

SECTION 02700 - SEWERAGE AND DRAINAGE

A. SUMMARY

1. Sanitary sewerage, with watertight joints, connected to building's sanitary system.
2. Storm drainage, with [**watertight**] [**silt-tight**] [**soil-tight**] joints, connected to building's storm drainage system.
3. Combined sanitary sewerage and storm drainage, with watertight joints, connected to building's combined sanitary sewerage and storm drainage system.
4. Force main, with watertight joints, connected to building's force main.
 - a. Install piping between and connect to packaged sewage pump station outlet.
5. Provide manholes for changes in direction, unless fittings are indicated.
6. Backwater valves, cleanouts, and drains.

B. SYSTEM PERFORMANCE

1. Gravity-Flow, Nonpressure-Piping Pressure Rating: System test pressure.
2. Force-Main Pressure Rating: System operating pressure, but not less than 150 psig (1035 kPa).

C. SUBMITTALS

1. Coordination Drawings [, **including profile drawings**].

D. MATERIALS

1. Sewerage Pipe and Fittings:
 - a. Hub-and-spigot, [**Extra-Heavy**] [**Service**] class, cast-iron pipe and fittings with gasketed joints.
 - b. Hubless, cast-iron pipe and fittings with coupled joints.
 - c. Ductile-iron pipe and fittings with gasketed joints.
 - d. Stainless-steel drainage pipe and fittings with gasketed joints.
 - e. ABS sewer pipe and fittings with solvent-cemented joints.
 - f. Corrugated polyethylene drainage tubing and PVC fittings with gasketed joints.
 - g. PVC cellular-core pipe and PVC fittings with solvent-cemented joints.
 - h. PVC sewer pipe and fittings with solvent-welded or gasketed joints.
 - i. Nonreinforced-concrete sewer pipe and fittings with gasketed joints.

2. Drainage Pipe and Fittings:
 - a. Hub-and-spigot, **[Extra-Heavy]** **[Service]** class, cast-iron pipe and fittings with gasketed joints.
 - b. Hubless, cast-iron pipe and fittings with coupled joints.
 - c. Ductile-iron pipe and fittings with gasketed joints.
 - d. Stainless-steel drainage pipe and fittings with gasketed joints.
 - e. Corrugated**[-steel]** **[-aluminum]** pipe and fittings with coupled joints.
 - f. ABS sewer pipe and fittings with solvent-cemented or gasketed joints.
 - g. Corrugated polyethylene drainage tubing and fittings with coupled joints.
 - h. PVC cellular-core pipe and PVC fittings with solvent-cemented joints.
 - i. PVC sewer pipe and fittings with solvent-welded or gasketed joints.
 - j. PVC profile pipe and gravity sewer fittings with gasketed joints.
 - k. Nonreinforced-concrete sewer pipe and fittings with gasketed joints.
3. Combined Sewerage and Drainage Pipe and Fittings:
 - a. Hub-and-spigot, **[Extra-Heavy]** **[Service]** class, cast-iron pipe and fittings with gasketed joints.
 - b. Hubless, cast-iron pipe and fittings with coupled joints.
 - c. Ductile-iron pipe and fittings with gasketed joints.
 - d. Stainless-steel drainage pipe and fittings with coupled joints.
 - e. ABS sewer pipe and fittings with solvent-cemented or gasketed joints.
 - f. Corrugated polyethylene drainage tubing and PVC fittings with coupled joints.
 - g. PVC sewer pipe and fittings with solvent-welded or gasketed joints.
 - h. Nonreinforced-concrete sewer pipe and fittings with gasketed joints.
4. Force Main Pipe and Fittings: Ductile-iron pipe, **[standard]** **[compact]** pattern and fittings with gasketed joints.

E. COMPONENTS

1. Manholes: **[Precast concrete]** **[Brick]** **[Cast-in-place concrete]**.
2. Catch Basins: **[Precast concrete]** **[Brick]** **[Cast-in-place concrete]**.
3. Storm-Water Inlets: **[Curb type]** **[Gutter type]** **[Combination type]**.
4. Drainage Systems:
 - a. Polymer-Concrete Channel: **[Sloped-invert]** **[Narrow-width, level-invert]** **[Wide-width, level-invert]** system.
 - b. Plastic Channel: **[Fiberglass]** **[Polyethylene]** system.
 - c. Stainless-Steel Trench: **[Narrow-width]** **[Wide-width]** system.
5. Drains: **[Area type]** **[Cast-iron trench]** **[Steel trench]** **[Stainless-steel trench]**.
6. Outfalls: **[Cast-in-place, reinforced concrete]** **[Riprap]** **[As indicated]**.

7. Drywells: [**Precast perforated concrete**] [**Polyethylene plastic**] [**Constructed-in-place aggregate type**].
8. Storm-Water Disposal System: Storage and leaching chambers, filtering material, and filter mat.

F. INSTALLATION

1. Close and abandon existing structures and piping.
2. Make connections to existing piping and underground structures.
3. Tunnel under streets or other obstructions that cannot be disturbed.

END OF SECTION 02700