

NATURAL RESOURCES CONSERVATION SERVICE

CONSTRUCTION SPECIFICATION

580 – STREAMBANK STABILIZATION AND SHORELINE PROTECTION – ROCK RIPRAP

1. SCOPE

This work shall consist of furnishing and installing rock riprap, including filter layers or bedding, as shown on the drawings.

Prior to commencing construction, public utilities shall be notified in accordance with N.Y.S. Industrial Code 753.

2. MATERIALS

Rock shall be free from dirt, clay, sand, rock fines and other materials not meeting the required gradation limits.

Individual rock fragments shall be dense, sound and free from cracks, seams and other defects conducive to accelerated weathering. Except as otherwise specified, the rock fragments shall be angular to subrounded in shape. The least dimension of an individual rock fragment shall not be less than one-third the greatest dimension of the fragment. Rounded river rock and field stone are generally not acceptable.

Except as provided below, the rock shall have the following properties:

- a) Bulk specific gravity (saturated surface-dry basis) not less than 2.5
- b) Absorption not more than 2% by weight
- c) Soundness: Weight loss in 5 cycles not more than 10 percent when sodium sulfate is used or 15% when magnesium sulfate is used.

Rock may be accepted if similar rock from the same source has been demonstrated to be sound after 5 years or more of service under conditions of weathering, wetting and drying, and erosive forces similar to the project.

Filter or bedding materials when required, shall be as shown on the drawings.

3. SUBGRADE PREPARATION

Geotextile, if specified, shall be non-woven, polymer fabric, manufactured for erosion control. Geotextile will be Class 1 and shall meet the requirements of NRCS Material Specification 592.

The subgrade surfaces on which the riprap or bedding course is to be placed shall be cut

or filled and graded to the lines and grades shown on the drawings. When fill to subgrade lines is required, it shall consist of appropriate onsite materials.

Riprap shall not be placed until the foundation is completed and the subgrade surfaces have been inspected and approved by the approving official or designated representative.

4. FILTER LAYERS AND BEDDING

When a filter layer or bedding is specified, the material shall be spread uniformly on the prepared subgrade surface to the depth specified. 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.

When geotextile is specified, it shall be unrolled along the placement area and loosely laid without stretching. Geotextile shall be overlapped a minimum of 18 inches and secured according to the manufacturer's recommendations. Geotextile shall be anchored as shown on the drawings.

5. ROCK RIPRAP PLACEMENT

When rock is to be dumped by equipment, it shall be dumped 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 distributed and firmly in contact to one another, with the smaller rocks and spalls filling the voids between the larger rocks.

When equipment-placed riprap is specified, the rock shall be placed on the surfaces and to the depths as shown on the drawings. It shall be securely bedded with the larger rocks firmly in contact to one another. Spaces between the larger rocks shall be filled with smaller rocks and spalls. Smaller rocks shall not be grouped as a substitute for larger rock. Flat slab rock shall be laid on edge, except where it is laid like paving stone and the thickness of the rock equals the specified depth of the riprap course.

If live willow stakes are specified with the riprap, care must be taken in placing the rock to avoid excessive damage to the willow stems.

6. MEASUREMENT AND PAYMENT

Method 1

For items of work, for which specific unit prices are established in the contract, the length of the rock riprap will be measured to the nearest linear foot, measured at the top of riprap. Payment for the rock riprap will be made at the contract unit price. Such payment will constitute full compensation for all labor, materials, including filter and bedding layers, equipment, tools, and other appurtenances necessary and incidental to the completion of the work.

Method 2

For items of work for which specific unit prices are established in the contract, the volume of rock for the rock riprap will be measured and computed to the nearest cubic yard. Payment for the rock riprap will be made at the contract unit price. Such payments will constitute full compensation for all labor, materials, including filter and bedding layers, equipment, tools and other appurtenances necessary and incidental to the completion of the work.

Method 3

For items of work for which specific unit prices are established in the contract, the quantity of rock for the rock riprap will be computed to the nearest ton by actual weight. For each load of rock riprap placed, the contractor shall furnish to the engineer a statement of delivery ticket showing the weight to the nearest 0.1 ton. Payment for the rock riprap will be made at the contract unit price. Such payments will constitute full compensation for all labor, materials, including filter and bedding layers, equipment, tools and other appurtenances necessary and incidental to the completion of the work.

Method 4

For items of work for which specific lump sum prices are established in the contract, the quantity of rock riprap will not be measured. Payment for the rock riprap will be made at the contract lump sum price. Such payment will constitute full compensation for all labor, materials, including filter and bedding layers, equipment, tools and other appurtenances necessary and incidental to the completion of the work.

Compensation for any item of work described in the contract but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in Section 7.

7. ITEMS OF WORK AND ADDITIONAL CONDITIONS: