

**SECTION 10.01**  
**TRENCHING AND BACKFILLING**

**10.01.01--Description:** Work under this item shall consist of trenching, backfilling and satisfactory disposal of all surplus excavated material, the removal of which is necessary for the proper installation of conduit or cable at the locations shown on the plans or as directed by the Engineer.

It shall also include the encasement of conduit or cable in sand, grading and placement of topsoil, fertilizing, seeding, and mulching, and the removal and reconstruction of riprap, crushed stone, pavement or sidewalk structure of all disturbed areas within the maximum trenching limits shown on the plans.

**10.01.02--Materials:** The materials for this work for the encasement of conduit or cable, shall be bedding material, all of which passes a 9.5 mm sieve, and not more than 10 percent passes a 75 um sieve.

Topsoil, fertilizer, seed and mulch shall conform to Section M.13.

Pavement and sidewalk shall conform to Sections M.02, M.03 and M.04.

**10.01.03--Construction Methods:** Trenches shall be of the depth and cross-section shown on the plans. The sand for encasement shall be placed as shown on the plans.

After the excavation is completed, the Contractor shall notify the Engineer; and no conduit or cable shall be placed in the excavated area until the Engineer has approved the depth and cross-section of the excavation.

Suitable material removed in making the excavation shall be used for backfill. No stones or coarse material shall be placed adjacent to the conduit or cable. All surplus or unsuitable material shall be removed and disposed of as directed. Should additional material be required for backfilling, it shall be obtained from sources approved by the Engineer.

All backfill shall be placed in layers of not more than 150 mm in depth after compaction and shall be thoroughly compacted by means of vibrators or by pneumatic tampers. Hand tampers shall be used only with permission of the Engineer. The backfill shall be brought to the surface of the surrounding ground and neatly graded, except that where excavation is required in existing lawn or grass areas, the backfill shall be brought to within 100 mm of the top of the trench; and the remainder shall be filled with topsoil to 20 mm above adjacent areas as directed by the Engineer. Marking tape shall be installed in the trench at the depth and to the requirements set forth in Article 1.05.15.

Where trenching occurs in riprap or crushed stone areas, the surface material shall be replaced in kind. Where trenching in sidewalk or paved areas, the trench shall be sawcut and backfilled to within the depth from the surface required to replace the removed sidewalk or pavement structure, which shall then be replaced. The edges of all trenches in paved surfaces shall be sawcut to neat lines prior to repavement. All trenches in existing or new roadway which parallel the curb, shall be no more than 500 mm from the curb, or when no curb is present, the apparent edge of road. The exception shall be to avoid existing roadway conditions such as catch basins, water gates, manholes etc.

**10.01.04--Method of Measurement:** This work will be measured for payment by the number of meters of trenching and backfilling, complete and accepted. If rock, conforming to the description given under Article 2.05.01, is encountered, the Contractor shall strip it of sufficient overlying material to allow for proper measurement, and shall notify the Engineer that the rock surface is ready for measurement. If the Contractor fails to give such notice, the Engineer will presume the measurements taken at the time he first saw the material in question will give the true quantity of rock excavation.

For measurement where rock is encountered in trenching, payment lines shall be vertical and 600 mm in width.

**10.01.05--Basis of Payment:** This work will be paid for at the Contract unit price per meter for "Trenching and Backfilling," which price shall include all materials, tools, equipment and labor necessary to complete the excavation in conformity with the plans or as ordered.

It shall also include all sand encasement, backfilling, grading, seeding, fertilizing, mulching, disposal of surplus material, sawcutting sidewalks and paved areas, as well as furnishing and installing riprap, crushed stone, topsoil, sidewalk, pavement or structure, as the case may be.

When rock, conforming to the description given under Article 2.05.01 is encountered within the limits of trenching, its removal will be classified; and the accepted quantities of rock in trench excavation will be paid for at the Contract unit price per cubic meter for "Rock in Trench Excavation."

Any backfill material required, whose source is other than the trenching excavation, will be paid for at the Contract unit price for the material being used or as extra work if no unit price has been established.

Any pavement or sidewalk replaced beyond the maximum trench limits as shown on the plans and approved by the Engineer, will be paid for at the Contract unit price for the material being used, or as extra work, if no unit price has been established.

Pay Item	Pay Unit
Trenching and Backfilling	m
Rock in Trench Excavation--0-1.2, 0-3, 0-4.5, and 0-6 m deep	m <sup>3</sup>