

## **829 - STONE RIPRAP**

### **829.1 DESCRIPTION**

This work shall consist of furnishing and placing a layer of stone riprap on properly compacted subgrade for protection of the channel slopes. Riprap shall be placed to reasonably conform to the lines and grades shown on the plans and in accordance with Section 829 of the Standard Specifications, except as otherwise modified herein.

### **829.2 MATERIALS**

Stone for riprap shall be sound durable limestone free from cracks, seams, shale partings, and overburden spoil. Deleterious substances which include soft friable particles, objectionable materials, and other foreign matter shall not exceed 5 percent by weight. Geotextile, if specified, shall meet the requirements of Subsection 1710 of the Standard Specifications, unless modified on the plans.

Stone for riprap shall conform to the requirements of Section 1114 and as amended by Special Provision 15-11001-R03 for the designation as indicated on the plans.

### **829.3 CONSTRUCTION REQUIREMENTS**

#### **a. Placement**

Slope protection work shall not begin until all construction within the channel and all channel grading is complete and approved by the Engineer. In a designated FEMA floodplain the approval shall be based on a survey of the channel to insure that the grading complies with the lines and grades shown on the Drawings.

Riprap shall be placed to its full layer thickness in one operation and in such a manner as to minimize segregation and avoid displacing the underlying material. The finished surface of riprap shall blend smoothly into surrounding slope lines.

Riprap placing procedures shall result in a reasonable distribution of the stone from the largest to the smallest sizes, free from clusters of the large stones and pockets of the small stones. Placement shall begin at the bottom and proceed up the slope in a progressive manner. Dumping of stone at the top of the slope and rolling into place will not be permitted. Moving stone by drifting and pounding of rock into place will not be permitted. Final finishing of the slope shall be done as the material is being placed. Hand placing shall be employed to the extent necessary to secure the results specified herein.

The contractor shall maintain the riprap protection until accepted by the Engineer and any material displaced by any cause shall be replaced at his expense to the requirements specified herein.

### **829.4 MEASUREMENT AND PAYMENT**

The Engineer will measure riprap by the square yard of materials acceptably placed as computed from the neat lines and grades shown on the plans. No measurement will be made of any excavation, backfill, filter fabric, or other appurtenances necessary to complete the work.

Payment for "Riprap" at the contract unit price bid is full compensation for the specified work.