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329200 - Turfs and Grasses

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SECTION 32 9200 - TURFS AND GRASSES

1.1 SUMMARY

A. Section Includes:

1. Seeding.
2. Sodding.

B. General: The University of New Hampshire Grounds and Events Department discourages the use of sod unless conditions exist that prohibit seeding. Sod is not normally available with the diversity of turf cultivars that may be obtained by seeding. In areas where sod will abut existing lawns, a difference in color will be evident in definitely. In general, seeded areas, when installed properly, will provide a stronger, more attractive lawn that is more resistant to pests and drought.

1. Any turf areas in excess of 100 square feet shall be accessible with a 62-inch wide riding mower.

1.2 DEFINITIONS

- A. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.
- B. Finish Grade: Elevation of finished surface of planting soil.
- C. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- D. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- E. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- F. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- G. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.
- H. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

- I. Surface Soil: Whatever soil is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.3 QUALITY ASSURANCE

- A. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 1. Pesticide Applicator: State licensed, commercial.
- B. Landscape work shall be performed by firms specializing in landscaping and by qualified, experienced horticultural technicians.
- C. Substitutions must be approved by UNH Grounds and Events Manager, or their appointee. Submit proof of non-availability.
- D. Soil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory.
 1. The soil-testing laboratory shall oversee soil sampling.
 2. Report suitability of tested soil for turf growth.
 - a. State recommendations for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
 - b. Report presence of problem salts, minerals, or heavy metals; if present, provide additional recommendations for corrective action.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, if applicable.
- B. Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and drying.

1.5 PROJECT CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of planting completion; unless otherwise directed by Landscape Architect or UNH Manager of Grounds and Events. Planting schedule for sod may be extended beyond the indicated time frames.
 1. Spring Planting: Between April 1 and June 1.
 2. Fall Planting: Between August 15 and September 15.

- B. Excavation of future lawn areas that expose conditions detrimental to seed or sod establishment such as rubble, adverse drainage, or obstructions shall require notification of contract monitor or UNH Manager of Grounds and Events.

1.6 MAINTENANCE SERVICE

- A. Initial Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable turf is established but for not less than the following periods:
 - 1. Seeded Turf: 60 days from date of planting completion.
 - a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.
 - 2. Sodded Turf: 30 days from date of planting completion.
 - 3. Automatic temporary irrigation systems shall be a standard practice for all new installations.

1.7 SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed bearing the present season's certification tag stating species and varieties present, germination percentage, and seed purity.
 - 1. Seed Mixes: All seed shall consist of high test cultivars identified by National Turf Grass Cultivation. Provide one of the following seed mixes: Northern Nurseries Sport Mixture 50/50
 - 2. Northeast Nursery Andover CC 50/50 Mix
 - 3. John Deere 50/50 Blue Ry Select
 - 4. Or submit an alternate similar mix for UNH Facilities approval.
- B. If seeding must be performed outside of normal planting period, modifications to the mixture may be advisable, recommended changes and approval shall be obtained from UNH Facilities, Grounds and Events Department.

1.8 TURFGRASS SOD

- A. Turfgrass Sod: Approved, complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture, strongly rooted, not less than two years old, free of weeds and undesirable native grasses, machine cut to thickness of 3/4-inch excluding thatch, and capable of vigorous growth and development when planted. Sod shall be of uniform size and broken pads or pads that cannot support their own weight will be rejected.

- B. Turfgrass Mix: Provide sod composed of the following grass species:

Versaturf from Tackahoe Turf Farms – Bluegrass / Ryegrass / Fine Fescue Sod
20% “America Type” Kentucky Bluegrass
15% ‘Award’ Kentucky Bluegrass
15% ‘Hampton’ Kentucky Bluegrass
15% ‘Victory’ Chewings Fescue
15% ‘Jasper’ Creeping Red Fescue
20% ‘Manhattan’ Perennial Ryegrass

Or submit an alternate similar seed mix for UNH Facilities approval.

1.9 INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C 602, agricultural liming material containing a minimum of 85 percent calcium carbonate.
1. Granular lime formations that meet this requirement are acceptable.
 2. Rates shall be determined by soil test results from Analytical Services Lab.

1.10 ORGANIC SOIL AMENDMENTS

- A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 3/4-inch (19-mm) sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings.
1. Analysis and certification of compliance shall be submitted for approval before use.
- B. Sphagnum Peat: Partially decomposed sphagnum peat moss, finely divided or of granular texture, with a pH range of 3.4 to 4.8.

1.11 FERTILIZERS

- A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
1. Composition: 1 percent nitrogen, 2 percent phosphorous, and 1 percent potassium, by weight.
 2. Apply at the rate of 3.5 lbs. per 1000 sq. ft.
 3. Fertilizer shall contain at least 3 percent water insoluble nitrogen.

1.12 PLANTING SOILS

- A. Topsoil that is brought in or reused from the Project site shall be tested at the UNH Analytical Services lab at contractor's expense. Provide a copy of test results and recommendations to the UNH Manager of Grounds and Events. No topsoil shall be used until test results have been approved and all required amendments for intended crop have been made.
- B. Existing topsoil from on-site shall be stock-piled and may be reused as long as it meets the specifications for all topsoil, unless approved by UNH Facilities.
 - 1. Existing, native surface topsoil formed under natural conditions with the duff layer retained during excavation process
- C. All topsoil shall be friable, loam containing a minimum of 25% organic matter after composting. The soil shall be free from toxic substances and particles of subsoil, roots, and rocks, over ½-inch in size. A pH of 6.5 is required for turf. The soil shall be free from roots and vegetative parts of weeds and noxious weeds seeds. The pH of soil for use with ornamentals shall be adjusted to meet the requirements of the turfgrass to be used.
 - 1. Imported topsoil or manufactured topsoil from off-site sources; do not obtain from agricultural land, bogs or marshes.
- D. Planting Soil: Verify suitability of soil to produce viable planting soil. Clean soil of roots, plants, sod, stones, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth. Mix soil with soil amendments and fertilizers to produce planting soil:

1.13 MULCHES

- A. Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley; for seeding operations.
- B. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture and free of chips, stones, sticks, soil, or toxic materials; for hydroseeding.

1.14 PESTICIDES

- A. General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction. Green Pesticides shall be used on all projects at UNH.

1.15 TURF AREA PREPARATION

A. Newly Graded Subgrades:

1. Provide adequate surface drainage throughout the area.
2. Provide a minimum grade of one-percent sloping away from the buildings.
3. Grades for turf areas shall not exceed 25% slope. If slopes greater than 25% cannot be avoided, retaining walls and/or ground covers shall be used.
4. Subsurface drain lines shall be constructed and connected to a functioning outlet if drainage is not adequate.
5. Loosen subgrade to a minimum depth of 4 inches (100 mm). Remove stones larger than 1 inch (25 mm) in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off University's property.
6. Thoroughly blend planting soil off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil.
7. Spread planting soil to a depth of 6 inches (150 mm) but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.

- a. Reduce elevation of planting soil to allow for soil thickness of sod.

B. Topsoil shall be provided at a minimum of 6 inches over all turf areas. Place ½ total amount of topsoil required. Work into the top of loosened subgrade to create a transition layer and place remainder of topsoil. Add soil amendments specified by UNH Analytical Services Lab and mix thoroughly into the topsoil. Half of the starter fertilizer shall be incorporated at this time. Soil pH shall be adjusted to bring it into the range of 6.4 to 6.6 within a period of three (3) months. The rest of the starter fertilizer shall be spread on top of finish grades.

C. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch (13 mm) of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.

1. Finish grades shall be to the top of granite curb, walks, or other adjoining areas after light rolling and natural settlement. When applicable, allow for sod thickness. All areas shall be raked to remove all clods, rocks, weeds, roots, and debris of any kind. Grading and shaping refinements shall be performed to bring surface to true uniform planes free from irregularities and to provide drainage and proper slopes to catch basins. Once areas have been finish raked, no heavy equipment or vehicles shall be allowed on them.

1.16 SEEDING

A. Do not broadcast or drop seed when wind velocity exceeds 5 mph (8 km/h). Evenly distribute seed, with spreader or seeding machine, by sowing equal quantities in two directions at right angles to each other. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.

B. Sow seed at a total rate of 4 lb/1000 sq. ft. (1.8 kg/92.9 sq. m).

- C. Rake seed lightly into top 1/8 inch (3 mm) of soil, roll lightly, and water with fine spray.
- D. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly to form a continuous blanket 1/2 to 1 inch in loose thickness over seeded areas. Spread by hand, blower, or other suitable equipment.
 - 1. The soil surface of seeded areas shall be kept moist continuously until the seed has germinated, this usually takes three weeks when bluegrass is in the seed mix.
 - 2. Anchor straw mulch by crimping into soil with suitable mechanical equipment.
- E. Protective fencing shall be erected and maintained to control traffic for 60 days and as required until lawn is established. Fence shall be removed when lawn is established and accepted.

1.17 SODDING

- A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.
- B. Grades for sod shall be flush with the top of walks and curbing after sod is installed and soil has settled. The finish grade of soil will normally be 3/4 inch below walks before sod is in place.
- C. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
 - 1. Lay sod across angle of slopes exceeding 1:3.
 - 2. Anchor sod on slopes exceeding 1:6 with wood pegs or steel staples spaced as recommended by sod manufacturer but not less than 2 anchors per sod strip to prevent slippage.
- D. Saturate sod with fine water spray within 30 minutes of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches (38 mm) below sod.

1.18 TURF MAINTENANCE

- A. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

- B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and keep turf uniformly moist to a depth of 4 inches; until areas are accepted by the University.
1. The soil surface of seeded areas shall be kept moist continuously until the seed has germinated, this usually takes three weeks when bluegrass is in the seed mix.
 2. Care shall be taken not to over water or it will be impossible to walk on these areas without damaging lawn.
 3. Sod roots shall be kept moist until they are firmly rooted, this usually takes at least two weeks.
- C. Maintain turf areas for 60 days after Substantial Completion, **through two mowings**, and until acceptance by the UNH Grounds and Events Department. **Turf will be considered acceptable when a full stand of grass has been established which covers 95% of the soil surface. The project manager and the Grounds & Events Manager will agree as to when that has occurred. It would be to the contractor's advantage to reseed thin and bare areas as they become apparent and temporary irrigation equipment is still functioning. Once all criteria have been met and agreed upon a date will be set for UNH to begin maintenance. If seeding takes place in fall and conditions of acceptance have not been met prior to winter the contractor will resume establishment and maintenance functions in the spring until accepted.**
1. Mow turf as soon as top growth is tall enough to cut, and at no time will turf exceed 3-1/2 inches in height. Repeat mowing to maintain height appropriate for species without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Turf shall never be cut shorter than 2-1/2 inches, and in June, July, and August mowing at 3 inches shall be done to increase drought tolerance.
- D. Apply pesticides and other chemical products and biological control agents in accordance with authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed. Green Pesticides only for all new installations.

END OF SECTION 32 9200