

ITEM 903 ROCK EXCAVATION

903.01 Description

903.02 Blasting

903.03 Estimated Quantities

903.04 Method of Measurement

903.05 Basis of Payment

903.01 Description. This work consists of furnishing all labor, equipment and materials for removing rock from the specified work limits of the trench, disposing of same, and backfilling where such is not otherwise provided.

The City defines rock as boulders and pieces of concrete, slag, or masonry exceeding 1/2 cubic yard (cubic meter) in volume, or solid ledge rock with a Rock Quality Designation (RQD) of 75 or greater and, that requires drilling and blasting for removal, or wedging or sledging, or barring or breaking up with a power-operated tool.

The City does not define soft or disintegrated rock or slag removable with a hand-pick or power-operated excavator or shovel equipped with bucket mounted rippers, loose, shaken, or previously blasted rock or broken stone in rock fillings or elsewhere, or rock beyond the maximum limits of measurement allowed, that may fall into the excavation as rock..

903.02 Blasting. When and if necessary to blast with explosives for the prosecution of the work, use the highest degree of care and adequate protective measures to not endanger life, completed portions of this contract project, and all other public and private property. Before conducting any blasting operations, furnish the Engineer, in writing, a schedule of intended blasting operations. Provide the Engineer prior written notification of any changes in such schedule.

Use explosives in blasting in accordance with 107.10 and all laws, rules and regulations of the federal, state, local agencies and the insurer governing the keeping, storage, use, manufacturing, sale, handling, transportation, and other disposition of explosives. Conduct operations with every precaution by trained, reliable workers under satisfactory, experienced supervision. Do not initiate a blast until all persons in the vicinity have had notice and reached positions out of danger. The City will make no additional payment for damages resulting from the use of explosives.

Provide public liability and property damage insurance for all blasting operations as specified in this section. Conduct all blasting during the daylight hours only, limited to certain daylight hours if required by the Engineer.

Conduct all firing in accordance with Section 107.10 and make suitable provisions to prevent the scattering of broken rock, earth, stones or other material during blasting operations.

903.03 Estimated Quantities. Where no data is available as to actual presence of rock, the quantity of rock listed in the estimate is intended only as an allowance for bid purposes if random rock is encountered. Where available data indicates that the Contractor will encounter rock, the quantity listed in the estimate includes the estimated amount based on such data, plus some additional amount as an allowance for possible excess of actual quantity over estimated quantity. The City will estimate the quantity by

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a straight line profile generated between soil borings where the elevation at the boring is determined by the top of the stratum where the RQD is 75 or greater.

903.04 Method of Measurement. The Engineer will not measure hardpan for payment under this item. The Engineer will calculate the volume of rock in the sewer trench for payment on the basis of the specified trench width and a bottom limiting plane at the level of the subgrade as shown on the applicable standard construction drawings. The Engineer will determine the upper limit for payment by one of the following methods:

1. **By Stripping.** Remove all earth and other materials capable of removal with an adequately sized excavator equipped with bucket mounted rippers from the rock surface prior to blasting. The Engineer will calculate the volume by measured rock profile elevations.
2. **By the Engineer.** After completing blasting and excavation, the Engineer will determine the profile of the rock that the Contractor could not excavate with bucket mounted rippers and will approximate the top of the stratum where the RQD is 75 or greater.

903.05 Basis of Payment. The City will pay the calculated number of cubic yards (cubic meters) of rock excavation measured at the contract unit price per cubic yard (cubic meter).

The City will pay under:

Item	Unit	Description
903	Cubic Yard (Cubic Meter)	Rock Excavation Where the Contractor Can Use Explosives
903	Cubic Yard (Cubic Meter)	Rock Excavation Where the Contractor Cannot Use Explosives