

SECTION 02630 - STORM DRAINAGE

PART 1 - GENERAL

SUMMARY

This Section includes storm drainage outside the building.

PERFORMANCE REQUIREMENTS

Gravity-Flow, Nonpressure-Piping Pressure Ratings: At least equal to system test pressure.

PART 2 - PRODUCTS

PIPING MATERIALS

Refer to Part 3 "Piping Applications" Article for applications of pipe and fitting materials.

PIPES AND FITTINGS

Corrugated PE Drainage Tubing and Fittings: AASHTO M 252, Type S, with smooth waterway for coupling joints.

Soiltight Couplings: AASHTO M 252, corrugated, matching tube and fittings to form soiltight joints.

DRAINS

Plastic Area Drains: Round body with anchor flange and round, secured, plastic grate. Include bottom outlet with inside calk or spigot connection, of sizes indicated. Use units with top-loading classifications according to the following applications:

Light Duty: In lawn foot-traffic areas.

PART 3 - EXECUTION

EARTHWORK

Excavating, trenching, backfilling, and identification materials and their installation are specified in Division 2 Section "Earthwork." Arrange for installing green warning tapes directly over piping and at outside edges of underground structures.

Use warning tape or detectable warning tape over ferrous piping.

**RENOVATIONS TO THE CHILDREN'S CENTER
STEVENS AVE., PORTLAND, ME**

PIPING APPLICATIONS

Piping Applications: Include watertight, silttight, or soiltight joints.

NPS 4 and NPS 6 (DN 100 and DN 150): Corrugated PE drainage tubing and fittings, soiltight couplings, and coupled joints.

INSTALLATION, GENERAL

General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground storm drainage piping. Location and arrangement of piping layout take design considerations into account. Install piping as indicated, to extent practical.

Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line, and pull past each joint as it is completed.

Use manholes for changes in direction, unless fittings are indicated. Use fittings for branch connections, unless direct tap into existing sewer is indicated.

Use proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.

Install gravity-flow piping, 8" diameter, in locations indicated. Terminate piping as indicated.

Install piping pitched down in direction of flow, at minimum slope of 0.5 percent, unless otherwise indicated.

Install piping with 18-inch minimum cover.

PIPE JOINT CONSTRUCTION AND INSTALLATION

PE Pipe and Fittings: As follows:

Install corrugated piping according to the Corrugated Polyethylene Pipe Association's "Recommended Installation Practices for Corrugated Polyethylene Pipe and Fittings."

Join piping made of different materials or dimensions with couplings made for this application. Use couplings that are compatible with and that fit both systems' materials and dimensions.

Install drains in locations indicated.

Set drain frames and covers with tops flush with lawn surface.

FIELD QUALITY CONTROL

Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches (600 mm) of backfill is in place, and again at completion of Project.

Defects requiring correction include the following:

Alignment: Less than full diameter of inside of pipe is visible between structures.

**RENOVATIONS TO THE CHILDREN'S CENTER
STEVENS AVE., PORTLAND, ME**

Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.

Crushed, broken, cracked, or otherwise damaged piping.

Infiltration: Water leakage into piping.

Exfiltration: Water leakage from or around piping.

Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.

Reinspect and repeat procedure until results are satisfactory.

PROTECTION AND CLEANING

Protect existing piping and structures to prevent concrete or debris from entering while making tap connections. Remove debris or other extraneous material that may accumulate.

Clear interior of piping and structures of dirt and superfluous material as work progresses. Maintain swab or drag in piping, and pull past each joint as it is completed.

Place plug in end of incomplete piping at end of day and when work stops.

Flush piping between manholes and other structures to remove collected debris, if required by authorities having jurisdiction.

END OF SECTION 02630