

900 SEWERAGE WORK

ITEM 903 - ROCK EXCAVATION

- 903.01 Description**
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- 903.03 Estimated Quantities**
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903.01 Description. This work shall consist 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.

Rock shall be defined as boulders and pieces of concrete, slag, or masonry exceeding 1/2 cubic yard (cubic meter) in volume, or solid ledge rock which has a Rock Quality Designation (RQD) of 75 or greater and, requires for its removal drilling and blasting, or wedging or sledging, or barring or breaking up with a power-operated tool. No soft or disintegrated rock or slag which can be removed with a hand-pick or power-operated excavator or shovel equipped with bucket mounted rippers; no loose, shaken, or previously blasted rock or broken stone in rock fillings or elsewhere; and no rock exterior to the maximum limits of measurement allowed, which may fall into the excavation, will be measured or allowed.

903.02 Blasting. When and if it is necessary, for the prosecution of the work to be done under this contract, to resort to blasting with explosives, the Contractor shall use the highest degree of care and adequate protective measures so as not to endanger life, completed portions of this contract project, and all other property both public and private. Before conducting any blasting operations, he shall furnish the Engineer, in writing, a schedule of intended blasting operations and he shall give the Engineer prior written notification of any changes in such schedule.

The responsibility of the Contractor with respect to the use of explosives in blasting includes compliance with Section 107.11 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. The Contractors operations shall be conducted with every precaution by trained, reliable workers under satisfactory, experienced supervision. Blast shall not be fired until all persons in the vicinity have had notice and reached positions out of danger. The Contractor shall be responsible for any and all damages resulting from the use of explosives.

All blasting operations shall be covered by public liability and property damage insurance as elsewhere specified herein. All blasting shall be conducted during the daylight

hours only, with the provision that, when required by the Engineer, blasting shall be limited to certain daylight hours.

All firing shall be done in accordance with Section 107.11 and the Contractor shall 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 in event random rock is encountered. Where available data indicates that rock will be encountered, 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 quantity will be estimated by 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. No hardpan will be measured for payment under this item. The volume of rock in the sewer trench for which payment is to be made will be computed 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 upper limit for payment will be determined by one of the following methods:

1. **By Stripping.** All earth and other materials capable of removal with an adequately sized excavator equipped with bucket mounted rippers shall be removed from the rock surface prior to blasting and the volume will be computed by measured rock profile elevations.
2. **By the Engineer.** After blasting and excavation have been accomplished, the Engineer will determine the profile of the rock which in his opinion could not be excavated with bucket mounted rippers and approximates the top of the stratum where the RQD is 75 or greater.

903.05 Basis of Payment. The computed number of cubic yards (cubic meters) of rock excavation measured for payment will be paid for at the contract unit price per cubic yard (cubic meter).

Payment will be made under:

| Item | Unit | Description |
|-------------|--------------------------|--|
| 903 | Cubic Yard (Cubic Meter) | Rock Excavation Where Explosives Can Be Utilized. |
| 903 | Cubic Yard (Cubic Meter) | Rock Excavation Where Explosives Cannot Be Utilized. |

