SECTION 32 92 00 _ Turf and Grasses

PART 1 – GENERAL

Information in this Section is to be followed unless otherwise directed by University of Delaware (UD) Owner Representative and UD Grounds Representative (Assistant Director of Grounds or UD Landscape Planner)

1.1 SUMMARY

This section defines standards for turf installation or restoration from start of project through final acceptance. Included are standards for seed/sod specifications, handling, installation and maintenance until project completion.

1.3 QUALITY ASSURANCE

A. Codes and Standards: Preform all work in compliance with applicable requirements of governing authorities having jurisdiction.

B. Installer Qualifications: Engage an experienced Installer who has completed landscape work similar in material, design, and extent to that indicated for turf work and with a record of successful turf establishment

C. Installer’s Field Supervisor: Installer is to maintain an experienced full-time supervisor on the Project site during all times throughout execution of this portion of the Work, who is thoroughly familiar with proper materials and methods for successful turf installation, to direct all work performed under this Section. This person shall have a minimum of 5 years’ experience in successful turf establishment.

D. Seeding and Sodding:

1. All materials are subject to approval by UD Grounds Representative, who may inspect materials either at place of growth or at site before installation, for compliance with specified species and materials.

2. All seed and sod are to be provided as specified. Requests to use substitutions shall be made prior to delivery of materials to site and only with written permission by UD Grounds’ Representative.

3. In the event that quantity discrepancies or material omissions occur between the Plant List and Planting Plan, Contractor is to immediately notify UD Grounds’ Representative for clarification about how to proceed.
4. Seed and Sod handling shall comply with State and Federal laws, including quarantines with respect to inspection, plant diseases and insect infestation.
   - Sod shall be relatively free of thatch and subject to approval by UD Grounds’ Representative.
   - Sod shall be free of diseases, nematodes and soil-borne insects.

5. Permanent lawn plantings are ideally installed during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Final Acceptance of lawn areas:
   - Seeding: April 1- May 31, August 15 – October 15
   - Spring Planting: April 1- May 31 – or once soil temperatures reach a minimum of 50 degrees Fahrenheit.
   - Fall Planting: August 15 – October 15

6. Proceed with installation only when existing and forecasted weather conditions permit. If projected or current weather will undermine turf installation, reschedule installation times and dates.
   - In the event that a project needs to stabilize a site during winter months or times when sod/seed needs to be installed outside of optimum planting times, site should be stabilized according to DNREC regulations, with the contractor returning at the next optimal planting time to properly install and establish the lawn area as per requirements for Final Acceptance.

E. Equipment:

1. Provide machinery and equipment necessary for the prompt, professional completion of the work. Such machinery shall be adequate to the task required and shall be operated by a person skilled and experienced in both operation of the equipment and the implementation of the task.

2. Upon request, promptly furnish satisfactory evidence of the organization, operator and equipment to be made available for the performance of the work.
F. Documentation and Coordination:

1. Submit, upon request, documentation prior to the start of work under this Section that all related materials have been ordered.

2. Seed: Submit, upon request by UD Grounds’ Representative, certification of grass seed from seed vendor for each grass-seed monostand or mixture stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging - certification should be current.

3. Sod: Submit, upon request, an invoice or sales slip identifying quality and species present in sod.

4. Timing of seed or sod installation is to be coordinated with UD Grounds’ Representative prior to delivery of materials to site.

G. Soil Analysis: Upon request, obtain analysis of soil from an accredited soil laboratory, at the cost of the Landscape Contractor, to determine suitability of topsoil for lawn growth. Provide pH and recommended quantities of nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory topsoil to support turf.

PART 2 – PRODUCTS

2.1 Seed

A. Seed Species: Seed of grass species as defined by project, with not less than 95% germination, not less than 95% pure seed, and not more than .5 % weed seed.

B. Seed should be fresh, clean and dry.

2.2 Sod

A. Sod Variety: Sod that contains 90% or more of one species shall be sold as that species. Blends of species accounting for less than 90% of the mix shall be labeled as with the variety of species identified.

B. Premium Grade Sod shall contain only the species and variety of turf grass specified, and no weeds or foreign species present.

C. Pad Size: Individual pieces of sod shall be cut to the supplier’s standard width and length, at a uniform soil thickness. Measurement for thickness excludes top growth and thatch.
Maximum allowable deviation from standard widths and lengths shall be plus or minus 0.5 inch (on width and plus or minus five percent on length). Broken pads and torn or uneven ends will not be acceptable.

D. Standard size sections of sod shall be strong enough that it can be picked up and handled without damage. Small sod pieces or cuts shall be avoided.

E. Sod shall not be harvested or transplanted when its moisture content (excessively dry or wet) may adversely affect its survival.

F. Before harvesting, cool season turf should be mowed uniformly to a height of 2.5 - 3.5", and warm season turf should be mowed uniformly to a height of 0.5 – 1.0".

2.3 Imported Planting Soil

A. Shall be composed of 2/3 parts topsoil and 1/3 part organic matter.

B. Shall be natural friable clay loam soil with a pH between 5 and 7 (soil analysis to be performed to determine necessary amendments) and shall contain not less than 6% and not more than 10% organic matter.

C. Shall be without subsoil, refuse, or any foreign material.

2.4 Compost

A. Preferred compost is Laurel Valley Compost. Substitutions should be the same quality and content as specified by Laurel Valley’s Compost Analysis.

1. Laurel Valley Soils: 705 Penn Green Rd, Landenberg, PA 19350-9204

2.5 Soil Amendments

A. Soil amendments and fertilizers are to be purchased and installed as per soil analysis recommendations and rates.

B. Compost added to existing soil is to be added at a 2" depth per 6" soil, and turned/mixed to a depth of 4 - 6" for turf areas. Final compost: soil ratio should not exceed 10% organic matter in final mixture of soil. Final mixture should meet the specifications set forth for Imported Planting Soil.
2.6 Mulch

A. Penn Mulch Seed Accelerator – to be applied as per manufactures recommended methods and rates.

B. Do NOT use straw or hay mulch.

2.7 Bio-netting

A. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable mesh. Include manufacturer's recommended staples, 6 inches (150 mm) long – if non-biodegradable staples are used, contractor is to remove them after establishment phase is complete.

B. Erosion-Control Fiber Mesh: Biodegradable twisted jute or spun-coir mesh, a minimum of 0.92 lb/sq. yd., with 50 to 65 percent open area. Include manufacturer's recommended staples, 6 inches (150 mm) long if non-biodegradable staples are used, contractor is to remove them after establishment phase is complete.

C. DO NOT USE PLASTIC OR NON BIODEGRADABLE NETTING

PART 3- EXECUTION

3.1 Turf Bed Preparation

A. Limit disturbance in areas under tree canopies and on slopes.

B. Restore areas if eroded or otherwise disturbed after finish grading and before planting.

C. Disturbed areas and areas stripped of topsoil:

1. Verify that sub-grades and finish grades are accurately established before spreading planting soil.

2. Apply compost and fertilizer directly to surface before loosening

3. Loosen subgrade to a minimum depth of 6 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner’s property.
4. **For Lay Down and Hall Use Area Restoration:**

   - Follow steps 1 - 3, but thoroughly loosen all compacted areas to a depth of 12 -18” instead of 6”, thoroughly mix soil amendments into top 6” of loosened soil.

5. Spread planting soil mix to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.

6. Reduce elevation of planting soil to allow for soil thickness of sod.

D. **Undisturbed Areas:**

   If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface soil stripping operations, prepare surface soil as follows:

1. All stumps, weeds, vegetation not being retained are to be grubbed out and/or removed. After grass or vegetation has been removed. Do not mix into surface soil.

2. Loosen surface soil to a depth of at least of 4 inches. Apply soil amendments and fertilizers (as needed) according to planting soil mix proportions and mix thoroughly into top 4 inches of soil.

3. Remove stones larger than 1 inch in any dimension and sticks, roots, trash, and other extraneous matter.

E. **Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.**

F. **Finish Grading/Raking:**

1. Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades. Eliminate rough, low or soft areas. Limit fine grading to areas that can be planted in the immediate future.

2. Grade or rake planting soil smooth to eliminate rough, low or soft areas, and to insure positive drainage. Slope grades to direct water away from buildings and to prevent ponding.
3.2 Delivery, Storage and Handling

A. Seed:

1. Deliver seed in original sealed, labeled, and undamaged containers.

B. Sod:

1. Sod shall be harvested, delivered and installed/transplanted within a period of 24 hours, unless a suitable preservation method is approved by UD Grounds Representative prior to delivery.

2. Sod shall be delivered to the site specified and unloaded using equipment furnished by the sod supply contactor. Palletized or large-roll turf grass sod shall be unloaded at the location(s) designated for this purpose at the installation site.

3. Sod should be without any signs of stress upon arrival to job-site; sod showing signs of decline or stress will be rejected.

3.3 Layout

A. Layout specifications and area and perimeter measurements are provided as guidelines only, and are to be confirmed in the field by Contractor(s) and adjusted as necessary and collaboratively with UD Grounds’ Representative.

B. The location of new turf areas are to be reviewed and, if necessary, staked out with UD Grounds’ Representative, prior to installation.

3.4 Seed/Sod Installation

A. Broadcast Seeding:

1. Ensure soil surface is scarified, and free of debris.

2. Spread seed with a broadcast or drop spreader uniformly to all areas to be seeded as per project specifications and rates.

3. Seed shall be raked, rolled or 'dimpled in', depending upon project size, to ensure full contact of seed to soil.

4. Keep top layer of soil evenly moist until grass is established and mowed for the first time.

5. Install approved mulch after seed installation is complete.
B. Hydoseeding:

1. Meets or exceeds DNREC requirements for hydro-seeding.

2. Keep seeded areas evenly moist until grass is established and area is mowed for the first time.

3. Ensure no drift of hydoseeding operations is allowed into areas not proposed for new seed installation.

C. Sod:

1. Ensure surface is scarified, and free of debris.

2. Lay sod strips in a running bond pattern perpendicular with any slopes, staggering seams. All seams and edges shall be tight and free from gaps, with sod roots in thorough contact with soil.

3. Add topsoil to sod edges if necessary to ensure successful establishment and knitting of seams.

4. Lightly roll the sod after installation to remove uneven areas and to ensure good sod to soil contact.

5. As sod is installed, it should immediately be watered.

6. Edge sod as needed along paving, planting beds, etc.

7. Sod should not be installed on the day before a weekend or period when the University is closed since UD staff may not be available to water after initial installation. If UD owns watering the day after the Contractor has installed sod, the project budget will need to include coverage for overtime staff support necessary to ensure watering can be performed, as needed, during non-business hours.

3.5 Mulch Installation

1. For PennMulch or Bio-net; installation is to be as per manufacturer’s recommendations.
3.6 Watering

1. Water newly seeded or sodded areas immediately after installation, and thereafter to keep newly sodded or seeded areas moist until Final Acceptance.

2. Water sods as it is installed, and ensure thorough saturation of root zone.

3. Over watering and pooling should be avoided for both seed and sod.

3.7 Protection, Clean-up and Maintenance

1. During turf installation or renovation, keep pavements clean and work area in an orderly condition. Place 3/4” plywood as needed to protect existing turf, paved areas, etc.

2. Install plastic safety fencing as needed to provide barrier protection for newly planted areas or areas to be preserved.

3. Protect existing plantings and turf from damage due to landscape operations, operations by other contractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damage to new or existing plantings or turf at the expense of the Landscape Contractor.

4. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of it off the Owner’s property.

5. Maintain until condition is approved by UD Grounds’ Representative. All turf areas which fail to germinate or, for sod, fail to knit and actively produce vegetative root growth within 2 weeks of installation shall be replaced at Contractor’s expense.

6. Satisfactory Seeded Lawn: A healthy, uniform, close stand of grass shall have been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches by final acceptance.
3.8 Requirements for Final Acceptance

A. Satisfactory Seeded or Sodded Lawn:

1. A healthy, uniform, close stand of grass shall have been established, free of weeds and surface irregularities, well rooted, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.

PART 4 – ATTACHMENTS (no content)

END OF SECTION