

SECTION 02481
HYDROSEEDING

PART 1 Description

1.01 General

Conform to the requirements and regulations of the Tennessee Department of Agriculture.

1.02 Related Sections

Section 02230 Clearing and Grubbing

Section 02200 Earthwork

Section 02925 Bonded Fiber Matrix

PART 2 Materials

2.01 Materials

A. Equipment

1. Equipment will have a built in agitation system and operating capacity sufficient to agitate, suspend and homogeneously mix a slurry containing not less than 44 lbs (20 kilos) of organic mulching amendment plus fertilizer, chemical additives and solids for each 100 gallons of water.

B. Cellulose Fiber Mulch:

1. Refer to Section 02925: Bonded Fiber Matrix

C. Fertilizers

1. 6-20-20 or 15-15-15 or approved equal applied at rate per manufacturer's recommendations.

D. Organic Tackifier

1. Refer to Section 02925: Bonded Fiber Matrix

E. Hydroseed Seed Mix

1. Meet or exceed applicable requirements of the Tennessee Department of Agriculture. No “below standard” seed will be acceptable.
2. Priority should be given to native species in any mixture due to the level of damage that non-native species are currently being exhibiting within the City as noted by the Natural Resources Inventory. Suggested native seed mixes are shown below:

Native Grass Mixture	Little Bluestem Indian Grass Blue Fescue (less than 20%) Side Oats Grama Big Bluestem Switchgrass (Native Panicum virgatum)	April 1 – June 30
Southeast Native Mixture	Indiangrass Little Bluestem Switchgrass Big Bluestem Lovegrass (Native only)	March 1 – June 15
Songbird Native Grass / Wildflower Mixture (Useful near conservation easements or natural areas for establishment of wildlife)	Side Oats Grama Little Bluestem Indian Blanket Lance-leaved Coreopsis Purple Coneflower Goldenrod Joe Pyeweed Evening Primrose New England Aster Black-Eyed Susan	April 1 – June 15 August 15 – October 15
Wetland Mixture	Red Top (Native only) Virginia Wild Rye Fox Sedge Woolgrass Soft Rush Lurid Sedge Joe Pyeweed	March 15 – June 15 August 15 – October 15
Native Rough Mixture (Fescue mix may not be appropriate in all locations due to invasive nature)	Hard Fescue Little Bluestem Chewings Fescue Blue Fescue	March 15 - June 1 August 15 – October 15

Some mixtures may not be appropriate near natural areas due to the inclusion of non-natives and plants that are invasive by nature. Focus on native species, including but not limited to: Big and Little Bluestem, Broomsedge Bluestem, Indiangrass, Native Switchgrass, Sideoats Grama, and

Eastern Gramagrass. These species should be planted from April to May. Mowing should only be done in late October and late February to early March. Other forms of maintenance (that closely resemble natural disturbance) may be needed to exclude undesirables and to further promote the growth and spread of the native grasses.

PART 3 Execution

3.01 Installation

A. Installation procedures:

1. Examine related work including irrigation and grading of surface before proceeding with any work and notify the Engineer in writing on conditions which may prevent the proper execution of this work. Failure to report unsuitable conditions will require the rectification of unacceptable work at no additional expense to the Owner. Verify that acceptable topsoil (minimum depth of six (6) inches) is in place before commencing of hydroseeding operations.
2. Water all plant areas thoroughly to saturate upper layers of soil prior to the hydroseeding operation.
3. Allow the planting area soil surface to dry out for one day only prior to the hydroseeding application. Exercise care not to allow the soil surface to be overly saturated with water prior to the hydroseeding installation. At the same time the soil surface should not become too dry during this period. There should be some residual moisture within the first ¼ inch of the soil surface.
4. Prior to starting the hydroseeding operation, notify the Engineer forty eight (48) hours in advance to be present at start of start of hydroseeding.

B. Hydroseeding Application:

1. Apply the hydroseeding in the form of a slurry consisting of organic soil amendments, commercial fertilizer, and any other chemicals that are called out. When hydraulically sprayed onto the soil, the mulch will form a blotter-like material. Direct the spray operation so that this procedure will drill and mix the slurry components into the soil, the slurry spray will also penetrate the soil surface, thus ensuring maximum impregnation and coverage. The impregnation and mixing of the components will help in retaining moisture while stabilizing soil surface from superficial erosion.
2. Do not let the hydroseeding slurry components in the hydroseeding machine for more than two (2) hours because of possible seed destruction. If slurry components are left for more

than two hours in the machine, add 50% more of the originally specified seed mix to any slurry mixture which has not been applied within the two hours after mixing. Add 75% more of the original seed mix to any slurry mixture which has not been applied eight (8) hours after mixing. All mixtures more than eight (8) hours old must be disposed, off-site, at no additional expense to the Owner.

3. Spray the area with a uniform visible coat, using the dark color of the cellulose fiber as a visual guide. The slurry will be applied in a downward drilling motion via a fan stream nozzle. Insure that all of the slurry components enter and mix with the soil. Insure the uniformity of the hydroseed application.
4. Exercise special care to prevent any of the slurry from being sprayed onto any hardscape areas including concrete walks, fences, walls, buildings, etc. Remove all slurry sprayed onto these surfaces at no additional expense to the Owner.
5. Save all seed and fertilizer tags and fiber mulch bags for the Engineer to verify compliance with the drawings and specifications.
6. The Engineer does not need to be present during the hydroseeding operation but has final determination if conditions are acceptable for hydroseed application.

3.02 Time of Sowing

A. The grass seed percentages listed below indicate quantity by weight percent.

1. Fall
 - a. Hydroseed during the period of September 15 to December 1 at the rate of ninety (90) pounds per acre.
2. Spring
 - a. Hydroseed during the period of April 1 to July 1 at the rate of ninety (90) pounds per acre.
3. Summer
 - a. Hydroseed during the period of July 1 to September 15 at the rate of ninety (90) pounds per acre.

B. Do not hydroseed during weather where prevailing winds exceed 15 miles per hour or are gusty, nor when the ground surface is frozen, wet or otherwise non-tillable. No hydroseeding will be allowed during the period December 1 to April 1 without written approval of the Engineer.

3.03 Maintenance

A. Upon acceptance of hydroseeding operations, maintain all hydroseeding areas for a period of 90 calendar days as follows:

1. Germination stage irrigation: Approximately 25 hours after hydroseeding the Planting areas, initiate the watering sequence. Leave the water on long enough to moisten the soil thoroughly to the depth of the slurry mulch taking care not to super saturate or wash away the slurry and seed. Perform frequent, light irrigation until the seed has germinated. Repair all seed washings and erosion.
2. Establishment stage irrigation: After germination, reduce each watering. The specific watering program will be approved by the Engineer.

B. Fertilization

1. Fertilize all hydroseed areas with an approved commercial fertilizer, 30 calendar days from the start of the maintenance period and continuing one every 60 calendar days until the completion of the 90 calendar day maintenance period.

C. Weeding

1. All concentrated developments of weed growth appearing in the seed mix planting areas during the maintenance period will be removed at two (2) week intervals. Remove such concentrations of weeds manually or by a City approved herbicide program.

D. Minimum Coverage and Acceptance

1. Minimum coverage
 - a. Final acceptance may be given at the end of the 90 calendar day maintenance period if an acceptable germination of turf and adequate plant establishment has been obtained, as determined by the Engineer.
 - b. Final approval and acceptance will be given in writing by the Engineer following a final acceptance inspection. The Engineer reserves the option to extend the maintenance period to achieve complete germination of all turf or other plant materials with a uniform height, color and density throughout all hydroseeded areas.

END OF SECTION