

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION
STREAMBANK AND SHORELINE PROTECTION – LOOSE ROCK RIPRAP
CODE 580R**

1. MATERIALS AND GRADATION

The source of the rock will be approved by the engineer prior to the placement of the riprap. The gradation shall be as shown on the drawings.

2. SUBGRADE PREPARATION

- a. The subgrade surface on which the riprap or bedding course is to be placed shall be cut or filled to the lines and grades shown on the drawings. If fill material is required, it shall be a select material approved by the engineer and compacted to a density equal to the undisturbed subgrade.
- b. Riprap shall not be placed until the foundation preparation is completed and the subgrade surfaces have been inspected and approved by the engineer.

3. FILTER LAYER OR BEDDING

- a. The gradation shall be as shown on the drawings. When the drawings specify filter layers or bedding beneath riprap, the filter or bedding material shall be spread uniformly on the prepared subgrade surfaces to the depth specified.
- b. Compaction of filter layers or bedding will not be required, but the surface of such layers shall be finished reasonably free of mounds, dips, or windrows.

4. EQUIPMENT-PLACED ROCK RIPRAP

- a. The rock shall be placed by equipment on the surfaces and to the depths specified. The riprap shall be constructed to the full course thickness in one operation and in such a manner as to avoid serious displacement of the underlying materials. The rock shall be delivered and placed in a manner that will insure that the riprap in place shall be reasonably homogeneous with the larger rocks uniformly disturbed

and firmly in contact one to another with the smaller rocks and spalls filling the voids between the larger rocks.

- b. Riprap shall be placed in a manner to prevent damage to structures. Hand placing will be required to the extent necessary to prevent damage to the permanent works.

5. HAND-PLACED RIPRAP

The rock shall be placed by hand on the surfaces and to the depths specified. It shall be securely bedded with the larger rocks firmly in contact one to another. Spaces between the larger rocks shall be filled with small rocks and spalls. Smaller rocks shall not be laid on edge.

6. MEASUREMENT

- a. The unit of measurement shall be the cubic yard.
- b. The volume of each type of riprap and the volume of each type of filter layer or bedding will be measured within the specified limits as shown on the drawings and computed to the nearest cubic yard by the method of average cross-sectional end areas.