



2016 ROAD AND BRIDGE SPECIFICATIONS [DIVISION VI—ROADSIDE DEVELOPMENT](#)

SPECIAL PROVISION COPIED NOTES (SPCNs), SPECIAL PROVISION (SPs) and SUPPLEMENTAL SPECIFICATIONS (SSs)

See “[Web List](#)” for a single list with links to the Specifications. (Future)

Specifications may also be found at the following locations:

- [VDOT Web](#) (Global Web Access)
- [OutsideVDOT](#) (Accessible by permission only)
- <http://www.virginiadot.org/business/resources/const/2016Rev.zip> (“zip” file [compressed WORD®])

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GUIDELINES — Use on all projects advertised between July 1, 2016 and January 1, 2017 (Do not use after this date).{2007-Spec Book 244, 303, 603, 606}

[SP600-000100-00](#)

VIRGINIA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION FOR
ROADSIDE DEVELOPMENT AND SOIL STABILIZATION

July 12, 2016

The various Sections of the **2016 Specifications** are amended as follows:

Section 244.02 (l) of the Specifications is replaced with the following:

Soil Retention Coverings shall include:

1. **Jute mesh** shall be a uniform, open, plain weave of undyed and unbleached single layer jute yarn. The yarn shall be loosely twisted and shall not vary in thickness by more than its normal diameter. Jute mesh shall be new, and its length shall be marked on each roll.

Between strands lengthwise, openings shall be 0.60 inch \pm 25 percent. Between strands crosswise, openings shall be 0.90 inch \pm 25 percent. Jute mesh shall weigh 0.9 pound per square yard \pm 5 percent.

2. **Soil retention mats** shall consist of a machine-produced mat of wood fibers, wood excelsior, or manmade fiber that shall intertwine or interlock. Matting shall be nontoxic to vegetation and germination of seed and shall not be injurious to the unprotected skin of the human body.

Mats shall be of consistent thickness, with fiber evenly distributed over its entire area, and covered on the top and bottom side with netting having a high web strength or covered on the top side with netting having a high web strength and machine sewn on 2-inch centers along the longitudinal axis of the material. Netting shall be entwined with the mat for maximum strength and ease of handling.

3. **Soil stabilization mats** shall be from the Department's approved products list for the site conditional use(s) specified.

Section 244.02(g) of the Specifications is replaced with the following:

Mulch: Mulch shall conform to the following unless otherwise approved in writing by the Engineer:

1. **Mulch for seeding** (vegetative) shall consist of dry straw or hay, free from noxious weeds. Mulch shall be reasonably bright in color and shall not be musty, moldy, caked, decayed, or dusty.
2. **Wood cellulose fiber mulch for hydraulic seeding** shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state. Mulch shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry. Mulch, including dye, shall not contain germination-inhibiting or growth-inhibiting factors. Mulch shall be manufactured and processed so that it will remain in uniform suspension in water under agitation and will blend with seed, fertilizer,

and other additives to form a homogeneous slurry. Mulch shall form a blotterlike ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of grass seedlings. Field and equipment performance determinations by the Department shall be prerequisites for the approval of a source of supply for mulch.

The manufacturer shall provide certification that the mulch conforms to the following:

Property	Value
Fiber or particle size	
Length	To approximately 0.39 inch (10 mm)
Thickness or diameter	Approximately 0.04 inch (1 mm)
Net dry weight content (VTM-47)	Minimum stated on bag
pH range (TAPPI T509 or ASTM D 778)	4.0 to 8.5
Ash content (TAPPI T413 or ASTM D 586)	Maximum 7.0%
Water-holding capacity (VTM-46)	Minimum 90%

Mulch shall not contain elements or compounds at concentration levels that will be phytotoxic.

In addition to making field performance determinations, the Department may sample and perform such other tests on mulch to ensure that it conforms to these specifications. Only those materials that have been evaluated by the Department and that appear on its list of approved sources of supply will be accepted.

Mulch shall be delivered in packages of uniform weight bearing the name of the manufacturer, the net weight, and an additional statement of the net dry weight content.

3. **Wood chips** processed from clearing and grubbing operations may be used for mulch on seeded areas as directed by the Engineer. Wood chips shall be not more than 3/8 inch in thickness or 6 square inches in area.
4. **Mulch for individual planting pits and planting beds** shall be double-shredded hardwood mulch aged for at least 1 year and brown in color. A representative sample shall be submitted to the Engineer for approval prior to delivery to the work site.

Section 303.03(b) of the Specifications is replaced with the following:

Soil Stabilization: Soil stabilization shall be applied within 7 days after attaining the appropriate grading increment for that stage of the construction operations, or upon suspension of grading operations for an anticipated duration of greater than 15 days, or upon completion of grading operation for a specific area. Areas excluded from this requirement include areas within 100 feet of the limits of ordinary high water or a delineated wetland which shall be continuously prosecuted until completed and stabilized immediately upon completion of the work in each impacted area. Soil stabilization includes: temporary and permanent seeding, riprap, aggregate, sod, mulching, and soil stabilization blankets and matting in conjunction with seeding. The applicable type of soil stabilization shall depend upon the location of areas requiring stabilization, time of year (season), weather conditions and stage of construction operations.

Cut and fill slopes shall be shaped and topsoiled where specified. Seed and mulch shall be applied in accordance with the requirements of Section 603 as the work progresses in the following sequence:

1. Slopes whose vertical height is 20 feet or greater shall be seeded in three equal increments of height. Slopes whose vertical height is more than 75 feet shall be seeded in 25-foot increments.
2. Slopes whose vertical height is less than 20 but more than 5 feet shall be seeded in two equal increments.
3. Slopes whose vertical height is 5 feet or less may be seeded in one operation.

Areas that cannot be seeded because of seasonal or adverse weather conditions should be mulched to provide some protection against erosion to the soil surface. Organic mulch shall be used, and the area then seeded as soon as weather or seasonal conditions permit in accordance with the requirements of Section 603.03(e). Mulch shall be paid for in accordance with the requirements of Section 603.04. Organic mulch includes: straw or hay, fiber mulch, wood cellulose, or wood chips conforming to the requirements of Section 244.02(g).

SECTION 603—SEEDING of the Specifications is completely replaced with the following:

SECTION 603—SEEDING

603.01—Description

This work shall consist of furnishing and applying fertilizer, lime, mulch, and seed in the quantities specified for areas designated on the plans or selected by the Engineer.

603.02—Materials

- (a) **Seed** shall conform to the requirements of Section 244.02(c).
- (b) **Fertilizer** shall conform to the requirements of Section 244.02(d).
- (c) **Lime** shall conform to the requirements of Section 244.02(e).
- (d) **Mulch** shall conform to the requirements of Section 244.02(g).

603.03—Procedures

Unless otherwise specified, seeding operations shall be performed at the times specified in Sections 303.03(b) and 603.03(d). Seeding operations shall not be performed when the ground is frozen or when soil or weather conditions would prevent proper soil preparation and subsequent operations. When hydroseeding is performed, nozzles or sprays shall not be directed toward the ground in a manner that will cause erosion or runoff. The Contractor shall notify the Engineer at least 48 hours prior to beginning seeding operations.

- (a) **Applying Lime:** Lime shall be uniformly applied to areas to be seeded at the rate of 2 tons per acre. Any approved method may be used.
- (b) **Preparing Soil:** After lime is applied, areas to be seeded shall be prepared in accordance with the following: Slopes 3:1 or flatter shall be loosened to a depth of approximately 3 inches by disking, harrowing, or other approved methods. Loosening of soil on excavated slopes steeper than 3:1 will not be required except to eliminate hard or crusted surfaces. Shoulders and embankment slopes steeper than 3:1 shall be loosened to a depth of approximately 1 inch. Clods, loose stones, and other

foreign material larger than 3 inches in any dimension shall be removed and disposed of in accordance with the requirements of Section 106.04 or as approved by the Engineer. Gullies, washes, and disturbed areas that develop subsequent to final dressing shall be repaired before they are seeded.

Topsoil, when specified, shall be applied in accordance with the requirements of Section 602.

- (c) **Applying Fertilizer:** When dry fertilizer is used, it shall be applied uniformly to the seeding areas at the time of seeding at the rate of 300 pounds of fertilizer per acre (approximately 45 pounds of nitrogen per acre or 1.0 pound of nitrogen per 1,000 square feet) or as directed by the Engineer. Slow release and slowly soluble fertilizer may be applied through a hydraulic seeder except for sulfur-coated urea (SCU). The method of application for fertilizer products will be approved by the Engineer prior to application of the fertilizer. When applied in liquid form or mixed with water, fertilizer shall provide the same value of nutrients per acre as specified for dry fertilizer. Fertilizer applied in liquid form shall be constantly agitated during application.
- (d) **Applying Seed:** Regular seeding shall consist of uniformly applying seed, fertilizer, and mulch on prepared areas.

Overseeding shall consist of applying seed and fertilizer on areas prepared as directed by the Engineer.

Where temporary seeding is employed as a means of soil stabilization it shall consist of applying seed, fertilizer, and mulch in accordance with the rates specified in the plans or in Section 603.03 to stabilize areas on which grading operations are anticipated to be suspended for durations greater than 15 days. Where temporary seeding is required or directed by the Engineer, the cost for removal of vegetation once grading operations resume shall be included in the price of seeding.

For hydroseeding, seed shall be put in the mixture slowly to result in a uniform mixture before application. Hydroseeding mixtures shall be constantly agitated from the time of mixing until application on the seed bed and used within 8 hours from the beginning of mixing.

If special seed is required in addition to the regular mixture, it will be furnished by the Department and shall be applied with the regular mixture at the Contractor's expense.

Leguminous seeds shall be inoculated or treated with approved cultures as specified by the manufacturer or directed by the Engineer before they are applied or mixed with other seeds to be applied. Seed shall be applied within 24 hours after treatment. When the hydroseeding method is used, leguminous seeds shall be treated with 5 times the amount of inoculant recommended by the manufacturer.

- (e) **Applying Mulch:** Mulch shall be applied in a separate application within 48 hours after completion of the seeding operation. When straw or hay mulch is used, it shall be applied on seeded areas at the rate of approximately 2 tons per acre. When wood cellulose fiber mulch is used, it shall be uniformly applied at the rate of approximately 1,500 pounds net dry weight per acre. Mulch will not be required on overseeded areas.

Straw and hay mulch shall be applied to a uniform thickness in such a manner that not more than 10 percent of the soil surface will be exposed at the conclusion of the mulching operations. Wet straw or wet hay shall not be used. Straw or hay mulch shall be anchored to the seeded surface by spraying with wood cellulose fiber mulch at the rate of 750 pounds per acre; spraying with an emulsified asphalt at the rate of at least 100 gallons per ton of mulch in a manner that will protect adjacent property and pedestrian traffic areas; disking or punching the mulch partially into the soil; using

approved netting; or using other materials or methods approved by the Engineer. The Contractor may use more than one method on the same project.

603.04—Measurement and Payment

Lime will be measured in tons and will be paid for at the contract unit price per ton.

Fertilizer will be measured in tons and will be paid for at the contract unit price per ton. When a grade different than that specified in the Contract is used, the tonnage quantity will be adjusted to the grade specified.

Seed will be measured in pounds of seed used and will be paid for at the contract unit price per pound. When bags of seed are transferred from project to project, certified scales shall be used for weighing the seed. Open bags will not be accepted for use.

Prices for seed, fertilizer, and lime shall include preparing seed beds; furnishing and applying seed; furnishing and applying mulch; and maintaining seeded areas until final acceptance.

Overseeding will be paid for at the contract unit price per pound of seed. This price shall include preparing seedbeds and furnishing and applying seed and additional fertilizer.

Mulch will not be measured for separate payment. The cost thereof shall be included in the price for seed.

Payment will be made under:

Pay Item	Pay Unit
(____) seed	Pound
(____) overseeding	Pound
Fertilizer (Ratio)	Ton
Lime	Ton

SECTION 606—ROLLED EROSION CONTROLLED PRODUCTS (RECP) of the Specifications is completely replaced with the following:

SECTION 606—SOIL RETENTION COVERINGS

606.01—Description.

This work shall consist of furnishing and placing protective coverings for soil retention, including seed, fertilizer, lime, topsoil, and water, in accordance with the requirements of these specifications and in conformity to the dimensions, lines, and grades shown on the plans or as established by the Engineer.

606.02—Materials.

Materials shall conform to the requirements of Section 244.02(I).

606.03—Procedures.

- (a) **Preparing Areas:** Two inches of topsoil shall be applied to the area to be covered. Drainage channels shall be shaped in accordance with the cross section shown on the plans and shall be rolled or tamped to compact soil in place before final shaping.

During shaping operations, a seedbed approximately 3/4 inch in depth shall be provided.

Stones, roots, and other objects that will prevent protective covering from making close contact with the seedbed shall be removed before covering is installed.

- (b) **Applying Seed:** Seed shall be applied in accordance with the requirements of Section 603 except that mulch will not be required. Seed, fertilizer, and lime shall be applied prior to installation of protective coverings.

Seeded areas adjacent to the channel or ditch that are disturbed during installation of covering shall be uniformly reshaped, reseeded, and mulched at the Contractor's expense.

- (c) **Installing Soil Retention Coverings:** Coverings shall be installed in accordance with the standard drawings and manufacturer's recommendations.

- (d) **Watering:** After coverings are installed, seeded areas shall be watered sufficiently to saturate the seedbed. Water shall be applied in a spray, and no additional watering will be required.

606.04—Measurement and Payment.

Protective coverings and soil stabilization mats will be measured in square yards of area covered, complete-in-place, in accordance with the nominal plan dimensions and will be paid for at the contract unit price per square yard. Overlaps, overwidths, and cut slots will not be measured for separate payment. This price shall include furnishing, installing, and stapling soil retention coverings; smoothing and shaping ditch channels and waterways; preparing seed beds; and furnishing and applying topsoil, lime, seed, fertilizer, and water.

Payment will be made under:

Pay Item	Pay Unit
Protective covering (Standard)	Square yard
Soil stabilization mat (Standard and type)	Square yard