

**SECTION 7000 - SEEDING, SODDING, AND MULCHING**

**PART 1 - GENERAL**

**1.01 SCOPE:** This Section covers seeding and sodding operations, seasonal limits, guarantee period, seed mixtures, soil preparation, top soil placement, fertilizing, mulching, and turf establishment.

**1.02 INSTALLER'S QUALIFICATION:** The senior member of each independently working sodding/seeding crew shall have a minimum one year's experience in the installation and establishment of sod/seed.

**1.03 RELATED WORK:** Refer to the following sections for related work:

Mulch	Section 1400-Construction Period Pollution Prevention
Seed bed preparation for erosion control	Section 1400-Construction Period Pollution Prevention

**1.04 GERMINATION AND VIABILITY GUARANTEE PERIOD:** Germination and viability of seed and sod shall be guaranteed for a period of two months from planting, or until the planted area is established and fully accessible for maintenance by the adjacent owner, whichever is longer. Performance standard shall be a uniform, vigorous, and densely planted growth.

The guarantee period of seeded and sodded areas against settlement, erosion, compaction due to traffic and construction activity, or failure to meet any other requirement of these specifications shall be the same as for the work as a whole.

**1.05 APPLICABILITY:** Unless shown otherwise in the Special Conditions or drawings, sod is required for restoration of turf and for residential and retail commercial lawns regardless of maintenance history. Grassed locations in ungroomed areas may be restored by seeding and mulching.

**PART 2 - PRODUCTS**

**2.01 SOD:** When sod placement is for repair of an existing lawn, the sod shall match the species of the existing lawn. Contractor shall be responsible for accurately determining the species. Sod for new installations shall be turf type tall Fescue or as indicated on the drawings or in the Special Conditions. Fescue sod may contain up to 35 percent Kentucky Bluegrass by seed count in lieu of netting. Sod shall be densely-rooted, dark green in color containing not more than 10 percent by coverage of other grasses and clovers. Sod shall be free of noxious and restricted species defined in KDOT Standard Specifications Subsection 2103. Sod shall be cut in strips containing approximately one square yard and not less than 18 inches wide. Sod thickness shall be 1 inch ± 1/4-inch. Sod shall be harvested immediately prior to shipping. Stakes for sloped areas shall be 1/2-inch square by 8-inch long wooden stakes. Allowable dates of sod placement are ground thaw to June 15, and September 1 to ground freeze.

**2.02 SEED GENERAL:** Seed purity shall conform to the requirements of KDOT Standard Specifications Subsection 2103. Seed mixes are listed below. Actual weight of seed shall be adjusted for purity and germination rate to provide the minimum weight of pure, live seed listed.

**2.03 SEED FOR TURF:** Seed mix for establishing lawn turf is as follows; all weights are lbs.-PLS/acre

- A. Cool season perennial turf grasses, total rate 150 lbs. No single variety shall be less than 10% of the entire mix:
  - 1. Kentucky bluegrass, not to exceed 20% of the mix.
  - 2. Perennial ryegrass, not to exceed 30% of the mix.
  - 3. 3 separate cultivars of improved turf-type tall fescue, K-31 not allowed.

**2.04 RESTORATION SEED MIX:** Seed mix for establishing cover on disturbed areas that are to remain ungrazed (this includes temporary seed for erosion control) shall be selected from the following table.

<b>Seed Mix for Restoration</b>			
Item	Standard mix	Summer mix	Winter mix
Dates	3/01 thru 4/30, & 8/15 thru 10/14	5/01 thru 8/14	10/15 thru 2/29
Nurse crop	Ryegrass	Buckwheat	Same selection as standard mix except double all application rates. Orchard grass is a required cool season selection.
Legumes	Select 2 from species list	Birdsfoot Trefoil + one other from list	
Cool season grasses	Select 3 from species list	Select 2 from species list	
Warm season grasses	Select 3 from species list	Select 4 from species list	

Species list by type and application rates are as follows. Weights are lbs.-PLS/acre. Weights are for the indicated species contribution to the total mix; weights anticipate additional species in the mix and shall not be pro-rated.

- A. Nurse crop: select the species appropriate for the season
  - 1. Cool season: Annual or Italian Ryegrass, *Lolium multiflorum*, 30 lbs.
  - 2. Warm season: Buckwheat, *Fagopyrum ssp*, at 60 lbs.
- B. Legumes:
  - 1. Birdsfoot Trefoil, *Lotus, corniculatus*, 2.5 lbs.
  - 2. Alfalfa, *Medicago sativa*, 2.5 lbs.
  - 3. Crimson Clover, *Trifolium incarnatum*, 5 lbs.
  - 4. Hairy Vetch, *Vicia villosa*, 10 lbs.

## C. Cool Season Grass:

1. Perennial Ryegrass, *Lolium perenne*, 10 lbs.
2. Canada Wildrye, *Elymus canadensis*, 5 lbs.
3. Red Top, *Agrostis gigantea*, 2.5 lbs.
4. Thickspike or Streambank Wheatgrass, *Elymus lanceolatus*, 5 lbs.
5. Meadow Brome, *Bromus erectus*, 5 lbs.
6. Orchardgrass, *Dactylis glomerata*, 2.5 lbs.

## D. Warm Season Grass:

1. Big Bluestem, *Andropogon gerardii*, 5 lbs.
2. Indian Grass, *Sorghastrum nutans*, 5 lbs.
3. Switchgrass, *Panicum virgatum*, 2.5 lbs.
4. Prairie Dropseed, *Sporobolus heterolepis*, 2.5 lbs.
5. Little Bluestem, *Schizachyrium scoparium*, 5 lbs.
6. Sideoats Grama, *Bouteloua curtipendula*, 5 lbs.
7. Blue Grama, *Bouteloua gracilis*, 2.5 lbs.

- 2.05 FERTILIZER:** Fertilizers shall conform to the requirements of KDOT Standard Specifications Subsection 2106. Suppliers shall be registered by the Kansas State Board of Agriculture. Ratio of Nitrogen, Phosphorus, Potassium shall be 10-1-1 to 24-3-3.
- 2.06 TOPSOIL:** Top soil shall be a friable, loamy soil with a good supply of humus and high degree of fertility, black or dark brown in color, subject to approval of Engineer based on visual and tactile inspection. Topsoil may be either naturally occurring field topsoil or blended from a mineral subsoil and organic compost.
- 2.07 TILLING AND PLANTING EQUIPMENT:** Tilling and planting equipment shall be appropriate to the size of the work. Seed drills shall be set for rows no more than 4 inches apart and a planting depth of 1/4- to 1/2-inch. Rollers shall have a weight of 60 to 90 pounds per linear foot. Hydroseeders shall be capable of producing a uniform distribution of seed, mulch, and fertilizer. Irrigation equipment shall be capable of uniform distribution and shall not cause wash out of topsoil or seed.

**PART 3 - EXECUTION**

- 3.01 VERIFICATION:** Verify that rough grading is complete and accepted.
- 3.02 SOIL PREPARATION FOR SOD AND TURFGRASS AREAS:** Soil preparation for sodded and seeded lawns is covered here. See related work, Part one for soil preparation for cover in disturbed areas that are to remain ungrained. The top 9 inches of soil in planted areas shall closely resemble a native prairie soil in permeability and fertility. See related work Part 1 for ground preparation for restoration.

- A. Subsoil containing excessive construction aggregate shall be removed and replaced with clean soil. Add water to excessively dry soil. Remove rock, clods and foreign matter larger than 3 inches.
- B. If topsoil exists on site and has been segregated or where imported topsoil is specified, bring grade to four inches below final grade. Till subsoil to 5-inch depth, pulverizing clods. Place topsoil to a 4-inch depth.
- C. If topsoil is not segregated or if existing topsoil contains no humus and imported topsoil is not specified, bring grades to one inch below final grade. Till subsoil to 8-inch depth, pulverizing clods. Add 1-inch loose depth of peat moss or well-composted organic material; blend with top 4 inches of soil.
- D. Level by rake or chain drag and lightly compact with roller. Alternately level and compact by back dragging with skid loader. Soil shall be level but not slick and shall compress slightly under heel pressure.

**3.03 FERTILIZATION RATES:** Fertilizer shall be applied at a rate of 1 pound nitrogen per thousand square feet on areas to be seeded or sodded. Fertilization is not required in restoration areas that are to remain rough or ungraded.

**3.04 SOD PLACING:** Sod shall be placed within 24 hours of harvesting. Sod shall be protected from drying prior to and after placing. Contractor shall place with tight joints, lay longitudinal joints along the contour, and stagger traverse joints. Sod shall be watered and rolled immediately after placing. Sod on slopes of 3:1 or greater shall be staked with minimum 3 stakes per square yard. Sod edges shall be tucked in at pavement edges and banked with moist earth at transition from sod to seed areas.

**3.05 SEED PLANTING:** Unless limited by the special conditions seed may be drilled, hydroseeded, premixed with compost mulch, impregnated onto the erosion control blanket, or broadcast. Drills shall be set as specified in Part 2 of this Section.

- A. Additional provisions for broadcast seed: Seed shall be broadcast only in hard to access areas and only during calm conditions. Application rate shall be doubled if seed is broadcast. If seed is broadcast, it shall be raked in to a depth of 1/4- to 1/2-inch.

**3.06 MULCH:** Mulch is required for all seeded areas. Mulch for lawns is same as mulch for restoration areas. See related work Part 1.

**3.07 ESTABLISHMENT OF TURF:** Seed and sod shall be irrigated during the germination and viability guarantee period specified in Part 1, this Section. Contractor shall maintain optimum soil moisture for growth. Turf shall be hardened by deep, infrequent watering during the last two weeks of the germination and viability guarantee period. Turf shall be protected from traffic, construction activities, settlement, and erosion.

END OF SECTION 7000