

Fertilizer, lime or other soil amendments shall be applied separately to the site after the soil test results have been forwarded to the Engineer. Amendments may be incorporated by disk, harrow or rake, at a depth of 2 to 4 inches, in the same operation.

The prepared surface of topsoil and soil shall be free of gullies, rivulets, crusting, caking and satisfactorily shaped and finished as provided in 203. This work shall be performed prior to seeding.

All seed bed areas, including slopes flatter than 2 to 1 shall be free of rock and other foreign material 2 inches (50 mm) or greater in any dimension. All seed bed areas with 2 to 1 slopes or steeper shall be free of rock and other foreign material 3 inches (75 mm) or greater in any dimension but shall not be fine graded. After topsoil is placed, the area shall be tracked back and forth to achieve good contact between soil and slope surface. Surface shall be raked smooth prior to seeding.

All seed bed areas in front of residences, commercial properties, etc. between curb and sidewalks or as indicated on the plans, shall be free of all stones 1 inch (25 mm) or greater in any dimension. Seed bed shall have a smooth surface. Hand raking will be required if site is inaccessible to machines or if machines do not provide results equivalent to hand raking.

Topsoil is not required for shale cuts steeper than 2:1. Shale cuts steeper than 2:1 shall be allowed to deteriorate to a soil type surface texture prior to seeding.

870.14 Seeding Methods. Seeding operation shall not be performed unless the area is properly prepared. Except with permission of the Engineer, the Contractor shall seed cool season grasses between August 15 to October 30. If permanent seeding is necessary prior to these months, seeding rates shall be increased by 10 percent. All seeding performed between October 15 and March 15 shall be temporary seeding in accordance with Supplemental Specification 877. Permanent seeding may be performed with permission for projects completed within the same calendar year.

Seeding shall be done prior to or concurrently with 660, 667, 668 or 670.

Crown vetch seeding shall not be permitted during September or October.

Wildflower classes 5 and 6 shall be seeded in the fall (September - October). Spring seeding may be allowed with approval. Class 4 shall be seeded during the spring (March - May) when possible.

Seeding native grasses and wildflowers in Classes 4, 5 and 6 shall be done with a rangeland type or native seed grass drill. Seeding natives shall be performed as a split rate application with no less than two passes in different directions. Broadcast seeding shall only be allowed with approval of the Engineer. Cultipacking or rolling will be required when broadcast seeding.

All seed shall be thoroughly mixed and then evenly sown over the prepared areas at the rates listed in Table 2. No seed shall be sown during high winds. Equipment shall be operated in a manner to ensure complete coverage of the entire area to be seeded. Immediately after sowing, the area shall receive a light raking followed by rolling on flat surfaces or tracking by dozer on slopes to

insure good seed soil-contact.

Seed and fertilizer mixtures in Classes 1, 2, 3 and 7 shall be applied with a hydraulic seeder between March 1 and October 15.

870.15 Mulching Operation. Materials used for mulching shall be straw, wood fiber, organic compost, or biosolids compost. Materials shall be reasonably free of weed seed, foreign materials, or other injurious materials that would prohibit seed germination.

Within 24 hours after any given area is seeded, straw mulch shall be evenly placed over all seeded areas at the following rates:

Seeding from March 15 to October 15:	2 tons per acre (0.5 t/1000 m ²)
Seeding from October 15 to March 15:	3 tons per acre (0.7 t/1000 m ²)

Mulching materials shall be kept in place with asphalt emulsion applied at a minimum rate of 60 gallons per ton (250 L/t) of mulch or with tackifiers per the manufacturer's recommendations. An additional application at a rate of 30 gallons per ton (125 L/t) of mulch shall be applied to the shoulder area, starting at the berm edge and extending out for a distance of 10 feet (3m). Asphalt emulsion for vegetative mulch shall conform to 702.04. Emulsion shall be nontoxic to plants and shall be so prepared that will not change in transportation or storage.

Displaced mulch shall be replaced at once but only after all work proceeding the seeding operation or that which was damaged during the mulching operation has been acceptably repaired.

870.16 Wood Fiber Mulch. Fiber mulch shall consist of pure wood fibers manufactured expressly from clean wood chips. The chips shall be processed in such a manner as to contain no lead paint, varnish, printing ink, petroleum based compounds or seed germination inhibitors. Fiber shall not be produced from unknown origin recycled material such as sawdust, paper, cardboard or residue from chlorine bleached pulp and paper mills.

The cellulose wood fiber mulch must maintain uniform suspension in water under agitation and shall blend with grass seed, fertilizer and other additives to form a homogeneous slurry. Tackifiers shall be manufacturer approved.

Using standard hydraulic mulching equipment, pure wood fiber mulch, tackifier, seed and fertilizer slurry shall be applied evenly over the soil surface in a one-step operation. Hydraulic application shall occur from March 1 to October 15 only. Applications rates are as follows:

Flat surfaces:	35 pounds per 1000 sq ft (170 kg/1000 m ²)
Slopes 3:1 or less:	46 pounds per 1000 sq ft (225 kg/1000 m ²)

All slopes subject to windy conditions shall be seeded and mulched by hydraulic methods only.

870.17 Compost. Compost may be applied as a mulch instead of straw or wood fiber. Grass seed shall be thoroughly mixed with the compost and distributed over the prepared seed bed area using pneumatic equipment. Compost/seed mixture shall be applied to a minimum 1/4 inch (6 mm)