

SECTION 1120 - GRADING AND SEEDING

PART 1 - GENERAL

1.1 SCOPE OF WORK:

Provide all labor, materials, equipment and services required to grade, fertilize, seed, and mulch as specified herein.

PART 2 - PRODUCTS

2.1 TOPSOIL:

The material shall consist of well-shredded, loose, friable, loamy topsoil without admixture of subsoil or refuse. For topsoil to be considered loamy, that fraction passing the Number 10 sieve shall contain not more than 40 percent clay. Acceptable topsoil shall contain not less than 3 percent or more than 20 percent organic matter as determined by loss on ignition of samples oven dried to constant weight at 100 degree C (212 F).

2.2 FERTILIZER:

Fertilizer shall be lawn or turf grade of 12-12-12.

2.3 SEED:

A. Urban Areas:

All areas to be seeded that are considered to be urban in character (residential, commercial, industrial, recreational, etc.) shall be seeded with the following mixture: (Percentages are by weight).

30 percent Kentucky Bluegrass (*Poa pratensis*)
30 percent Creeping Red Fescue (*Festuca rubra*)
20 percent Annual Ryegrass (*Lolium multiflorum*)
20 percent Perennial Ryegrass

The seed shall be thoroughly mixed and then evenly sown over the prepared areas at the rate of 5 pounds per 1000 square feet. Seed shall be sown dry or hydraulically.

B. Non-urban Areas:

All areas not urban in nature with slopes less than or equal to 3 to 1 shall be seeded with the following mixture:

30 percent Kentucky Bluegrass (*Poa pratensis*)
40 percent Kentucky 31 Fescue (*Festuca arundinacea* var. Ky. 31)
30 percent Perennial Ryegrass (*Lolium perenne*)

The seed shall be thoroughly mixed and then evenly sown over the prepared areas at the rate of 5 pounds per 1000 square feet. Seed shall be sown dry or hydraulically.

C. Other areas:

All areas with slopes greater than 3 to 1 shall be seeded with the following mixture:

30 percent Crown Vetch (*Coronilla varia*)
60 percent Perennial Ryegrass (*Lolium perenne*)
10 percent Annual Ryegrass

The seed shall be thoroughly mixed and then evenly sown over the prepared areas at the rate of 3 pounds per 1000 square feet. Seed shall be sown dry or hydraulically.

2.4 MULCH:

Mulch shall be straw, hay or wood fiber. The material shall be reasonably free of weed seed and such foreign materials as may detract from their effectiveness as mulch or injurious to desired plant growth.

2.5 SODDING:

Sod shall be provided in high erosion areas or where required to satisfy easement conditions, as directed by the ENGINEER. Sod shall meet the requirements of ODOT 660, and shall be well-rooted Kentucky Bluegrass (*Poa pratensis*) or Canadian Bluegrass (*Poa compressa*), containing a growth of not more than 30 percent of other grasses and clovers, and free from all noxious weeds such as wild mustard, thistles, quack grass, and Johnson grass, and reasonably free from dandelions and crab grass. Preparation, placement, and maintenance of sod shall be in accordance with ODOT 660.

PART 3 - EXECUTION

3.1 PREPARATION OF SEED BED:

A. Topsoil from Excavations:

If suitable topsoil is available as part of the excavated material, it shall be removed, stored, and used to backfill to the original depth of the topsoil or a minimum of four inches (4") whichever is greater. All grass, weeds, roots, sticks, stones, and other debris are to be removed and the topsoil carefully brought to the finished grade by hand raking.

B. Topsoil from Off-Site for Urban Areas:

If suitable topsoil is not available on any part of the project or if there is a deficiency of suitable topsoil, the CONTRACTOR shall furnish a minimum of four inches (4") of shredded topsoil to be used as a seed bed in all urban areas.

C. Non-topsoil:

If suitable topsoil is not available on any part of the project or if there is a deficiency of suitable topsoil, the trench backfill may be used as a seed bed in non-urban areas, except where otherwise indicated on the plans. After the backfill has been given a reasonable time to settle, it shall be graded off to the finished grade and harrowed to a depth of 3 inches. All grass, weeds, roots, sticks, stones and other debris are to be removed and the soil carefully brought to the finished grade.

3.2 FERTILIZING:

Fertilizer shall be uniformly applied to all areas to be seeded at the rate of 20 pounds per 1000 square feet. Either dry or liquid fertilizer may be used and shall be distributed in an even pattern over the specified area and then thoroughly disced, harrowed or raked into the soil to be a depth of not less than 2-inches unless otherwise directed by the Engineer. Immediately before sowing the seed, the Contractor shall rework the surface until it is a fine, pulverized, smooth seed bed, varying not more than 1-inch in 10 feet.

3.3 SEEDING:

Immediately after sowing, the area shall be raked, dragged or otherwise treated so as to cover the seed to a depth of approximately 1/4 inch. The operation of seed sowing shall not be performed when the ground is frozen or muddy, or when the soil or weather conditions would prevent the proper soil preparation and subsequent operations as specified. All seeding performed between October 15 and March 15 shall be temporary seeding as outlined in these specifications. However, for projects to be completed in the same calendar year, permanent seeding may be performed with permission of the Engineer. Sowing of Crown Vetch shall not be permitted during September or October.

3.4 MULCHING:

Within 48 hours after any given area is seeded, mulching material shall be evenly placed over all seeded areas at the rate of approximately 2 tons per acre for straw, or 3 tons per acre for hay, when seeding is performed between the dates of March 15 and October 15, and at the approximate rate of 3 tons per acre for straw, or 4 ½ tons for hay, when seeding is performed between the dates of October 15 and March 15 of the succeeding year.

Mulching materials shall be kept in place with asphalt emulsion applied at a minimum rate of 60 gallons per ton of mulch or by methods approved by the Engineer. Emulsion shall be non-toxic to plants and shall be so prepared that it will not change in transportation or storage. Mulching which is displaced shall be replaced at once but only after the seeding or other work which preceded the mulching and which work was damaged as a result of displacement of mulching material has been acceptably required.

3.5 MAINTENANCE:

All seeded areas shall be carefully maintained and tended by the Contractor, watering as necessary to secure a good turf. Settled areas shall be filled, graded, and reseeded. The Contractor shall be responsible for the condition of the seeded areas for a period of one (1) year from the date of final acceptance of the project, except for conditions unrelated to construction activities.

3.6 TEMPORARY SEEDING:

The CONTRACTOR shall provide all labor, material, tools, and equipment required to fertilize and seed in a good workmanlike manner the areas where shown on the plans or where directed by the ENGINEER and as specified herein. Temporary seeding is required for areas of high erosion potential and all disturbed areas planned to remain idle for forty-five (45) days or more.

A. Fertilizing:

Fertilizer (12-12-12) shall be uniformly applied to all areas to be seeded at a rate of 20 pounds per 1000 square feet.

B. Seeding:

All areas to be seeded shall be seeded on the same day as the backfill is completed. Seed and fertilizer shall be covered to a depth of 1-inch. A disk harrow, or other suitable equipment as approved by the ENGINEER, shall be used to cover the seed and fertilizer. Seed shall be annual ryegrass (*Lolium multifolium*) and shall be applied at the rate of 5 pounds per 1000 square feet.

PART 4 - BASIS OF PAYMENT

Grading and seeding are not pay items, unless a separate bid item is shown on the proposal forms. Temporary seeding is not a pay item, unless a separate bid item is shown on the proposal forms. Unless separate bid items are included for this work, all associated costs shall be included in the bid prices for the pipe. Sodding, where required by the plans or ENGINEER, shall be paid for at the square foot unit price indicated on the proposal forms. No payment will be made for sodding required where the CONTRACTOR encroaches beyond the right-of-way and easements or other work limits provided for the project.

END OF SECTION