

32 92 23 – Sodding

1. Introduction

- A. This Construction & Design standard covers Sodding, to be used in conjunction with other related sections listed below:

31 25 00	Erosion and Sedimentation Controls
32 01 90	Operation and Maintenance of Planting
32 01 90	Operation and Maintenance of Planting (Grasses)
32 01 90.13	Fertilizing
32 01 90.26	Watering
32 80 00	Irrigation
32 91 00	Planting Preparation
32 91 13	Soil Preparation
32 92 19	Seeding
32 83 43	Trees

1. This sections does not apply to athletic fields.

- B. Designers should coordinate with Duke University Landscape Services (LS) to coordinate selection and execution requirements for Sodding.

2. References

- A. AOSA – Association of Official Seed Analysts
- B. Turfgrass Producers International (TPI) Guideline Specification to Turfgrass Sodding
- C. TPI's Specifications of Turfgrass Sod Materials
- D. TPI's Specifications for Turfgrass Sod Transplanting and Installation

3. Definitions:

- E. Backfill: Earth used to replace or the act of replacing earth in an excavation.
- F. Finish Grade: Elevation of finished surface of topsoil following natural settling, light rolling or light compaction activities.
- G. Manufactured Soil: Soil produced off site by homogeneously blending mineral soils or sand with stabilized organic soil amendments.
- H. Sub-Grade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath the topsoil.

- I. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
 - J. Top Soil: Imported or native soil as specified.
 - K. Weeds: Any undesirable plants growing in an area.
 - L. Installer: The firm performing the sod work.
4. Design Standards
- A. Turfgrass Sod shall be
 - 1. TPI certified nursery grown grade, complying with TPI's "Specifications for Turfgrass Sod Materials" in its "Guideline Specifications to Turfgrass Sodding".
 - 2. Be of uniform density, color and texture, strongly rooted, free of stones, burned or bare spots, and containing no more than 10 weeds per 50 square yards and capable of vigorous growth and development when planted.
 - 3. Minimum age: 18 months
 - 4. Select sod grown in soils similar to those present on the project site.
 - 5. Turfgrass species:
 - a. Fescue: A minimum of three cultivars of turf type tall fescue with up to one cultivar of Kentucky bluegrass comprising a maximum of 10% of the mix. A minimum of 2 of the fescue cultivars are to be rhizomatic.
 - b. Bermuda: Bermuda cultivar to be specified by owner.
 - 6. Harvesting Sod: Machine cut sod not exceeding 1 square yard in area with a minimum width of 18 inches. Broken pads or pads with uneven ends are not acceptable. Soils depth shall be as follows for each grass type.
 - a. Fescue: minimum of .75 inch and maximum of 1.25 inch topsoil base.
 - b. Bermuda: minimum of .5 inch and maximum of .75 inch topsoil base.
 - B. Planting Accessories
 - 1. Selective Herbicides: EPA registered and approved, of type recommended by manufacturer for application.
 - 2. Mycorrhizae Inoculant: Provide one of the following, or similar with approval from owner.
 - a. Landscape Inoculant by Bio-Organics.

- b. MycoGrown for Lawns by Fungi Perfecti.
 - c. Mycor Root Building by GreenSense.
 - d. Turf Saver by Plant Health Care.
 3. Water: Clean, fresh and free of material harmful to plant growth. Refer to 32 01 90.26 Watering for more information.
 - C. Fertilizer
 1. See Fertilizing Section 32 01 90.13.
5. Documentation and Review Requirements
 - A. Submittals
 1. Provide product data for each type of product utilized on site, including MSDS, name brand, active chemical, and content analysis. Also provide:
 - a. Fertilizer: Nitrogen, phosphorous and potassium ratio. See 32 01 90.13 for additional Fertilizer information.
 - b. Biocides: Pesticides, Herbicides.
 2. Indicate sodding method and equipment proposed to be used.
 3. Provide documentation of the following:
 - a. Sod type and depth of Sod.
 - b. Certification of each seed mixture used for turfgrass sod, identifying source, name and number of each supplies.
 - c. Location, name and contact where the sod is grown.
 4. Indicate planting schedule including anticipated sodding dates.
 5. Provide qualifications of the installer and installer's project manager and superintendent.
6. Installation and Performance Requirements
 - A. Quality Assurance
 1. Sod Producer: Company specializing in sod production and harvesting with a minimum of 5 years of experience and certified by the state of North Carolina.

2. Installer Qualifications: A qualified lawn installer with a minimum of 5 years of experience of work of this type, scale and complexity, whose work has resulted in successful lawn establishment.
3. The Installer shall have an employee who holds a four year bachelor degree in the field of landscape contracting, landscape management, agronomy, landscape architecture or horticulture and is available to the project.
4. The Installer's project superintendent, at a minimum, shall hold a minimum of a two year degree in the field of landscape contracting, landscape management, agronomy, landscape architecture or horticulture and be present on the project site a minimum of 75% of the time the installer's crew is present on the site.
5. The worked described in this section, as well as in planting, grading and irrigation, shall be contracted to a single landscape contractor.
6. The pre-installation meeting shall be at the project site or another site designated by the owner.

B. Regulatory Requirements

1. All personnel shall comply with regulatory agencies and authorities having jurisdiction for all chemical applications.
2. MSDS sheets shall be onsite, readily available, and easily accessible for all chemicals in use.
3. All chemical applicators shall have a current and valid North Carolina pesticide applicators license.

C. Delivery, Storage and Handling

1. Harvest, deliver, store and handle sod according to requirements in TPI's "Specifications of Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in its "Guidelines Specifications to Turfgrass Sodding". Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and exposed roots from dehydrations.
2. Deliver chemicals in original, sealed, waterproof containers labeled with chemical analysis and manufacturer. Retail all labels and/or containers through substantial completion date.

D. Project Conditions

1. Planting is restricted to one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance to date of turn over.
 - a. Fescue: March 15th to May 15th or September 15th to October 15th.

- b. Bermuda: May 1st to August 1st. Dormant plantings may be allowed with written permission of owner.
 2. Proceed with sodding only when existing and forecasted weather conditions permits.
- E. Coordination
 1. Coordinate work of this section with installation of underground utilities, irrigation system and plant materials.
 2. Coordinate as required to determine who is controlling the watering rates and times and ensure rates are appropriate for work of this section and do not harm any other plant material.
- F. Examination
 1. Examine areas to receive lawns and grass for compliance with requirements and other conditions affecting performance.
 - a. Do not sod when soil is wet and unable to support load of equipment.
 - b. Verify that prepared topsoil is ready to receive work of this section. (See 32 91 13 Soil Preparation)
 - c. Verify that required utilities and irrigation are available and ready for use.
 2. After installation, proof roll topsoil as required to ensure settling is minimized while ensuring optimum growing conditions for the plant materials.
 3. Proceed with installation only after any unsatisfactory conditions have been corrected.
- G. Preparation
 1. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs and plantings from damage caused by planting operations.
 - a. Protect grade stakes set by others until directed to remove them.
- H. Lawn Preparations
 1. Apply presodding fertilizer as dictated by soil test to achieve desired fertility.
 2. Apply mycorrhizal inoculant at the rate of .5 lb. per 1000 square feet of sod. Apply per manufacturers recommendations.
 3. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create a muddy condition.

4. Before sodding, restore areas if eroded or otherwise disturbed after finish grading and proof rolling.

I. Sodding

1. Lay sod within 24 hours of harvesting. Do not lay sod if ground is frozen or muddy.
 - a. Dormant sod may only be laid with written permission from owner.
2. Laying Sod:
 - a. The first row of sod shall be laid in a straight line with subsequent rows laid parallel.
 - b. Lay sod to form a solid mass with tightly fitted joints.
 - c. Butt ends and sides of sod. Do not stretch or overlap.
 - d. Stagger sod strips or pads to offset joints in adjacent courses a minimum of 12 inches.
 - e. Avoid damage to subgrade or sod during installation.
 - f. Tamp and roll lightly to ensure contact with subgrade and top soil, eliminate air pockets, and form a smooth surface.
 - g. Work sifted soil or fine sand into minor cracks between pieces of sod. Remove excess to avoid smothering sod and adjacent grass.
 - h. Lay sod perpendicular to slopes.
 - i. Sod shall not be laid on any slope exceeding 1:3.
 - j. Place top elevation of sod .5 inches below adjacent pavement.
 - k. Place sod in a single stripe 18 inches wide adjacent to all pavement.
 - l. The installation of sod in swales and drainage ditches shall be as follows:
 - (1) Stagger to prevent a continuous seam along line of flow.
 - (2) Secured with degradable materials to prevent washout during establishment period.
3. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 2 inches below sod.

J. Lawn Renovation

1. Renovate existing lawn in areas indicated on drawings or where existing lawns have been damaged by construction activities.
 - a. Reestablish lawn where settlement or washouts occur where minor regrading is required.
 - b. Provide new top soil as required.
2. Remove sod and vegetation from diseased or unsatisfactory lawn areas. Do not bury in soil.
3. Remove topsoil that contains foreign materials resulting from Contractor's operations, including oil drippings, fuel spills, stone, gravel, debris or other materials. Replace with new topsoil.
4. Where substantial lawn remains, mow, dethatch, core aerate, and rake existing lawn.
5. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches.
6. Apply soil amendments and initial fertilizers required for establishing new lawns per soil tests, and mix thoroughly into top 4 inches of existing soil. Provide new planting soil to fill low spots and meet finish grades.
7. As dictated by soil test, surface apply fertilizer to areas of lawn to remain. See section 32 01 90.13 for Fertilizing information.
8. Water newly planted areas as required. See section 32 01 90.26 for Watering information.

K. Satisfactory Lawns

1. Lawn installations shall meet the following criteria as determined by the owner during final inspection and at acceptance.
 - a. Satisfactory Sodded Lawn: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 95 percent over any 10 square feet and bare spots not exceeding 5 by 5 inches, with finished grass height 2 inches for Bermuda and 4 inches for Fescue.
2. Use specified materials to reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.
3. If satisfactory lawn has not been established at final inspection, another inspection shall be made upon written contractor requires that the lawn is ready for inspection, but no earlier than 60 calendar days and no later than 90 days.

L. Clean Up and Protection

1. Promptly remove soil and debris, created by lawn work, from paved and hardscaped areas. Clean wheels of vehicles before leaving site to avoid racking soil onto roads, walks, or other paved areas.
2. Allow only vehicles and equipment required to perform and maintain work of this section onto completed lawn areas.

M. Maintenance

1. See Operation and Maintenance of Planting (Grasses) Section 32 01 90.

7. As-Built Requirements

- A. Refer to 32 01 90 Operation and Maintenance of Planting (Grasses) for more information regarding the maintenance during and after turnover.