

**SECTION 02635**

**STORM DRAINAGE PIPING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Storm drainage piping, fittings, and accessories.
- B. Foundation drainage piping and accessories.

**1.02 RELATED SECTIONS**

- A. Section 02250 - Dewatering.
- B. Section 02315 - Common Excavation, Embankment and Compaction.
- C. Section 02317 - Trenching.
- D. Section 02640 - Manholes and Covers.

**1.03 REFERENCES**

- A. ASTM C 76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe; 2004a.
- B. ASTM C 443 - Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets; 2005.
- C. ASTM D 1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120; 2004a.
- D. ASTM D 2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications; 2004.
- E. ASTM D 2729 - Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2003.
- F. ASTM D 3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings; 2004a.

**1.04 SUBMITTALS**

- A. Product Data: Provide data indicating pipe, pipe accessories.
- B. 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 PROJECT CONDITIONS**

- A. Coordinate the Work with termination of storm sewer connection outside of building.

**PART 2 PRODUCTS**

**2.01 STORM DRAIN PIPE MATERIALS**

- A. Reinforced Concrete Pipe: ANSI/ASTM C76, IV, with modified tongue-and-groove compression gasket joints complying with ANSI/ASTM C443.
- B. Reinforced Concrete Pipe Joint Device: ASTM C 443 (ASTM C 443M) rubber compression gasket joint.
- C. Corrugated Polyethylene Pipe (PE): Pipe complying with AASHTO M294 and MP7, and ASTM

D3550. Interior of pipes shall be smooth, and shall have an "n" value of not less than 0.010. Pipes shall be joined with gasketed bell and spigot joints complying with ASSHTO M252 and M294. Gaskets shall comply with ASTM F477 and ASTM D1149. Provide minimum coverage per manufacturer's specifications.

1. Acceptable Manufacturers of Corrugated Polyethylene Pipe: Hancor "Eco-First" or approved equivalent.
- D. Plastic Pipe: ASTM D 3034, Type PSM, Poly(Vinyl Chloride) (PVC) material; inside nominal diameter of specified inches, bell and spigot style solvent sealed joint end.
- E. Building foundation drain: 4" dia. SDR-35 perforated underdrain pipe.

## **2.02 PIPE ACCESSORIES**

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

## **2.03 UNDERGROUND DETENTION SYSTEM**

- A. Chambers: ADS "StormTech SC-740" chambers.
- B. 1-1/2 inch Crushed Angular Stone: See Section 02315

## **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. Verify that trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on layout drawings.
- B. Install pipe, fittings, and accessories in accordance with manufacturer's instructions. Seal watertight.
  1. Plastic Pipe: Also comply with ASTM D 2321.
- C. Install pipe, fittings, and accessories in accordance with ASTM D 2321 and manufacturer's instructions. Seal joints watertight.
- D. Lay pipe to slope gradients noted on layout drawings; with maximum variation from true slope of 1/8 inch in 10 feet.

### **3.03 FIELD QUALITY CONTROL**

- A. Perform field inspection and testing in accordance requirements of local authorities having jurisdiction.

### **3.04 PROTECTION**

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

**END OF SECTION**