SECTION 22 1413

FACILITY STORM DRAINAGE PIPING

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LANL MASTER SPECIFICATION

Word file at <http://engstandards.lanl.gov>

This template must be edited for each project.  In doing so, specifier must add job-specific requirements.  Brackets are used in the text to indicate designer choices or locations where text must be supplied by the designer.  Once the choice is made or text supplied, remove the brackets.  The specifications must also be edited to delete specification requirements for processes, items, or designs that are not included in the project -- and specifier’s notes such as these.  To seek a variance from requirements in the specifications that are applicable, contact the Engineering Standards Manual MechanicalPOC. Please contact [POC](https://engstandards.lanl.gov/POCs.shtml#mech) with suggestions for improvement as well.

When assembling a specification package, include applicable specifications from all Divisions, especially Division 1, General requirements.

Specification developed for ML-4 projects.  For ML-1, 2, and 3 applications, additional requirements and independent reviews should be added if increased confidence in procurement or execution is desired; see ESM Chapter 1 Section Z10 Specifications and Quality sections.

Refer to Specification 33 4000 for Site Storm Drainage Utilities.

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1. GENERAL

1.1 SECTION INCLUDES

1. Building storm drainage piping, fittings, and accessories within building wall.

1.2 SUBMITTALS

1. Submit the following in accordance with Project submittal procedures:
2. Catalog data on pipe materials, fittings, and accessories.
3. Manufacturer's Installation Instructions for piping and accessories.
	1. QUALITY ASSURANCE
		1. Comply with NSF 14, "Plastics Piping Systems Components and Related Materials," for PVC piping components.
4. PRODUCTS

2.1 PRODUCT OPTIONS AND SUBSTITUTIONS

1. Alternate products may be accepted; follow Section 01 2500, *Substitution Procedures.*

2.2 STORM DRAINAGE PIPING, ABOVE GROUND

1. Cast Iron Pipe and Fittings: CISPI 301 hubless, service weight.
2. Joints: CISPI 310, neoprene gaskets and stainless steel clamp/shield assemblies.
3. Cast Iron Pipe and Fittings: ASTM A74, service weight, bell and spigot ends.
4. Joints: Hub and spigot, CISPI HSN compression type with ASTM C564, neoprene gaskets.
5. PVC Pipe and Fittings: ASTM D3034, SDR 35, polyvinyl chloride (PVC) material.
6. Joints: ASTM D2855, solvent weld with ASTM D2564 solvent cement and ASTM F656 primer.
7. PVC Pipe and Fittings: ASTM D2665, polyvinyl chloride (PVC) material.
8. Joints: Solvent weld, ASTM D2855, with ASTM D2564 solvent cement and ASTM F656 primer.

2.3 ROOF DRAINS

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Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturer’s specification.

Select roof drains determined by roof construction, expected rainfall, etc. Refer to manufacturer’s catalog data for selection criteria.

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1. ASME A112.6.4, Cast iron body and strainer with removable dome [with vandal proof screws]

2.4 CLEANOUTS

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Edit the following descriptive specifications to identify Project requirements and to eliminate conflicts with manufacturer’s specification.

Select cleanouts to suit project. Refer to manufacturer’s catalog data for selection criteria.

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1. ASME A112.36.2M, Cast iron cleanout assembly with [heavy duty] [round] [square] adjustable, scoriated, cast iron [nickel bronze] cover [with threaded spanner wrench cover] [stainless steel access cover secured with machine screw] [and no-hub outlet] [and a speed-set outlet] [with an inside caulk outlet].
2. EXECUTION

3.1 PREPARATION

1. Ream pipe ends and remove burrs.

3.2 INSTALLATION

1. Extend cleanouts to finish floor or wall surface. Lubricate threaded cleanout plugs with non-hardening thread lubricant. Ensure clearance at cleanout for snaking drainage system
2. Install floor cleanouts at elevation to accommodate finished floor.
3. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
4. Install piping penetrating roofed areas to maintain integrity of roof assembly.
5. Install bell and spigot pipe with bell end upstream.
6. Sleeve and caulk pipes penetrating exterior walls or interior bearing walls. Provide waterproof installation for exterior walls. Provide UL/FM approved through-penetration firestop system when penetrating fire-rated barriers (e.g., walls, floors, etc.). [See Section 07 8400, *Firestopping*]
7. Test piping system with water in accordance with Section 22 0813, *Testing Piping Systems*, at the pressures and durations indicated below.
	* + 1. Storm Water Piping:
				1. Storm water piping inside building to 5 Feet outside building: Test with water in accordance with the IAPMO UPC. Fill the entire system with water to the point of overflowing. Keep water in system for at least 1 hour before inspection starts. If the system is tested in segments, no piping (except the uppermost 10 feet of the system) shall have been submitted to a test of less than 10 foot head of water.
				2. Acceptable Alternate: Test with air at 5 psig and hold pressure for at least 15 minutes.

Note: pneumatic testing may not be used for plastic piping.

1. Label piping in accordance with Section 22 0554, *Identification of Plumbing, HVAC and Fire Piping and Equipment.*
2. Support piping in accordance with Section 22 0529, *Hangers and Support for Plumbing Piping and Equipment.*
3. Insulate piping system in accordance with Section 22 0713, *Plumbing and HVAC Insulation.*
4. Provide splash blocks under downspout nozzle when required to control erosion.
5. Install cast-iron soil piping according to CISPI's "Cast Iron Soil Pipe and Fittings Handbook," Chapter IV, "Installation of Cast Iron Soil Pipe and Fittings".

END OF SECTION

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Do not delete the following information:

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THE FOLLOWING STATEMENT IS FOR LANL USE ONLY

This project specification section is based on LANL Master Specification Section 22 1413 Rev. 3, dated March 11, 2021.