

## SECTION 208 EXCAVATION AND BACKFILLING FOR PIPE TRENCHES

**208.01 Description.** This work consists of the excavation, removal, and replacement or disposal of all materials necessary for the placement of pipes.

This work also consists of placing and compacting backfill for pipe trenches.

### CONSTRUCTION METHODS.

**208.02 Test Holes and Test Pits.** All test holes and test pits shall be excavated under this Section. They shall be dug with extreme care, using hand excavation methods where necessary.

**208.03 Excavation.** Unsuitable foundation material shall be removed from below the bottom of trench elevation shown on the Plans, or as directed.

When a pipe is to be placed either partially or completely in a fill, the embankment shall be compacted to an elevation of 12" (300 mm) plus the outside diameter of the pipe above the design invert of the pipe for a minimum of two pipe diameters on each side of the centerline of the pipe. The trench shall then be excavated, as specified in this Subsection.

When rock, hardpan, or other unyielding material is encountered, the trench shall be excavated as shown on the Plans and in accordance with [Subsection 206.03](#).

**208.04 Backfilling.** All backfilling of pipe trenches shall conform to the requirements of [Subsection 202.05](#) (c), except proof rolling will not be required.

For pipe trenches or utility trenches below the roadway or shoulders, trenches shall be backfilled with material conforming to the requirements of [Subsection 209.04](#), Borrow Type C. If the existing material meets these requirements, it shall be used for pipe or utility backfill. For these areas, backfill material shall be compacted to 95% or more of maximum density according to the requirements of [Subsection 202.05](#) (f). For pipe trenches or utility trenches at locations other than below the roadway and shoulders, trenches shall be backfilled with material conforming to the requirements of [Subsection 209.04](#), Borrow Type C, to a height of 12" (300 mm) above the top of the pipe or utility. The remaining depth of these pipe or utility trenches shall be backfilled with existing material. For these areas, backfill material shall be compacted to 90% or more of the maximum density according to the requirements of [Subsection 202.05](#) (f).

Material for backfilling utility trenches shall be furnished by the Contractor. Materials shall be stockpiled at location(s) mutually agreed upon by the Contractor, the utility, and the Engineer.

The operation of backfilling utility trenches shall be performed by the utility organizations involved and shall conform to the requirements of [Section 202.05](#) (c).

Utility companies will be required to remove all excess excavation material from the Project, unless the Engineer directs it to be utilized by the Contractor in the Project.

**208.05 Method of Measurement.** The quantity of excavation and backfilling for pipe trenches will be measured as the volume of excavation included between a line from the bottom of plan excavation to the bottom of the pipe at the time of pipe placement, and a normal horizontal measurement of outside pipe dimension plus 12" (300 mm) each side, unless otherwise designated on the Plans, but exclusive of rock excavation, which will be paid for under [Section 206](#). No allowance will be made for excavation or backfill outside the limits established above. The limits of trench excavation shall extend to the exterior wall of

drainage inlets and manholes. When the trench intercepts a "normal" structure, such as a headwall, culvert, etc. (where payment for structure excavation is applicable), the trench payment limit will terminate at the point where structure excavation begins [normally 18" (450 mm) outside the structure]. For pipe placement in a fill area, the trench payment limit will extend to only 12" (300 mm) above the pipe.

**208.06 Basis of Payment.** The quantity of excavation and backfilling for pipe trenches will be paid for at the Contract unit price per cubic yard (cubic meter). Price and payment will constitute full compensation for excavating suitable and unsuitable material from the trench within the limits specified; for hauling, storing, and final disposal of excavated material; for placing and compacting backfill; for placing sheeting and shoring; for constructing cribs; for dewatering; and all labor, equipment, tools, and incidentals required to complete the work.

Additional trench excavation, directed by the Engineer to establish the foundation below the elevation indicated on the Plans, will be paid for on the basis of the Contract unit price per cubic yard (cubic meter) plus an additional percentage corresponding to the total depth lowered, as indicated in [Table 207-A](#). The Contract unit price plus the additional percentage shown in [Table 207-A](#) shall be accepted by the Contractor as full compensation as defined in this Subsection for excavating to depths below those designated on the Plans.

Rock excavation will be paid for under [Section 206](#).

Borrow for backfill will be paid for under [Section 210](#).

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