

DIVISION 19**BORE AND JACKING**19.01 Description:

The work shall consist of boring and jacking a casing pipe, or carrier pipe, as specified in the proposal, and shall include the furnishing of all labor, materials, and equipment necessary to complete the work as specified herein.

19.02 Materials:

19.02.01 Steel Casing Pipe shall be thirty five thousand (35,000 psi) pounds per square inch minimum yield strength and shall conform to ASTM Designation A-139, Grade B.

19.02.02 Carrier Pipe shall be as called for on the proposal.

19.03 Construction Methods:

While these specifications describe the general method of conducting the tunneling operations, and set forth certain minimum conditions that must be complied with, it shall be the responsibility of the contractor to secure any permit required for the work under the rights-of-way and to carry out the details of his work in a manner that will fully meet the approval of the authority having jurisdiction over the track or road affected. Details of the materials to be used, the proposed method and schedule of operations, and the proposed locations and details of jacking pits shall be submitted to the Engineer and to the agency having jurisdiction before any work is started.

Joints between adjacent sections of steel casing pipe shall be field welded.

Sanitary sewers shall be carried in a casing pipe conduit beneath railroads, roads, or streets in the locations and to the lines, grades, and limits shown on the plans. At each location a minimum size of conduit is indicated on the drawings. The contractor will not be limited to such size, but will be permitted to use a larger size if required for proper installation of the sewers. Sections of pipe shall be coupled together with bolted couplings, or field welded, to form a continuous conduit capable of taking all jacking stresses.

Pipe conduits shall be jacked into place by approved methods that will provide accurate alignment and grade, and that will allow the sewer to be installed within each conduit at the specified alignment and grade. If jacking of the pipe should prove to be impracticable at any location, then the contractor shall excavate by tunneling, using tunnel liners or

other method approved by the authority having jurisdiction. It shall be understood that no interruption to traffic will be permitted, and the contractor shall take all precautions to the effect.

In the event the contractor places a casing pipe at a wrong elevation, which elevation cannot be used, the casing shall be abandoned by the contractor. The casing shall be filled with flowable fill as per Section 7, at the expense of the contractor.

Carrier pipe shall be used as required by the drawings. The pipe shall be joined together to form a continuous run through the conduit. It shall be supported on wooded shoes or blocks which shall be securely fastened to each end of each piece of pipe. The pipe shall then be drawn or shoved through the conduit. Junction with the pipe at each end shall be made as shown on the drawings. After the pipe has been inspected and accepted, the carrier pipe shall be filled with water and the annular space between the pipe and the conduit filled with flowable fill. After the conduit has been completely filled, the ends of the conduit shall be bulkheaded and grouted to the satisfaction of the Engineer.

Where approved by the Engineer tunneling shall be provided in accordance with the provisions of the Class V concrete pipe method. The joints of Class V pipe shall be free from leaks.

Class V Concrete Pipe Method – sewer may be installed by jacking in accordance with the lines, grades, and limits shown on the plans. Sewers which are jacked shall be constructed of concrete pipe conforming to the requirements and modifications specified elsewhere in these documents.

Pipe shall be jacked into place by approved methods that will provide accurate alignment and grade. Excavation shall be performed ahead of the pipe by a man working with a shovel inside the pipe passing the excavated material back, or shall be performed by boring in a suitable manner with a machine or machines. Voids which occur on the outside of the pipe due to such things as stump removal shall be grouted full before proceeding with the jacking operations.

If approved by the Engineer the contractor may excavate by tunneling, using tunnel liners or other methods approved by the authority having jurisdiction. It shall be understood that no interruption to traffic will be permitted, and the contractor shall take all precautions to that effect.

While constructing the jacking pit, the contractor will be required to tight-sheet the front and both sides of the pit as necessary to protect his operation and adjacent property.

19.04

Method of Measurement and Basis of Payment:

Payment for “Furnishing, Boring and Jacking” shall be for the actual length of casing pipe bored and jacked or carrier pipe actually bored and jacked into place. This length

shall not exceed that shown on the proposal except if additional length is specifically authorized by the Engineer. No additional payment shall be made for the length beyond the proposal amount except as authorized by the Engineer.

The contract price per linear foot for "Furnishing, Boring and Jacking" shall include the furnishing and installation of the carrier pipe if so required, and shall be payment in full for completing the work specified, including necessary jacking pits, connections to pipes on both ends of the boring and jacking and all other work necessary and incidental thereto.