SECTION 72

MULCHING

72.1 DESCRIPTION

A. General

This work consists of placing a mulch cover on designated areas following seeding operations.

B. Related Work

Section 70 Seeding
Section 71 Fertilizing

72.2 MATERIALS

A. Grass Hay or Straw Mulch

Grass hay or straw mulching shall be substantially free of noxious weed seeds and objectionable foreign matter. The mulch shall have been baled dry, in bales of approximately equal weight and shall be relatively dry when applied. The Engineer will reject materials having characteristics, making them unsuitable for the purpose intended.

Bromegrass is not an acceptable mulch.

B. Fiber Mulch

Fiber Mulching shall contain no germination or growth inhibiting factors and shall have the property of becoming evenly dispersed and suspended when agitated in water. When sprayed uniformly on the surface of the soil, the fibers shall form a blotter-like ground cover, which will readily absorb water and allow infiltration to the underlying soil without restricting emergence of seedlings. Weight specification from suppliers, and for all applications, shall refer only to air dry weight of the fiber, considered to be 10 percent moisture.

The fiber mulch material shall be supplied in packages marked by the manufacturer to show the air dry weight content. Suppliers shall certify that laboratory and field testing of their product has been accomplished, and that it meets all of the foregoing requirements.

C. Compost and Wood Chip Mulch

Compost shall be ¾ in. minus and ⅜ in. minus screened material. Wood Chip Mulch shall be material passing the ¾ in. screen.

No chemical additives shall be added during the composting process. The process shall be completely natural utilizing the organic feedstock, water and air. The material shall be composted to a ratio of 30 parts carbon to 1 part nitrogen before screening the material. The compost shall be registered through the South Dakota Department of Agriculture as a soil amendment.

D. Hydroseeding Tackifier Amendment

Hydro seeding tackifier amendment shall be a safe, non-toxic polymer that can be used with any paper or fiber mulch products. The anionic high molecular weight polymer binds the hydroseeding media to the soil particles. The tackifier shall be hydropholic and allow water into the mulch matrix. The tackifier shall be a synthetic material that is free of weed seed and any organic containments. It shall be compatible with biostimulants, fertilizers and surfactants. It shall not clump in the tank and clog the spray nozzle. The tackifier lubricates the slurry mix and tightens the slurry stream and will increase the shooting distance. The tackifier will break down from UV light in 5-6 weeks.

The tackifier can be used as a temporary dust abatement in non-traffic areas. The tackifier can be applied as a temporary soil stabilizer to protect against erosion. The tackifier can be applied through hydraulic equipment for clarifying sediment/holding ponds.

72.3 CONSTRUCTION REQUIREMENTS

A. Grass Hay or Straw Mulch

1. Placing Mulch

The rate of application shall be 42000 lbs. per acre unless otherwise specified by the Engineer. The mulch shall be placed within forty-eight (48) hours after the seeding has been completed. Mulching operations shall not be performed during periods of high winds, which preclude the proper placing of the mulch. The placing of mulch shall begin on the windward side of the areas to be covered.

The mulch shall be blown from a machine designed for that purpose and uniformly distributed over the seeded areas. The machine for placing the mulch shall be of an approved type, which will blow or eject, by constant air stream, a controlled amount of mulch. The machine shall cause a minimum of cutting or breakage in the length of the mulch.

Mulch containing excessive moisture, which prevents uniform feeding through the machine, shall not be used. Bales shall be broken up and loosened as they are fed into the blower to avoid placing of matted or unbroken lumps.

Mulch shall be placed uniformly over the seeded areas at the plan specified rates. The rates of application may be varied with the approval of the Engineer. Approximately ten percent (10%) of the soil surface shall be visible through the mulch blanket prior to mulch tiller (punching) operation.

Any existing cover left in place, as specified in Section 70.3CD.2, shall be used as mulch, and the specified rate for mulching shall be reduced to leave ten percent (10%) of the soil surface visible through the mulch blanket and a loose thickness of cover of about one (1) inch prior to the punching operation.

Excessive cover, which will smother seedlings of small seeded grasses, shall be prohibited. The Engineer may order the placement of mulch on any area where protection is considered necessary to forestall erosion or encourage turf establishment.

B. Punching

Immediately following application, the mulch shall be punched into the soil by a mulch tiller consisting of a series of dull, flat disks with notched or cutout edges. The disks shall be approximately twenty (20) inches in diameter, one-fourth (1/4) inch thick, and shall be spaced approximately eight (8) inches apart and shall be fitted with scrapers.

Working width of the tiller shall not exceed six (6) feet per member, but may be operated in gangs of not over three (3) members. The tiller shall be operated on contour, except on slopes 3:1 or steeper, where the Engineer may order diagonal operation and, if necessary, dual drive wheelers or crawler tread on the tractor to minimize side slip and rutting damage to slopes.

Tiller members shall be ballasted to push mulch into the soil approximately three (3) inches with ends exposed above the soil surface. When light disking is required in existing cover so the seed can be drilled into a depth of one (1) to one and one-half (1 1/2) inches, the tiller members shall be ballasted to push mulch into the soil with the ends exposed above the soil surface. The Engineer shall determine on construction the depth to which the mulch is to be punched.

The mulch tiller shall follow as closely as possible behind the mulch blower. Mulch shall not be blown when the wind velocity causes appreciable displacement before it can be anchored by the mulch tiller. The Engineer may require more than one (1) pass of the mulch tiller or diagonal passes where necessary to assure adequate anchoring.

C. Fiber Mulch

Rate of application shall be 2000 lbs. per acre unless otherwise specified by the Engineer. Excessive thickness of mulch, which will smother grass seedlings, shall be avoided.

Mulch shall be placed on a given area as soon as possible, or within 48 hours after seeding.

D. Compost

~~Apply a minimum one-part compost to three parts soil and maximum of one part compost to two parts soil. (Soil quality, except for cobble size rocks, is irrelevant). Soil and compost must be incorporated by blending in stockpiles or tilling in after surface application. Let the product cool to the ambient ground temperature prior to planting.~~Apply a ¼ inch layer of compost over the seeded area, then water to protect against hot, dry weather or drying winds.

E. Hydroseeding Tackifier Amendment

1. Hydro seeding

When using as a tackifier with paper or fiber mulch, add three pounds per acre. Slowly pour the tackifier into the water and thoroughly mix in the tank. Add mulch, seed, fertilizer and any other components in the tank and thoroughly mix.

2. Straw Tacking

Apply three pounds per acre with 750 pounds of wood or paper mulch.

3. Temporary Dust Control

Apply to non-traffic areas at a rate of three pounds per acre with 1000 gallons of water. On slopes of 4:1 to 2:1 apply at a rate of 6-12 pounds per acre.

4. Clarifying sediment/holding ponds

Slowly pour two-three pounds of tackifier into 1000 gallons of water while the tank is agitating. Thoroughly mix for 15 minutes and spray to one surface acre of water.

F. Care During Construction and Final Acceptance

Traffic, either foot, equipment, or vehicular, shall be kept to a minimum over the seeded and mulched areas.

The Contractor shall, prior to acceptance of the project, re-mulch any area on which the original mulch has been displaced as a result of excessive wind, water, or other causes.

72.4 METHOD OF MEASUREMENT

Mulching will be measured to the nearest square yard.

72.5 BASIS OF PAYMENT

Mulching will be paid for at the contract unit price per square yard, which will be full compensation for furnishing, hauling, placing, and punching, and for materials, equipment, labor, tools, and incidentals necessary. Hydroseeding Tackifier Amendment shall be included in the contract unit price bid per square yard for mulching when used as a mulch tackifier.

Payment for mulching, seeding, and fertilizing will all be included under the same bid item.

Compost and Wood Chip Mulch will be paid for at the contract unit price per ton, which will be full compensation for furnishing, hauling, and placing, and for materials, equipment, labor, tools, and incidentals necessary.

When Hydroseeding Tackifier Amendment is being used for temporary dust control or clarifying sediment/holding ponds the Hydroseeding Tackifier Amendment will be paid for at the contract unit price per acre which will be full compensation for furnishing, hauling, and placing, and for materials, equipment, labor, tools, and incidentals necessary.

END OF SECTION