

SEEDING AND HYDRO-MULCHING

SECTION 02931

{Instruction to Consultants: The Master Specification must only be considered to be general guidelines as it is not prepared for a Specific Project. If the items described in the Master Specification do not match the items actually going to be used in a Specific Project, then the Consultant must add new text or modify the existing text so that the final Specification is fully coordinated and consistent with the Contract Drawings. The Master Specification must not be considered complete. Additions and deletions necessary to make it Project specific are required from the Consultant. Items that are not part of the scope of the Specific Project must be deleted.

The Consultant must add to and/or delete paragraphs, items, etc. to the Master Specification Section as required by the scope and nature of the Specific Project. The general format and general statements of the various Sections must remain unchanged. The Consultant must modify and finalize the footer to identify the Specific Project as to name of Project, Project number, and issued for/issue date.

PART 1 GENERAL

1.01 SECTION INCLUDES:

- A. Work under this Section is subject to the requirements of the Contract Documents.
- B. Furnish and install all Seeding and Hydro-mulching work as shown on the Drawings and as specified herein, including but not limited to the following:
 - 1. Furnish, transport and place grass seed mixture.
 - 2. Furnish, transport and place mulch material.
 - 3. Maintain seeded and mulched areas until acceptance.
- C. Install products and materials (furnished in other Sections) as shown on the Drawings and as specified herein, including but not limited to the following:
 - 1. *{If any, insert, otherwise delete paragraph.}*
- D. Basis of Payment
 - 1. Item No. G-1: The price for all Work specified in this Section will be included in the total price indicated by the bidder in the space provided in the "Proposal - Schedule of Prices" for Item G-1.

---or---

2. Item No. G-[]: The price for all Work specified in this Section, will be paid for at the unit price per [], and will be indicated by the Bidder in the space provided in the "Proposal - Schedule of Prices" for Item G- [].]

1.02 RELATED WORK:

- A. As specified in the following divisions:
 1. Division 1 – General Requirements
 2. Division 2 – Site Work

1.03 REFERENCES:

- A. SSRBC-Standard Specifications for Road and Bridge Construction, Published by Illinois Department of Transportation , the latest edition and supplements.
- B. ASPA (American Sod Producers Association) - Guideline Specifications to Sodding.
- C. FS O-F-241 - Fertilizers, Mixed, Commercial.
- D. Section 02905 – Sustainable Airport Landscaping

1.04 SUBMITTALS:

- A. Submit the following
 1. Qualifications Data
 - a. Qualifications Data for firms and persons specified
 2. Samples and/or Product Data
 - a. Samples:
 - (1) Mulch - One (1) cubic foot of each type specified.
 - b. Product Data:
 - (1) For each type of product indicated.
 3. Material Test Reports
 - a. Submit test reports necessary to show compliance with the Contract Documents.
 - b. Provide mix formulation for hydroseeding.

- c. Analyze fertilizer to ascertain percentage of nitrogen, phosphorus, and potash, soluble salt content, organic matter content, and pH value.
4. Manufacturer's Certification
 - a. Submit certification that products meet or exceed the specified requirements.
 - b. Provide certificate of compliance from authority having jurisdiction indicating approval of seed mixture.
5. Operation and Maintenance Manuals
 - a. Submit maintenance instructions recommending procedures to be established by owner for maintenance of landscaping during an entire year. Include maintenance instructions, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer.

1.05 QUALITY CONTROL:

- A. Contractor Qualifications: Installation of seeding and hydro-mulching must be performed only by a qualified Installer. The term qualified means experienced in performing the Work required by this Section. The qualified installer must have a minimum of five (5) years documented experience on Projects similar in size and scope to this Project. The installer must submit evidence of such qualifications upon request by the Director.
- B. Perform Work in accordance with the latest edition, of the appropriate divisions, of the following:
 1. The work under this Section must be done in accordance with applicable portions of Section 250 and 251 of the SSRBC, (as indicated in the Special Conditions) except as modified herein.
 2. All Local and National Codes as applicable for fertilizer and herbicide composition.
- C. Certification of Grass Seed
 1. Provide seed mixture from seed vendor(s) in containers showing botanical and common name of each species and variety, percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.

D. Soil Testing Laboratory

1. Furnish soil analysis by a qualified soil testing laboratory. The laboratory must be an independent laboratory recognized by the State Department of Agriculture.

1.06 DELIVERY, STORAGE AND HANDLING:

A. Materials must be delivered to the Project in sealed containers bearing Manufacturer's name and material identification. Materials must be stored in strict accordance with the Manufacturer's printed directions, copies of which must be furnished to the Director.

1. Seed in damaged packaging is not acceptable.
2. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

B. Protect materials against damage from mechanical abuse, plaster, salts, acids, staining and other foreign matter by an approved means during transportation, storage and erection and until completion of construction Work. All unsatisfactory materials must be removed from the premises, and all damaged materials replaced with new materials.

C. Access and Storage Areas

1. All access routes and storage areas must be subject to the approval of the Director in order to reduce interference with Airport Operations.

1.07 WARRANTIES AND GUARANTEES:

A. (Not Used)

1.08 EXTRA MATERIALS AND SPARE PARTS:

A. (Not Used)

1.09 ENVIRONMENTAL REQUIREMENTS:

A. Weather

B.

1.10 SPECIAL REQUIREMENTS:

- A. Field Measurements - Before proceeding with the work, the supplier/installer must verify all dimensions and take such measurements as are required for proper installation of the work
- B. Protection - Protect materials against damage from mechanical abuse, plaster, salts, acids, staining and other foreign matter by an approved means during transportation, storage and erection and until completion of construction work. All unsatisfactory materials must be removed from the premises, and all damaged materials replaced with new materials.

PART 2 PRODUCTS

2.01 MATERIALS:

- A. Grass
 - 1. Grass seed must be fresh, clean, new crop seed composed of the following varieties mixed in the proportions by weight, as shown, and testing the minimum percentages of purity and germination indicated.
 - 2. All seed must be mixed by the dealer, and the Contractor must furnish the dealer's guarantee of composition of the mixture and percentage of purity and germination of each variety.
 - 3. The seed must be delivered to the site in original unopened containers, each bearing the analysis of the contents.
 - 4. The seed mix must consist of the following:

Grass Seed Blend	lbs./acre
Tall Fescue	250

Use a minimum of 3 varieties of tall fescue. Each variety should contain a minimum of 70 % viable endophytes. Varieties should come from the following list: 2nd Millenium, Bonsai, Cayenne, Cochise III, Constitution, Covenant, Coyote II, Crossfire II, Dakota, Dynasty II, Escalade, Mustang 3, Rendition, SR 8600, Taos, Titan Ltd, Titanium or Tombstone.

- 5. Substitution of seed mix, using acceptable turf grass species as shown in Division 2, Section 02905 – Sustainable Airport Landscaping, must be submitted to Director for approval.
- 6. Seeds of one of the following seed supplier will be acceptable:

- a. []
- b. []
- c. []

B. Mulch

1. Mulch material must consist of a natural wood cellulose fiber containing no germination or growth inhibiting factors. It must be dyed an appropriate color, preferably green, to allow visual metering of its application. The wood cellulose fibers must have the property of becoming evenly dispersed and suspended when agitated in water. Weight Specifications from suppliers, and for all applications, must refer only to air dry weight of the fiber.
2. The mulch material must be supplied in easily handled moisture resistant packages and must be marked by the manufacturer to show the air dry weight content.
3. Mulch of one of the following mulch suppliers will be acceptable:
 - a. "Conwed Hydro-Mulch 2000" - Conwed Corporation, St. Paul, Minnesota 55101,
 - b. []
 - c. []

C. Accessories

1. Organic fertilizer - Must containing 6% organic nitrogen and 3% phosphoric acid plus other elements.
 - a. Products of one of the following Manufacturers will be acceptable: *{Consultant/Final Designer to provide additional acceptable manufacturers}*
 - (1) "Milorganite" - The Sewerage Commission, Milwaukee, Wisconsin,
 - (2) []
 - (3) []
2. Water - Clean, fresh and free of substances or matter which could inhibit vigorous growth of grass.
3. Erosion Fabric - [Jute] [] matting, open weave.

4. Herbicide - [_____].
5. Stakes - Softwood lumber, chisel pointed.
6. Wood Pegs - Softwood, sufficient size and length to ensure anchorage of sod on slope.
7. String - Inorganic fiber.
8. Wire Mesh - Interwoven hexagonal [metal wire] [plastic] mesh of [2] inch ([50] mm) size.
9. Edging - [Galvanized steel.] [Plastic.] [Wood of [_____] species.]

PART 3 EXECUTION

3.01 INSPECTION:

- A. Before commencing installation, examine substrate surfaces to determine that they are free of conditions which might be detrimental to proper and timely completion of the work. Start of work must indicate acceptance of the substrate.

3.02 EQUIPMENT:

- A. The equipment used for the hydro-mulching operation must be any approved equipment normally used for such operation, with a capacity not to exceed 1000 gallons in order to prevent compaction of the prepared seed bed.
- B. The seeder must be a Brillion Landscape Seeder or an approved equal.
- C. Equipment for the earthwork preparation must be standard landscape equipment normally used for seed bed preparation.

3.03 CONSTRUCTION METHODS:

- A. All areas to be seeded and mulched must be cleaned of all stones and rocks over 1 inch in any dimension, sticks, roots, rubbish and extraneous matter, and such debris, etc. must be removed from the site.
- B. The areas must be finish graded; meeting all adjoining paved or turfed surfaces. The finish grading operations must be performed to obtain an acceptable seed bed with the top 4 inches of soil well pulverized

- C. The seed mix must be applied at the rate of 6 pounds per 1000 square feet (250 pound per acre).
- D. Following the seeding operation with the Brillion seeder, the entire seeded area must be mulched with an approved hydro-mulcher. The wood cellulose fiber mulch must be applied at the rate of 35 to 40 pounds, dry weight, per 1000 square feet. The amount of water used for the amount of dry weight fiber must be as recommended by the manufacturer of the fiber.
- E. At the Contractor's option the seeding and mulching operations may be performed simultaneously by mixing the seed and mulch material in the same slurry. The same rates of application of seed and mulch must apply.

3.04 MAINTENANCE:

- A. All seeded and mulched areas must be protected and maintained by watering, mowing, fertilizing and reseeding as may be necessary to produce a uniform stand of grass. Maintenance must begin immediately following the last seeding and mulching operation for each area and must continue in accordance with the following requirements.
- B. Maintenance must continue for a minimum of 60 days of growing weather or until a uniform turf is established that is acceptable to the Director.
- C. For purposes of establishing an acceptable standard, scattered bare spots, none of which is larger than 2 square feet, must be allowed up to a maximum of five (5) percent of any seeded area.
- D. Immediately prior to the acceptance of the seeded areas, the Contractor must apply Milorganite to the seeded areas at the rate of 30 pounds per 1000 square feet.

3.05 GENERAL CLEAN-UP:

- A. All rubbish and debris resulting from the work of this Section must be collected, removed from the site and disposed of legally
- B. All work must be left in a broom clean condition.

END OF SECTION 02931