

SECTION 02920 - LAWNS AND GRASSES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. This Section includes the following:
 - 1. Seeding of low maintenance fescue mix and short grass prairie mix.
 - 2. Lawn renovation.

1.2 RELATED WORK AND PROVISIONS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Related Sections include the following:
 - 1. Section 02300 – EARTHWORK
 - 2. Section 02231 – TREE PROTECTION AND TRIMMING

1.3 DEFINITIONS

- A. Finish Grade: Elevation of finished surface of planting soil.
- B. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments as required by soil test.
- C. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Certification of Seed: From seed vendor for each grass-seed mixture stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

- C. **Product Certificates:** For soil amendments and fertilizers, signed by product manufacturer.
- D. **Qualification Data:** For landscape Installer.
- E. **Soil Test Reports:** For existing surface soil and imported topsoil.
- F. **Planting Schedule:** Indicating anticipated planting dates for each type of planting.

1.5 QUALITY ASSURANCE

- A. **Installer Qualifications:** A qualified landscape installer whose work has resulted in successful lawn establishment.
 - 1. **Installer's Field Supervision:** Require Installer to maintain an experienced full-time supervisor on Project site when planting is in progress.
- B. **Soil-Testing Laboratory Qualifications:** An independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- C. **Topsoil Analysis:** Furnish soil analysis by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of topsoil.
 - 1. State recommended quantities of nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce Planting Soil as specified in specification section 02930, article "2.4 Topsoil".

1.6 DELIVERY, STORAGE, AND HANDLING

- A. **Seed:** Deliver seed in original sealed, labeled, and undamaged containers.

1.7 SCHEDULING

- A. **Planting Restrictions:** Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.
 - 1. **Spring Planting:**
 Low maintenance fescue mix – April 1-May 30 or as approved by ENGINEER;
 Short grass prairie mix – May 15 – June 30 or as approved by ENGINEER

2. Fall Planting:
Low maintenance fescue mix – August 15 – October 15
Short grass prairie mix – fall (dormant) seeding may be allowed with submittal of fall planting recommendations from prairie seed specialist.

- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

1.8 MAINTENANCE

- A. Begin maintenance immediately after each area is planted and continue until acceptable cover is established, but for not less than the following periods:

1. 60 days from date of Substantial Completion.
 - a. When full maintenance period has not elapsed before end of planting season, continue maintenance during next planting season.

- B. Maintain and establish seeded areas by watering, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and mulch to produce a uniformly smooth lawn.

1. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch. Anchor as required to prevent displacement.

2. Avoid pulling weeds in prairie planting by hand.

- C. Watering (where applicable): Provide and maintain temporary piping, hoses, and lawn-watering equipment to convey water from sources and to keep lawn uniformly moist to a depth of 4 inches.

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.

2. Water at a minimum rate of 1 inch per week in the absence of other rainfall.

- D. Mowing:

1. Mow short grass prairie to 6 inches whenever new growth reaches 12 inches in height. Use flail-type mower or string trimmer.

2. Low maintenance fescue mix does not need to be mowed.

PART 2 - PRODUCTS

2.1 SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.
- B. Seed Species: State-certified seed of grass species, as follows:
1. Low maintenance fine fescue seed mix:
 - a. Care-Free Fine Fescue Blend, Olds Seed Solutions; "No-mow Lawn Mix, Prairie Nursery, Westfield, WI; or similar.
 2. Short grass prairie seed mix:
 - a. Forbs (25%)

1) Butterfly Weed	2.50%
2) Sky Blue Aster	1.00%
3) Canadian Milk Vetch	.25%
4) White Wild Indigo	2.50%
5) Pale Purple Coneflower	6.50%
6) Rattlesnake Master	2.50%
7) Wild Quinine	2.50%
8) Foxglove Beardtongue	1.00%
9) White Prairie Clover	1.25%
10) Purple Prairie Clover	2.50%
11) Black-eyed Susan	1.25%
12) Stiff Goldenrod	.25%
13) Hoary Vervain	1.00%
 - b. Grasses (75%)

1) Little Bluestem	31.25%
2) Sideoats Grama	35.00%
3) Prairie Brome	8.75%

Final mix may vary depending on seed availability. Final mix, including cover crop seed and inert seed carrier is to be determined by a prairie seed specialist and approved by the ENGINEER.

2.2 TOPSOIL

- A. See specification section 02930, article 2.4.

2.3 INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C 602, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent and as follows:
 - 1. Class: Class T, with a minimum 99 percent passing through No. 8 sieve and a minimum 75 percent passing through No. 60 sieve.
 - 2. Provide lime in form of dolomitic limestone.
- B. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, with a minimum 99 percent passing through No. 6 sieve and a maximum 10 percent passing through No. 40 sieve.
- C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.
- D. Aluminum Sulfate: Commercial grade, unadulterated.
- E. Perlite: Horticultural perlite, soil amendment grade.
- F. Agricultural Gypsum: Finely ground, containing a minimum of 90 percent calcium sulfate.
- G. Sand: Clean, washed, natural or manufactured, free of toxic materials.

2.4 ORGANIC SOIL AMENDMENTS

- A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
 - 1. Organic Matter Content: 50 to 60 percent of dry weight.
 - 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.
- B. Peat: Finely divided or granular texture, with a pH range of 6 to 7.5, containing partially decomposed moss peat, native peat, or reed-sedge peat and having a water-absorbing capacity of 1100 to 2000 percent.
- C. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture, free of chips, stones, sticks, soil, or toxic materials.

- D. **Manure:** Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.

2.5 PLANTING ACCESSORIES

- A. **Selective Herbicides:** EPA registered and approved, of type recommended by manufacturer for application.

2.6 FERTILIZER

- A. **Slow-Release Fertilizer:** Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
 - 1. **Composition:** 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
 - 2. **Composition:** Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

2.7 MULCHES

- A. **Straw Mulch:** Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.
- B. **Asphalt Emulsion:** ASTM D 977, Grade SS-1; nontoxic and free of plant-growth or germination inhibitors.

2.8 EROSION CONTROL MAT

- A. **Class I, Type A**

PART 3 - EXECUTION

3.1 EXAMINATION

- A. **Examine areas to receive seed mixes for compliance with requirements and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.**

3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
- B. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 LAWN PREPARATION

- A. Limit lawn subgrade preparation to areas to be planted.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 8 inches. Remove stones larger than 2 inches in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
 - 1. Thoroughly blend planting soil off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil mix.
 - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
 - b. Mix lime with dry soil before mixing fertilizer.
 - 2. Spread planting soil to a depth of 6 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
 - a. Spread approximately one-half the thickness of planting soil mix over loosened subgrade. Mix thoroughly into top 2 inches of subgrade. Spread remainder of planting soil mix.
- C. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be planted in the immediate future.
- D. Moisten prepared areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- E. Restore areas if eroded or otherwise disturbed after finish grading and before planting.

3.4 SEEDING

- A. Sow seed by hand or with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
 - 1. Do not use wet seed or seed that is moldy or otherwise damaged.
- B. Sow short grass prairie mix at the rate of 11 lb/Acre
- C. Sow low maintenance fescue mix at the rate of 4-6 lb/1000 sq. ft.
- D. Rake seed lightly into top 1/8 inch of topsoil, roll lightly, and water with fine spray.
- E. Protect slopes 5:1 or flatter with straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose depth over seeded areas. Spread by hand, blower, or other suitable equipment.
 - 1. Anchor straw mulch by crimping into topsoil with suitable mechanical equipment.
 - 2. Alternatively, bond straw mulch by spraying with asphalt emulsion at the rate of 10 to 13 gal./1000 sq. ft. Take precautions to prevent damage or staining of structures or other plantings adjacent to mulched areas. Immediately clean damaged or stained areas.
- F. Protect slopes steeper than 5:1 with erosion control mat. Install and staple according to manufacturer's instructions.

3.5 LAWN RENOVATION

- A. Renovate existing lawn damaged by CONTRACTOR's operations, such as storage of materials or equipment and movement of vehicles.
 - 1. Reestablish lawn where settlement or washouts occur or where minor regrading is required.
- B. Remove sod and vegetation from diseased or unsatisfactory lawn areas; do not bury in soil.
- C. Remove topsoil containing foreign materials resulting from CONTRACTOR's operations, including oil drippings, fuel spills, stone, gravel, and other construction materials, and replace with new topsoil.
- D. Mow, dethatch, core aerate, and rake existing lawn as needed.

- E. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides.
- F. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property.
- G. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches.
- H. Apply soil amendments and initial fertilizers required for establishing new lawns and mix thoroughly into top 4 inches of existing soil. Provide new planting soil to fill low spots and meet finish grades.
- I. Apply seed and protect with straw mulch as required for new lawns.
- J. Water newly planted areas and keep moist until new lawn is established, where applicable.

3.6 SATISFACTORY LAWNS

- A. Satisfactory Seeded Plantings: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.
- B. Reestablish seeded plantings that do not comply with requirements and continue maintenance until lawns are satisfactory.

3.7 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by lawn work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Erect barricades and warning signs as required to protect newly planted areas from traffic. Maintain barricades throughout maintenance period and remove after lawn is established.

END OF SECTION 02920