SECTION 221313 - FACILITY SANITARY SEWERS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Coordination Drawings showing piping profiles and elevations at a horizontal scale of 1 inch equals 50 feet (1:500) and a vertical scale of 1 inch equals 5 feet (1:50). Indicate underground structures and show pipe types, sizes, and materials and elevations of other utilities crossing system piping.

PART 2 - PRODUCTS

2.1 PIPE AND FITTINGS


B. Precast Concrete Manholes: ASTM C 478, precast, reinforced concrete, with provision for rubber gasketed joints.

1. Diameter: 48 inches minimum, unless otherwise indicated.
2. Ballast: Increase thickness of precast concrete sections or add concrete to base section, as required to prevent flotation.
3. Base Section: 6-inch minimum thickness for floor slab and 4-inch minimum thickness for walls and base riser section, and having separate base slab or base section with integral floor.
4. Riser Sections: 4-inch minimum thickness, and of length to provide depth indicated.
5. Top Section: Eccentric-cone type, unless concentric-cone or flat-slab-top type is indicated. Top of cone of size that matches grade rings.
7. Resilient Pipe Connectors: ASTM C 923, cast or fitted into manhole walls, for each pipe connection.
8. Steps: Individual FRP steps, FRP ladder, or ASTM A 615/A 615M, deformed, 1/2-inch steel reinforcing rods encased in ASTM D 4101, PP, wide enough to allow worker to place both feet on 1 step and designed to prevent lateral slippage off step. Cast or anchor steps into sidewalls at 12- to 16-inch intervals. Omit steps if total depth from floor of manhole to finished grade is less than 60 inches.
9. Grade Rings: Reinforced-concrete rings, 6- to 9-inch total thickness, to match diameter of manhole frame and cover.
11. Manhole Frames and Covers: Ferrous; 24-inch ID by 7- to 9-inch riser with 4-inch-minimum width flange and 26-inch-diameter cover. Include indented top design with lettering cast into cover, using wording equivalent to "SANITARY SEWER."

a. Material: ASTM A 48/A 48M, Class 35 gray iron, unless otherwise indicated.

C. Gray-Iron Cleanouts: ASME A112.36.2M, round, gray-iron housing with clamping device and round, secured, scoriated, gray-iron cover. Include gray-iron ferrule with inside calk or spigot
connection and countersunk, tapered-thread, brass closure plug. Use units with heavy-duty top-loading classification in vehicle-traffic service areas and medium-duty in paved foot-traffic areas.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install cleanout and extension to grade at connection of building sanitary drain and building sanitary sewer.

B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Install piping pitched down in direction of flow, at minimum slope of 2 percent, unless otherwise indicated, with 36-inch minimum cover.

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

D. Install PVC pipe and gasketed fittings with gaskets according to ASTM D 2321.

3.2 FIELD QUALITY CONTROL

A. Clean and inspect piping and structures.

B. Test complete piping according to authorities having jurisdiction.

END OF SECTION 221313