

**BEDFORD  
13527**

January 27, 2011

**SPECIAL PROVISION**

**AMENDMENT TO SECTION 203 -- EXCAVATION AND EMBANKMENT**

**Item 203.91 - Rock Scaling - Hand Method  
Item 203.92 - Rock Scaling - Machine Method**

**Add** to Description:

**1.4** This work consists of scaling rock slopes by hand scaling methods requiring high-angle industrial rope access or by machine scaling methods. All the applicable provisions of this section shall apply unless specifically stated herein.

**1.5** On this project, the Design-Builder shall perform rock slope scaling to remove all loose and potentially unstable rock from the rock slopes at locations and limits as shown on the plans and/or or as directed, including loose rock that may be resting on the soil slope above the rock face. This work shall also include disposal of scaled rock and debris.

**1.5.1** Work shall be done by personnel equipped with appropriate hand tools and/or by machine scaling, using equipment and methods appropriate for the conditions of the site and for safe operations.

**1.5.2** This work also includes the removal and disposal of all vegetation (trees and brush) that jeopardizes the integrity of the slope within the scaling area. This includes the face and along the top, up to 20 feet back from the crest of the rock slope.

**Add** to Classification of Materials:

**2.9 Rock Scaling Equipment.**

**2.9.1** The Design-Builder shall furnish equipment capable of reaching all areas of the rock slope.

**2.9.1.1** The hand scaling operation shall include the use of standard steel mining rods, airbags, Boulder Buster™ or other appropriate tools.

**2.9.1.2** Machine scaling shall be done by large excavators, hydraulic splitters or expanders, and/or by other approved mechanical (non-explosive) means.

**Add** to Construction Requirements

**3.14 Rock Slope Scaling**

**3.14.1** Scaling of loose or potentially unstable rock shall be accomplished by hand or machine scaling methods.

**3.14.1.1** A written plan (1 copy) outlining the following: method of operation, proposed construction sequence and schedule, proposed rope access methods and safety plans, specific types and sizes of equipment to be used in the work, the number of rock slope scaling crews, and estimating the number of hours for each type of operation shall be submitted to the Department for approval two weeks per 105.02 prior to the start of rock scaling operations. The plan shall also include the method of daily rock removal if working adjacent to the road. This may require that a hydraulic impact hammer, loader, and truck(s) be on site each day that hand and machine scaling is scheduled.

**3.14.1.2 Hand Scaling Experience.** The contractor must have experience in performing stabilization methods while hanging on ropes (high-angle industrial rope access). It is required that the contractor have a minimum of 10 years experience in stabilizing slopes working from ropes. The contractor must show proof of these projects and supply at least three letters of recommendation from different state transportation agencies. The contractor must prove to the State that it has the experience and equipment available to perform all the stabilization necessary without having any equipment except for trucks, loaders and compressors at the base of the slope.

**3.14.1.3** The foreman responsible for the crew must have at least 6 years experience in all the stabilization techniques that will be required. A list of projects and letters of recommendation must be provided by qualified State Inspectors.

**3.14.1.4** The Rock Remediation Technicians (workers performing the hand scaling) will be required to have at least 4 years experience working on rock slopes from ropes and operating the equipment that is required for the stabilization of the slopes. Proof of experience will be required.

**3.14.1.5** Once the crew has been approved by the State no changes will be allowed without prior approval from the Department. A hand scaling crew shall consist of a Foreman and three Rock Remediation Technicians.

**3.14.1.6** The plan will be reviewed by the Research Geologist at the Bureau of Materials & Research. Work shall not begin until the plan is approved by the Department.

**3.14.2** Portions of any existing safety berm at the base of the rock slopes may be temporarily removed to allow for equipment placement during scaling and subsequent operation but shall be replaced upon completion of that specific section at the contractor's expense.

**3.14.3** The rock slope shall be thoroughly scaled to the satisfaction of the Department's Research Geologist to assure that the desired stabilized rock face is obtained. Upon completion, the scaled rock slope shall be stable and free from possible hazards of falling rocks, overhangs, or rockslides that endanger public safety.

**3.14.3.1** Care shall be taken to minimize damage to the surface of the adjacent roadway by the construction equipment or falling rock.

**3.14.3.2** After scaling the rock slope, any large sections of rock, which have fallen and are not transportable, shall be further reduced in size by mechanical or other approved means.

**3.14.3.3** Any hand and/or machine scaled rock that falls within the contract specified clear zone must be removed from the clear zone the same day that the rock is scaled and before operations cease for the day.

**3.14.4** The Design-Builder shall submit to the Engineer daily time reports. Time reports shall include the following:

- (1) Personnel time used for scaling of the rock slopes by hand method in units of actual hours of use.
- (2) Equipment time used for scaling of rock slopes by machine method in units of actual hours of approved equipment use.

**3.14.5** All areas disturbed by the Design-Builder's operations shall be restored to a condition equal to that found prior to construction at the Design-Builder's expense. Restoration shall include, but not be limited to, reshaping of the safety berm, loaming, fertilizing, reseeding, and mulching and realignment of any granite curb disturbed.

**3.14.6** Any damage to the pavement, guardrail, and/ or drainage structures adjacent to rock scaling and disposal operations shall be repaired by the Design-Builder.