

SECTION 02930 - LAWNS AND GRASSES

PART 1 - GENERAL

1.01 GENERAL PROVISIONS:

- A. The Conditions of the Contract and all Sections of Division are hereby made a part of this Section.

1.02 DESCRIPTION OF WORK:

- A. Work Included: Provide labor, materials, and equipment necessary to complete the work of this Section, and without limiting the generality thereof furnish and install the following:

1. Topsoil
2. Seeding
3. Sodding

- B. Related Work Specified Elsewhere: Carefully examine all Contract Documents for requirements which affect the work of this Section. Other specifications sections which directly relate to the work of this section include, but are not limited to the following:

1. Stripping of Topsoil: Section 02100 - Site Preparation
2. Establishment of Subgrade Elevation: Section 02200 – Earthwork

1.03 QUALITY ASSURANCE; SUBMITTALS:

- A. General: Comply with requirements of Division 1; Submittals.

- B. Reference Standards: Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, most restrictive requirements govern.

1. American Society for Testing and Materials (ASTM): C136 Sieve Analysis of Fine and Coarse Aggregates, E11 Wire-Cloth Sieves for Testing Purposes

- C. Manufacturers Product Data: Submit manufacturer's product data for following materials:

1. Aluminum Sulfate
2. Fertilizer

- D. Certificates of Compliance: Submit labels from manufacturer's container certifying that product meets specified requirements, for the following materials:

1. Grass Seed

- 2. Ground Limestone
- 3. Commercial Fertilizer

1.04 INSPECTION AND TESTING:

- A. Work will be subject to inspection at all times by Architect. Owner reserves the right to engage an independent testing laboratory in accordance with the requirements of Section 01400, Testing Laboratory Services, to analyze and test materials used in the construction of the work. Where directed by Architect, the testing laboratory will make material analyses and will report to Architect whether materials conform to the requirements of this specification.
 - 1. Cost of initial tests and material analyses made by the Testing Laboratory will be borne by the Owner. Costs of retesting resulting from initial tests indicating non-compliance shall be borne by Contractor.
 - 2. Testing equipment will be provided by and tests performed by Testing Laboratory. Upon request by Architect, Contractor shall provide such auxiliary personnel and services needed to accomplish the testing work and to repair damage caused thereby to the permanent work.
- B. Testing, analyses, and inspection required by Contractor for own information or guidance shall be at Contractor's expense.

1.05 DELIVERY, STORAGE, AND HANDLING:

- A. Deliver seed in original sealed containers, labeled with analysis of seed mixture, percentage of pure seed, year of production, net weight, date of packaging, location of packaging, and name of seed grower. Damaged packages will not be accepted.
- B. Deliver fertilizer in sealed waterproof bags, printed with manufacturer's name, weight, and guaranteed analysis.

1.06 PLANTING SEASON:

- A. Planting season for seeding shall be as follows:

<u>Item</u>	<u>Planting Period</u>	
	<u>Spring</u>	<u>Fall</u>
Seed Mix - Lawn Grass	5/1 to 7/1	8/20 to 10/1

- B. Perform planting only when weather and soil conditions are suitable for planting the material specified in accordance with locally accepted practice.
- C. Planting season may be extended with written permission of Architect.

1.07 ACCEPTANCE:

A. Acceptance:

1. Architect will inspect all work for Substantial Completion upon written request of Contractor. Request shall be received at least ten calendar days before anticipated date of inspection.
2. Acceptance of material by Architect will be for general conformance to specified requirements, and shall not relieve Contractor of responsibility for full conformance to Contract Documents.
3. Upon completion and reinspection of all repairs or renewals necessary in the judgement of Architect, Architect will recommend to Owner that the work of this Section be accepted.

B. Seeded areas will be accepted only when in compliance with all the following conditions:

1. Roots are thoroughly knit to the soil;
2. All areas show a uniform stand of specified grass in healthy condition;
3. At least 60 days have elapsed since completion of work under this Section.

PART 2 - PRODUCTS

2.01 SEED:

A. Seed Mixture: Standard grade seed of the most recent season's crop, dry and free of mold, mixture as follows:

<u>Name of Seed</u>	<u>% by Weight in Mixture</u>	<u>Minimum % Purity</u>	<u>Minimum % Germination</u>
Pennlawn Creeping Red Fescue	50	98	90
Kentucky 31 Tall Fescue	30	95	90
Common Perennial Ryegrass	10	95	90
Red Top	10	90	95

2.02 TOPSOIL:

- A. Obtain topsoil from a previously established stockpile on the site, to extent available. Obtain additional topsoil from Architect approved off-site sources.
- B. Topsoil, whether stripped from site or supplied from off-site, shall be a sandy loam or loam soil as defined by the USDA Soil Conservation Service, Soil Classification System, and shall have the following mechanical analysis:

<u>Textural Class</u>	<u>% of Total Weight</u>	<u>Average</u>
Sand (0.05-2.0 mm dia. range)	45 to 75	60
Silt (0.002-0.05 mm dia. range)	15 to 35	25
Clay (less than 0.002 mm dia. range)	5 to 25	15

- 1. 95% of topsoil shall pass a 2.0 mm sieve.
 - 2. Topsoil shall be free of stones 1 inch in longest dimension, earth clods, plant parts, and debris.
 - 3. Organic matter content shall be 4 to 12% of total dry weight.
- C. Provide topsoil having a pH value range of 6.0 to 6.5. If the soil does not fall within the pH range specified, it may be amended to bring the pH within the specified limit.

2.03 PEAT MOSS:

- A. Provide horticultural grade, sphagnum peat moss containing partially decomposed fibrous or cellular stems and leaves of any of the many species of sphagnum mosses from fresh water sources, conforming to following requirements:
 - 1. Homogeneous material free of decomposed colloidal residue lumps, roots, stones, and other foreign matter; and of such consistency that peat can pass a 1/2 inch mesh and can be readily incorporated with the topsoil.
 - 2. pH not less than 3.5 nor greater than 6.0 at 25 deg. C.
 - 3. Organic matter content not less than 90%, by weight, on an oven-dry basis.
 - 4. Ash content not more than 10%, by weight, on an oven-dry basis.
 - 5. Moisture absorption capacity not less than 800%, by weight, on an oven-dry basis.

2.04 LIMESTONE:

- A. Ground Limestone: An agricultural limestone containing minimum of 85% total carbonates, by weight, graded within the following limits:

<u>Sieve Size</u>	<u>% Passing by Weight</u>
No. 10	100
No. 20	90
No. 100	60

2.05 WATER:

- A. Water shall be suitable for irrigation and free from ingredients harmful to seeded areas.

2.06 ALUMINUM SULFATE:

- A. Aluminum sulfate shall be unadulterated and shall be delivered in containers with the name of the material and manufacturer, and net weight of contents.

2.07 COMMERCIAL FERTILIZER:

- A. Provide fertilizer conforming to the following:

1. When applied as a topsoil amendment, provide fertilizer having an analysis that will deliver appropriate amounts of nitrogen, phosphorus, and potassium as required to remedy deficiencies revealed by testing the topsoil.
2. When used as a top dressing for the maintenance of sod, conform to following:
 - a. 50% of nitrogen from natural organic source of ureafoam.
 - b. Available phosphorus derived from superphosphate, bone meal, or tankage.
 - c. Potassium derived from muriate of potash containing 60% potash.

- B. Deliver fertilizer in manufacturer's standard container printed with manufacturer's name, material weight, and guaranteed analysis.

- C. Fertilizers with N-P-K analysis other than that stated above may be used provided that the application rate per square foot of nitrogen, phosphorus, and potassium is equal to that specified.

PART 3 - EXECUTION

3.01 PREPARATION OF SUBGRADE:

- A. Examine subgrade to assure that rough grading and all other subsurface work in lawn areas and other areas to be seeded is done prior to start of seeding.
- B. Loosen existing subgrade or scarify to a minimum depth of 3 inches prior to spreading topsoil. Bring subgrade to true and uniform grade. Clear of stones greater than 3 inches, stocks, and other extraneous material.

3.02 SPREADING OF TOPSOIL:

- A. Spread topsoil until it is possible to follow immediately or within 24 hours with seeding operations. If topsoil is spread prior to this time, cultivate to loosen soil prior to seeding.
- B. Do not place soil when subgrade or topsoil material are frozen, excessively wet, or excessively dry.
- C. Spread topsoil in a uniform layer, to a thickness which will compact to depth required to bring final lawn and grass surfaces to required elevation. Unless otherwise indicated, provide minimum topsoil depth of 6 inches.
- D. Grade and smooth surfaces, eliminating all sharp breaks by rounding, scraping off bumps and ridges, and filling in holes and cuts.

3.03 APPLICATION OF FERTILIZER AND CONDITIONERS:

- A. Apply fertilizer and conditioners at following rates:
 - 1. Peat Moss: 1 inch thick.
 - 2. Limestone: As required by test results of topsoil.
 - 3. Fertilizer: As required by test results of topsoil. Provide two applications Fall 2004 and Spring 2005.
- B. Mixing with Topsoil:
 - 1. Spread fertilizer and conditioners over entire lawn areas at application rates indicated above.
 - 2. Uniformly and thoroughly mix material into top 4 inches of topsoil by discing, rototilling, or other approved method.

3.04 FINISH GRADING:

- A. Provide final surface of topsoil immediately before seeding with +1/2 in. of required elevation, with no ruts, mounds, ridges, or other faults, and no pockets or low spots in which water can collect. Remove stones, roots, and other debris greater than 1 in. in any dimension, which are visible at the surface, and fill resulting holes with topsoil, leaving a uniform planar surface.

- B. Finish grade surface with a drag or rake. Round out all breaks in grade, smooth down all lumps and ridges, fill in all holes and crevices. Rolling with a light roller is acceptable, if surface is scarified afterward.
- C. In event of settlement, readjust work to required finished grade.

3.05 SEED APPLICATION:

- A. Broadcast seed by means of an approved mechanical spreader, to give a uniform application at the following rates:

<u>Seed</u>	<u>Application Rate lb/1,000 s.f.</u>
Seed Mixture - Lawn Grass	4.5

- B. Apply seed in two equal applications for uniform coverage; direction of travel of spreader for second pass perpendicular to that of the first pass. Do not seed when it is raining or snowing, or when wind velocity exceeds 5 mph.
 - 1. At Contractor's option, and with the permission of Architect, seed may be spread by hydroseeding method, utilizing power equipment commonly used for that purpose. Mix and apply seed, lime, fertilizer, and mulch to achieve application quantities specified herein for the conventional seeding method, with mulch applied at the rate of 1,200 lb/acre. Other provisions specified for conventional seeding also apply to hydroseeding.
- C. Protect seeded slopes greater than 1:2 against erosion with erosion netting or other methods acceptable to Architect.
- D. Following seeding, lightly rake the area to mingle seed with top 1/8 to 1/4 in. of soil, then fine grade. Remove stones and other debris greater than 1 in. in any dimension which are visible on surface. Roll surface with hand roller having a weight of 60 to 90 lb/ft of width, and a minimum diameter of 2 feet.
- E. Following seeding and raking, water entire area by use of lawn sprinklers, or other approved means. Continue initial watering until equivalent of a 2-in. depth of water has been applied to entire seeded surface, at rate which will not dislodge the seed. Repeat watering thereafter as frequent as required to prevent drying of the surface, until grass attains an average height of 1/4 in. Watering methods and apparatus which may cause erosion of the surfaces are not permitted.

3.06 MAINTENANCE:

- A. Except as otherwise specified below, include all operations required to produce an established lawn, including but not limited to:
 - 1. Fertilizing (twice)
 - 2. Mowing

3. Replanting
 4. Watering
 5. Weeding
- B. Begin maintenance of seeded areas upon completion of seeding and continue until acceptance of the building, until mowing as specified below is completed, or until average height of grass is 1-1/2 in., whichever occurs later.
- C. After grass has sprouted, replace seeded areas which fail to show a uniform stand of grass as often as necessary to establish acceptable stand of grass.
1. Scattered bare spots shall not exceed 72 square inches each.
- D. Do first mowing when average height of grass is 2-1/2 in., with mower set to cut at a height of 1-1/2 in. Perform subsequent mowings at not over two week intervals, with height of cut set at 1-1/2 in. With prior permission of owner, mowings during periods of slow growth or dormancy may be spaced at greater intervals.
- E. Remove weed and growth other than varieties of grass named in grass seed formula. Removal may be accomplished by use of suitable herbicides or by physical removal, in which case remove both top growth and roots, and reseed bare spots exceeding specified limits.
- F. If lawn or grass is established in the fall maintenance is required to continue into spring months. Provide an extra application of lime and fertilizer to lawn and grass in the spring. Spread lime and fertilizer in a uniform layer over entire lawn surface, at following rates:

<u>Material</u>	<u>Application Rate</u>
Lime	100 lb/1000 sf
Fertilizer	20 lb/1000 sf

* END OF SECTION 02930 *