

ITEM 010300

Item 0103001 - ROCK EXCAVATION

Item 0103002 - ROCK IN TRENCH EXCAVATION

DESCRIPTION

The work requirements of this item shall consist of the satisfactory removal and disposal of rock from mass excavations, or excavated from confined trenches as necessary for the proper completion of the work as shown on the plans or as ordered by the engineer, all in accordance with these specifications. This item will be paid for on a unit price basis if any rock is encountered in completing the proposed scope of work. Normal earth excavation is covered and paid for in other items.

REFERENCED ITEMS

None

REQUIRED SUBMITTALS

None

MATERIALS

None

CONSTRUCTION METHODS

1. **DEFINITION OF ROCK**

Rock Excavation:

Where rock is encountered within the limits of mass excavation as shown on the plans or as directed by the engineer, it shall be removed as required to permit the construction work. Rock excavation shall be defined as boulders exceeding 2 cubic yards in volume, or solid ledge rock, which, in the opinion of the Engineer, requires for its removal drilling and blasting or wedging, or sledging, or barring. No hardpan, soft or disintegrated rock which can be removed with a pick, loose, shaken, or previously blasted rock or broken stone smaller than two (2) cubic yard, in rock filling or elsewhere, and no rocks exterior to the maximum limits of excavation, as approved by the Engineer, will be measured or allowed as rock excavation.

Rock in Trench Excavation:

Where rock is encountered within a confined area during a trenching operation, it shall be removed as required to permit the construction work. Rock in trench excavation shall be defined as boulders exceeding 1 cubic yard in volume, or solid ledge rock, which, in the opinion of the Engineer, requires for its removal drilling and blasting or wedging, or sledging, or barring. No hardpan, soft or disintegrated rock which can be removed with a pick, loose, shaken, or previously blasted rock or broken stone smaller than one (1) cubic yard, in rock filling or elsewhere, and no rocks exterior to the maximum limits of the trench excavation, as approved by the Engineer, will be measured or allowed as rock in trench excavation.

Rock shall be excavated to the depth limits of the sub-grade as shown on the plans or as directed by the Engineer. Where explosives and blasting are used, all laws and ordinances of municipal, state and federal agencies relating to the use of explosives shall be complied with. All blasting shall be performed by qualified personnel and proper precautions shall be taken to protect persons, property, and the work from damage or injury from blast or explosion. The rock shall be well-covered with effective blast mats, and the Contractor shall not commence blasting before giving sufficient advance warning to all persons in the vicinity of the work. Care shall be taken to avoid damage to water pipes, gas pipes, sewers, drains, or other structures. Caps or other primers shall not be kept in the same place in which dynamite or other explosives are stored.

Where rock is encountered close to buildings or other structures, special precautions shall be observed in extreme cases, the Contractor may be required to remove rock without the use of explosives, if so directed by the Engineer.

When rock is encountered, the Contractor shall notify the Engineer and shall strip or expose the rock to such an extent that in the Engineer's opinion, the necessary measurement can be taken for rock excavation. If the Contractor shall fail to give such notice(s), or the Engineer shall presume that measurements taken at the time the Engineer first sees the material in question will give the true quantity of excavation.

METHOD OF MEASUREMENT

If necessary, as determined by the engineer, the contractor shall prepare existing and as built cross sections at set intervals, plotted to scale, that show the original conditions before excavation and the as-built condition after rock excavation.

Depth of rock excavation will be measured in place by taking the difference in elevation between the existing rock surface and the bottom of the actual completed

and accepted trench or excavation grade or approved revised plan grade. If required by the engineer the contractor shall compute the volume of excavation by the average end area method of calculation and submit these computations to the engineer.

Width limits for rock excavation shall be the vertical planes to which the material is actually removed except that in no case shall the width be greater than that indicated on the plans for excavation.

BASIS OF PAYMENT

This work will be paid for at the contract unit price per cubic yard for "ROCK EXCAVATION", which price is an additional compensation over the normal excavation paid in the lump sum price. The price shall include all materials, tools, equipment and labor necessary to complete the rock excavation in conformity with the plans or as ordered. It shall also include the disposal of excavated rock.

<u>PAY ITEM</u>	<u>DESCRIPTION</u>	<u>PAY UNIT</u>
0103001	Rock Excavation	CY
0103002	Rock in Trench Excavation	CY