NOTE TO CONSULTANTS: 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. (Remove these instructions).

The attached Seattle Parks and Recreation (SPR) Standard Specifications represent the minimum acceptable standards for Sodding of Irrigated/Mowed Lawn areas and occasionally Athletic Fields by exception. 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).

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 Sodded Lawn Areas as shown on the plans and as specified. The work includes: soil preparation, topsoil installation, lime application, fertilization, maintenance (including watering, weeding and mowing), inspections and acceptance.

1.02 Related Sections:

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

1.03 Quality Assurance:

A. Sod Producer: Shall be a company specializing in sod production and harvesting with a minimum of three (3) years of experience producing sod.

B. Sod: Sod shall be grown between six (6) to twelve (12) months with root development that will support its own weight, without tearing, when suspended vertically by holding the upper two corners.

C. Sod shall not include plastic netting, unless otherwise specified and/or as approved by the Engineer.

D. Sand-based, non-netted, Rye Grass sod shall be used for Athletic Field applications only, by exception.

1.04 Submittals:

A. Submit minimum five (5) pound sample of specified soil and document the source of supply.

B. Submit sieve analysis for soil in which sod was grown, along with sod certification.

C. Submit sod certification for grass species and location of sod source.

1.05 Delivery, Storage and Handling:

A. Deliver sod on pallets or in rolls. Protect exposed roots from dehydration.

B. Do not deliver more sod than can be laid within twelve (12) hours.

1.06 Project Conditions:

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

B. Provide hose and lawn watering equipment as required.

PART 2 - PRODUCTS

2.01 Sod Materials: Sod shall be composed of the following seed varieties:

A. For General Lawn Areas:
50% Turf-Type Perennial Rye Grass
30%-45% Kentucky Bluegrass
5%-20% Fine Fescue
(Or)
B. For Athletic Fields:
100% Turf-Type Perennial Rye Grass

2.0~~3~~2 Topsoil: Topsoil and soil preparation shall be according to Section 32 91 13 - Soil Preparation, unless otherwise specified.

2.0~~4~~3 Fertilizers and Soil Amendments: Materials shall be as follows:

A. Dolomite Lime (required for all Lawn Areas and Athletic Fields).

1. Fine ground Dolomite Limestone.
2. Shall be retained by Taylor Standard Sieves as follows:
No. 20 sieve - retains 0%
No. 100 sieve - retains 25%

B. For Lawn Installation/Starter Fertilizer use:

1. Starter Fertilizer: (10-20-20), or, approved equal.

Total Nitrogen* (N)	***10.0%***
(10.0% Ammoniacal Nitrogen)	
Available Phosphate (P205)	***20.0%***
Soluble Potash (K20)	***20.0%***
Sulfur (S)	***7.0%***

****Shall be derived from Ammonium Sulfate, Potassium Chloride, and Monoammonium Phosphate.***
(Or)
2. Lawn Starter Fertilizer (7-7-2) 'Starter Feed', or approved equal. Fertilizer shall be 100% Organic Fertilizer, as manufactured by Walt's Organic Fertilizer Co.

C. For Maintenance/Follow-up Fertilizer use:

1. Maintenance Fertilizer: (16-16-16), or approved equal.

Total Nitrogen* (N)	***16.0%***
(8.5% Ammoniacal Nitrogen)	
(7.5% Urea Nitrogen)	
Available Phosphate (P205)	***16.0%***
Soluble Potash (K20)	***16.0%***

Sulfur (S) 7.6%
****Shall be derived from Ammonium Sulfate, Potassium Chloride, Monoammonium Phosphate, and Urea.***

(Or)

2. Lawn Maintenance Fertilizer (9-3-5) '<u>Regular Feed</u>', shall be 100% Organic Fertilizer as manufactured by Walt's Organic Fertilizer Co., or approved equal.

2.0~~5~~4 Optional Supplemental Mycorrhizal Amendment (3-3-4) '<u>EndoROOTS</u>', shall be 100% Organic as manufactured by roots, Inc, or approved equal.

PART 3 - EXECUTION

3.01 Inspection: Examine finish surfaces. Do not start sodding work until unsatisfactory conditions are corrected.

3.02 Soil Preparation: Refer to Section 32 91 13 - Soil Preparation.

3.03 Fertilizing and Liming:

A. Dolomite Lime: Broadcast with mechanical spreader at the rate of 50lbs. of material per 1,000 square feet then incorporate into the top 2" of specified soil.

B. Installation/Starter Fertilizer: Broadcast with mechanical spreader at the rate of 1lb. pound of N per 1,000 square feet then incorporate into the approved finish grades of topsoil by raking into the top 2".

C. Maintenance/Follow-up Fertilizer: After the first mowing or approximately 30 days after the initial installation (whichever comes first) broadcast with mechanical spreader at the rate 1lb. of N per 1,000 square onto the top of all sodded areas.

3.04 Sod Installation:

A. Moisten prepared surface immediately prior to laying sod.

B. Do not lay sod or install sod on saturated or frozen soil.

C. Lay sod immediately upon delivery to site, to prevent deterioration or drying.

D. Lay sod tight with no open joints visible and no overlapping. Stagger end joints 12" minimum. Do not stretch sod pieces, and spread playfield soil or fertile mulch over any exposed edges. Keep edges moistened as required or as directed.

E. When piecing sod, use pieces no smaller than 1 square foot.

F. Install sod with top flush with adjacent curbs, sidewalks, drains and seeded areas.

G. Slopes for any Mowed Lawn areas within a Park project area shall be no greater than 5:1. If directed by the Consultant and approved by the Engineer, sod installed on slopes greater than 5:1 shall be pegged with wooden stakes and layed parallel to the contours. Pegs shall be set flush with finished grades.

H. Water sod thoroughly with a fine spray immediately after laying.

I. Roll with light lawn roller to ensure contact with sub-grade on slopes 5:1 or less.

3.0~~6~~5 Maintenance and Establishment:

A. Maintain sodded areas immediately after placement for at least 2 mowings.

B. Sodded areas shall not be allowed to grow to more than 4" in height before mowing is required. Mow at approximately 2".

B. Maintenance shall include but not be limited to, erosion control, protection, dressing edges, watering, weeding and mowing as required and/or as directed by the Engineer.

C. After the first mowing, sod shall be fertilized with maintenance/follow-up fertilizer at the rate of 1lb. of N per 1,000 square feet.

D. Grass clippings shall be removed from site.

3.0~~7~~6 Inspections and Acceptance:

A. Inspection (at Substantial Completion) to determine acceptance of sodded areas shall be made by the Engineer and SPR maintenance staff, upon the Contractor's request. Provide notification at least seven (5) working days before requested inspection date by calling the **SPR Inspection Request Line @ (206) 684-7034 or by email at parksconstruction.inspection@seattle.gov** to make arrangements for inspection. Sodded areas shall be accepted provided all requirements, including maintenance, have been complied with and sod is well established in a healthy, vigorous growing condition.

B. Upon acceptance at Substantial Completion, the owner shall assume all lawn maintenance responsibilities.

3.0~~8~~7 Clean Up: Perform cleaning both during installation and upon completion of the work. Remove from the site all excess materials, soil, debris and equipment. Repair any damage resulting from sodding operations as directed by the Engineer.

3.0~~9~~8 Warranty and Replacement: Provide a uniform stand of grass. Re-sod areas as specified in the original specifications to provide a uniform stand of grass until all affected areas are accepted by the Engineer. 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