

SECTION 02535  
FORCE MAIN SYSTEM

**PART 1 - GENERAL**

1.01 SUMMARY

A. Section Includes:

1. Provide force main system as shown on the Drawings, specified herein, and as needed for a complete and properly functioning system.

1.02 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.

**PART 2 - PRODUCTS**

2.01 SOLID WALL PVC PIPE

- A. Pipe for valve vaults and above ground piping shall be Schedule 80 PVC. See Section 15078.  
B. Buried piping shall be HDPE SDR-11.

**PART 3 - EXECUTION**

3.01 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- B. Comply with Section 02316-Trenching, Backfilling, and Compacting, appropriate paragraphs of this section, and pipe material manufacturer's recommendations.

3.02 FIELD MEASUREMENT

- A. Make necessary measurements in the field to assure precise fit of items in accordance with the approved design.

3.03 HANDLING

- A. Handle pipe accessories so as to ensure delivery to the trench in sound, undamaged condition:
1. Carry pipe into position; do not drag.
  2. Use pinch bars or tongs for aligning or turning the pipe only on the bare end of the pipe.
- B. Thoroughly clean interior of pipe and accessories before lowering pipe into trench. Keep clean during laying operations by plugging or other method approved.
- C. Before installation, inspect each piece of pipe and each fitting for defects:

1. Material found to be defective before or after laying shall be replaced without additional cost to the Owner.

### 3.04 PIPE CUTTING

- A. Cut pipe neatly and without damage to the pipe.
- B. Unless otherwise recommended by the pipe manufacturer, cut pipe with mechanical cutter only.
- C. Cut plastic pipe square, and remove all burrs.

### 3.05 JOINT DEFLECTION

- A. Maximum allowable deflection will be one-half (1/2) of amount given in AWWA C600 or the manufacturers recommendation whichever is less.
- B. If alignment requires deflection exceeding one-half the limits shown in AWWA C600 or from the manufacturer furnish bends to provide angular deflections within the limits shown.

### 3.06 PLACING AND LAYING

- A. General:
  1. Lower pipe and accessories into trench by means of derrick, ropes, belt slings, or other equipment. Do not dump or drop any of the materials into the trench.
  2. Rest the full length of each section of pipe solidly on the pipe bedding, with recesses excavated to accommodate bells, couplings, and joints.
  3. Relay pipe that has the grade or joints disturbed after laying.
  4. Do not lay pipe in water, or when trench conditions are unsuitable for the work; keep water out of the trench until jointing is completed.
  5. Securely close open ends of pipe, fittings, and valves when work is not in progress.
- B. Place and spread pipe bedding material in trench bottom to depth shown on the drawings and in accordance with section 02316.
- C. Pipe laying:
  1. Position pipe and fittings in trench in a manner that identifying markings will be readily visible for inspection.
  2. Cutting and joining:
    - a. Protect against abrasion from serrated holding devices.
    - b. Remove burrs from surfaces to be jointed and dirt, dust, and moisture by wiping clean with chemical cleaner or dry cloth.
    - c. Insert pipe into bottom of the fitting socket; and push home
  3. Align pipe system components without strain and within allowable deflection limits.
- D. At connections to existing pipe or where different pipe materials connect with each other use specials and fittings to suit the actual conditions. Use only those specials and fittings approved by the utility having jurisdiction.

### 3.07 TESTING AND INSPECTION

- A. Closing uninspected work: Do not allow or cause any of the work of this Section to be covered up until after it has been completely inspected and tested.
- B. Hydrostatic tests:
  - 1. Where any section of a line is provided with concrete thrust blocking for fittings, do not make hydrostatic tests until at least five days after installation of the concrete thrust blocking.
  - 2. Devise a method for disposal of wastewater from hydrostatic tests, and for disinfection.

END OF SECTION