# SECTION 02535

# SANITARY SEWER PIPING

## PART 1 GENERAL

### 1.01 SECTION INCLUDES

A. Sanitary sewerage drainage piping, fittings, and accessories.

### 1.02 RELATED SECTIONS

A. Section 02250 - Dewatering

B. Section 02315 - Excavation

C. Section 02317 - Trenching for Site Utilities

D. Section 02640 - Manholes and Covers.

### 1.03 REFERENCES

A. ASTM D 2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications; 2005.

B. ASTM D 2729 - Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2003.

C. ASTM D 3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2004a.

### 1.04 SUBMITTALS

A. See Section 01300 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data indicating pipe, pipe accessories.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Project Record Documents:
   1. Record location of pipe runs, connections, catch basins, cleanouts, and invert elevations.
   2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

### 1.05 REGULATORY REQUIREMENTS

A. Perform work in accordance with the requirements of the City of Portland Public Works.

## PART 2 PRODUCTS

### 2.01 SEWER PIPE MATERIALS

A. Plastic Pipe - gravity service: ASTM D 3034, Type PSM, Poly(Vinyl Chloride) (PVC) material rated SDR 35; inside nominal diameter of 8 inches, bell and spigot style solvent sealed joint end.

B. Pipe shall be continually marked with manufacturer's name, pipe size, cell classification, SDR rating, and ASTM classification.

C. Pipe joints shall be integrally molded bell ends in accordance with ASTM D-3034 Table 2, with factory supplied elastomeric gaskets and lubricant.

D. Fittings: Same material as pipe molded or formed to suit pipe size and end design, in required tee, bends, elbows, cleanouts, reducers, traps and other configurations required.

### 2.02 PIPE ACCESSORIES

A. Trace Wire: Magnetic detectable conductor, clear plastic covering, imprinted with "Sewer Service " in large letters.

## PART 3 EXECUTION

### 3.01 TRENCHING

A. See Section 02317 for additional requirements.

B. Backfill around sides and to top of pipe with cover fill, tamp in place and compact, then complete backfilling.

### 3.02 INSTALLATION - PIPE

A. Make all required connections to existing sewers. Carry out such work in accordance with local standards. Observe care to prevent debris from entering sewers. Check the invert elevations of existing sewers to which connections are to be made, and if appreciable difference from elevations noted on the drawings, or if they involve any difficulty in obtaining necessary drainage, notify the engineer immediately so that appropriate corrective action may be taken.

B. Commence at the lowest point in the system and lay the pipe with the bell-end upgrade. Test pipe for soundness and clean interior and joint surfaces before lowering the pipe into the trench. Lay pipe in straight lines and on uniform grades between points where changes in alignment or grade are shown. Bed the pipe barrel uniformly.

C. Comply fully with manufacturer's instructions for sewer pipe jointing, using sealing or lubrication compound as supplied by the manufacturer, and apply proper pressure to seal the spigot in the bell.

D. As soon as the joint material has set, pack fine earth carefully around the joints, and around and over the pipe. Carry this backfill operation to a depth of at least 12 inches above the top of the pipe. Care shall be used in tamping backfill under lower parts of the pipe to give proper support, especially in shallow trenches.

E. Flush all sanitary sewers, including building connections, with water in sufficient volume to obtain free flow through each line. Remove any obstructions and correct any defects discovered.

F. Verify that trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on layout drawings.

G. Install pipe, fittings, and accessories in accordance with ASTM D 2321 and manufacturer's instructions. Seal joints watertight.

H. Lay pipe to slope gradients noted on layout drawings; with maximum variation from true slope of 1/8 inch in 10 feet

I. Connect to building sanitary outlet.

J. Install trace wire 6 inches (150 mm) above top of pipe; coordinate with Section 02317.

### 3.03 FIELD QUALITY CONTROL

A. Perform field inspection and testing in accordance with the requirements of the servicing utility.

B. Provide copies of test report to owner and servicing utility, documenting results and compliance with requirements in advance of requesting a certificate of occupancy

C. It tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to Owner.

### 3.04 PROTECTION

A. Protect pipe and bedding cover from damage or displacement until backfilling operation is in progress.

**END OF SECTION 02535**