Section 705 - SEEDING AND SODDING FOR TURF AREAS

705.01 DESCRIPTION

A. Seeding: This work shall consist of soil preparation, seeding, addition of soil amendments (as determined by the soil test results), mulching, overseeding, and mowing all areas designated for turf establishment as specified in the Contract Documents or as directed by the M-NCPPC Construction Manager.

B. Sodding: This work shall consist of soil preparation, addition of soil amendments (as determined by the soil test results), watering, and placing grass sod on prepared areas, as specified in the Contract Documents or as directed by the M-NCPPC Construction Manager.

705.01.01 QUALITY ASSURANCE

A. Submit for approval proposed seed mixture.

B. Submit Manufacturer's certificates of purity and guarantees of germination in accordance with Maryland Seed Law to the M-NCPPC Construction Manager.

C. Follow Section 723 Landscape Soil for quality assurance of soil and soil testing.

E. Turf Grass Conditions will not be accepted if there is a poor or thin stand; improper application of sod, dead grass or sod, use of seed mixtures or sod other than approved in specifications, improper fertilizer application either uneven spreading or insufficient amounts, or failure to re-fertilize during extended acceptance, and the presence of persistent weeds established in turf areas.

705.01.02 REFERENCE STANDARDS

A. Landscape Specification Guidelines, latest edition, Landscape Contractor’s Association (LCA) of Maryland, Virginia and The District of Columbia.

B. “Recommended Turf grass cultivars for Professional Seed Mixtures,” University of Maryland Turfgrass Technical Update TT-77, most recent edition (updated annually), formerly Agronomy Mimeo 77, or AM-77.

705.02 Materials

A. Soil:

Follow section 723 for materials.
Section 705 - Seeding and Sodding

B. Grass Seed:

Shall be Maryland Certified. It shall be fresh, clean, new crop seed mixed in the proportion shown and testing to no more than .02% weed seed and 85% minimum germination. Approved varieties shall be selected “Recommended Turfgrass cultivars for Professional Seed Mixtures,” University of Maryland Turfgrass Technical Update TT-77, most recent edition (See Section 705.3) A copy of this publication can be obtained from the M-NCPPC Construction Manager or by visiting the Maryland Turfgrass Council website http://www.mdturfcouncil.org or by calling them at 410-836-2876. A minimum application rate shall be approximately 300 pounds per acre (7 lbs/1000ft) unless plans specifically state another rate of application.

Minimum Percentages of Grass Seed:

<table>
<thead>
<tr>
<th>SEED MIXTURE TO BE:</th>
<th>% BY WEIGHT</th>
<th>% PURITY</th>
<th>% GERMINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kentucky Bluegrass</td>
<td>10%</td>
<td>98%</td>
<td>85%</td>
</tr>
<tr>
<td>Turf-type Tall Fescue*</td>
<td>70%</td>
<td>98%</td>
<td>90%</td>
</tr>
<tr>
<td>Perennial Rye Grass</td>
<td>20%</td>
<td>98%</td>
<td>85%</td>
</tr>
</tbody>
</table>

*Use a single cultivar or seed in blends

C. Mulch:

1. Bright, small grain type straw. Shall be free of rot and noxious weed seeds. Apply 1/2”-3/4” thick layer or 60-80 bales/acre.

2. Hydro mulch: Wood cellulose applied at a net dry weight of 750 pounds per acre. See LCA, Landscape Specification Guidelines, Seeding and Sodding specifications, Section 5.3 Mulching Materials, for detailed specifications.

3. Erosion Control Blankets acceptable as determined by M-NCPPC Construction Manager.

D. Mulching and Stabilizing Materials:

All straw mulch shall be bound with a suitable binder or straw shall be rolled thoroughly with a crimping roller in several directions to prevent erosion of the soil and/or mulch. See LCA, Landscape Specification Guidelines, Seed and Sod specifications, Section 5.3 Stabilizing Materials, for detailed specifications.

E. Sod:
1. Shall be Maryland Certified (labeled), inspected and approved by the Maryland Department of Agriculture.

2. Label must be presented to the M-NCPPC Construction Manager at the time of delivery and prior to installation for approval.

3. Sod shall be a 90/10 mix with 90% of the mix shall be a blend of three turf type tall fescues, and at least 10% Bluegrass. Approved varieties shall be selected “Recommended Turfgrass cultivars for Professional Seed Mixtures,” University of Maryland Turfgrass Technical Update TT-77 most recent edition. A copy of this publication can be obtained from the M-NCPPC Construction Manager or by visiting the Maryland Turfgrass Council website http://www.mdturfcouncil.org or by calling them at 410-836-2876.

4. Specifications for Sod Materials
   a. Thickness of Cut: The thickness of the roots and soil should be ½” to ¾”.
   b. Pad Size: Individual pieces of sod shall be cut to the supplier’s standard width and length. Maximum allowable deviation from standard widths and lengths shall be 5%. Broken pads and torn or uneven ends will not be acceptable.
   c. Strength of Sod Sections: Under ideal conditions, standard size sections of sod shall be strong enough to support their own weight and retain their size and shape when suspended vertically from a firm grasp on the upper 10% of the section without the use of netting. NOTE: Younger tall fescue will not be strong enough to pass this test but is still okay to use.
   d. Sod Viability: Sod shall not be harvested or transplanted under drought conditions.
   e. Time Limitations: Under optimal conditions, sod shall be harvested, delivered and installed within a period of 36 hours. However, because sod is a perishable commodity, if high temperatures and low moisture extremes occur, its viability declines and installation should occur within 24 hours from harvest. Sod not transplanted within this period shall be inspected and approved or rejected by the M-NCPPC Construction Manager prior to installation.

F. Sod Staples:

On slopes greater than 3:1 or steeper sod shall be stapled at a minimum of 4 staples per
square yard of sod.

705.03 **CONSTRUCTION**

Final Soil Grading and Preparation shall be inspected by the M-NCPPC Construction Manager before seeding and/or sodding commences.

Seed, Sod, and Soil Amendment Rates and Specifications shall adhere to those in Section 723 - Topsoil, unless specifically changed in this contract.

**Seeding and Mulching:**

1. Final grade and seedbed must be approved by the M-NCPPC Construction Manager before seeding begins and upon completion of the seedbed. Failure to get the seedbed approved may result in doing the seedbed preparation over.

2. Seeding may be done immediately thereafter, provided the topsoil has remained in a good, friable condition and has not become muddy or hard. If it has become hard, it shall be tilled to friable condition again, and re-inspected.

3. Weeds and undesirable grasses growing on existing grade that is to be seeded and/or sodded must be cut and removed before soil preparations begins. In some instances an M-NCPPC approved herbicide may be used as directed and approved by M-NCPPC construction manager. Contractor must have current MD Dept. of Agriculture certified pesticide applicator performing work. Signage and pesticide records shall follow MDA regulations. Copies of all application records shall be submitted to construction manager.

4. Before seeding or sodding all soils shall be loosened by means of tilling and/or diskng; then further prepared by York Rake or other approved equipment, to a minimum depth of four (4) inches. All stones over 3/4 inch in any dimension shall be removed from the top four (4) inches of soil by use of screening, a "Rock Hound", or other means. In addition, prep should include removal of all trash, debris, roots, brush, wire, grade stakes and other objects that would interfere with seeding and sodding.

5. Soil preparation methods shall adhere to the Section 723- Landscape Soil (Topsoil) and to the LCA, Landscape Specification Guidelines.

**Dry Application:**
a. Seed Installation: Cultipacker Seeder: This method applies to seed just below soil surface and covers the seed in a single operation. Seed should be applied within the top ¼" of the soil in two different directions for best results.

Drop-type/Broadcast Spreader: Apply seed within top ¼" of the soil in two directions for best results. To improve soil/seed contact the entire area shall be rolled.

b. Mulching: Apply mulching material to retain moisture and minimize erosion. See Section 705.2, section C for application rates.

c. Stabilizing: Stabilize the mulch by either mulch anchoring tool, cellulose fiber, liquid mulch binders or mulch netting.

Hydroseeding:

a. Installation:

Water, seed and fertilizer method: The mixture shall be sprayed on the previously prepared seedbed in the form of an aqueous mixture. Refer to “Recommended Turfgrass Cultivars for certified sod and professional seed mixtures,” for recommended seeding rates. All mixture shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed.

If fertilizer is mixed into the slurry, no more than 30 minutes should lapse before it is applied to prevent the fertilizer from burning the seed. Care shall be exercised to ensure uniform coverage.

b. Straw shall be applied by hand or with a straw blower and stabilized. The same rates and procedures shall be followed as detailed in Dry Application above.

c. Seed, fertilizer, water and cellulose fiber method: The application procedure for this method is the same as for the first method above. The rate of cellulose fiber is 50 pounds per 100 gallons of water. Follow manufacturer’s recommended rates.

Sodding:

Sod shall conform to materials in Section 705.02 Paragraph E of these specifications.
1. Soil preparation shall conform to Section 723.

2. Sodding may be done immediately thereafter, provided the bed has remained in a good condition and has not become muddy or hard. If it has become hard it shall be tilled to a friable condition again, and re-inspected by the M-NCPPC Construction Manager.

3. Moistening soil: During periods of high temperature, lightly irrigate the soil immediately prior to laying the sod.

4. Starter Strip: The first row of sod shall be laid in a straight line with subsequent rows placed parallel to and tightly against each other. Lateral joints shall be staggered to promote more uniform growth and strength. Care shall be exercised to ensure that the sod is not stretched or overlapped and that all joints are butted tightly in order to prevent voids, which would cause air-drying of the roots.

5. Sloping Terrain: On sloping terrain (3 to 1 or steeper), where erosion may be a problem, sod should be installed perpendicular to slope when possible with staggered joints and secured by staples. Staples are to be driven flush with sod. Sod in swales shall be stapled. Use only lengths of four feet or more in ditch inverts and swales. Sod joints shall be staggered.

6. No sod shall be applied to frozen ground and/or frozen sod is not to be laid.

7. Watering and Rolling: The contractor shall lightly water sod during installation to prevent excessive drying. As sodding is completed in any one section, an entire area shall be rolled. It shall then be thoroughly irrigated so that the underside of the new sod pad and soil immediately below the sod are thoroughly wet. The contractor shall be responsible to have adequate water available at the site prior to and during installation of sod, unless otherwise stated.

PLANTING AND TIMING

A. Regular Seeding Season

   Spring - March 1-May 15
   Fall - August 15-October 15
   Optimum seeding time is late August to mid October

B. Regular Sodding Season

   Spring - (March 1 to May 1)
   Fall - (October 1 to November 15)
C. To begin seed and sod installation, obtain approval from the M-NCPPC Construction Manager. To seed or sod at times other than those listed, requires the approval of the M-NCPPC Construction Manager.

MAINTENANCE OF NEWLY SEEDED AND SODDED AREAS

A. Maintenance of grass areas shall consist of watering, mowing, weeding, re-seeding and/or re-sodding as necessary to obtain an approved stand of grass. Maintenance shall continue until M-NCPPC Construction Manager accepts the project.

B. In the absence of rainfall, during the first week of seed or sod installation, watering shall be performed daily by the Contractor or as often as deemed necessary by the M-NCPPC Construction Manager. Water must be in sufficient quantities to maintain moist soil to a depth of 4 inches. The total shall be equal to the equivalent of at least 1 inch of water per week. Watering shall continue until the stand of turf is accepted. For seeded areas, bare spots, which persist after three weeks of favorable growing weather, shall be re-cultivated, re-seeded, raked and rolled. Re-seeding of bare spots shall be done as many times as necessary until an acceptable stand of turf is established. For sodded areas, bare spots shall be re-sodded until deemed acceptable. If the turf stand is not accepted by the following seeding and sod season, the Contractor shall re-seed or sod and fertilize, as necessary, the unaccepted areas at no additional charge to M-NCPPC.

C. If stand provides between 40% and 90% ground coverage, overseed and fertilize using half of the rates originally applied. If stand provides less than 40% coverage, reestablish stand following original rates and procedures.

D. Flooded, washed-out, rilled or otherwise damaged or defective areas of seeding, sod, mulch, grade, swales or berms shall be reconstructed and all grades re-established in accordance with the grade plans or other specifications or when, in the judgment of the M-NCPPC Construction Manager, such defects or damages are the result of poor workmanship, or failure to meet the requirements of the specifications.

E. All mowing shall be the Contractor's responsibility until final acceptance of the project. No mowing shall remove more than one-third of the grass blade length. Heavy mowing, resulting in grass piles shall be "double mowed" or the contractor shall remove piles. Height of the grass shall be maintained between two and a half and three inches, unless otherwise specified.

F. Following are some examples of delays in final acceptance of a project:
1. Improper Grades:
   a. Low or high spots on flat or fairly level areas.
   b. Improper drainage such as, swales, low areas, rip-rapped outlets and paved areas.
   c. Washed out or rilled areas.
   d. Exposed debris.

2. Turf Grass Conditions:
   a. Poor or thin stand; improper application of sod, dead grass or sod; use of seed mixtures or sod, other than approved in specifications.
   b. Improper fertilizer application - Uneven spreading, insufficient amounts, failure to re-fertilize during extended acceptance.
   c. Persistent weeds established in turf areas.

**705.04 MEASUREMENT AND PAYMENT**

Payment will be full compensation for all material, labor, equipment, tools and incidental items necessary to complete the work. Payment shall be made on a unit rate or lump sum basis as shown in the bid proposal.