

ITEM 018010

Item 0180101 - UTILITY TRENCHING

Item 0180102 - UTILITY SERVICE LATERALS

Item 0180103 - LUMINAIRE TRENCHING

DESCRIPTION

Work under this time shall consist of trenching; backfilling and satisfactory disposal of all surplus excavated materials, the removal of which is necessary for the proper installation of conduits or cable for installation of private utility services not being installed within roadway pavement or sidewalks in public streets at the locations shown on the plans or as ordered by the Engineer.

It shall also include conduits, the encasement of conduits or cable in concrete, 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 on the plans.

REFERENCED ITEMS

Items 0106401, 0111201 and 0111401

REQUIRED SUBMITTALS

None

MATERIALS

The materials for this work for the encasement of conduits or cable shall be concrete, which shall conform to Item 0111401.

Topsoil, fertilizer, seed and mulch shall conform to Item 0106401.

1. CONDUIT INSTALLATION

Trench Depth: 36" minimum to the top of the encasement for Utility Trench, and 30" for Luminaire Trench.

Backfill shall not contain stones larger than two inches in maximum dimension. Clean fill.

For Utilities Trench: Minimum 6-4" PVC conduit schedule 40, and in conformance with the utilities company's requirements.

For Utilities Service Lateral: Minimum 3-2" PVC conduit schedule 40, and in conformance with the utilities company's requirements.

For Luminaire Trench: Minimum 2-2" PVC conduit schedule 40. One spare, and one with 3 #8 wires, 2 hot legs and one ground wire.

Minimum 1/4" nylon pull rope must be installed and secured in Utility Trench conduits, which will be capped on each end.

At pole- 90 degree galvanized steel bend, 24" minimum radius.
At house- 90 degree schedule 40 PVC bend.

Warning tape supplied by Utilities Company. Installed by Contractor 12" above conduits.

Necessary manpower and equipment is required for backfilling at time of installation of facilities.

Maintain 18" minimum horizontal clearance to adjacent sewers, water lines, fuel (gas and oil) lines, and building foundations and steam lines.

CONSTRUCTION METHODS

Utility Trench, Utility Service Lateral and Luminaire Trench shall be of depth and cross-section shown on the plans. The concrete for encasement shall be placed as shown on the plans.

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

Suitable materials removed in making the excavation shall be used for backfill. No stones or coarse materials 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 City.

All backfill shall be placed in layers of not more than six inches 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 City. 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 four inches of the top of the trench; and the remainder shall be filled with topsoil of $\frac{3}{4}$ of an inch above adjacent areas as directed by the City.

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 backfilled to within the depth from the surface required to replace the removed sidewalk of pavement structure, which shall then be replaced.

METHOD OF MEASUREMENT

This work will be measured for payment by the number of linear feet of Utility Trenching, Utility Service Lateral or Luminaire Trenching, complete and accepted. If rock, conforming to the description given under Item 0111201, is encountered, the Contractor shall strip it of sufficient overlying material to allow for proper measurement, and shall notify the City that the rock surface is ready for measurement. If the Contractor fails to give such notice, the City 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 four feet in width.

BASIS OF PAYMENT

This work will be paid for at the contract unit price per linear foot for "UTILITY TRENCHING", "UTILITY SERVICE LATERALS" AND "LUMINAIRE TRENCHING", 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 concrete encasement, conduits, joints, (wire for Luminaire Trench) fittings, backfilling, grading, seeding, fertilizing, mulching, disposal of surplus material as well as furnishing and installing riprap, crushed stone, topsoil, sidewalk, pavement or structure, as the case may be.

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

<u>PAY ITEM</u>	<u>DESCRIPTION</u>	<u>PAY UNIT</u>
0180101	Utility Trenching	LF
0180102	Utility Service Laterals	LF
0180103	Luminaire Trenching	LF