

## Section 160—Reclamation of Material Pits and Waste Areas

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### 160.1 General Description

This work includes reclaiming material pits and waste areas by vegetative planting and applies to areas outside of the right-of-way.

The vegetative requirements of this section apply when the Contractor obtains material from a source or wastes material on an area other than within the Right of Way. These requirements apply regardless of how the source or area is obtained. Exceptions to the vegetative requirements of this section include:

- A material source where the Engineer determines not to drain water that accumulates after the material is removed. Only the slopes above water will be planted.
- An area composed of rock or other materials that the Engineer determines are not satisfactory for permanent vegetative cover.
- An area that has been exempted in writing by the Georgia Surface Mined Land Use Board.
- An area where the owner or Contractor, (whichever is designated as the Operator) secures a license from the Surface Mined Land Use Board for surface mining. The Operator will be responsible only to the Surface Mined Land Use Board for reclamation of the affected area.

#### 160.1.01 Definitions

General Provisions 101 through 150.

#### 160.1.02 Related References

##### A. Standard Specifications

[Section 700—Grassing](#)

[Section 702—Vine, Shrub and Tree Planting](#)

[Section 890—Seed and Sod](#)

##### B. Referenced Documents

General Provisions 101 through 150.

#### 160.1.03 Submittals

The Engineer must:

- Approve the planting type if the Contractor furnishes a material pit or waste area that requires vegetation under the provisions of this Specification.
- Approve all modified mixtures before planting begins.

The property owner may change the plant material types specified in the Plans to a type not shown in the Planting Table in [Subsection 160.2, “Planting Table”](#), below. If a change is made, the mixture shall cost approximately the same and shall produce an equal amount of protective covering as the mixture contained in this Specification.

### 160.2 Materials

Materials shall conform to the requirements of [Sections 700](#) and [702](#) as applicable.

If the Plans or the Proposal do not specify the vegetation type to be planted on State-optioned areas, the Engineer will select the type to be used on each area from the Planting Table.

The State is divided into planting zones as shown on the Planting Zones Map in [Sections 700](#). Consult the Planting Table when planting and follow these points:

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- Do not use giant bermuda seed (cynodon species) including NK-37.
- Do not use Italian rye grass seed—perennial or annual.
- Apply the entire combination of seeds specified for each group in the amounts specified. If the property owner does not make a specific choice, use planting groups A, B, C, G, H, or N-1.
- Increase all seed quantities 50 percent on slopes that are too steep for soil preparation and cannot be dug at least 6 in (150 mm) deep.
- Air dry sericea lespedeza seed hay and ensure that it contains mature seed.

**Planting Table**

	Planting Groups	Species	Rates per Acre/Hectare	Planting Zones			
				lbs. (kg) (except as noted)	Zone 1	Zone 2	Zone 3
Spring Planting	A	Weeping Love Grass	4 (4.5)	3/1-7/15	2/15-7/ 15	2/15-7/ 15	2/1-7/ 15
		Interstate Lespedeza (HS)*	50 (56)	3/1-7/15	2/15-7/ 15	2/15-7/ 15	2/1-7/ 15
	A-1	Interstate Lespedeza (HS)*	60 (67)	3/1-7/15	2/15-7/ 15	2/15-7/ 15	2/1-7/ 15
	B	Tall Fescue	30 (33.5)	3/1-5/1	2/15-5/1		
		Interstate Lespedeza (HS)*	50 (56)	3/1-5/1	2/15-5/1		
	C	Hulled Common Bermuda	10 (11)	3/1 -7/1	2/15-7/1	2/15-7/1	2/1-7/1
		Pensacola Bahia	50 (56)	3/1 -7/1	2/15-7/1	2/15-7/1	2/1-7/1
	D	Hulled Common Bermuda	15 (17)				
		Korean Lespedeza	25 (28)	3/1-3/15	2/15-6/1	2/15-6/ 15	2/1-7/ 15
	D-1	Hulled Common Bermuda	15 (17)				
		Unhulled Common Bermuda	5 (5.5)	3/1-6/1	2/15-6/ 15	2/15-7/1	2/1-7/ 15
		Korean Lespedeza	25 (28)				
	E	Tall Fescue	20 (22.5)				
		White Dutch Clover	6 (6.5)	2/1-4/1	2/1-4/1	1/1-3/1	1/1-3/1
		Korean Lespedeza	20 (22.5)				
	F	Tall Fescue	30 (33.5)				
		Korean Lespedeza	20 (22.5)	2/1-4/1	2/1-4/1	1/1-3/1	1/1-3/1
	F-1	Tall Fescue	50 (56)				
		Korean Lespedeza	20 (22.5)	2/1-6/1	2/1-5/1	1/1-4/1	
	F-2	Tall Fescue	60 (67)	2/1-4/1	2/1-4/1	1/1-3/1	
Summer	G	Hulled Common Bermuda	10 (11)	7/1-9/1	7/1-9/1	7/1-9/1	7/1-9/1

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	Planting Groups	Species	Rates per Acre/Hectare	Planting Zones			
				Zone 1	Zone 2	Zone 3	Zone 4
			lbs. (kg) (except as noted)				
Planting							
		Pensacola Bahia	50 (56)				
	H	Weeping Love Grass	4 (4.5)	7/1-9/1	7/1-9/1	7/1-9/1	7/1-9/1
		Interstate Lespedeza (HS)	50(56)				
	I	Hulled Common Ber muda	15 (17)	7/1-9/1	7/1-9/1	7/1-9/1	7/1-9/1
		Pensacola Bahia	20 (22.5)				
		Korean Lespedeza	20 (22.5)				
		Reseeding Crimson Clover	30 (33.5)				
	J	Weeping Love Grass	4 (4.5)	7/1-9/1	7/1-9/1	7/1-9/1	7/1-9/1
		Korean Lespedeza	20 (22.5)				
		Reseeding Crimson Clover	20 (22.5)				
	K	Hulled Common Bermuda	5 (5.5)	7/1-9/1	7/1-9/1	7/1-9/1	7/1-9/1
		Pensacola Bahia	20 (22.5)				
		Reseeding Crimson Clover	20 (22.5)				
	L	Tall Fescue	20 (22.5)	7/1-9/1	7/1-9/1	7/1-9/1	7/1-9/1
		Pensacola Bahia	20 (22.5)				
		Korean Lespedeza	20 (22.5)				
		Reseeding Crimson Clover	30 (33.5)				
	M	Weeping Love Grass	5 (5.5)	7/1-9/1	7/1-9/1	7/1-9/1	7/1-9/1
		Tall Fescue	20 (22.5)				
		Korean Lespedeza	20(22.5)				
		Reseeding Crimson Clover	20 (22.5)				
Fall Planting	N	Tall Fescue	30 (33.5)				
		Interstate Lespedeza (HS)*	50 (56)	8/1-11/1	8/15-11/ 1		
	N-1	Tall Fescue	30 (33.5)				
		Interstate Lespedeza (Unscarified)	75 (84)	8/1-3/1	8/15-2/ 15	9/1-2/15	9/15-2/ 1
	O	Tall Fescue	50 (56)	8/1-10/ 15	8/15-11/ 1		
	O-1	Tall Fescue	60 (67)	8/1-10/ 15	8/15-11/ 1	9/1-11/ 15	
	P	Tall Fescue	20 (22.5)				

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	Planting Groups	Species	Rates per Acre/Hectare	Planting Zones			
				Zone 1	Zone 2	Zone 3	Zone 4
			<b>lbs. (kg) (except as noted)</b>				
		Pensacola Bahia	40 (45)	8/1-10/ 15	8/15-11/ 1	9/1-11/ 15	10/1-12/1
	P-1	Tall Fescue	20 (22.5)				
		Pensacola Bahia	60 (67)	8/1-10/ 15	8/15-11/ 1	9/1-11/ 15	10/1-12/1
	Q	Tall Fescue	40 (45)				
		Korean Lespedeza	20 (22.5)	9/1-11/1	9/15-11/ 15	10/1-12/ 1	10/15-12/15
	Q-1	Tall Fescue	50 (56)				
		Korean Lespedeza	20 (22.5)	8/1-10/ 15	8/15-11/ 1	9/1-11/ 15	
	Q-2	Reseeding Crimson Clover	50 (56)	8/15-11/ 1	8/15-11/ 15	9/1-12/ 15	9/15-12/15
Special Planting	R	Unhulled Common Bermuda	8 (9)				
		Sericea Lespedeza Seed Hay	3 tons (6.7 Mg)	10/1-3/ 15	10/1-3/1		
	S	Pine Seedlings, Native to Georgia @ 6' x 8' (1.8 m x 2.4 m) spacing	900 (2224) seedlings	10/15-3/ 15	10/15-3/ 15	11/1-3/1	11/1-3/ 1
	T	Costal Bermuda Sprigs	Omit Over seeding		3/1-9/1	2/15-9/ 15	1/15-12/1
*(HS) = Hulled and Scarified Note: Sericea Lespedeza or Serala Lespedeza may be substituted for Interstate Lespedeza							

**160.2.01 Delivery, Storage, and Handling**

If the sprigs are stockpiled, cover the sprigs and keep them moist.

**160.3 Construction Requirements**

**160.3.01 Personnel**

General Provisions 101 through 150.

**160.3.02 Equipment**

Equipment shall conform to the requirements of [Section 700](#) and [Section 702](#) as applicable.

**160.3.03 Preparation**

Seed or sprig areas that are subject to erosion. If the Engineer feels the borrow pit or waste area will be subject to erosion, grass and mulch areas that require pine seedlings before planting the seedlings.

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### 160.3.04 Fabrication

General Provisions 101 through 150.

### 160.3.05 Construction

Comply with the construction methods in [Section 700](#) for this work with the following exceptions:

#### A. Prepare the Ground

1. Complete the excavation.
2. Have the Engineer examine the slopes to ensure that planting is not done on areas composed of rock or other materials that the Engineer determines unsatisfactory for permanent vegetation.
3. Plow areas that are to be planted to a depth of 6 in (150 mm) unless the areas are exempted in this Specification or in [Section 700](#).

#### B. Apply Lime and Fertilizer

1. Spread agricultural lime uniformly at the rate shown on the Plans or determined by the Engineer.
2. Apply fertilizer grade 4-12-12, 6-12-12, or 5-10-15 uniformly at approximately 1,200 lbs/acre (1350 kg/ha).
3. Mix the lime and fertilizer into the top 2 in (50 mm) of soil, including the areas to be planted with pine seedlings.
4. Hydroseed slopes steeper than 2 to 1 as defined in [Subsection 700.3.05.F, "Hydroseeding."](#) The mixing may be eliminated.

#### C. Seed

Sow seeds at the rates specified in the [Subsection 160.2, "Planting Table"](#).

#### D. Mulch

1. Use any mulch type listed in [Subsection 700.3.05.G, "Mulching."](#)
2. Mulch all seeded and sprigged areas.

#### E. Plant Pine Seedlings

1. Use a dibble or other approved planter to dig holes for the pine seedlings after seeding or sprigging and mulching.
2. Set the plants slightly deeper than they were planted in the nursery. When hand planting, compact the bottom of the hole before setting the plants.

#### F. Apply Nitrogen

1. Apply nitrogen according to [Subsection 700.3.05.I, "Application of Nitrogen."](#)
2. Do not apply nitrogen directly over the seedlings.

#### G. Harvest Sprigs

1. Observe sprigging seasonal limitations. See [Subsection 160.2, "Planting Table"](#).
2. Inspect harvesting sites. Ensure inspection is according to [Subsection 890.2.02.C, "Acceptance."](#)
3. Harvest sprigs as follows:
  - a. Harvest the sprigs using a sod cutter, turning plow, or other approved equipment so that at least 3 in (75 mm) of the root system is lifted intact.
  - b. Immediately load the harvested sprigs and cover them with wet burlap or canvas to prevent weather damage.
  - c. Transport the sprigs to where they will be immediately planted or stockpiled.
  - d. Plant sprigs within 48 hours after they are harvested. Never allow sprigs to dry out or freeze.

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### H. Apply Sprigs

Apply sprigs using either the broadcast or row method. However, do not perform broadcast sprigging on steep slopes or narrow areas where results will not be satisfactory.

During sprigging, ensure that the soil moisture content is at least the optimum for soil sprigging.

#### 1. Broadcast Sprigging

Perform broadcast sprigging as follows:

- a. Apply the sprigs mechanically or by hand in a uniform layer over the prepared surface placing at least 4 viable sprigs to each square foot (43 viable sprigs to each square meter).
- b. Place the sprigs 2 to 3 in (50 to 75 mm) deep by disc harrowing or by other satisfactory means.

#### 2. Row Sprigging

Perform row sprigging as follows:

- a. Open furrows spaced at least 1 ft (300 mm) apart to at least 4 in (100 mm) deep.
- b. Immediately place the sprigs in the furrows by hand or by planting machines and overlap them in the furrows.
- c. Do not expose sprigs more than 15 minutes before filling in the furrows.

### I. Restore Line and Grade, and Roll

After the sprigging is done, do the following:

1. Return the impaired sections back to the line and grade as established by the Engineer.
2. Roll the area at right angles to the direction of the slope incline.

### J. Mulch Sprigged Areas

Mulch sprigged areas within the construction limits according to [Subsection 700.3.05.G, "Mulching."](#)

#### 1. Mulch with Binder

When applying mulch with binder, apply immediately after the overseeding and rolling are complete.

#### 2. Mixed-in-Place Mulch

When applying mixed-in-place mulch, apply immediately after sprigging.

### 160.3.06 Quality Acceptance

Before Final Acceptance, each planted area shall meet the requirements for satisfactory growth and development as defined in [Subsection 160.5.01.A, "Plant Establishment."](#) Except as otherwise specified in this Specification, all seeding shall conform to [Section 700](#), and pine seedling planting shall conform to [Section 702](#).

### 160.3.07 Contractor Warranty and Maintenance

General Provisions 101 through 150.

## 160.4 Measurement

The following will be measured in acres (hectares) horizontal measurement:

- Area reclamation—seeding or sprigging
- Area reclamation—pine seedlings including fertilizer and mulch

Reclamation items that are completed, accepted, and eligible for measurement and payment are subject to the following conditions:

- Each work item shall be done for the Department according to the Specifications and terms of the Contract.
- Areas where the work is done shall be shown on the Plans as possible sources of materials or waste areas.

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- If the Contractor furnishes a substitute area, measurement of reclamation terms eligible for payment shall not exceed Plan quantities.

### 160.4.01 Limits

Some reclamation items are not eligible for measurement and payment by the Department. These include but are not limited to:

- Items performed for or paid for by another agency
- Items performed on areas, other than substitute areas, secured by the Contractor but not shown on the Plans
- Items performed on any area excluded under [Subsection 160.1, “General Description.”](#)

### 160.5 Payment

Items of area reclamation will be paid for if complete in place and accepted.

The following will be paid for at the Contract Unit Price per acre (hectare):

- Area reclamation—seeding or sprigging
- Area reclamation—pine seedlings measured for payment

Payment shall be full compensation for:

- Preparing the ground
- Seeding or planting
- Applying fertilizer, including nitrogen
- Watering
- Mulching
- Providing other work and incidentals necessary to complete the Item except lime, which will be measured and paid for according to [Section 700](#).

The Contractor will be allowed full measurement and payment on his regular monthly estimates for all reclamation items at the time they are first completed, provided the work has been done in strict compliance with the Specifications.

Payment will be made under:

Item No. 160	Area reclamation, seeding	Per acre (hectare)
Item No. 160	Area reclamation, sprigging	Per acre (hectare)
Item No. 160	Area reclamation, pine seedlings	Per acre (hectare)
Item No. 700	Agricultural lime	Per ton (megagram)

### 160.5.01 Adjustments

#### A. Plant Establishment

Perform plant establishment according to [Subsection 700.3.07.A, “Plant Establishment”](#) except that mowing is not required.

#### B. Pine Tree Seedlings

The area covered with pine tree seedlings will not be considered satisfactory until 85 percent or more of the growth has survived 90 days after planting with no fail spots exceeding 0.25 acre (0.1 ha).

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If the survival rate is less than 85 percent, but greater than 75 percent, and fail spots do not exceed 0.25 acre (0.1 ha), the affected area will be measured for payment at half the Contract price unless the Contractor replants the deficient area to meet the requirements for full growth and coverage.

Areas that do not meet the minimum 75 percent requirement shall be replanted in full at the Contractor's expense. All replanting shall be done within the allowable planting season for pine seedlings as shown in [Subsection 160.2, "Planting Table"](#).