

SECTION 02922

SEED, TURF SEED, AND TURF SOD

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Seed, turf seed, and turf sod requirements and application.
- B. Surface preparation.

1.2 RELATED SECTIONS

- A. Section 02912: Topsoil.

1.3 REFERENCES

- A. Utah Seed Law: Utah Code - Title 4, Chapter 16.

1.4 SUBMITTALS

- A. Copy of the purchase order to the Engineer documenting that all seeds, including substitutions, have been acquired before the seeding window begins.
 - 1. For seeding schedule, refer to this Section, article, "Scheduling."
 - 2. The purchase order should list the common and botanical name for each seed species.
- B. Certification that turf sod is nursery grown and contains a minimum of 3 varieties of Kentucky Blue Grass.
- C. Certification indicating the date and time sod was cut at the nursery.
- D. Furnish fertilizer labels to Engineer.
- E. Through the Engineer, supply legible copy of Seed Certification Reports to Region Landscape Architect.
- F. Seed certification: Include the following on seed certification reports and labels:
 - 1. Botanical name (include variety if applicable).
 - 2. Common name.
 - 3. Name of seed testing laboratory.

4. Lot number and address of the seed company.
5. Weed seed (percent).
6. Other crop seed (percent).
7. Inert matter (percent).
8. Pure live seed (percent).
9. Noxious weed seed (name and rate of occurrence).
10. Date tested (month and year).
11. Germination(percent).
12. Hard seed (percent).
13. Net weight (do not include container weight).
14. Pure live seed weight.
15. Collection locations for native shrub and tree species (state, county, elevation).

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Mixing Seed:
 1. Notify Engineer 7 calendar days prior to seed mixing.
 2. Engineer will verify that the seed certification report or label represents the seed lot from which the seed is furnished.
 3. Mix the different seed varieties to provide an even blend.
 4. Bag the mixed seed, seal the container, and attach a signed UDOT label to the exterior.
- B. Deliver seed or turf seed to job site in original containers showing analysis of seed mixture, net weight, and date and location of packaging. Damaged packages are not acceptable.
- C. Strip turf sod from nursery no more than 24 hours before laying.
- D. Deliver fertilizer in containers showing weight, chemical analysis, and name of manufacturer. Store fertilizer in a weatherproof location.

1.6 SCHEDULING

- A. Pre-measure the area to be seeded before ordering seed from supplier. The Engineer must approve the measuring technique and determined quantity.
- B. Seeding Window: Complete all general roadside seeding within the appropriate seeding window.
 1. If the seeding is not completed within the given window, postpone seeding until the following year.

2. Under certain conditions, an exception to this window may be obtained through the Region Landscape Architect. The exception must be approved by the Engineer.

<u>Elevation</u>	<u>Seeding Window</u>
Below 4000 ft	Oct. 1 to Dec. 31
4000 to 6000 ft	Sept. 15 to Dec 1
Above 6000 ft	Sept. 1 to Nov 15

- C. Turf seed and turf sod can be placed only after irrigation system is installed and operational.
- D. Topsoil: Refer to Section 02912.
 1. Place topsoil just before seeding to eliminate competition from weeds.
 2. Coordinate topsoil placement with the above seeding window.

PART 2 PRODUCTS

2.1 SEED AND TURF SEED

- A. Meet the Utah Seed Law.
- B. Supply seed on a pure live seed (PLS) basis.
- C. Obtain seed from lots that have been tested by a state certified seed testing laboratory. (Association of Seed Analyst (AOSA) or Society of Commercial Seed Technologists (SCST)).
 1. Seed germination test older than 18 months for grass seed, and 9 months for forb, shrub, or tree seed are not acceptable.
 2. Based on the amount or type of seed required on a project, UDOT may require additional testing by the Department of Agriculture.
- D. Do not use wet, moldy or otherwise damaged seed.
- E. Seed Substitutions
 1. Before requesting a seed substitution, contact the major seed brokers in the state to verify that the seed is unavailable.
 2. Have the Engineer contact the Region Landscape Architect to verify the seed is unavailable and to recommend a seed substitution.
 3. Replacement seed shall be of equal or greater cost to the originally specified seed.

2.2 TURF SOD

- A. Healthy and well-rooted nursery grown Kentucky Blue Grass sod comprised of a minimum of 3 varieties and free of weeds.
- B. Machine cut in straight, uniform strips or rolls, cut at a depth between 3/4 inch and 1 inch.

2.3 FERTILIZER (For turf sod and turf seed areas only)

- A. Uniform in composition, dry and free flowing.
 - 1. For turf seed or turf sod: Elemental nitrogen in granular form. Phosphorus, and potassium are optional and may be applied with nitrogen in granules. A minimum of 50 percent of nitrogen shall be in a slow release form such as sulfur coated urea or urea formaldehyde.
 - 2. If hydroseeding method is used, apply elemental nitrogen with a concentration ranging from 21-34 percent.

PART 3 EXECUTION

3.1 PREPARATION

- A. Complete all final grading, trench settling, topsoil placement, surface preparation, and irrigation work before seeding begins.
- B. Prepare General Seedbed (for all seeded and sodded areas).
 - 1. Before any seed or sod work begins, properly prepare the topsoil surface and have it approved by the Engineer. Refer to Section 02912.
 - 2. Do not work topsoil or seed when the soil is saturated or frozen.
- C. Prepare Turf Seedbed:
 - 1. Review finish grade to confirm that topsoil is 1 inch below the top of all walk, curbs, mow strips and other hard surfaces.
 - 2. Apply fertilizer at the rate of 2 lbs/100 yd² and mix thoroughly into upper 2 inches of topsoil.
 - 3. Do not apply fertilizer and seed at the same time in the same machine.
- D. Prepare Turf Sod Surface:
 - 1. Review finish grade to confirm that topsoil is 1-1/2 inch below the top of all walks, curbs, mow strips and other hard surfaces.
 - 2. Apply fertilizer at the rate of 2 lbs/100 yd² and mix thoroughly into upper 2 inches of topsoil.

3. Level and roll seeded areas using an 21 gal water-filled hand roller containing 8 gallons to 10 gallons of water.
4. Just before laying the sod, lightly rake and dampen with water the top 1/8 to 5/8 inches of soil.

3.2 SEEDING

- A. Notify the Engineer 7 working days before seeding.
- B. Apply seed at the rate indicated in the Seed Schedule shown in the plans.

3.3 DRILL METHOD

- A. Use the drill method of seeding on accessible slopes 3:1 and flatter.
- B. Use a rangeland type drill for non-turf areas or a Brillion type drill for turf areas equipped with the following:
 1. Depth band
 2. Seed box agitator
 3. Seed metering device
 4. Furrow opener
 5. Packer wheels or drag chains
- C. Provide the Engineer a copy of the manufacturer's directions on drill calibration 2 working days before seeding.
- D. Using the drill manufacturer's directions, and in the presence of the Engineer, calibrate the drill to apply seed at the rate indicated in the seeding schedule.
- E. Space drill rows a minimum of 6 inches and a maximum of 8 inches.
- F. Fill the seed box/boxes no more than half full when drilling on a slope.
- G. Set depth bands to drill seeds to a 1/2 inch depth.
- H. Drill along the contour.
- I. Maintain the drill at the calibrated setting throughout the seeding operation.
- J. Allow the furrows that are created by the drill to remain.

3.4 BROADCAST METHOD

- A. Use the broadcast method of seeding under the following conditions:
 - 1. Slopes steeper than 3:1.
 - 2. Slopes 3:1 and flatter where the area to be seeded is inaccessible to drill.
 - 3. Where the area to be seeded is not large enough to justify using a drill.
 - 4. Where rocky surface conditions would damage a drill.
- B. Obtain approval of the broadcast method by demonstrating the procedure on a 100 yd² area.
- C. Broadcast the seed and rice hull carrier (if needed).
 - 1. Evenly in one direction with a cyclone seeder or other approved mechanical seeder.
 - 2. Or, using a hydroseeder, apply seed, water and 300 lbs of cellulose fiber mulch (tracer) per acre.
- D. Do not seed during windy weather or when soil is saturated.
- E. Incorporate the seed into the soil by one of three methods:
 - 1. Cat-tracking, running the dozer up and down the slope, creating continuous cleat tracks that run parallel with the contours.
 - 2. Hand raking the seed in 1/2 inch deep and along the contours of the slope.
 - 3. Slope chaining by pulling the chain along the contour until the seed is covered.

3.5 TURF SEEDING

- A. Apply turf seed. Refer to this Section, article, "Drill Method," paragraph: Broadcast Method, item C.2.
- B. Roll seeded areas using a hand roller half filled with water. Rolling is not necessary if a Brillion type seeder is used.
- C. Lightly water and program the irrigation system to maintain a moist seed bed.
- D. Along walkways, rope-off newly seeded areas using bright plastic ribbon tape attached to stakes.

3.6 LAYING SOD

- A. Refer to this Section, article, "Scheduling," paragraph C for timing.

- B. Place sod with all edges and joints tightly butted.
 - 1. Do not stretch or overlap sod.
 - 2. Keep length seams in a straight line.
- C. Lay turf sod with staggered joints and trim off excess material along the edges.
- D. Roll sod immediately after placing using a hand roller half filled with water.
 - 1. Re-roll if depressions still remain.
 - 2. Thoroughly water with a fine spray to a depth sufficient that the underside of the new sod and soil immediately below the sod are thoroughly wet.

END OF SECTION