PART 1 GENERAL

1.1 SECTION INCLUDES

A. Examination
B. Fertilizing
C. Seeding
D. Hydroseeding
E. Temporary Seeding
F. Seed Protection
G. Maintenance

1.2 REFERENCES

A. FS O-F-241 - Fertilizers, Mixed, Commercial
B. PennDOT Publication 408, Specifications

1.3 DEFINITIONS


1.4 QUALITY ASSURANCE

A. Provide seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.

1.5 REGULATORY REQUIREMENTS

A. Comply with regulatory agencies for fertilizer and herbicide composition.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of Section 01600.
B. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.
C. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.
1.7 SUBMITTALS

A. For hydroseeding, submit mix formulation.

B. Provide catalog cuts and manufacturer's instructions for erosion control matting.

1.8 MAINTENANCE SERVICE

A. The CONTRACTOR shall maintain seeded areas immediately after placement until grass is well established and exhibits a vigorous growing condition.

B. The CONTRACTOR shall replace topsoil at all eroded areas and/or washouts and shall reseed with the same seed mix, or shall place sod of the same seed mix.

C. The CONTRACTOR shall be responsible for replacing all failures which occur within one year of final completion.

PART 2 PRODUCTS

2.1 SEED

A. All seed used shall be labeled in accordance with the U.S. Department of Agricultural Rules and Regulations under the Federal Seed Act in effect at the time of purchase, which shall be later than the date of this Contract. Seed which has become wet, moldy, or otherwise damaged in transit or in storage will not be acceptable. Seed shall not be more than two (2) years old and shall be retested for germination rate no more than ninety (90) days prior to use.

B. Inert matter shall not exceed 15%. Blue Tag Certified Seed shall be supplied wherever possible.

2.2 SEED MIXTURE

<table>
<thead>
<tr>
<th>% by Weight</th>
<th>Purity</th>
<th>Min. % Germination</th>
<th>Max. % Weed Seed</th>
</tr>
</thead>
</table>

A. Lawn Seed (PennDOT Formula B)

Kentucky Bluegrass
(4 or more varieties - none greater than 25% of total Bluegrass component) 50 98 80 0.20

Pennfine Perennial
Ryegrass 20 98 90 0.15
Creeping Red Fescue 30 98 85 0.15
B. Slope areas steeper than 3 horizontal to 1 vertical which will not be moved (PennDOT Formula C)

<table>
<thead>
<tr>
<th>Species</th>
<th>Weight %</th>
<th>Purity %</th>
<th>Germination %</th>
<th>Weed Seed %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crown Vetch</td>
<td>45</td>
<td>99</td>
<td>70</td>
<td>0.10</td>
</tr>
<tr>
<td>Annual Ryegrass</td>
<td>55</td>
<td>98</td>
<td>90</td>
<td>0.15</td>
</tr>
</tbody>
</table>

C. Special Areas - swales, pond embankments, levees, diversion channels, and occasional water flow areas (PennDOT Formula D).

<table>
<thead>
<tr>
<th>Species</th>
<th>Weight %</th>
<th>Purity %</th>
<th>Germination %</th>
<th>Weed Seed %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kentucky 31 Tall Fescue</td>
<td>70</td>
<td>98</td>
<td>85</td>
<td>0.25</td>
</tr>
<tr>
<td>Creeping Red Fescue</td>
<td>30</td>
<td>98</td>
<td>85</td>
<td>0.15</td>
</tr>
</tbody>
</table>

D. Temporary Seeding (PennDOT Formula E)

<table>
<thead>
<tr>
<th>Species</th>
<th>Weight %</th>
<th>Purity %</th>
<th>Germination %</th>
<th>Weed Seed %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Ryegrass</td>
<td>100</td>
<td>98</td>
<td>90</td>
<td>0.15</td>
</tr>
</tbody>
</table>

E. Temporary Seeding

<table>
<thead>
<tr>
<th>Species</th>
<th>Weight %</th>
<th>Purity %</th>
<th>Germination %</th>
<th>Weed Seed %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter Rye</td>
<td>100</td>
<td>95</td>
<td>80</td>
<td>0.15</td>
</tr>
</tbody>
</table>

2.3 ACCESSORIES

A. Mulching Material: Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.

B. Pulverized agricultural limestone.

C. Fertilizer: FS O-F-241, Type I, Grade A; recommended for grass, with fifty percent (50%) of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil to the following proportions: Nitrogen ten percent (10%), phosphoric acid ten percent (10%), soluble potash ten percent (10%).

D. Water: Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.

E. Erosion Control Matting: Of the type indicated on the Drawings, in accordance with the manufacturer’s specifications.

F. Herbicide: In accordance with Publication 408, Section 804.2(d).

G. Stakes: Softwood lumber, chisel pointed.
H. String: Inorganic fiber.

I. Edging: Plastic or wood of the indicated species.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that prepared soil base is ready to receive the work of this Section.

3.2 FERTILIZING

A. Apply pulverized agricultural limestone at a rate of 6 tons per acre.
B. Apply fertilizer in accordance with manufacturer's instructions.
C. Apply after smooth raking of topsoil and prior to roller compaction.
D. Do not apply fertilizer at same time or with same machine as will be used to apply seed.
E. Mix fertilizer and limestone thoroughly into upper four inches of topsoil.
F. Lightly water to aid the dissipation of fertilizer.

3.3 SEEDING

A. Apply seed at the rates listed below, evenly in two intersecting directions. Rake in lightly.

<table>
<thead>
<tr>
<th></th>
<th>Rate</th>
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<tbody>
<tr>
<td>Formula B</td>
<td>2.5 lbs per 1,000 sq. ft.</td>
</tr>
<tr>
<td>Formula C</td>
<td>1.0 lbs per 1,000 sq. ft.</td>
</tr>
<tr>
<td>Formula D</td>
<td>2.5 lbs per 1,000 sq. ft.</td>
</tr>
<tr>
<td>Formula E</td>
<td>1.2 lbs per 1,000 sq. ft.</td>
</tr>
<tr>
<td>Winter Rye</td>
<td>4 lbs per 1,000 sq. ft.</td>
</tr>
</tbody>
</table>

B. Do not seed areas in excess of that which can be mulched on same day.

C. Planting Season:

<table>
<thead>
<tr>
<th></th>
<th>Season</th>
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</thead>
<tbody>
<tr>
<td>Formula B</td>
<td>March 1 to June 1 and August 1 to October 15</td>
</tr>
<tr>
<td>Formula C</td>
<td>Ryegrass portion March 1 to October 15; Crown Vetch portion November 1 to August 31</td>
</tr>
<tr>
<td>Formula D</td>
<td>March 1 to June 1 and August 1 to October 15</td>
</tr>
<tr>
<td>Formula E</td>
<td>March 1 to August 15</td>
</tr>
<tr>
<td>Winter Rye</td>
<td>August 16 to October 15</td>
</tr>
</tbody>
</table>

D. Do not sow immediately following rain, when ground is too dry, or during windy periods.

E. Roll seeded area with roller not exceeding 65 lbs. per foot width.

F. Immediately following seeding and compacting, apply mulch at a rate of 3 tons per acre. Maintain clear of shrubs and trees.

G. Apply water with a fine spray immediately after each area has been mulched. Saturate to four inches of soil.
3.4 HYDROSEEDING

A. Apply seeded slurry with a hydraulic seeder to match seed rates specified in Section 3.3A, evenly in two intersecting directions.

B. Inoculate Crown Vetch at 5 times the manufacturer's rate.

C. If fertilizer is applied with inoculant, the mixture shall not remain in a slurry for more than one hour.

D. Mulch as specified in Section 3.3F., or apply wood cellulose fiber, at a rate of 900 lbs. per acre, as part of the slurry.

3.5 TEMPORARY SEEDING

A. Temporary seeding shall be done in areas where no active work will be performed for 20 days or more. Any disturbed area on which activity has ceased for more than 20 days must be seeded and mulched immediately.

B. During nongerminating periods, ONLY mulch should be applied at the recommended rates.

C. Disturbed areas which are not at finished grade and which will be redisturbed within one (1) year may be seeded and mulched with a temporary seed mixture.

D. Disturbed areas which are either at finished grade or will not be disturbed again within one (1) year shall be seeded with the indicated permanent seed mixture and mulched.

E. Temporary Seeding Steps:
   1. Apply agricultural limestone or hydrated lime at a rate of one ton per acre.
   2. Apply fertilizer at the application rate of 50-50-50 (N-P_2O_5-K_2O) pounds per acre.
   3. Work the limestone and fertilizer into the soil to depth of three inches.
   4. Apply mulch at a rate of three tons per acre.

3.6 SEED PROTECTION

A. Identify seeded areas with stakes and string around area periphery.

B. Mulch shall be kept moist and anchored either mechanically, or with cutback asphalt or polymer tackifier, as required to prevent it from blowing away.

C. Cover seeded areas with erosion control matting where indicated. Install matting in accordance with manufacturer's specifications and instructions.

D. Lightly dress slopes with topsoil to ensure close contact between fabric and soil.

E. Apply herbicides in accordance with Publication 408, Section 804.3(h).

3.7 MAINTENANCE

A. Mow grass at regular intervals prior to final completion to maintain a maximum height of four
inches in lawn areas. Do not cut more than 1/3 of grass blade at any one mowing.

B. Neatly trim edges and hand clip where necessary, in lawn areas.

C. Immediately remove clippings after mowing and trimming.

D. Water to prevent grass and soil from drying out.

E. Roll surface to remove minor depressions or irregularities.

F. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.

G. Immediately reseed and mulch areas which show bare spots.

H. Protect seeded areas with warning signs during maintenance period.

END OF SECTION