100).
			1. Basis of Design: Zurn Industries, LLC:
				1. Model Z127.
			2. Standard: ASME A112.6.4.
			3. Pipe Size (NPS / DN): \_\_\_\_\_\_.
			4. Material: Cast iron:
				1. Acid resistant epoxy coating.
				2. Dura-coated.
				3. Galvanized.
			5. Dimension of Body: Nominal, 8-5/8 inch (219 mm).
			6. Combination Flashing clamp deck receptor frame.
			7. Dome Material:
				1. Aluminum.
			8. Outlet:
				1. Configuration:

Bottom.

\*\* NOTE TO SPECIFIER \*\* The side version is only available with a threaded outlet NPS 2 through NPS 4 (DN 50 through DN 100).

Side.

* + - * 1. Type:

Inside caulk.

Threaded.

No-hub.

Neo-loc.

\*\* NOTE TO SPECIFIER \*\* See individual product data for full range of available options.

* + - 1. Options:
				1. Underdeck clamp.
				2. Dome: High profile.
				3. Roof sump receiver.
				4. Extension:

Static.

Adjustable

* + - * 1. Top-set deck plate
	1. CLEANOUTS

\*\* NOTE TO SPECIFIER \*\*
Finished Floor Areas, "Level-Trol" Adjustable" Z1400-K.
Finished Floor Areas, Terrazzo Floors: Z1400-K.
Finished Floor Areas, Linoleum, Tile, or Composition: Z1400-BZ.
Heavy Traffic and Industrial Areas. "Level-Trol" Adjustable: Z1400-K.
See individual product data for full range of available options.

* + 1. Floor Cleanouts NPS 2 to NPS 8 (DN 50 to DN 200).
			1. Basis of Design: Zurn Industries, LLC:
				1. Model Z1400-BZ.
				2. Model Z1400-K.
				3. Model Z1402.
			2. Standard: ASME A112.36.2M.
			3. Pipe Size (NPS / DN): \_\_\_\_\_\_.
			4. Cleanout Size (inch / mm): \_\_\_\_\_\_ diameter.

\*\* NOTE TO SPECIFIER \*\*Delete subparagraph below is heavy-duty is not required.

* + - 1. Heavy Duty with anchor flange.

\*\* NOTE TO SPECIFIER \*\* Subparagraph below applies to models Z1400-BZ and Z1400-K..

* + - 1. Adjustable to finish floor.

\*\* NOTE TO SPECIFIER \*\* Subparagraph below applies to Model Z1402 only.

* + - 1. Non-Adjustable.
			2. Secured.
			3. Material: Cast iron.
				1. Acid resistant epoxy coating.
				2. Dura-coated.
				3. Galvanized.
			4. Top Style: Secured.
				1. Round patterned.
				2. Round recessed.
				3. Square.
				4. Square recessed for tile.
			5. Top Style:
				1. Round patterned.
				2. Round recessed.
				3. Square.
				4. Square recessed for tile.
			6. ABS tapered plug: gas and watertight.
				1. Bronze.
			7. Vandal-proof screws.
			8. Carpet marker.
			9. Outlet:
				1. Inside caulk.
				2. No-hub.
				3. Neo-loc.
		1. Cast-Iron Wall Cleanouts NPS 2 (DN 50) to NPS 8 (DN XX).
			1. Basis-of-Design: Zurn Plumbing Products Group:
				1. Model Z1441.
				2. Model Z1446.
			2. Standard: ASME A112.36.2M. Include wall access.
			3. Pipe size (NPS / DN): \_\_\_\_\_\_.
			4. Body:
				1. Dura-coated cast iron.
				2. Galvanized cast iron.
			5. ABS Tapered Threaded Plug, Gas and watertight.
				1. Raised head.
				2. Bronze.
			6. Outlet:
				1. No-hub.
				2. Spigot
			7. Secured Access Cover:
				1. Scoriated.
				2. Smooth.
				3. Materials:

Dura-coated cast iron.

Polished bronze.

Nickel bronze.

Polished nickel bronze.

Polished stainless steel.

* + - * 1. Shape:

Round with securing screw.

Square with nickel bronze frame for attaching cover.

* 1. BACKWATER VALVES
		1. Horizontal, Cast-Iron Backwater Gate Valves, NPS 2 (DN 50) to NPS 10 (DN 250).
			1. Basis-of-Design: Zurn Plumbing Products Group:
				1. Model Z1088.
				2. Model Z1090.
				3. Model Z1095.
			2. Standard: ASME A112.14.1.

\*\* NOTE TO SPECIFIER \*\* Pipe size to be the same as connected piping.

* + - 1. Pipe Size (NPS / DN): \_\_\_\_\_\_.
			2. Body and Cover: Cast iron.
				1. Coating: Dura-coated
				2. Galvanized
			3. Access Cover:
				1. Bolted.
				2. Threaded.

\*\* NOTE TO SPECIFIER \*\* Gate Type Sanitary Sewer Backwater Valve, Model Z1088 only.

* + - 1. NRS bronze spade gate valve at outlet. Controlled at floor level by covered handle.
			2. Swing (flapper) Backwater Check Valve: Removable.
				1. Material:

Bronze.

PVC.

* + - * 1. Method of function: Assembled or field modified to:

Hang closed.

Hang open for airflow unless subject to backflow condition.

* + - 1. End Connections:
				1. Hub and spigot.
				2. No-hub.
		1. Cast-Iron, Drain-Outlet Backwater Valves NPS 2 (DN 50) to NPS 6 (DN 150).
			1. Basis-of-Design: Zurn Plumbing Products Group:
				1. Model Z1099.
			2. Pipe Size (NPS / DN): \_\_\_\_\_\_.
			3. Body: Cast iron.
				1. Dura-coated.
				2. Galvanized.
			4. Plastic Ball Float.
			5. Bronze Backwater Bushing:
				1. Neoprene Seat: Replaceable.
			6. Inlet / Outlet:
				1. Threaded / No-hub.
				2. No-hub / no-hub.
	1. TRENCH DRAINS
		1. Modular Trench Drains:
			1. Basis-of-Design: Zurn Plumbing Products Group:

\*\* NOTE TO SPECIFIER \*\* Entrances and Concourses: Z664, Z665, Z667.
Garage, Hanger, and Service Areas: Z664, Z665, Z667.
Industrial Areas, Extra Heavy Duty: Z664.
Industrial Areas, Medium Duty: Z667.

* + - * 1. Model Z664.
				2. Model Z665.
				3. Model Z667.
			1. Standard: ASME A112.6.3
			2. Dimensions of Frame and Grate:

\*\* NOTE TO SPECIFIER \*\* Z664

* + - * 1. 6 inches (152 mm) wide by 12 inches (305 mm) long.

\*\* NOTE TO SPECIFIER \*\* Z667

* + - * 1. 6 inches (152 mm) wide by 15 inches (381 mm) long.

\*\* NOTE TO SPECIFIER \*\* Z665

* + - * 1. 12 inches (305 mm) wide by 12 inches (305 mm) long.
				2. Number of sections required: \_\_\_\_\_\_.
			1. Body Material: Cast iron.
				1. Acid resistant epoxy coating.
				2. Dura-coated.
				3. Galvanized.
			2. Grate
				1. Material:

Dura-coated cast iron.

Polished bronze.

Polished stainless steel.

* + - * 1. Slotted, heel-proof Holes
				2. Square holes.
				3. Secured.
				4. Vandal-proof.
			1. Anchor Flange:
				1. Seepage holes.
			2. Clamping Collar.
			3. Outlet (NPS / DN): \_\_\_\_\_\_.
				1. Bottom.

\*\* NOTE TO SPECIFIER \*\* Z664 and Z665

* + - * 1. Side outlet via endplate.

\*\* NOTE TO SPECIFIER \*\* Z664 and Z665

* + - 1. Secondary Dome Strainer.
			2. Backwater Valve.
1. EXECUTION
	1. EXAMINATION
		1. Verification of Conditions: Examine areas and conditions under which Work is to be performed and identify conditions that may be detrimental to proper or timely completion.
			1. Walls and partitions: Suitable thickness.
		2. Valve interiors: Clean and free of foreign matter, and corrosion. Remove packing used to prevent disc movement.
			1. Operate valves from fully open to fully closed positions.
			2. Verify guides and seats are clean and free of foreign matter, and corrosion.
		3. Outlet Threads: Inspect valve and mating pipe for form and cleanliness.
		4. Replace defective items with new components.
		5. Do not proceed until unsatisfactory conditions have been corrected.
	2. INSTALLATION
		1. Dielectric Fittings:
			1. Install at piping connections of dissimilar metals.
				1. NPS 2 (DN 50) and Smaller:

Nipples.

Unions.

* + - * 1. NPS 2-1/2 to NPS 4 (DN 65 to DN 100):

Flanges.

Flange kits.

Nipples.

* + - * 1. NPS 5 (DN 125) and Larger: Dielectric flange kits.
		1. Roof drains installation locations: At low points of roof areas per roof membrane manufacturer's instructions.
			1. Maintain integrity of waterproof membranes where penetrated.
				1. Flashing collar or flange: Install between drain and roofing materials.
				2. Expansion joints: Install on roof drain outlets.
				3. Position for ease of maintenance.
		2. Cleanouts in aboveground piping and building drain piping according to the following instructions unless otherwise indicated:
			1. Drainage piping up to NPS 4 (DN 100): Cleanouts to be same size as drainage piping.
			2. Drainage piping larger than NPS 4 (DN 100), use NPS 4 (DN 100) cleanout unless otherwise specified.
			3. Location:
				1. Each directional change of piping exceeding 45 degrees.
				2. 50 foot (15 m) minimum intervals for piping up through NPS 4 (DN 100)
				3. 100 feet (30 m) for piping larger than NPS 4 (DN 100).
				4. The base of each vertical stack.
			4. Below floors, install top deck plate flush with finished floor.
			5. Concealed piping: Install wall access covers
				1. Frames and covers to be flush with finished wall.
		3. Backwater valves: Install in drain outlets.
		4. Trench drains: Install at low points of drainage areas.
			1. Drain grates: Flush with finished surface.
	1. FIELD QUALITY CONTROL

\*\* NOTE TO SPECIFIER \*\* Revise this article to suit requirements of authorities having jurisdiction.

* + 1. Test per authorities having jurisdiction.
		2. Prepare test and inspection reports.
	1. PROTECTION
		1. Protect drains, trenches, for duration of construction period from traffic, dirt, and debris.
		2. Plug uncompleted piping when work is not being performed.
	2. CLEANING

\*\* NOTE TO SPECIFIER \*\* Retain one of the following paragraphs below for piping not connected to potable-water supply.

* + 1. Flush piping systems as described by authorities having jurisdiction.
		2. Flush piping systems per NFPA 24 for flushing of piping.
			1. Use potable water until contaminants no longer appear at outlets.
		3. Prepare reports documenting flushing and disinfecting efforts.

END OF SECTION