

SECTION 313700
RIPRAP

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**SECTION 313700
RIPRAP**

PART 1 - GENERAL

1.1 SUMMARY

This Section applies to placing stone riprap, with or without grout as specified. Riprap shall be placed at locations shown on the Plans, as noted in the Specifications, and as directed by the Engineer.

1.2 MEASUREMENT

- A. Measurement will be by the volume, computed by the area staked and the specified thickness.
- B. Geotextile filter fabric is incidental to riprap. Separate payment is not made for geotextile filter fabric.

1.3 PREPARATION

- A. The foundation for the riprap, with or without filter material, shall be excavated and shaped to the cross-sections indicated on the Plans in the Specifications, unless otherwise directed by the Engineer. All loose foundation material shall be thoroughly compacted before placement of the riprap or filter material.
- B. The Contractor shall place geotextile material under the riprap unless otherwise specified in the Contract. Filter material shall cover the entire area on which the riprap is to be placed.
- C. Wherever geotextile filter material is placed, the Contractor shall ensure that:
 - 1. The foundation surface is relatively smooth and free of stones, sticks, and other debris or irregularities that might puncture the fabric.
 - 2. Placing material or conducting construction operations do not tear, puncture, or shift the fabric.
- D. Where multiple fabric widths or lengths are required, they shall be placed with the longest dimension parallel to the direction of water flow. If not seamed, splices and joints shall be overlapped a minimum of 24 inches, except that under water the overlap shall be 36 inches. The joint laps shall be shingled (both in the flow direction and from top of slope to bottom) so as to direct water flow over the joint without undermining. In lieu of joint overlapping, multiple fabric pieces may be sewn together.

PART 2 - PRODUCT

2.1 MATERIALS

- A. Riprap shall be sound, durable rock which is roughly rectangular shape and of suitable quality to insure permanence in the condition in which it is to be used. Rounded stones, boulders, sandstone, or similar soft stone will not be acceptable. Material shall be free from overburden, spoil, shale, and organic material. Each load of riprap shall be reasonably well graded from the smallest to the maximum size specified and shall conform to State of Georgia Department of Transportation Standard Specifications Section 805. Riprap shall consist of a durable field or quarry stone shaped roughly as rectangular blocks. One dimension of each exposed riprap shall be not less than 8 inches. The joints in the riprap shall be filled with spalls of suitable size to construct a solid, stable slope, free from large voids and defects.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Dumping of stone at the top of the slope and rolling of stone down the slope will not be permitted. When stones are placed directly on the geotextile filter without a granular cushion, equipment will not be permitted to operate on top of the stones once they are placed. Construction equipment shall not operate directly on top of the geotextile.
- B. Riprap shall be placed by starting at the lowest elevations and working upwards.
- C. Random riprap shall be positioned in a manner that will provide uniform distribution of the various sizes of stone and produce a dense, well-keyed layer of stones with the least practical quantity of void space. The surface shall be leveled as necessary, to produce a reasonably uniform appearance and the required thickness.

3.2 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off the Owner's property.
- B. The disposal of all materials will be in accordance with the rules and regulations of the State of Georgia.

END OF SECTION 313700