

## SECTION 02621

### BURIED POLYVINYL CHLORIDE (PVC) SEWER AND PRESSURE PIPE

#### PART 1 GENERAL

##### 1.1 SUMMARY

- A. Section Includes: Requirements for providing buried PVC pipe, fittings and appurtenances.
1. Provide PVC pipe and fittings complete with all necessary jointing facilities and materials, specials, adapters and other appurtenances required for installation in and completion of the pipelines to be constructed.
  2. Provide plain end or rubber gaskets (push-on or mechanical joint) of the types, sizes and classes shown or specified.
- B. Related Work Specified In Other Sections Includes:
1. Section 02630 - Buried Ductile-Iron Pipe and Fittings
  2. Section 02650 - Laying and Jointing Buried Pipelines
  3. Section 02675 - Disinfection
  4. Section 02676 - Leakage Testing

##### 1.2 REFERENCES

- A. Codes and standards referred to in this Section are:
1. ASTM D 3034 Type PSM Vinyl Poly Chloride (PVC) Sewer Pipe and Fittings
  2. ASTM F 679 Vinyl Poly Chloride (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings
  3. AWWA C900 Polyvinyl Chloride (PVC) Pressure Pipe, 4 In. through 12 In., for Water Distribution
  4. AWWA C905 Polyvinyl chloride (PVC) Water Transmission Pipe, Nominal Diameters 14 In. through 36 In.

5. ASTM D 2321 Underground Installation of Flexible Thermoplastic Sewer Pipe
6. ASTM F 477 Elastomeric Seals (Gaskets) For Joining Plastic Pipe
7. ANSI A21.10 Ductile-Iron and Gray-Iron Fittings 3 inches through 48 inches, for Water and Other Liquids
8. ANSI A21.11 Rubber-Gasket Joints for Ductile-Iron and Gray Iron Pressure Pipe and Fittings

### 1.3 SYSTEM DESCRIPTION

- A. Design Standards: Provide 4-inch through 15-inch PVC gravity sewer pipe and fittings meeting the requirements of ASTM D 3034. Provide 18-inch through 27-inch PVC gravity sewer pipe and fittings meeting the requirements of ASTM F 679. Provide 4-inch through 12-inch PVC pressure pipe meeting the requirements of ANSI/AWWA C900. Provide 14-inch through 36-inch PVC pressure pipe meeting the requirements of ANSI/AWWA C905. Provide mechanical ductile-iron pipe fittings for PVC pressure pipe meeting the requirements of Section 02620.
  1. Provide pipe of the various sizes and classes as specified in the schedule or shown. Restrain all pressure pipe joints.
  2. Construct concrete encasements where shown.

### 1.4 SUBMITTALS

- A. General: Provide all submittals, including the following, as specified in Division 1.
- B. Submit the following shop drawings:
  1. Pipe joints, fittings, sleeves and cleanouts. Where special designs or fittings are required, show the work in large detail and completely describe and dimension all items.

2. Fully dimensioned drawings of piping layouts, including fittings, couplings, sleeves, cleanouts, valves, supports and anchors. Label pipe size, materials, type, and class on drawings and include the limits of each reach of restrained joints. Provide cross sections showing elevations of cleanouts, pipes, fittings, sleeves, and valves.
  3. Catalog data for pipe, joints, fittings, sleeves, harnessing and cleanouts.
- C. Quality Control: Submit certificate of compliance for pipe, fittings, gaskets, coatings, specials, sleeves and cleanouts in accordance with this Section.

#### 1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle all pipe, fittings and appurtenances as specified in Division 1 and Section 02650.

### PART 2 PRODUCTS

#### 2.1 MATERIALS

- A. Fittings for Pressure Pipe: Provide all fittings meeting the requirements of ANSI A21.10, unless shown or specified otherwise. Provide fittings with cement mortar lining. Fittings 14 inches and larger require a pressure rating of 150 psi, or as specified, whichever is greater.
- B. Joints and Fittings for Gravity Sewer Pipe: Provide all fittings meeting the requirements of ASTM D 3034 and ASTM F 679. Provide joints that are a molded integral part of the pipe section. Do not use joints or couplings furnished loose. Provide joints with elastomeric gasket joints.
- C. Joints for Pressure Pipe: Provide pipe with bell ends in accordance with AWWA C900 and AWWA C905. Provide joints with elastomeric gasket joints.
- D. Elastomeric Gasket Joints: Provide elastomeric gasket joints in accordance with ASTM F 477.
- E. Rubber Gasket Joints: Provide mechanical joints meeting the requirements of ANSI A21.11.
- F. Harnessing: Series 1600 , Series 2800 and Series 2000 PV as manufactured by EBAA Iron Sales, Inc., or equal.

- G. Color: Provide pipe made of 100 percent of the color specified. Provide green sewer or force main pipe. Provide blue potable water pipe. Provide pantone purple for reuse water pipe.
- H. Pressure Pipe Outside Diameter: Provide pressure pipe of the outside diameter consistent with ductile-iron pipe.
- I. Pipe Marking: Provide mark on each pipe at internals of 5 feet or less to designate compliance with applicable ASTM or AWWA specification.
- J. Temporary Bulkheads: Provide temporary bulkheads at the ends of sections where adjoining pipelines have not been completed and are not ready to connect.
  - 1. Remove all temporary bulkheads when they are no longer needed.
- K. Date of Manufacturer: Provide pipe and fittings manufactured no earlier than 12 month period proceeding the date of the Agreement.
- L. Wall Thickness for Gravity Sewer:
  - 1. 4 through 15 inches diameter - provide SDR-35 conforming to ASTM D 3034 for depth of cuts through 18 feet. Provide SDR-26 conforming to ASTM D 3034 for depth of cut over 18 feet.
  - 2. 18 through 27 inches diameter - provide either T-1 or T-2 conforming to Table 1 in ASTM F 679.

## PART 3 EXECUTION

### 3.1 INSTALLATION

- A. Install all buried PVC pipe and fittings in accordance with the manufacturer's recommendations and approved shop drawings and as specified in Division 1 and Section 02650.

### 3.2 LEAKAGE TESTING

- A. Cleaning: Flush clean and test all pipes after installation.
- B. Testing: Test pipes for leaks and repair or tighten as required.

C. Procedures: Conduct tests in accordance with Section 02676.

### 3.3 DISINFECTION

A. General: Disinfect all pipelines that are to carry potable water before they are placed in service as specified in Section 02675.

### 3.4 SCHEDULES:

A. Refer to the Schedules contained in Section 02650 Laying and Jointing Buried Pipelines for information on the piping that is to be constructed using the pipe materials and methods specified herein.

END OF SECTION

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