

# VERMONT CONSTRUCTION SPECIFICATION

## 52 – SEEDING

### 1. Scope

The work consists of seed bed preparation; furnishing and placing seed, mulch, fertilizer, inoculant, lime, and other soil amendments; and anchoring mulch in designated areas as specified on the drawings.

### 2. Material

**Seed** - All seed shall conform to the current rules and regulations of the state of Vermont and shall be from the latest crop available. It shall meet or exceed the standard for purity and germination specified on the drawings.

Seed shall be labeled in accordance with the state laws and the U.S. Department of Agriculture rules and regulations under the Federal Seed Act. Bag tag figures are evidence of purity and germination. No seed will be accepted with a test date of more than 9 months before the delivery date to the site.

Seed that has become wet, moldy, or otherwise damaged in transit or storage will not be accepted. The percent of noxious weed seed allowable shall be as defined in the current State laws relating to agricultural seeds. Each type of seed shall be delivered in separate sealed containers and fully tagged.

**Fertilizer** - Fertilizer shall be commercial grade and shall meet the standard for grade and quality specified by State law. Unless otherwise specified on the drawings, the rate of application shall be 500 pounds of fertilizer per acre having an analysis of 10-10-20.

**Inoculants** - The inoculant for treating legume seeds shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species and shall not be used later than the date indicated on the container. A mixing medium, as recommended by the manufacturer, shall be used to bond the inoculant to the seed. Two times the amount of the inoculant recommended by the manufacturer shall be used except four times the amount shall be used when seed is applied using a hydraulic seeder. Seed shall be sown within 24 hours of treatment and shall not remain in the hydraulic seeder longer than 4 hours.

**Lime and other soil amendments** - Lime shall consist of standard ground agriculture limestone, or approved equivalent. Standard ground agriculture limestone is defined as ground limestone meeting current requirements of the State Department of Agriculture. Unless otherwise specified on the drawings, the rate of application shall be two tons of lime per acre. Other soil amendments shall meet quality criteria and application requirements specified on the drawings.

**Straw or hay mulch material** - Straw mulch shall consist of wheat, barley, oat or rye straw, hay, grass cut from native grasses, or other plants. The mulch material

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shall be air-dry, reasonably light in color, and shall not be musty, moldy, caked, or otherwise of low quality. The rate of application shall be no less than two tons per acre. The use of mulch that contains noxious weeds is not permitted.

**Other mulch materials** - Mulching materials, such as wood cellulose fiber mulch, mulch tackifiers, synthetic fiber mulch, netting, and mesh, are other mulching materials that may be required for specialized locations and conditions. These materials, when specified, shall be applied and secured in accordance to the manufacturer's recommendations.

### 3. Seeding mixtures and dates of planting

Time of seed application shall be from early spring until June 1 or from August 15 to September 15. The application rate for seed mixtures shall be:

#### A. Embankments (Un-mowed Conditions)<sup>1/</sup>

Seed	lbs./Acre	lbs./1000 sq. ft.	Soil Drainage
Smooth bromegrass	15	.33	Well to moderately well
Ryegrass	5	.10	
Birdsfoot trefoil	5	.10	
Creeping red fescue	10	.25	Excessively to moderately well
Tall fescue	15	.33	
Clover (Ladino type)	3	.10	
Reed canarygrass <sup>2/</sup>	15	.33	Moderately well to poorly
Creeping foxtail	5	.10	
Redtop	5	.10	
Birdsfoot trefoil	10	.25	
Creeping red fescue	20	.45	Excessively to moderately well
Redtop	2	.10	
Field Peas <sup>3/</sup>	15	.33	
White Clover	2.5	.10	
Birdsfoot trefoil	8	.20	Excessively to moderately well
Hairy Vetch	15	.33	
Creeping red fescue	20	.50	

1/ Use this table for seeding banks with loamy or clayey soils only. For details on vegetating sandy or gravelly areas, see VT NRCS publication "Vegetating Vermont Sand and Gravel Pits".

2/ Use only Reed canarygrass with a germination rate of 70% or better that has been tested within the past 4 or 5 months. Reed canarygrass can be invasive in wetland areas. Do not use it if planning objective is plant diversity.

3/ Field peas will not over winter but give a quick spreading cover.

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### B. Embankments (Mowed Conditions)

Seed	lbs./Acre	lbs./1000 sq. ft.	Soil Drainage
Kentucky bluegrass	20	.50	Well to moderately well
Creeping red fescue	20	.50	
Ryegrass	5	.10	
Creeping red fescue	20	.50	Well to moderately well
Tall fescue	20	.50	
Birdsfoot trefoil	8	.20	
Creeping red fescue	20	.50	Moderately well to poorly
Redtop	2	.10	
Tall fescue	20	.50	
Creeping red fescue	20	.50	Well to moderately well
Redtop	2	.10	
Birdsfoot trefoil	8	.20	
Tall fescue	20	.50	Well to poorly
Reed canarygrass	10	.25	
Redtop	3	.10	

### C. Streambanks

Seed	lbs./Acre	lbs./1000 sq. ft.	Soil Drainage
Creeping red fescue	20	.50	Well to moderately well
Tall fescue	20	.50	
Birdsfoot trefoil	8	.20	
Creeping red fescue	20	.50	Well to moderately well
Redtop	2	.10	
Birdsfoot trefoil	8	.20	
Tall fescue	20	.50	Moderately well to poorly
Reed canarygrass <sup>1/</sup>	10	.25	
Redtop	3	.10	
Creeping red fescue	20	.50	Excessive to moderately well
Redtop	2	.10	
Hairy Vetch	15	.33	

<sup>1/</sup> In place of Reed canarygrass use brome (15lb/a) with an oats (50#/a) companion crop in wetland sensitive habitats. Reed canary grass can be invasive.

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### D. Vegetative Spillways and Waterways

Seed	Lbs./Ac.	Lbs./1000 Sq. Ft.	Soil Drainage
Kentucky Bluegrass	20	.50	Well to moderately well
Creeping red fescue	20	.50	
Ryegrass	5	.10	
Creeping red fescue	20	.50	Well to moderately well
Tall fescue	20	.50	
Birdsfoot trefoil	8	.20	
Creeping red fescue	20	.50	Moderately well to poorly
Redtop	2	.10	
Tall fescue	20	.50	
Creeping red fescue	20	.50	Well to moderately well
Redtop	2	.10	
Birdsfoot trefoil	8	.20	
Smooth Bromegrass	15	.33	Well to moderately well
Ryegrass	5	.10	
Birdsfoot trefoil	15	.10	

### E. Recommended Varieties

Annual ryegrass .....	Common
Birdsfoot trefoil .....	Empire
Creeping foxtail .....	Garrison
Creeping red fescue .....	Ensylva
Kentucky bluegrass .....	Adelphi/Barron
Redtop .....	Common
Reed canarygrass .....	Palaton/Venture
Ryegrass .....	Pennfine
Smooth bromegrass .....	Saratoga/Baylor
Tall Fescue <u>1/</u> .....	KY-31
White Clover .....	Dutch/New Zealand

1/ Do not use in or near grazing areas.

Cover grass and/or legume seed with 1/4 inch of soil unless a hydroseeder is used. Many failures result from poor seed-soil contact. Cultipacking or tracking the site with a dozer will improve the speed and uniformity of germination.

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### 4. Seedbed preparation and treatment

Areas to be seeded shall be dressed to a smooth, firm surface. On sites where equipment can operate on slopes safely, the seedbed shall be adequately loosened (4 to 6 inches deep) and smoothed. Depending on soil and moisture conditions, disking or cultipacking, or both, may be necessary to properly prepare a seedbed. Where equipment cannot operate safely, the seedbed shall be prepared by hand methods by scarifying to provide a roughened soil surface so that broadcast seed will remain in place. Seedbed preparation shall be discontinued when soil moisture conditions are not suitable for the preparation of a satisfactory seedbed.

Rocks larger than 6 inches in diameter, trash, weeds, and other debris that will interfere with seeding or maintenance operations shall be removed.

### 5. Seeding, fertilizing, mulching, and stabilizing

All seeding operations shall be performed in such a manner that the seed is applied in the specified quantities uniformly in the designated areas. Unless otherwise specified on the drawings, seeding shall be accomplished within 2 days after final grading is completed.

Fertilizer, lime, and other soil amendments shall be applied as in section 2. When specified on the drawings, the fertilizer and soil amendments shall be thoroughly incorporated into the soil immediately following surface application.

Mulches shall be applied uniformly to the designated areas at the rates shown in section 2. They shall be applied to areas seeded not later than 2 working days after seeding has been performed. Straw mulch material shall be stabilized within 24 hours of application using a mulch crimper or equivalent anchoring tool or by a suitable tackifier. When the mulch crimper or equivalent anchoring tool is used, it shall have straight blades and be the type manufactured expressly for and capable of firmly punching the mulch into the soil. Where the equipment can be safely operated, it shall be operated on the contour. Hand methods shall be used where equipment cannot safely operate to perform the work required.

The tackifier shall be applied uniformly over the mulch material at the manufacturer's specified rate, or it shall be injected into the mulch material as it is being applied. Mesh or netting stabilizing materials shall be applied smoothly, but loosely on the designated areas. The edges of these materials shall be buried or securely anchored using spikes or staples.