

SECTION 3130 - REINFORCED CONCRETE SEWER PIPE

PART 1 - GENERAL

1.1 SCOPE OF WORK:

Provide all labor, materials, equipment and services required for furnishing and installing all piping and appurtenances specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

- A. Trench Excavation: Section 3720
- B. Bedding and Backfill: Section 3730

PART 2 - PRODUCTS

2.1 REINFORCED CONCRETE PIPE:

Reinforced concrete sewer pipe and fittings shall meet the requirements of ASTM C76, Wall B or Wall C. Wall B pipe shall be used for all pipe sizes less than 24", where depth is less than 16 feet. Wall C shall be used for pipe sizes 24" and larger at any depth and for all pipe sizes where depth is 16 to 25 feet. No sewer shall exceed 25 feet in depth without the approval of the ENGINEER. The strength class (D-load) for the pipe shall be in accordance with the following table.

REINFORCED CONCRETE PIPE Class vs. Depth to Invert				
Pipe Size	Class II	Class III	Class IV	Class V
15"	5'-8'	4'-5'	3'-4'	2'-3'
		8'-11'	11'-18'	18'-25'
18"	5'-8.5'	4'-5'	3'-4'	2'-3'
		8.5'-11'	11'-21'	21'-25'
21"	5'-9'	4'-5'	3'-4'	2'-3'
		9'-12'	12'-24'	24'-25'
24"	5'-9.5'	4'-5'	3'-4'	-----
		9.5'-13'	13'-25'	
27"	5.5'-10'	4.5'-5.5'	3.5'-4.5'	-----
		10'-14'	14'-25'	
30"	5.5'-10.5'	4.5'-5.5'	3.5'-4.5'	-----
		10.5'-15'	15'-25'	
33"	5.5'-11'	4.5'-5.5'	4'-4.5'	-----
		11'-16'	16'-25'	
36"	5.5'-11.5'	4.5'-5.5'	17'-25'	-----
		11.5'-17'		
42"	6'-12.5'	4.5'-6'	18'-25'	-----
		12.5'-18'		
48"	6'-13.5'	5'-6'	19'-25'	-----
		13.5'-19'		
54"	6'-15'	15'-20'	20'-25'	-----

A. Testing:

Testing of concrete sewer pipe, when so directed by the ENGINEER, shall be made in accordance with ASTM C497. All equipment necessary to conduct the pipe test shall be provided by the CONTRACTOR. Hydrostatic testing of the pipe barrel shall be as specified under Paragraph 2.2.

B. Inspection:

All pipe and fittings will be inspected by the ENGINEER or his authorized representative immediately prior to installation and all rejected or damaged pieces must be completely removed from the project. Pipe acceptable to the ENGINEER shall be substituted for rejected or damaged pieces at the CONTRACTOR's expense.

2.2 PIPE JOINTS:

A. Concrete sewer pipe joints shall be bell and spigot, or tongue and groove with flexible, watertight rubber gasket joints conforming to ASTM C443. The CONTRACTOR shall furnish evidence of satisfactory performance of the joint for previous installations.

B. Testing of concrete sewer pipe joints when so directed by the ENGINEER shall be made in accordance with ASTM C443 with modifications as specified below. All equipment necessary to conduct the pipe joint tests shall be provided by the CONTRACTOR.

1. Test Specimens - The ENGINEER or his authorized representative may initially and periodically select random sewer pipe for test purposes. The tests shall be performed on not less than two specimens and not more than 1 percent of the total pipe length of each size and class of pipe required for the project.

2. Test Modification - Two sections of pipe shall be assembled with outer ends bulkheaded, and hydrostatically tested to 20 feet of water (8.6 pounds per square inch pressure) for a period of 2 hours. With the assembled pipe under pressure, the pipe joint shall be deflected to the maximum amount. Continuing the hydrostatic pressure, a shear load of 150 pounds per inch of diameter shall be applied to the unsupported spigot end of the pipe immediately adjacent to the joint. During the entire testing period, there shall be no visible leakage at the joint. The pipe barrel shall not show excessive leakage during the entire testing period. Moisture appearing on the surface of the pipe in the form of patches or beads adhering to the surface shall not be considered as excessive leakage.

PART 3 - BASIS OF PAYMENT

Payment for reinforced concrete gravity sewer lines of the different sizes at the various depths of cut will be made at the contract unit price per linear foot in place, which price will include compensation for furnishing pipe, all trenching (including rock excavation), bedding, laying, jointing, testing, backfilling, surface restoration (except pavement replacement) connections to new manholes, and all plugs as required. The depth of cut to be paid for shall be measured from the existing ground surface at the top of the trench to the invert of the sewer line. The quantity of sewer to be paid for shall be the length of pipe measured along the centerline of the completed pipeline without deducting the length of branches, fittings and manhole inverts. Connections of existing sewers to new sewers will be incidental to this pay item.

END OF SECTION