

## PARTIALLY GROUTED RIPRAP

The Standard Specifications are revised as follows:

SECTION 616, BEGIN LINE 4, INSERT AS FOLLOWS:

This work shall consist of placing broken stone or concrete which may or may not be grouted, *partially grouted*, precast slabs, or slopewall in accordance with these specifications and in accordance with 105.03.

SECTION 616, BEGIN LINE 33, DELETE AND INSERT AS FOLLOWS:

The aggregate, preparation of the slope, and the depth of the riprap aggregate for grouted *or partially grouted* riprap shall be in accordance with 616.05. After the aggregate has been placed and accepted, ~~all openings shall be filled with cement grout. The finished surface shall be approximately smooth, solid, and true to line, grade, and section.~~ *portland cement grout shall be placed at a rate of 2.0 cu ft/sq yd of riprap in a 1 ft by 1 ft grid line pattern. The grout line shall be placed with 2/3 of the grout line residing in the upper half of the riprap layer and 1/3 of the grout line penetrating into the lower half. Grout shall be placed by a hose or tremie, or by automated mechanical means.*

Grout shall be composed of 1 part portland cement and 4 parts fine aggregate. The portland cement and the fine aggregate shall be dry-mixed to a uniform mixture. Water shall be added as the mixing continues until the grout attains a ~~consistency that will enable it to flow into the openings~~ *wet grout density ranging from 120 to 140 lb/cu ft.*

SECTION 616, BEGIN LINE 153, INSERT AS FOLLOWS:

Grouted *or partially grouted* riprap and precast concrete riprap, including the area occupied by the wedge course, will be measured by the square yard, parallel to the slope.

SECTION 616, BEGIN LINE 163, INSERT AS FOLLOWS:

The accepted quantities of dumped, revetment, class 1, and class 2 riprap obtained from outside the right-of-way will be paid for at the contract unit price per ton. Dumped, revetment, class 1, and class 2 riprap obtained from within the project limits will be paid for at the contract unit price per ton. Grouted *or partially grouted* riprap will be paid for at the contract unit price per square yard of the specified depth.

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