

416 - JACKING AND BORING - OPSS 416

416.1 GENERAL

This item covers the requirements for the construction of sewers and culverts by the method of jacking and boring.

Occasionally it is necessary to place sewers and culverts under a roadway or railway without disrupting traffic. This can be accomplished by jacking and boring. As the volume of traffic on the affected roadway is a prime consideration in choosing to tunnel (see B415) or to jack and bore rather than to open cut, close liaison with the Regional Traffic office is essential.

Pipe Sewer and Culvert Materials

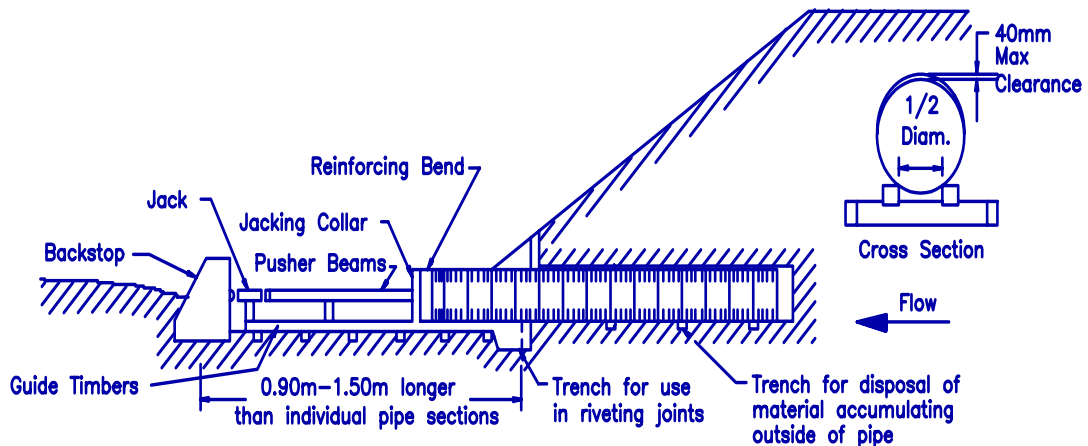
Pipe sewer and culverts may be designed using either smooth walled steel pipe or concrete pipe with consideration of the design objectives of the system.

416.1.1 Tender Item

Jacking and Boring

- a) The illustration shows a pipe being jacked into a fill. The earth material ahead of the pipe is excavated by "hand" and drawn back through the pipe for disposal.
- b) Another method is used for smaller pipes where a man cannot enter to perform excavation work. An auger drills out the earth as the pipe is jacked through the augured hole. Another variation would be to drill the hole in its entirety and then push the pipe through.

The choice of one of the described methods is to be made by the designer based on soils data provided by Regional Geotechnical Section.



416.1.2 Specification

The requirements for the jacking and boring are described in OPSS 416.

416.1.3 Special Provisions

The designer should refer to chapter "E" of this Manual to review the applicable special provisions.

416.2 COMPUTATION

This is a Plan Quantity Payment item.

416.2.1 Source of Information

The main sources of information for this tender item are the Regional Geotechnical Office, the Regional Traffic Office and the design cross-sections.

416.2.2 Method of Calculation

Measurement of this tender item is in metres, measured along the centre of the pipe from centre to centre of the end catchbasins, manholes or ditch inlets with no deduction in length for intermediate manholes, catchbasins or ditch inlets.

The unit price includes other work such as excavation, grouting, sheathing and shoring, dewatering, etc., including the connection of existing sewers, drains and service connections, if shown on the contract drawings.

Digital Rounding is not to be applied to the above tender item.

416.3 DOCUMENTATION

Contract Drawings

The above installation with or without end sections is to be indicated on the new construction plan and profile sheets of the contract drawings with the appropriate symbol. A profile should be drawn to indicate the station, diameter, length, offset and invert elevation left and right of centreline of highway construction, catchbasin numbers and the original ground and proposed cross-section over the pipe.

Contract Documents

Pipe sewers will be shown on the Quantities - Sewers Sheet. Pipe culverts will be shown on the Quantities - Pipe Culverts Sheet. The different diameters of pipe together with their respective lengths are recorded on the quantity sheet in separate columns. The type of pipe whether concrete or steel must also be identified on the Quantity Sheet. The quantities in each column are totalled. These totals when combined become the tender total that is transferred to the tender document. The wall thicknesses for smooth wall steel pipe must not be shown on the Q-Sheets unless they are to vary from those shown in OPSS 1802.

Documentation of connections to existing sewers, drains, etc. headwalls, grating and end finish shall be as indicated in Section B406.

416.3.1 Documentation Accuracy

Length calculations to 0.1 m.

Stations to the nearest whole metre or more accurate if required for layout.

Offsets shown to 0.01 m.