

**Revised December 4, 2017**

Rock slope scaling shall start at the top of the slope and work shall proceed downward toward the highway, removing all loose rock blocks and vegetation as the work progresses.

The new rock face will be inspected by the Engineer and Geologist to determine whether or not the rock slope scaling has been completed. If other rocks or vegetation are identified that require removal, the Contractor shall continue to scale the slope until the scaling has been completed to the satisfaction of the Engineer and Geologist.

- (c) Removal of Ledge Salvage or Waste Material. When all scaling work is complete, all material from inside the excavation line, as shown on the Plans, and all loose material from the rock slopes outside the excavation line shall be removed from the work area. The material may be disposed of in the project area, with permits approved by the Engineer and Agency's Environmental Section.

Material can be excavated and transported with reasonable types of equipment. However, under no circumstances shall any material be pushed towards or over the cliff crest.

- (1) A volume of removed ledge material not to exceed 100 CY shall be salvaged to the State of Vermont as specified in the Contract Documents.
- (2) Material to be wasted on the site shall meet the requirements of Subsection 703.05. The material, when placed in the waste area, shall be leveled and walked in by bulldozer and need not be heavily compacted.

58. METHOD OF MEASUREMENT. The quantity of Special Provision (Removal of Ledge Salvage Material) to be measured for payment will be the number of cubic yards of ledge material salvaged in the complete and accepted work.

Existing ledge material in the ditch line that is salvaged will be included for measurement.

A printed load ticket, which indicates truck identification and date and time of delivery, shall be furnished to the Engineer for each load delivered to the site.

The quantity of Special Provision (Removal of Ledge Waste Material) to be measured for payment will be the number of cubic yards of ledge material removed in the complete and accepted work.

The quantity of Special Provision (Trim Blasting, **Truck Measurement**) to be measured for payment will be the number of cubic yards removed from the ledge face in the complete and accepted work.

All material from previous activities shall be cleared from the ditch line prior to commencing Special Provision (Trim Blasting, **Truck Measurement**). All material accumulating in the ditch line due to trim blasting operations shall be removed and measured as Special Provision (Trim Blasting, **Truck Measurement**) prior to commencing any other ledge removal activities. No other ledge removal activities shall take place during trim blasting operations.

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Measurement for Special Provision (Trim Blasting, **Truck Measurement**), Special Provision (Removal of Ledge Salvage Material), and Special Provision (Removal of Ledge Waste Material) will be on a weight in pounds to a volume in cubic yards basis. The basis for the conversion from weight to volume shall be 170 lbs/cubic foot.

Portable scales sufficient to weigh trucks with up to ten (10) wheels shall be provided by the Contractor. Trucks having more than ten (10) wheels will not be permitted. The scales shall be certified for correct weight and sealed. Calibration shall be performed according to the manufacturer's recommendations. Storage, placement, and handling of the truck scales shall be the responsibility of the Contractor. Any damage done to the truck scales by the Contractor's operations shall be the Contractor's responsibility. Damaged scales shall be replaced or repaired to the satisfaction of the Engineer at no cost to the Agency.

When the scales are no longer needed, as determined by the Engineer, they shall remain the property of the Contractor.

In lieu of providing portable scale(s) for the project, the Contractor may utilize a local permanent truck scale(s) for weighing trucks. Use of local scale(s) shall be approved by the Engineer prior to beginning work.

The quantity of Special Provision (Hand Scaling) to be measured for payment will be the number of hours of qualified hand scaling operations used in the complete and accepted work, as required by the Contract Documents and as authorized by the Engineer. Hours measured will be per scaling operation used in the performance of the work, with a scaling operation consisting of three (3) scalers and one (1) foreman. No additional allowance will be made for premium time (overtime), and no allowance or payment will be allowed for any training, clothing, or equipment required.

The quantity of Special Provision (Machine Scaling) to be measured for payment will be the number of hours of qualified heavy equipment used in the complete and accepted work, as required by the Contract Documents and as authorized by the Engineer.

59. BASIS OF PAYMENT. The accepted quantities of Special Provision (Removal of Ledge Salvage Material) and Special Provision (Removal of Ledge Waste Material) will be paid for at the Contract unit price per cubic yard. Payment will be full compensation for performing the work specified, including refining, handling, loading, transporting, and placing the specified materials; for breaking down large blocks of rock prior to removal from the site; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

The accepted quantity of Special Provision (Trim Blasting, **Truck Measurement**) will be paid for at the Contract unit price per cubic yard. Payment will be full compensation for performing the work specified; for furnishing all materials required, including explosives; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

The accepted quantity of Special Provision (Hand Scaling) will be paid for at the Contract unit price per hour. Payment will be full compensation for hours of scaling operations accrued on the project; for furnishing all materials required; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work as required by the Contract Documents and as authorized by the Engineer.

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The accepted quantity of Special Provision (Machine Scaling) will be paid for at the Contract unit price per hour. Payment will be full compensation for performing the work specified; for furnishing, operating, and supervising the use of this equipment, including fuel, repairs, and attachments; and for furnishing all labor, tools, other equipment, and incidentals necessary to complete the work.

Payment for preparing and making required submittals and for furnishing truck scales will not be made separately, but will be considered incidental to the work under this Section.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.608 Special Provision (Removal of Ledge Salvage Material)	Cubic Yard
900.608 Special Provision (Removal of Ledge Waste Material)	Cubic Yard
900.608 Special Provision (Trim Blasting, <b>Truck Measurement</b> )	Cubic Yard
900.630 Special Provision (Hand Scaling)	Hour

DRY MIX FIBER REINFORCED SHOTCRETE

60. DESCRIPTION. This work shall consist of installing shotcrete buttresses and dental shotcrete on the faces of rock slopes at the locations shown in the Plans and as directed by the Engineer and Agency Geologist (Geologist). All shotcrete shall consist of dry mix fiber reinforced shotcrete, herein referred to as shotcrete.

The work includes high-angle shotcrete installation to be completed using industrial rope access methods. The Contractor shall provide all labor, materials, equipment, tools and appurtenances required for the installation of shotcrete to exposed rock slope surfaces, as shown on, specified in, or required by the Contract Drawings and Specifications, or as directed by the Engineer and Geologist.

The Contractor shall be solely responsible for the control, stability, and safety of its shotcreting activities at all times. Furthermore, the Contractor shall plan and conduct its operations and take all necessary precautions to:

- (a) Prevent damage to existing utilities, structures, roads, grades, slopes, surface water drainage features, underground piping, manholes, catch basins, drop inlets and other features.
- (b) Safeguard people and property.
- (c) Minimize traffic inconveniences.
- (d) Minimize dust and odors.
- (e) Provide safe working conditions.

61. GENERAL. This method of rock support consists of pneumatically applied dry mix fiber reinforced shotcrete and required reinforcing elements to construct permanent shotcrete buttresses and dental shotcrete.