## SPSRW-XX: Rock Toe

## Version Date: 06/12/2023 Revision Date: XX/XX/XXXX by XXX

### **DESCRIPTION**

The work covered by this section consists of furnishing, stockpiling, placing, and maintaining approved stone to be utilized to construct a rock toe, as specified in the Contract Document or as directed by the Engineer. The rock toe is used for bank toe protection, providing bank stability.

The quantity of structures to be constructed will be affected by site conditions during construction. The type and quantity of this structure may be increased or decreased at the direction of the Engineer. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the work.

### **MATERIALS**

Backfill material shall consist of a well-mixed gradation of, stone aggregate and earth. Earth material shall be sourced on site from stockpiled materials resulting from bank and/or channel bed excavations from channel construction activities. Earth material from channel bed excavation is preferable for well-mixed gradation placed in the channel and bank(s).

Stone aggregate and rip rap material shall meet the material requirements of NCDOT section 1005 General Requirements for Aggregate and NCDOT section 1042 Rip Rap Materials.

The size (length, width and depth (thickness)) of the stone material shall as specified by the Engineer in accordance with the construction documents.

Stone Backfill Material shall consist of durable field or quarry stone that is sound, hard, dense, slightly rounded, resistant to the action of air and water, and free of seams, cracks, or other structural defects. The Contractor cannot use limestone or concrete waste for stone.

### **METHODS**

Rock Toe

* 1. Prepare the toe of the stream bank for the placement of stone material by excavating and shaping the slopes of the trench.
  2. Place the stone material using mechanical means that produce a job within the tolerances required in the Contract Documents.
  3. Pack down the installed stone material once in place to ensure tight fit with minimal voids. Limit handwork to the amount necessary to fill small voids or correct localized areas.
  4. Finish grade the adjacent streambed and channel banks to provide a smooth even grade transition between project structure components (vane arms, sills, inverts, floodplain sills, etc.) and the existing and/or proposed ground surface.

In locations where exposed bedrock and/or other existing feature extends to and/or within the limits of the proposed work, the rock toe installation shall be field adjusted to incorporate the bedrock/existing feature into the finished work. The Engineer shall be contacted as soon as the presence of bedrock and/or other existing feature is field identified to determine the appropriate method of incorporation. Site conditions may require slight deviation from the plan and shall be approved by the Engineer.

### **MEASUREMENT**

The quantity of rock toe to be measured for payment will be the actual linear feet of toe installed and accepted by the Engineer. All measurement for rock toe protection shall be made uniformly along the surface of the bank.

### **PAYMENT**

The quantity of rock toe, measured as provided above, will be paid for at the contract unit price per linear foot of boulder toe installed and accepted. Payment will be full compensation for all work covered in this special provision, including, but not limited to grading, installation, adjusting, excavating, rock, and for furnishing all materials, labor, equipment, tools and incidentals necessary to complete the work as specified in the Contract Documents, or as directed by the Engineer.

Payment will be made under:

**ROCK TOE LF**