

ITEM 0222001

TRENCHING & BACKFILLING TYPE I

DESCRIPTION

This work shall include trenching and backfilling in sidewalk areas, under driveway ramps, behind curblines and under roadways having no reinforced concrete base material.

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 at the locations shown on the plans or as ordered by the Engineer.

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

REFERENCED ITEMS

Items 0102101, 0102301, 0103701, 010400, 0104702, 0106401 and 010680

REQUIRED SUBMITTALS

None

MATERIALS

Sand: 95 to 100 percent of the sand bedding material shall pass through 4 square mesh sieve.

Topsoil, fertilizing, seeding and mulching: These items shall conform to Item 0106401.

Processed traprock base: Shall conform to Item 0103701.

Sidewalk: Shall conform to Item 0102101 and/or Item 0102301.

Bituminous Pavement: Shall conform to Item 0104702.

Underground Warning Tape: The warning tape shall be model "THORTEC"

as manufactured by THOR ENTERPRISES INC. of Sun Prairie, WI or approved equal. It shall be of the RED color and SIX (6) inches in width and imprinted with "CAUTION - TRAFFIC SIGNAL CABLE BURIED BELOW".

CONSTRUCTION METHODS

Use of Vermeer or ditch witch trenching method is prohibited. Trenches shall be the depth and cross-section shown on the plans. If the depth is not specified, the top of conduit/duct bank shall be a minimum of 36 inches below finished grade. After the excavation is completed, the Contractor shall notify the Engineer; and no conduit shall be placed in the excavated area until the Engineer has approved the depth and cross-section of the excavation.

When backfilling over rigid metal conduit there shall be four (4) inches of sand placed around the conduit and the rest of the trench shall be backfilled with processed traprock material. All surplus material shall be removed and disposed of. The Underground Warning Tape shall be installed in the trench 12 inches above the top of conduit.

All backfill shall be placed in layers of not more than six (6) inches in depth after compaction and shall be thoroughly compacted by means of pneumatic tampers. When excavation is required in existing lawn or grass areas, the backfill shall be brought to within four (4) inches of the top of the trench; and the remainder shall be filled with topsoil to 3/4 of an inch above adjacent areas as directed by the Engineer.

When trenching in paved areas, the trench shall be backfilled to within the depth from the surface required to replace the pavement structure, the edge of the pavement shall be cut on a neat line 12 inches beyond the edge of trench for bituminous concrete material. When there is 3 feet or less between a curb and the edge of the trench or excavation nearest the curb, the restoration shall extend to the curb. All pavement removal, excavation, backfill and restoration shall be performed in accordance with all laws and shall meet the requirements of the appropriate item applicable to that work, or in absence of such item, to the satisfaction of the engineer.

MILLING AND PAVING

For all trenches of a length of fifty (50) feet or greater, a milling operation may be ordered by the engineer. The pavement surrounding and including the excavation shall be milled to a depth of 2 inches for the width of the traffic lane in which the excavation was made or for a width of 10 feet, whichever is greater. The milled area shall extend a minimum of 10 feet beyond the beginning and end of the excavation.

The milled edges shall be vertically faced and not tapered. The entire milled areas, including edges, shall be swept and tack coated with approved material at the appropriate rate. The milled area will then be overlaid with class 1 bituminous concrete, compacted with a steel drum roller of at least 10 tons to a thickness of 2 inches. The surface of the new overlay shall be flush with the adjacent existing pavement. Pavement joints shall be sealed with an approved asphaltic material. All pavement markings shall be replaced with same kind within the restoration area. This work will be performed and paid for in accordance with the requirements of items 010400, 0104702 and 010680.

When trenching in driveway ramps, the driveway ramp shall be sawcut at the nearest joint and the complete slab(s) of driveway ramp shall be removed and replaced. The unit price includes restoration of driveway ramps.

When trenching in sidewalk areas, the sidewalk shall be sawcut at the nearest joint and the complete slab(s) of sidewalk shall be removed and replaced. The unit price includes restoration of sidewalks.

When trenching in brick sidewalk areas, the sidewalk shall be restored matching the existing pattern. The unit price includes restoration of these sidewalks.

Any other area disturbed by the excavation shall be restored to match the existing surface.

When trenching for the installation of a conduit for service the contractor shall contact Northeast Utilities at for locating the existing spare laterals at the curb or locating the nearest electrical handhole or manhole.

When trenching for the installation of a conduit to the nearest SBC manhole for traffic signal projects, the contractor shall contact of SBC Inspector for identifying the exact location to enter the manhole. The conduit entry hole shall be drilled, not pounded, in the manhole walls. Telephone manhole cover shall not be removed or entered without the presence of the SBC inspector. Advance notification to SBC is required for scheduling an inspector for the job. Before entering the SBC manholes testing and ventilating manholes must fulfill all OSHA and SBC standards.

When trenching to connect the new conduit to an existing conduit or a utility conduit, and when trenching in the vicinity of an identified utility, it shall be the Contractor's responsibility to dig a test pit to verify the exact location of existing conduit(s).

METHOD OF MEASUREMENT

This work will be measured for payment by the number of linear feet of trenching and backfilling completed and accepted. If rock in definite ledge formation, boulders, portions of boulders, concrete structures are 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.

BASIS OF PAYMENT

This work will be paid for at the contract unit price per linear foot for "TRENCHING AND BACKFILLING TYPE-I", 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 sawcut, excavation, disposal of surplus material, sand encasement, underground warning tape, processed traprock, grading, seeding, fertilizing , mulching, restoration of sidewalk, milling and paving, restoration of trench, pavement, driveway ramps and any other type of surfaces as explained in the construction methods, test pits to verify the location of existing utilities or existing conduit for connection in the vicinity, and drilling into the utility structures for the installation of conduit.

When rock conforming to the description given under Method of Measurement 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 yard for "Rock in Trench Excavation".

<u>PAY ITEM</u>	<u>DESCRIPTION</u>	<u>PAY UNIT</u>
0222001	Trenching and Backfilling Type-I	LF