

SECTION 33 31 00

SANITARY UTILITY SEWER STRUCTURES

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Sanitary sewer gravity pipe, fittings, and miscellaneous appurtenances.
- B. Related Section
 - 1. Section 02 41 13 – Removals
 - 2. Section 33 39 00 – Sanitary Utility Sewer Structures

1.02 REFERENCES

- A. American Society of Testing Materials (ASTM)
 - 1. C578 – Specification for Rigid, Cellular Polystyrene Thermal Insulation.
 - 2. D1784 – Specification for Rigid Polyvinyl Chloride (PVC) Compounds and Chlorinated Polyvinyl chloride (PVC) Compounds.
 - 3. D3212 – Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.
 - 4. F477 – Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
- B. American Water Works Association (AWWA):
 - 1. AWWA C900 – Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 inches through 12 inches, for water distribution.

1.03 SUBMITTALS

- A. Submittals shall conform to Section 01 33 00. Submit Product Data for the following items:
 - 1. Pipe and fittings.
 - 2. Transition couplings.
 - 3. Tracer wire.
- B. Shop drawings shall indicate complete information for fabrication and installation of units. Include the following:
 - 1. Plans and elevations defining all material furnished by manufacturers.
 - 2. Sections and details showing connections, cast-in items, field installed lifting devices, capacities, all openings, and their relation to the structure.

1.04 SEQUENCING AND SCHEDULING

- A. No work to begin until traffic control is in place.

PART 2 PRODUCTS

2.01 SOLID WALL PVC PIPE

- A. Polyvinyl Chloride (PVC) Gravity Sewer Pipe
 1. Conform to the standards and specifications of ASTM D3034 – SDR 35 for sizes 4 inches to 15 inches.
 2. Conform to ASTM F679 for size 18 inches to 27 inches.
 3. The bell of each pipe shall consist of an integral wall section with a factory installed elastomeric seal conforming to the standards and specifications of ASTM F-477
 4. The gasket shall be securely locked into position to prevent displacement when pipes are assembled.
- B. Polyvinyl Chloride (PVC) Gravity Sanitary Sewer Services
 1. Conform to the standards and specifications of ASTM D1785 for Schedule 40 or heavier PVC pipe.
 2. The bell of each pipe shall consist of an integral wall section with a factory installed elastomeric seal conforming to the standards and specifications of ASTM F-477
 3. The gasket shall be securely locked into position to prevent displacement when pipes are assembled.

PART 3 EXECUTION

3.01 PREPARATION

- A. By-Pass Pumping: Contractor shall be responsible for all items required to maintain sewer flows during construction of the new sanitary sewer line. All work and costs for this are considered incidental to the Project.

3.02 PIPE INSTALLATION

- A. Install pipe to the alignment, grade, and location as shown on the Drawings and/or staked in the field.
 1. Horizontal Alignment: Within 0.50 feet
 2. Vertical Alignment: Zero plus and 0.08 feet minus elevation with no intermediate high points or reverse slope.

- B. Maintain reference line and grade with laser equipment or other equipment approved by the Engineer. Periodically check equipment for adjustment and accuracy. Take precautions to prevent deflection in reference line and grade.
- C. Non-conforming pipe installation shall be removed and reinstalled at no cost to the City.
- D. Inspect pipe for defects prior to installation.
- E. Install from lower to higher invert elevation.
- F. Pipe spigot ends to be pointing in the direction of flow.
- G. No pipe is to be laid in water or when trench conditions are unsuitable for such work.
- H. Jointing
 - 1. All joints must be watertight
 - 2. Hand fill and compact all bell depressions with granular bedding materials to prevent joints from sagging or movement.
- I. Remove all dirt and debris from the interior of each pipe length as the Work progresses.
- J. Sanitary Sewer Service Connections
 - 1. Wye's to be at 45 degree angle from horizontal. Minor deviations may be required to match elevation of the existing service pipe.

3.03 CONNECT TO EXISTING SYSTEM

- A. Connect to Existing Manhole
 - 1. Connect to existing structure at locations shown on the Drawings.
 - 2. If rubber boot exists at manhole opening, connect new pipe to the boot and secure.
 - 3. If manhole opening does not contain rubber boot or the existing boot is damaged, core drill opening in the structure, and install a rubber boot in manhole opening prior to connection of pipe.
 - 4. Make repairs to the structure required due to the Work performed, including installation of doghouse.
 - 5. If necessary, the invert shall be reconstructed to accommodate new flow location. Reconstruction of invert will also be necessary if pipe sizes increase.
- B. Connect to Existing Main
 - 1. Expose existing sanitary sewer main at location as shown on Drawings.
 - 2. Saw cut existing main to provide a straight joint at connection.

3. Connect new pipe to existing pipe with a transition coupling.