

VIRGINIA DEPARTMENT OF TRANSPORTATION

# LOCATION AND DESIGN DIVISION

## INSTRUCTIONAL AND INFORMATIONAL MEMORANDUM

GENERAL SUBJECT: ROADSIDE DEVELOPMENT	NUMBER: IIM-LD-122.13
SPECIFIC SUBJECT: ROADSIDE DEVELOPMENT SHEET; COORDINATION; COMPUTING QUANTITIES/SUMMARIZATION	DATE: APRIL 27, 2009
	SUPERSEDES: IIM-LD-122.12
DIVISION ADMINISTRATOR APPROVAL:	Mohammad Mirshahi, P.E. State Location and Design Engineer Approved April 27, 2009

Changes are shaded.

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### CURRENT REVISION

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- The typical fertilizer application rate has been revised in accordance with the 2007 Road and Bridge Specifications. An application rate of 300 pounds per acre is to be estimated unless otherwise specified by the Maintenance Division.
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### EFFECTIVE DATE

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- These instructions are effective upon receipt.
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### POLICY

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- The Roadside Development Sheet and the Erosion Control Summary Sheet are to be included in project plan assemblies.
  - The Roadside Development Summary will indicate the Maintenance Division's recommended seed mixtures, and estimated quantities for Topsoil, Seeding (Regular and Legume), Fertilizer and Lime.
  - Seed additives (e.g. foxtail millet) are paid for as Regular Seeding except Crown Vetch, Sericea Lespedeza and Birdsfoot Trefoil
  - Seed mixture recommendations may at times deviate from the seed mixture guidelines on the Roadside Development Sheet. The District Roadside Manager will provide recommendations for the application of seed mixtures (core mix and additives), fertilizer, lime, etc.

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## SPECIAL INSTRUCTIONS

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- The approximate area (hectares or acres) to be disturbed will be shown under “Notes” on the Roadside Development Sheet. This area is not to be expanded for estimating purposes.
  - Notes on the Roadside Development Sheet marked by a star are for the use of field forces only. The Designer is not to use any percentages shown under “Notes” on the Roadside Development sheet when computing quantities.
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## MULCH

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- Roadside Development involves two categories of mulch as follows:
  - Seeding Mulch, Type I or II is applied in the field with the seed mixture. This mulch is included in the price for the regular seeding and is not summarized in the plans.
  - Erosion Control Mulch is summarized on the Erosion Control Summary Sheet when recommended by the Maintenance Division. This material is estimated at the rate of 0.25 acres (1,210 S.Y.) per 100 feet of alignment or 0.332 hectares (3,319 m<sup>2</sup>) per 100 meters of roadway alignment) and is to be paid for as follows:

<u>PAY ITEM</u>	<u>UNIT</u>	<u>ITEM CODE</u>
Erosion Control Mulch	Acres (Hectare)	27288
Erosion Control Mulch	S.Y. (m <sup>2</sup> )	27284

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## LEGUME SEEDING

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- The seed mixes available for roadside development include three “Legume” seeds, Crown Vetch, Sericea Lespedeza and Birdsfoot Trefoil specified as additives “E, F, and G” on the Roadside Development Sheet.
- These Legume seeds are used only on slopes 3:1 or greater and are not used on shoulders or other locations to be mowed.
- Legume Seed, and Legume Overseeding are to be summarized for separate payment.
- Whenever the Maintenance Division specifies any of these Legume seeds, the mowable areas on the project (slopes flatter than 3:1) and non-mowable areas (slopes 3:1 and greater) must be measured separately in order to accurately summarize the seeding requirements.

## ESTIMATING QUANTITIES

- If the lime application rate is not provided by the Maintenance Division, the Designer should estimate the Normal Lime Quantity based on 2 tons per acre (5 metric tons per hectare).
- If the fertilizer application rate is not provided by the Maintenance Division, the Designer should estimate the Normal Fertilizer Quantity based on **300** pounds per acre (**336** kilograms per hectare).
- The seed mixtures (core mix plus additives) shown on the Roadside Development Sheet are weights per acre (or hectare) of disturbed area. These quantities may vary for each construction season.
- The Designer is advised to:
  1. Determine the disturbed area to be seeded.
  2. Determine the application rate for the sloped and mowed areas shown for each construction season.

Example for Seed Mix 2E:

100 lbs. Core Mix + 20 lbs. Additive = 120 lbs.

3. The greatest seeding rate is assumed to be the “Normal” Seeding rate.

Example for 10 acre area:

### MIX REQUIREMENTS ON THIS PROJECT

PROJECT NUMBERS	SLOPES	MOWED	SLOPES	MOWED	SLOPES	MOWED
	SPRING & FALL		SUMMER		LATE FALL & WINTER	
0123-123-103	2E	2B	3A	3A	4B	4B
	120 LBS.	120 LBS.	110 LBS	110 LBS.	120 LBS.	120 LBS.

The Normal Seeding rate = 120 lbs. per acre.

120 lbs. x 10 acres of disturbed area = 1200 lbs. “Normal” Seeding Quantity

- When a legume seed additive is specified (Crown Vetch, Sericea Lespedeza or Birdsfoot Trefoil) the sloped areas and mowed areas must be measured separately when summarizing seeding quantities.
  1. Determine the flat (less than 3:1) areas and sloped (3:1 and greater) areas to be seeded.
 

Example: 10 acres of mowed areas; 5 acres of sloped areas.
  2. Determine the application rate for the mowed areas.

Example for "Seed Mix 2B": 100 lbs. Core Mix + 20 lbs. Additive = 120 lbs.

3. Determine the application rate for the sloped areas:

Example for Seed Mix 2E: Core Mix "2" = 100 lbs.; Additive E" = 20 lbs.

4. Determine the quantities of Regular Seed and Legume Seed.

Example for mowed area (Seed Mix 2B):

Core Mix 100 lbs. + 20 lbs. = 120 lbs. x 10 acres = 1200 lbs. Regular Seed

Example for sloped areas (Seed Mix 2E):

100 lbs. x 5 acres = 500 lbs. Regular Seed

20 lbs. x 5 acres = 100 lbs. Legume Seed

- The "Normal" quantities for lime, fertilizer, and seeding are based on the actual area to be disturbed. The "Normal" quantities are to be increased by the following percentage factors to obtain the quantity to show in the summary:
  - Lime = Normal Quantity increased by 90%
  - Fertilizer (15-30-15) = Normal Quantity increased by 90%
  - Regular Seed = Normal Seeding Quantity increased by 60%
  - Overseeding = 100% of Normal Seeding Quantity (no mulch or fertilizer)
  - Legume Seed = Normal Seeding Quantity increased by 60%
  - Legume Overseeding = 100% of Normal Seeding Quantity (no mulch or fertilizer)

Examples for determining quantities to summarize:

20 tons "normal" Lime x 1.90 (or 190%) = 38 tons Lime

3 tons "normal" Fertilizer x 1.90 (or 190%) = 5.7 or 6 tons Fertilizer

1700 lbs. "normal" Seeding x 1.60 (or 160%) = 2720 lbs. Regular Seeding

1700 lbs. "normal" Seeding (@ 100%) = 1700 lbs. Overseeding

100 lbs. "normal" Legume Seeding x 1.60 (or 160%) = 160 lbs. Legume Seed

100 lbs. "normal" Legume Seeding (@ 100%) = 100 lbs. Legume Overseeding

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## PAY ITEMS

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• Lime	Metric Ton/Ton	27250
• Fertilizer	Metric Ton/Ton	27215
• Regular Seed	kg/lbs.	27102
• Overseeding	kg/lbs.	27103
• Legume Seed	kg/lbs.	27104
• Legume Overseeding	kg/lbs.	27105
• Topsoil Class A	ha/acres	27012
• Topsoil Class B	ha/acres	27022
• Erosion Control Mulch	ha/acres/m <sup>2</sup> /S.Y.	27288

## REVIEW BY MAINTENANCE DIVISION

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- The Roadside Development Sheet is to be reviewed by the Maintenance Division prior to submission of the plan assembly for construction.
  - Anytime the current Roadside Development Sheet is replaced by a revised Roadside Development Sheet, the District Roadside Manager should be requested to determine the need for any changes in seed mixes, quantities, etc.
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## INSERTABLE SHEETS

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- The Imperial Roadside Development Sheet may be accessed from the **sheet2000.cel** library in Microstation.
  - A-4 Roadside Development Sheet (**RDSDEV**)
- The Metric Roadside Development Sheet may be obtained through the insertable sheet directory on Falcon DMS.
  - Special Design Section Drawing No. MA-4 (Metric)
- The Imperial Erosion Control Summary Sheet may be accessed from the **sheet2000.cel** library in Microstation.
  - A-5 Erosion Control Summary Sheet (**ECSUM**)
- The Metric Erosion Control Summary Sheet may be obtained through the insertable sheet directory on Falcon DMS
  - Special Design Section Drawing No. MA-5 (Metric)