

## SECTION 66

### SLOPE PROTECTION

#### 66.1 DESCRIPTION

##### A. General

This work consists of the excavation of toe trenches, slope preparation, the placement of drainage fabric or foundation filter material of sand or gravel, a spread of spalls, and/or a spread of dumped riprap stone.

##### B. Related Work

Section 65	Riprap
Section 105	Fine Aggregate for use in Portland Cement Concrete
Section 109	Riprap and Slope Materials
Section 124	Fabric Formed Concrete Mat Material
Section 125	Gabions
Section 146	Erosion Treatment Material
Section 202	Engineering Fabric

#### 66.2 MATERIALS

- A. Riprap materials for slope protection shall conform to the requirements of Section 109.
- B. Filter material shall be a fine gravel or sand as specified in Section 105 or as directed by the Engineer.
- C. Spalls shall consist of broken or crushed Portland Cement Concrete conforming to the general gradation specifications of Section 109, Riprap and Slope Materials.
- D. Filter Fabric - Drainage Fabric shall conform to the requirements of Section 202.

#### 66.3 CONSTRUCTION REQUIREMENTS

##### A. Slope Preparation

The leading or upstream edge of the area to receive slope protection shall be over excavated to the depth and width indicated on the plans to form a thickened edge and toe trench within which to embed the filter fabric or filter material.

Damage occurring in the toe trenches or on the slopes prior to or during the placement of the filter fabric or material, spalls and dumped riprap shall be satisfactorily repaired at the Contractor's expense. Soft or otherwise unsatisfactory areas shall be remedied in advance of placement of any filter fabric or material. Repair work shall be performed by the Contractor at his expense. The excavated material obtained from shaping the slopes and preparing toe trenches shall be suitably disposed of by the Contractor.

B. Placement of the Filter Material

The filter material shall be uniformly spread in the toe trench and on the fill slopes in one (1) layer without segregation. Compaction is not required. The spread of filter material shall present a uniform surface free of mounds, ridges and windrows.

C. Placement of Spalls

Spalls shall be dumped and spread upon the filter material to obtain the best possible graded mass and uniform thickness. Hand and rake methods may be used.

D. Placement of Dumped Riprap

The placement of riprap shall be in accordance with Section 65.

E. Placement of Drainage Fabric

Drainage fabric shall be placed on a prepared surface under the area to receive riprap or gabions, where indicated on the plans. The fabric shall be laid smooth with the Manufacturer's recommended overlap width in strips laid perpendicular to the direction of flow. The overlapping layer shall be laid to the upstream side.

#### 6.4 METHOD OF MEASUREMENT

- A. The filter material will be measured to the nearest one-tenth (0.1) ton.
- B. Spalls will be measured to the nearest one-tenth (0.1) ton or one-tenth (0.1) cubic yard.
- C. The dumped riprap stone will be measured to the nearest one-tenth (0.1) ton or one-tenth (0.1) cubic yard.
- D. Drainage fabric will be measured to the nearest one-tenth (0.1) square yard, in place with no addition for overlap.

**66.5 BASIS OF PAYMENT**

- A. The filter material will be paid for at the contract unit price per ton. Payment for this item will be full compensation for furnishing the filter material, for excavation, the disposal of waste and for labor, equipment and tools required.
- B. The spalls material will be paid for at the contract price per ton or cubic yard. Payment for this item will be full compensation for furnishing the material, labor, equipment, and tools required to strip the pits, screen, crush, load, haul, place, and spread the spalls.
- C. The dumped riprap stone material will be paid for at the contract unit price per ton or cubic yard. Payment for this item will be full compensation for furnishing the material, excavation, the disposal of waste, labor, equipment, and tools required.
- D. The drainage fabric will be paid for at the contract unit price per square yard. Payment for this item will be full compensation for furnishing the material, excavation, the disposal of waste, labor, equipment, and tools required.

**END OF SECTION**