NOTE TO CONSULTANTS*: This section is to be used for Hand Seeding of Small Lawn Areas only and used only as directed by the Engineer. Edit with Track Changes turned on, any text in this section that appears in bold and italics then turn off the bold and italics for the final approved version. This Specification must be edited for each project's special conditions. (Do not include these instructions in the Contract Documents).

The attached Seattle Parks and Recreation (SPR) Standard Specifications represent the minimum acceptable standards for Hand Seeding of Lawns, Athletic Fields, Erosion Control and Eco-Turf or Wildflower Meadow Areas. There are several options for execution of Soil Preparation operations as needed for the individual project requirements depending upon the existing conditions of the site, or as specified at the Park Engineer's direction. The Consultant shall choose the options that best suit the project conditions and edit the specifications accordingly. The following guidelines shall be followed:

Grading:
Maintaining positive drainage to a drainage structure or detention facility is required at all times. Grades shall be a minimum of 2%. Areas that are intended to be regularly mowed shall not exceed a ratio of 5 horizontal to 1 vertical (5:1). Any area that is not intended to be mowed on a regular basis (Erosion Control or Meadow Areas) shall be graded between 5:1 and 3:1 depending on site conditions. Any areas exceeding 3:1 shall be protected with erosion control fabric or other methods as specified by the Engineer. Areas over 3:1 shall be planted as shrub bed areas or as shown on the drawings. No area shall exceed a grade of 2:1 without the construction of a wall or rockery with adequate footings and drainage.

Soil Preparation Options:
Refer to Section 32 91 13 - Soil Preparation, for soil preparation and amendment options based on soil testing and/or existing conditions of native soils at the project site or as directed by the Engineer. One of the soil preparation options shall be chosen and the specifications shall be edited accordingly to fit preparation strategy.

Compaction of soils:
Condition 1 - Soils require full compaction to levels as described in Section 31 00 00 - Earthwork and Section 32 91 13 - Soil Preparation.
Condition 2 - Soils require cultivation to lessen compaction density to acceptable levels.

PART 1 - GENERAL

1.01 Description: Provide seeded lawns as shown on the contract drawings and as specified herein.

A. The work includes the following:

1. Preparation of the sub-soil.
2. Soil Preparation; including the placing of specified soils and/or soil amendments.
3. Liming and Fertilizing.
4. Seeding of lawns, athletic fields, and other indicated areas.
5. Maintenance.

1.02 Related Sections:

Section 31 00 00 - Earthwork
Section 32 91 13 - Soil Preparation

1.03 References:

A. All construction shall be in accordance with the City of Seattle Standard Plans and Specifications (most recent edition).

B. The Seattle Parks & Recreation (SPR) Standard Specifications and Details.

1.03 Quality Assurance: The seed shall be furnished in containers that show the following information: seed name, lot number, net weight, percentage of purity, germination, weed seed and inert material. Seed that has become wet, moldy, or otherwise damaged will not be accepted. Seed shall conform to the requirements of the Washington State seed law and when applicable the Federal Seed Act, and shall be "certified" grade or better.

1.04 Submittals: Submit seed vendor's certification for required grass seed mixture, indicating percentage by weight and percentages of purity, germination and weed seed for each grass species.

1.05 Delivery, Storage and Handling: Deliver seed and fertilizer materials in original unopened containers showing weight, analysis, and name of manufacturer. Store the seed in such a manner that will prevent the wetting and deterioration of the seed.

1.06 Field Quality Control:

A. Grading inspections:

1. Rough grading or sub-grades shall be inspected and approved by the Engineer prior to placing playfield soil.
2. Finish grading, soil placement and preparation shall be inspected and approved by the Engineer prior to seed application.

B. Other Inspections: The Contractor shall request a provisional inspection by the Engineer upon completion of the work. Call the **SPR Inspection Request Line @ (206) 684-7034 or by email at parksconstruction.inspection@seattle.gov** to make arrangements for inspections. Upon Substantial Completion and completion of the punch list items, the Engineer will make provisional acceptance in writing.

1.05 Project Conditions:

A. Restrict traffic from lawn areas until grass is established. Erect signs and barriers as required.

B. Provide hoses and lawn-watering equipment as required.

1.06 Warranty: Provide a uniform stand of grass. Reseed all areas, which fail to provide a uniform stand of grass with specified materials until the Engineer accepts all affected areas.

PART 2 - PRODUCTS

2.01 Grass Seed Mix for Irrigated/Mowed Lawn Areas and Athletic Fields:

A. The Grass Seed Mix shall be composed of the following, by weight:
50% Turf-type Perennial Ryegrasses
25% Creeping Red Fescue
25% Chewings Fescue

B. The Grass Seed Mix shall also meet or exceed the following:
Minimum pure seed percent - 98%
Minimum germination percent - 90%
Maximum weed seed percent - 0.5%

C. All Seed shall be packed in clean, sound containers of uniform weight.

D. Soil preparation: Soil preparation shall be per Section 32 91 13, unless otherwise specified.

E. Soil Amendments shall be as follows: Compost, Lime, Fertilizers, etc., per Section 32 91 13 - Soil Preparation.

PART 3 - EXECUTION

3.01 Inspection: The Engineer shall examine all of the finished surfaces. Do not start seeding work until all unsatisfactory conditions are corrected.

3.02 Preparation of Sub-soils:

A. Prepare subsoil to eliminate uneven areas and low spots. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.

B. Remove foreign materials and undesirable plants and their roots. Do not bury foreign material beneath areas to be seeded. Remove contaminated subsoil.

C. Scarify sub-soil to a depth of four (4) inches where specified soil is to be placed. Repeat cultivation in areas where equipment, used for hauling and spreading, has compacted subsoil.

3.03 Placing Specified Soils or Soil Amendments:

A. Spread specified soil or soil amendments to the specified depth over all areas to be seeded and rototill into the subsoil, refer to Section 32 91 13 - Soil Preparation for options.

B. Place specified soil or amendment during dry weather and on dry, unfrozen, prepared subsoil.

C. Grade all areas to eliminate rough, low, soft areas, and to ensure positive drainage. Achieve elevations and grades as shown on the drawings. Roll for firmness and to prepare for seeding.

3.04 Liming and Fertilizing:

A. Incorporate fifty (50) pounds of Dolomite Lime per 1,000 square feet (if required by soil test or as directed by the Engineer).

B. Incorporate specified Installation Fertilizer by broadcasting over entire area at an even distribution and rate, then broom rake the fertilizer into the top inch of specified or amended soil at the rate of one (1) pounds of nitrogen per 1,000 square feet.

3.05 Seeding:

A. Seed indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operation.

B. After applying lime, fertilizer and amendments at the specified rates, drag to an even grade and roll for firmness.

C. Grass Seed Mixes shall be spread at the rate of eight (8) pounds per 1,000 square feet.

D. Half of the seed shall be sown at right angles to the first sowing, lightly rake to cover seed, compact by rolling, spread a thin layer (approximately 1/4 inch) of fertile mulch over the entire area and water as required.

E. Spread a minimum of ¼" of Fertile Mulch over all seeded areas (except Ecology Mix) and broom rack to an even consistency.

F. Seeding shall not be done during windy weather (above 25 mph) or when the ground is overly wet (saturated) or frozen. Contractor shall give the Owner 48 hours notice of seeding operations. Seeding, fertilizing, and mulching of prepared areas shall be performed during the following time frames:

1. Seeding shall be done from April 1 to May 31 or from September 1 to October 31.
2. No seeding shall be done before or after these dates without the Engineer's written approval. Written permission to seed from June 1 to August 31 may be granted only if automatic irrigation is available and operational at the site. Permission to seed from November 1 to March 31 will only be given when completion of the Project is imminent and the environmental conditions are conducive to acceptable growth. No seeding shall be done on weekends or legal holidays without written approval of the Engineer.
3. Application of pre-germinated seed, moisture retention agents and/or provision for supplemental watering may be required by the Engineer should the Contractor schedule this portion of the Work outside the time frames listed in item 1 immediately above.
4. All areas that are partially completed to grade, shall be prepared and seeded during the first available planting period and shall not be allowed to sit idle for long periods of time without receiving the erosion control specified in the Contract.
5. When environmental conditions are not conducive to acceptable results from seeding operations, the Engineer may order the Work suspended, and it shall be resumed only when the desired results are likely to be obtained.

3.07 Maintenance and Establishment:

A. Maintain seeded areas until grass is well established and exhibits a vigorous growing condition.

B. Maintenance shall include protection, watering, weeding and at least two mowings.

C. After the first mowing, turf shall be fertilized at the rate of one (1) pound of nitrogen per 1,000 square feet.

D. All grass clippings shall be removed from the site during each mowing.

3.08 Acceptance:

A. Inspection to determine Physical Completion of seeded areas shall be made by the Engineer upon the Contractor's request. Provide notification at least five (5) working days before requested inspection date.

1. Seeded areas shall be accepted provided that all requirements, including maintenance, have been complied with and grass is well established and exhibits a vigorous growing condition.
2. Upon Physical Completion, the Owner shall assume all lawn maintenance responsibilities.

3.09 Cleaning: Perform cleaning during installation of the work and upon completion of the work. Remove from site, all excess materials, soil, debris, and equipment. Repair any and all damage to the site resulting from seeding operations.

3.10 Warranty and Replacement: All seeded areas must have a relatively uniform stand of turf grass or other seed mixes as specified with no bare spots over 6" square at the time of Substantial Completion. Reseed at the original rate and fertilize at the rates as for all blended materials. All areas failing to vigorously establish within 90 days after germination or one growing season (whichever is longest), shall be redone at the Contractor's expense.

END OF SECTION