

ITEM 164

SEEDING AND EROSION CONTROL BLANKET

- 164.1 Description. Seeding, followed by the application of an erosion control blanket shall consist of preparing the ground, sowing of seeds, application of a fertilizer, and stabilization with a mulch, mat, or mesh consisting of straw, hay, wood, coir, paper, or other biodegradable fibers along and across such areas as are designated on the plans and in accordance with these specifications.
- 164.2 Grass. All seed must meet the requirements of the U.S. Department of Agriculture as set forth in the Rules and Regulations of the Federal Seed Act and the Texas Seed Law, including the labeling requirements for showing pure live seed, (PLS=purity x germination), name and type of seed. Seed furnished shall be of the previous season's crop and the date of analysis shown on each bag shall be within nine months of the time of use on the project. Each variety of seed shall be furnished and delivered in separate bags or containers. A sample of each variety of seed shall be furnished and delivered when directed by the Engineer. Seed which has become wet, moldy or otherwise damaged in transit or storage will not be accepted. The amount of seed planted per acre, the type and the planting date shall be as indicated in Table 1:

TABLE 1

Plant Type	Rate of Application in Pounds of Seed per Acre	Planting Date
<u>Common Bermuda Grass</u> (60% Unhulled and 40% Hulled by weight)	<u>60</u>	Apr. 1 to <u>Sep.30</u>
* <u>"Foxtail Millet</u>	<u>15</u>	Apr. 1 to <u>Sep.30</u>
<u>Common Bermuda Grass</u> (60% Hulled and 40% Unhulled by weight)	<u>50</u>	Oct. 1 to <u>Mar.31</u>
* <u>"Gulf" Annual Ryegrass</u>	<u>15</u>	Oct. 1 to <u>Mar.31</u>
<u>Crimson Clover & Inoculant</u>	<u>20</u>	Oct. 1 to <u>Mar.31</u>
* <u>"KY_31" Tall Fescue</u>	<u>15</u>	Oct. 1 to <u>Mar.31</u>

*Indicates MAXIMUM APPLICATION RATE ALLOWED

Table 1 shall be used except for special applications. For special applications the seed mix, rate of application, and planting dates shall be as shown in the plans.

164.3 Fertilizer. Commercial fertilizer as outlined in the Item 166, "Fertilizer", shall be applied to the entire seeded area at the prescribed rates. The fertilizer shall be delivered to the site in bags or other convenient containers, each fully labeled, conforming to the applicable State Fertilizer Laws and bearing the name and warranty of the producer.

164.4 Straw Mulch. Straw mulch shall be oat, wheat, or rice straw. Hay mulch shall be prairie grass, bermuda grass, oat, wheat or rice stems or other hay as approved by the Engineer. Do not use straw containing Johnson grass or other noxious weeds and foreign materials. The mulch shall be kept in a dry condition and shall not be molded or rotted.

164.5 Fiber Mat. Fiber mat to consist of machine produced woven mat of wood, coir, straw, or a combination of various biodegradable fibers as approved by the Engineer, with consistent thickness throughout the blanket. The fiber mat shall have a mesh or netting for support. The mesh or netting shall be biodegradable or photo-degradable and have a high wet strength. The mat shall not contain any weed seeds. Use blanket with a weight from 0.7 pounds per square yard to 1.0 pound per square yard. The mat shall be free of defects, rips, holes, flaws, deterioration, mold, rot, or damage.

Material type, size, shape, and spacing of wire staples, or fasteners, shall be in accordance with the recommendations of the manufacturer of the fiber mat erosion control blanket.

164.6 Paper Mesh. Use paper mesh consisting of knitted construction of yarn with uniform openings interwoven with strips of biodegradable paper, furnished in rolls which have suitable protection for outdoor storage. Use paper mesh of weight from 0.2 pounds per square yard to approximately 0.5 pounds per square yard. The mesh shall be free of defects, rips, holes, flaws, deterioration, mold, rot, or damage.

Material type, size, shape, and spacing of wire staples, or fasteners, shall be in accordance with the recommendations of the manufacturer of the paper mesh erosion control blanket.

164.7 Construction Methods.

A. General

Fertilizing & Seeding. After areas to receive fertilizing and seeding have been completed to the lines, grades and sections shown on the plans, apply fertilizer at the prescribed rates as outlined in the Item 166, "Fertilizer". Thoroughly mix upper 3 inches of top soil with fertilizer until a uniform mixture of fertilizer and top soil is obtained. Sprinkle areas to be seeded with water, using fine spray to avoid washing or erosion of soil. Broadcast seed with sowing equipment at the rate specified above, using care to obtain uniform distribution. After broadcasting, lightly rake seeds into soil to a depth not to exceed 1/2 inch. Complete seeding by rolling with roller developing 15 to 25 pounds per inch of tread.

After application of seed and fertilizer, apply straw mulch, fiber mat, or paper mesh as described in the following sections. Keep seeded areas moist for a period of 10 days immediately following placement and as necessary to meet Contractor's maintenance and guarantee period. When watering seeded areas, use fine spray to prevent erosion of seeds or soil. Reseed any areas damaged by erosion and as necessary to obtain a satisfactory growth as determined by the Engineer.

If rain is imminent, then seeding and fertilization shall be postponed until weather conditions exist such that the potential for the runoff of fertilizer from the site is minimized. If high wind conditions exist then the subsequent application of the straw mulch, fiber mat, or paper mesh erosion control blanket shall be postponed until weather conditions exist such that the blanket can be installed properly.

B. Straw Mulch Erosion Control Blanket

1. Fertilizing & Seeding: After ditch or slope has been completed to lines, grades and cross-sections shown on the plans, apply fertilizer and seed in accordance with the above. When seed and fertilizer are to be distributed as water slurry, mixture is to be applied within 30 minutes after all components are placed in the equipment.
2. Mulch Application: Immediately upon completion of planting of seed and fertilizing, spray straw mulch uniformly over the area at the rate of 1 1/2 to 2 tons of hay

or 2 1/2 tons of straw per acre. Mulching machine shall inject tacking agent into straw uniformly as it leaves the equipment at the rate of 0.05 to 0.10 gallons of tacking agent per square yard of mulched area. When watering seeded areas, use fine spray to prevent erosion of seeds or soil. Reseed any areas damaged by erosion for any reason. The mulching operation shall immediately follow seeding and fertilizing as a continuous operation.

C. Fiber Mat or Paper Mesh Erosion Control Blanket

1. Fertilizing and seeding shall be in accordance with the above.
2. Fiber Mat or Paper Mesh Installation: Place fiber mat or paper mesh within 24 hours after seeding operations have been completed. Prior to placing, clear the area to be covered of all rocks or clods over 1 1/2 inches in diameter and all sticks or other foreign material which will prevent close contact of the blanket with the soil. Area shall be smooth and free of ruts or other depressions.

If as a result of a rain, prepared seed bed becomes crusted or eroded, or if eroded places, ruts or depressions exist for any reason, rework soil until smooth and reseed such areas. After area has been properly prepared, lay fiber mat or paper mesh flat, smooth and loosely without stretching or crimping material. Lay mat according to manufacturer's recommendations, generally with the mesh or netting on the top side.

Apply materials with lengths running parallel to the flow of water, or as shown on the plans or as directed by the Engineer. When more than one width is required, butt or overlap edges as required by the manufacturer. In general, for overlaps, the top edge shall overlap the bottom edge to match the direction of the flow of water, not against it.

Hold the material in place by means of a wire staple driven into the soil at an angle to the surface. Staple material along each edge and in a grid pattern with a minimum of 3 foot centers each way. In ditches and on slopes, provide additional stapling as recommended by the manufacturer.

The placement of the fiber mat or paper mesh erosion control blanket shall immediately follow the preparation of the ground.

164.8 Contractor Maintenance & Guarantee Period. It shall be the responsibility of the Contractor to maintain all seeded and erosion control blanket areas until satisfactory growth has occurred as determined by the Engineer, and for a period of 60 days after the successful completion of all punch list items. Maintenance shall consist of watering and weeding, repair of all erosion and any reseeding as necessary to establish a uniform stand of the specified grasses. A minimum of 95% of the area seeded shall be covered with the specified grass with no bare or dead spots greater than 10 square feet.

The Contractor shall be responsible for one (1) mowing per month between the months of April to October. The Contractor shall also be responsible for one (1) mowing every six (6) weeks between the months of November to March. In addition, the Contractor shall water all grassed areas as often as necessary to establish satisfactory growth and to maintain its growth throughout the duration of the project.

The Contractor shall make as many repeat seedings as necessary to achieve a minimum of 95% of the area planted covered with the specified grass with no bare or dead spots greater than 10 square feet. Such replanting is to be performed within 14 calendar days of notification by the Engineer.

164.9 Submittal Required. The Contractor shall submit copy of seed tag(s) and letter from the supplier attesting that the seed meets the requirements as stated herein. Certification shall include common name; botanical name, percent by weight of each plant species; year of harvest; percent purity, germination and dormant seed; percent noxious weed content; and date of certification.

164.10 Measurement & Payment:

Measurement shall be by the acre or square yard of prepared area underlying the erosion control blanket. Payment for work under this item to be made at the contract price for "Seeding and Erosion Control Blanket", with price to be full compensation for the materials, tools, equipment, and labor necessary for preparing the area (including fine grading and rolling), seeding, fertilizing, placing and securing the fiber mat, and watering. Additional payment shall not be made for those areas that are repaired or reseeded.

There are line code(s), description(s), and unit(s) for this item.

This specification requires other Standard Specifications.

Item 725 General Source Controls
Item 166 Fertilizer

END OF ITEM 164

SUMMARY SHEET

ITEM 164 - SEEDING AND EROSION CONTROL BLANKET

Other Specifications Required:

Item 166 – Fertilizer
Item 725 – General Source Controls

Reference Standards:

1. U.S. Department of Agriculture, Rules & Regulations of the Federal Seed Act
2. Texas Seed Law

Description:

Describes requirements for seeding and the application of a straw mulch, fiber mat, or paper mesh erosion control blanket.

Payment:

By the acre or square yard.

DO NOT INCLUDE THIS SHEET IN THE CONTRACT SPECIFICATIONS