

**DIVISION IV**  
**GRAVITY SEWERS, FORCE MAINS, AND PUMP STATIONS**

**SECTION 41**

**PIPE LAYING, JOINTING, AND MISCELLANEOUS CONSTRUCTION DETAILS**

**41.1 SURVEY LINE AND GRADE**

The CONTRACTOR shall set Temporary Bench Marks (TBM'S) at a maximum 500 foot interval. The CONTRACTOR shall constantly check line and grade of the pipe by laser beam method. In the event line and grade do not meet specified limits described hereinafter, the WORK shall be immediately stopped, the CITY notified, and the cause remedied before proceeding with the WORK.

**41.2 PIPE PREPARATION AND HANDLING**

All pipe and fittings shall be inspected prior to lowering into trench to insure no cracked, broken, or otherwise defective materials are being used. The CONTRACTOR shall clean ends of pipe thoroughly and remove foreign matter and dirt from inside of pipe and keep clean during and after pipe installation.

Proper implements, tools, and facilities shall be used for the safe and proper protection of the WORK. Pipe shall be lowered into the trench in such a manner as to avoid any physical damage to the pipe. Pipe shall not be dropped or dumped into trenches under any circumstances.

**41.3 SEWER PIPE LAYING**

Laying of sewer pipe shall be accomplished to line and grade in the trench only after it has been dewatered and the trench has been prepared in accordance with specifications outlined in Division III. Refer to Section 41.4 for additional bedding requirements. Mud, silt, gravel, and other foreign material shall be kept out of the pipe and off the jointing surface. All pipe laid shall be retained in position so as to maintain alignment and joint closure until sufficient backfill has been completed to adequately hold the pipe in place. All pipe shall be laid to conform to the line and grade shown on the PLANS.

Variance from established line and grade, at any point along the length of the pipe, shall not be greater than one thirty-second (1/32) of an inch per inch of pipe diameter and not to exceed one-half (1/2) inch, provided that any such variation does not result in a level or reverse sloping invert.

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The sewer pipe, unless otherwise approved by the CITY, shall be laid up grade from point of connection on the existing sewer or from a designated starting point. The sewer pipe shall be installed with the bell end forward or upgrade. When pipe fitting / installation is not in progress the open end of the pipe shall be kept tightly closed with an approved temporary plug.

All PVC pipe shall be installed in accordance with the pipe manufacturer's written recommendations as approved by the CITY. Ductile Iron Pipe shall conform to the installation specifications outlined in Section 51.4.7.

**41.4 TRENCH PREPARATION AND PIPE BEDDING**

**41.4.1 TRENCH EXCAVATION, DEWATERING, BEDDING MATERIAL, BACKFILL, COMPACTION, FILL AND GRADING**

Applicable provisions of Section 32 shall apply. Also refer to STANDARD DRAWINGS.

**41.4.2 PLACEMENT OF PIPE BEDDING MATERIAL**

CONTRACTOR shall hand-grade bedding to proper grade ahead of pipe laying operation. Bedding shall provide a firm, unyielding support along the entire pipe length.

If without direction from the CITY, the trench has been excavated below the required depth for pipe bedding material placement, CONTRACTOR shall fill the excess depth with pipe bedding material to the proper grade.

CONTRACTOR shall excavate bell holes at each joint to permit proper assembly and inspection of the entire joint. No pipe shall bear upon the bell.

**41.4.3 DEPTH OF BEDDING MATERIAL**

CONTRACTOR shall provide pipe bedding material in accordance with the STANDARD DRAWINGS.

**41.5 GRAVITY PIPE AND WATER MAIN SEPARATION**

Gravity sewers that are laid in the vicinity of pipe lines designated to carry potable water shall meet the conditions set forth in Section 51.3.

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**41.6 PLUGS AND CONNECTIONS**

Plugs for pipe branches, stubs, or other open ends which are not to be immediately connected shall be made of an approved material and shall be secured in place with a joint comparable to the main line joint.

**41.7 PIPE JOINTING**

All pipe shall be installed to the homing mark on the spigot. The CITY shall be given an opportunity to check all joints in this manner before backfilling.

Type of joint to be used will conform to the requirements of Sections 40.3. All pipe and jointing for gravity sewers shall be subject to the tests specified in Section 44.

**41.8 LOCATION AND IDENTIFICATION**

All lettering shall appear legibly on the pipe and run the entire length of the pipe. Lettering shall read and color shall be as is acceptable for the intended use. See STANDARD DRAWINGS.