

STANDARD SPECIFICATIONS
SECTION 02920
LAWNS AND GRASSES

PART 1 GENERAL

1.1 DESCRIPTION

- A. Section includes requirements for preparation of seed and sod bed, seeding, sodding, fertilizing, liming, and mulching to limits shown, and as required for restoration and restabilization of disturbed areas, at Engineer's direction.

1.2 RESTORATION

- A. As defined below, and when noted in Restoration Schedule on Drawings.
 - 1. Type A: Sod for established lawns, park lawns, and frequently mowed public spaces.
 - 2. Type B: Sod for sodded swales.
 - 3. Type C: Surge stone for seeded and stone lined swales.
 - 4. Type D: Seed for improved areas.
 - 5. Type E: Seed for unimproved and outfall areas.
 - 6. Type F: Development sites with existing stabilization of temporary mulch or planted seed.
 - a. Restore in kind and maintain.
- B. Service Connection Contracts (SC, LC, AC) and Sewer Rehabilitation Contracts as specified herein.
 - 1. Type A.
 - 2. Type D.

1.3 SUBMITTALS

- A. Submit following Section 01450.
 - 1. Certificates of Compliance Before Delivery of Materials:
 - a. Topsoil.
 - b. Seed.
 - c. Sod.
 - d. Fertilizer.
 - e. Lime.

1.4 REFERENCE DOCUMENTS

- A. Obtain and maintain at work site a copy of Maryland Turf Grass Law and Regulations and Maryland Seed Law and Regulations, available from:

Maryland Department of Agriculture
Turf and Seed Regulatory
50 Harry S. Truman Parkway
Annapolis, Maryland 21401
Phone (410) 841-5960

PART 2 PRODUCTS

2.1 TOPSOIL

A. Properties

1. Fertile natural surface agricultural soil capable of sustaining vigorous plant growth.
2. Containing not less than 1-1/2 percent organic matter as determined by MSHA Standard Method of Test.
3. pH value of not less than 6.5.
4. Free of stones, roots, rubbish, and other objectionable materials such as Bermuda grass, poison ivy, and kindred roots, and material harmful to plant growth.
5. Sufficient pore space to permit adequate root penetration.
6. Meet analysis of sand, silt, and clay when determined following AASHTO M146 with these exceptions:

	Percent Passing by Weight	
	<u>Minimum</u>	<u>Maximum</u>
Sand	20	75
Silt	10	60
Clay	5	30

- B. Topsoil available on site that meets above specified requirements may be utilized with Engineer's approval.

2.2 SPECIAL PURPOSE TOPSOIL

- A. Hand spreadable and meeting requirements listed above for topsoil and following gradation:

<u>Sieve</u>	<u>Minimum Percent Passing by Weight</u>
2-inch	100
No. 4	90
No. 10	80

- B. Topsoil available on site that meets above specified requirements for special purpose topsoil may be utilized with Engineer's approval.

2.3 COMPOSTED SLUDGE

- A. May be used instead of topsoil following requirements specified herein.
1. Composition: Mixture of sewage sludge and bulking agent, such as wood chips, subjected to aerobic decomposition (composting).
 2. Meet guidelines for destruction of primary pathogenic organisms and heavy metals limitations as set forth by Maryland Department of Health and Mental Hygiene.
 3. Handle and transport under guidelines in Department of the Environment Code of Maryland Regulations 26.04.06.
 4. Meet guidelines for nutrient content and application rates as outlined in Maryland Department of the Environment Standards and Specifications for Soil Erosion and Sediment Control.

2.4 SEED

- A. Certification: Unless otherwise specified herein, certified by Maryland Department of Agriculture and following requirements of Maryland Seed Law and Regulations.
- B. For dry and semishady improved areas mowed regularly: Sow following mixtures at 195 pounds per acre or 4.5 pounds per 1,000 square feet between March 1 and May 31 and between August 15 and October 31.

TYPE OF GRASS	PERCENT	CERTIFIED SPECIES
Tall Fescue	90-100	Adventure, Apache, Arid, Falcon, Finelawn I, or Rebel II.
Kentucky Bluegrass	0-10	Common, Kenblue, Vica, Ram 1, or Monopoly.

- C. For dry, heavily shaded improved areas mowed regularly: Sow mixture at 175 pounds per acre or 4 pounds per 1,000 square feet between March 1 and May 31 and between August 15 and October 31.

TYPE OF GRASS	PERCENT	CERTIFIED SPECIES
Tall Fescue	65	Adventure, Apache, Arid, Falcon, Finelawn I, or Rebel II.
Perennial Ryegrass	10	All-Star, Blazer, Manhattan, Palmer, Pennant, Pennfine, Premier, Prelude, Regal, or Repell.
Creeping Red Fescue and/or Chewings Fescue	25	Penlawn, Flyer, Longfellow, Victory, or Jamestown.

- D. For unimproved drought-prone areas not to be mowed or mowed infrequently: Sow mixture at 175 pounds per acre or 4 pounds per 1,000 square feet between March 1 and May 31 and between August 15 and October 31.

TYPE OF GRASS	PERCENT	CERTIFIED SPECIES
Tall Fescue	80	Kentucky 31
Perennial Ryegrass	20	Common

- E. For unimproved areas that are poorly drained and subject to frequent flooding: Sow mixture at 130 pounds per acre or 3 pounds for 1,000 square feet between March 1 and May 31 and between August 15 and October 31.

TYPE OF GRASS	PERCENT	CERTIFIED SPECIES
Tall Fescue	75	Kentucky 31
Reed Canarygrass	25	Common

- F. Temporary grass stabilization: Use 1 of following, but not in maintained turf areas.

TYPE OF GRASS	SOWING INSTRUCTIONS
Barley or Annual Ryegrass	Sow mixture at 50 pounds per acre or 1 pound per 1,000 square feet between March 1 and May 31 and between August 15 and October 15.
Foxtail Millet	Sow mixture at 50 pounds per acre or 1 pound per 1,000 square feet between May 31 and August 15.

- G. Nontidal wetlands and nontidal wetlands buffers: Use 1 of following:

TYPE OF GRASS	SOWING INSTRUCTIONS
Annual ryegrass; Millet; Barley, Oats; Rye.	100 percent of 1 of the listed. Follow Maryland Standards and Specifications for Soil Erosion and Sediment Control, MDE, WMA for seeding rates, zones, and periods. Other non persistent vegetation approved by Maryland Department of Natural Resources, Nontidal Wetlands Division.

2.5 SOD

- A. Grade: Certified or Approved as designated by Maryland Department of Agriculture and following requirements of Maryland Turf Grass Law and Regulations.
1. Machine cut sod at uniform thickness of 3/4 inch \pm 1/4-inch, excluding top growth and thatch.
 2. Use individual sod pieces strong enough to support their own weight when lifted by ends.
 3. Broken pads, irregularly shaped pieces, and torn or uneven ends will not be acceptable.
 4. Lay sod between September 15 and May 15. Do not lay on frozen ground.
- B. Replacement:

1. For replacing previously established turf, use sod similar to what existed before construction.
2. For sod placed where no grass existed before construction or replacing lawn consisting mainly of coarse textured grass without dominant species, use Maryland Certified Sod of Tall Fescue 100 percent Certified Adventure, Apache, Arid, Bonanza, Falcon, Finelawn, Jaquar, Mustang, Olympic, or Rebel.
3. For sod replacing lawn consisting mainly of fine textured grass without dominant species, use Maryland Certified sod of Kentucky Bluegrass 100 percent certified Aspen, Blacksburg, Bristol, Cheri, Eclipse, Georgetown, Gnome, Haga, Merit, Midnight, Plush, Trenton, or Victa.

2.6 FERTILIZER

- A. Uniform composition, free flowing and delivered to site fully labeled according to applicable state fertilizer laws and bearing name, trade name, or trademark and warranty of producer.
- B. Submit soil samples to approved soils testing laboratory for fertilizer recommendations.
 1. Submit recommendations and receive Engineer's approval before implementation.
- C. Unless otherwise directed, fertilize at following rates:
 1. Temporary Seeding: 10-10-10 or equivalent at rate of 600 pounds per acre or 15 pounds per 1,000 square feet.
 2. Permanent Seeding: 1000 pounds per acre of 10-20-20 or equal.
 3. Sodding:
 - a. Immediately before sod placement, apply 3.5 pounds of slow release nitrogen per 1,000 square feet.
 - b. Slow release nitrogen: Approximately 1/3 immediately available and 2/3 water insoluble, such as Urea formaldehyde or isobutyledene urea.
 - c. Rate: 15 pounds of 10-20-10 per 1,000 square feet after sodding.

2.7 LIME

- A. Contents: Ground limestone containing at least 50 percent total oxides (calcium oxide plus magnesium oxide).
 1. Limestone: Ground to fineness so that at least 50 percent will pass through 100 mesh sieve and 98 percent will pass through 20 mesh sieve.
- B. Rate: 2 tons per acre, 100 pounds per 1000 square feet.

2.8 MULCH

- A. For Protection of Permanent Seeding:
 1. Straw: Clean, weed free, unrotted, applied at rate of not less than 100 pounds per 1,000 square feet, 2 tons per acre, and anchored with 1 of following methods.

- a. Mulch anchoring tool for flat slopes, mulch nettings, and cut back or liquid binders listed following manufacturer's recommendation.
- b. Acrylic DLR (Agro-Tack).
- c. DCA-70.
- d. Petroset.
- e. Terra Tax II.
- f. Terra Tack AR.
- g. Or equal.
2. Mulch: Jute or excelsior blanket.
3. Wood Chips: Coverage 1-1/2 inches deep.

B. Mulch Utilized as Temporary Protection and Stabilization: Follow above materials requirements, except Engineer will set rate of application.

PART 3 EXECUTION

3.1 PERMANENT SEEDING

A. Preparation.

1. Harrow, disc, or otherwise loosen subsoil to depth of 4 inches.
2. Spread topsoil or composted sludge evenly over prepared subsoil to following depths.
 - a. Topsoil:
 - 1) Slopes 3:1 or steeper: 2 inches after compaction.
 - 2) Slopes flatter than 3:1: 4 inches after compaction.
 - b. Composted Sludge:
 - 1) All areas: 2 inches after compaction.
3. Where existing topsoil does not meet these requirements, provide required topsoil to meet above minimum thicknesses.
4. Remove objectionable material such as stones 2 inches or larger, clods, brush, roots, and trash from top 4 inches of soil.
5. Perform harrowing, discing, scarifying, and raking on contour of slopes steeper than 3:1.

B. Amendments:

1. Apply lime and fertilizer at rates specified in PART 2, PRODUCTS, and thoroughly mix into top 6 inches.
 - a. When composted sludge is used instead of topsoil, lime and fertilizer may be eliminated.
 - b. Scarify area and rake until surface is leveled to give a maximum of 2 inches in variation, and soil is easily crumbled and uniform fine texture.

C. Seed Application:

1. Apply mixture uniformly with mechanical power driven seeders, mechanical cyclone hand seeders or hydroseeding equipment.
2. Slurry for hydroseeder may contain seed and fertilizer only.

3. Disc seed 1 inch into soil in floodplain areas.
4. Rake, roll, or drag seedbed in all other areas, if hydroseeder or cyclone seeder is used.
5. Moisten seedbed during periods of drought and/or high temperatures.

D. Mulch Application:

1. Apply at rates specified in PART 2 PRODUCTS herein.
2. Anchor as specified in PART 2 PRODUCTS herein.

3.2 TEMPORARY SEEDING

A. Preparation:

1. Loosen top 2 inches of seedbed.
2. Apply lime and fertilizer at rates specified in PART 2 PRODUCTS.

B. Seed Application: Follow application for permanent seeding.

C. Mulch Application: Follow application for permanent mulching.

3.3 SODDING

A. Preparation:

1. Harrow, disc, or otherwise loosen subsoil to depth of 6 inches.
2. Harrow, disc, scarify, and rake on contour of slopes steeper than 3:1.
3. Remove objectionable material such as stones, clods, brush, roots, and trash from top 4 inches of soil.

B. Amendments:

1. Apply lime and fertilizer at rates specified in PART 2, PRODUCTS, and thoroughly mix into loosened subsoil.
2. Scarify area and rake until surface is leveled to a maximum of 2 inches in variation, and soil is easily crumbled and uniform fine texture.

C. Sodding:

1. Lay between September 15 and May 15.
2. Deliver to site within 24 hours, and install within 36 hours, after cutting.
3. During wet weather, dry sod sufficiently to prevent tearing during handling and placing.
 - a. During dry weather, water sod sufficiently before lifting to insure its vitality and to prevent dropping off of soil during handling.
4. Desiccated sod will be rejected; replace at no cost to the Commission.
5. Place sod in straight lines parallel to one another.
 - a. Stagger lateral joints and butt tight.
 - b. On slopes 5:1 and steeper place sod with long edges parallel to contour starting at top of slope.

- c. In drainage ditches and sodded channels, place sod with long edge parallel to flow of water.
6. On slopes 2:1 and steeper and in surface drainage V-shaped or flat bottomed ditches, stake each strip of sod with at least 2 stakes, spaced not more than 2 feet apart, or wire staples.
7. Immediately after completing section of sodding, roll, tamp, and water until underside of sod pad and soil surface beneath it are thoroughly wet and in contact with each other to eliminate air pockets.
8. Completion of placing, rolling, tamping, and watering: Within 8-hour period.
9. Moistened dry sod bed during periods of drought or high temperatures.

3.4 MULCH ONLY

- A. Grade as required.
- B. Place and anchor mulch only at rates specified in PART 2, PRODUCTS, where indicated and directed by Engineer.

3.5 TIME RESTRICTIONS

- A. When permanent seeding or sodding is specified or directed, and is not allowed because of time restrictions specified above, utilize 1 or more of following methods to prevent erosion and sedimentation until permanent seeding or sodding is allowed.
 1. Place and anchor straw mulch or wood chips.
 2. Apply temporary seeding and mulch.
 3. Prepare soil as for permanent seeding and then mulch as specified herein; overseed during next seasonal seeding period.
 4. Provide other erosion control measures acceptable to Engineer.
 5. Remove straw or wood chips used as temporary mulch or work into subsoil minimum depth of 6 inches before initiation of permanent seeding or sodding application.

3.6 MAINTENANCE OF SEEDED AND SODDED AREAS

- A. Maintain seeded and sodded areas until accepted in writing by Engineer.
 1. Water seeded and sodded areas as necessary to establish growth.
- B. Inspect seeded and sodded areas for failures and necessary repairs.
- C. Provide replacements during specified planting seasons.
- D. When Engineer determines stand of turf is inadequate:
 1. Overseed and fertilize using 1/2 of rates originally applied.
 2. Resod.
- E. When Engineer determines stand is over 60 percent damaged:

1. Reestablish following original lime, fertilizer, and seed.
2. Prepare sod bed following seeding or sodding recommendations.

PART 4 MEASUREMENT AND PAYMENT

4.1 SEEDING AND SODDING

- A. Seeding, sodding, mulch, fertilizer, lime, topsoil, and preparation of seed and sod bed to limits indicated, as directed by Engineer, and to repair damage caused by Contractor's operations, will not be measured for payment, but will be considered incidental to Contract.

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