

SECTION 32 92 01

SEEDING AND SODDING

PART 1 GENERAL

1.1 SCOPE OF WORK

- A. The area to be grassed and mulched along the work disturbed area shall include all damaged cover over the backfilled trench and area adjacent thereto irrespective of the cause of damage, whether it be from handling of pipe, trenching or driving equipment.
- B. Where required by the NCDOT encroachment permit, areas along the work shall be grassed and mulched in accordance with Section 1660, of the latest edition of the State of North Carolina Department of Transportation "Standard Specifications for Roads and Structures".

1.2 QUALITY ASSURANCE

- A. Requirements
 - 1. It is the intent of this Specification that the Contractor is obliged to deliver a satisfactory stand of grass as specified. If necessary, the Contractor shall repeat any or all of the work, including grading, fertilizing, watering, and seeding or sodding at no additional cost to the Owner until a satisfactory stand is obtained.
- B. Satisfactory Stand
 - 1. For purposes of grassing, a satisfactory stand of grass is herein defined as a full lawn cover over areas to be seeded or sodded, with grass free of weeds, alive and growing, leaving no bare spots larger than $\frac{3}{4}$ square yard within a radius of ten (10) feet.

1.3 SUBMITTALS

- A. Provide technical data as required for shop drawings on all materials or installation procedures required under this Section.
- B. When required by the Engineer, submit representative topsoil samples for analysis by a private laboratory to determine nutrient deficiencies and outline a proper fertilization program.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Fertilizer

1. Fertilizer shall be 10-10-10 at a rate of 1,000 pounds per acre of uniform, free-flowing granules. Fertilizer shall be a standard product complying with State and Federal fertilizer laws.
 2. Percentages of nitrogen, phosphorus and potash shall be 10-10-10 unless required otherwise based on laboratory testing on the actual soils.
 3. Fertilizer shall be delivered to the site, mixed as specified, in the original unopened standard size bags showing weight, analysis and name of manufacturer. Containers shall bear the manufacturer's guaranteed statement of analysis, or a manufacturer's certificate of compliance covering analysis shall be furnished to the Engineer. Store fertilizer in a weatherproof place and in such a manner that it will be kept dry and its effectiveness will not be impaired.
 4. Superphosphate shall be composed of finely ground phosphate rock as commonly used for agricultural purposes containing not less than twenty (20) percent available phosphoric acid.
- B. Lime
1. Description: Agricultural dolomitic limestone containing a minimum of 85 percent of combined calcium and magnesium carbonates with 60% passing a #60 mesh sieve and 95% passing a #10 mesh sieve.
- C. Seed
1. Seed shall have 97% purity and 90% germination guarantee. All seed must meet the requirements of the North Carolina Department of Agriculture. Bags shall be labeled to describe the composition, purity, germination, and the presence of restrictive or prohibited agents. Damp or moldy seed will be rejected.
 2. Seed shall be sown during the following dates at the following pound per acre rates. On a calm day and preferably by machine, but if by hand, only by experienced workmen.
 - a. For soils with good moisture retention from February 15 to April 30 or September 1 to October 31. Seed with 80 lbs. tall Fescue, 50 lbs. un-hulled Common Bermuda Grass, 40 lbs. Kobe Lespedeza.
 - b. For soils with poor moisture retention from April 1 - July 15, seed with 50 lbs. un-hulled Common Bermuda Grass, 5 lbs. Centipede Grass and 10 lbs. German Millet.
 - c. Temporarily seeding all other times (to be reseeded at the first available date listed in a or b above), 120 lbs. rye (grain), 50 lbs. Kobe Lespedeza.
 3. Hydroseed may be utilized if approved by the Engineer.
- D. Organic Fiber Blanket in yard and lawn areas that are not sodded, the areas disturbed shall be re-established by securing straw, excelsior, coconut, or wood fiber blankets over the seed bed to aid moisture retention and seed germination.
- E. Sod
1. Sod shall be Bermuda Grass, Centipede Grass, St. Augustine Grass or Zoysia Grass, of firm texture having a compacted growth and good root development as approved.
 2. Sod shall be approved by The North Carolina Sod Producers Association and absolutely true to varietal type, and free from weeds or other objectionable vegetation, fungus, insects, and disease of any kind.

3. Before being cut and lifted the sod shall have been mowed three times with the final mowing not more than a week before cutting into uniform dimensions.

F. Mulch

1. Rate of application specified herein shall correspond to depth not less than one inch or more than three inches according to texture and moisture content of mulch material.
2. Mulch shall consist of small grain straw or other acceptable material and shall have been approved by the Engineer before being used. All mulch shall be reasonably free from mature seedbearing stalks, roots, or bulblets of Johnson Grass, Nutgrass, Sandbur, Wild Garlic, Wild Onion, Bermuda Grass, Crotalaria, and Witchweed, and free from an excessive amount of restricted noxious weeds as defined by the North Carolina Board of Agriculture at the time of use of the mulch, and there shall be compliance with all applicable State and Federal domestic plant quarantines. Straw mulch that is matted or lumpy shall be loosened and separated before being used.

G. Topsoil

1. Topsoil shall be a natural, fertile, friable, productive soil from naturally well drained areas in the immediate vicinity with a PH between 5 and 9. It shall not contain any substances that may be harmful to grass growth. Topsoil which has been stockpiled from trenching or excavations may be used provided it meets the above requirements. Topsoil delivered to the site in a frozen or muddy condition shall be rejected.

H. Water

1. It is the Contractor's responsibility to water the site, as required during seeding and sodding operations and until the work has reached final completion. The Contractor shall make whatever arrangements may be necessary to ensure an adequate supply of water to meet the needs for his work. The Contractor shall also furnish all necessary hose, equipment, attachments and accessories for the adequate irrigation of lawns and planted areas as may be required.

PART 3 EXECUTION

3.1 SHOULDER STABILIZATION, FERTILIZING, SEEDING, MULCHING, AND SODDING

- A. The Contractor shall protect and restore road shoulders, ditch banks and other natural or artificial slopes as directed by the NCDOT encroachment permit or City of Wilmington right of way permit.
- B. Shoulder Stabilization, Fertilizing, Seeding, Mulching, and Sodding requirements shall conform in all respects to those specified above.

3.2 GRASS AND SHRUBBERY PLOTS

- A. Grass plots and graded areas shall be restored to the condition existing prior to making the excavation. All shrubbery, ornamental trees and other planting shall be fully protected. If it is necessary to remove any shrubbery or planting to accomplish the

work, it shall be satisfactorily replaced before the work will be accepted. A 10-10-10 fertilizer shall be applied to all replaced sod at a rate of 50 pounds per 1,000 square feet.

- B. The areas in which the grass plots and shrubbery are to be replaced shall contain sufficient moisture, as determined by the Engineer, for optimum results after being placed. The areas shall be kept in a moist condition for no less than three weeks. The moistened condition shall extend at least to the full depth of the rooting zone.

3.3 NEW SOD PLACEMENT

- A. Whenever a suitable area has been graded and requires sodding, the Contractor shall, when directed by the Engineer, proceed at once with the sodding of the available areas. Sodding shall be incorporated into the Project at the earliest practical time in the life of the contract. No sod which has been cut for more than forty-eight (48) hours shall be used unless specifically authorized by the Engineer after his careful inspection thereof. Any sod which is not placed within twenty-four (24) hours after cutting shall be stacked in an approved manner and properly maintained.
- B. The sod shall be placed on the prepared surface, with edges in close contact. Stake sod in place by driving stakes flush with the sod, on all slopes 2:1 or steeper, in drainage channels, on other areas shown in the plans, and on any areas that are in such condition that there is danger of sod slipping. Perform staking concurrently with sod placement and before tamping with sound wooden stakes which are approximately one inch square or one inch in diameter and not less than 12" in length. Place enough stakes to prevent slipping or displacement of the sod. Drive stakes perpendicular to the slope. Where backfill is necessary on cut slopes to obtain a uniform sodding area, provide stakes of sufficient length to reach at least 3" into the solid earth underneath the backfill. On all other areas, use metal staples in place of wooden stakes. The metal staples should be 12" long, made of 11-gauge new steel wire so as not to bend when pinned or driven through the sod. Shorter staples may be used with the approval of the Engineer.
- C. Place, stake and staple the sod where necessary, then tamp or roll carefully and firmly by acceptable means. If rolled, roller shall weigh 150 lb/ft of roller width. Take extreme care to prevent the installed sod from being torn or displaced.
- D. Where sodding is used in drainage ditches, the setting of the pieces shall be staggered, such as to avoid a continuous seam along the line of flow. Along the edges of such staggered areas the offsets of individual strips shall not exceed six inches. In order to prevent erosion caused by vertical edges at the outer limits, the outer pieces of sod shall be tamped so as to produce a feather-edge effect.
- E. Any pieces of sod which, after placing, show an appearance of extreme dryness shall be removed and replaced with new sod.
- F. Ditch banks disturbed during the construction of ditch and creek crossings shall be sodded when directed by the Engineer or when called for in the permit requirements.
- G. Watering and fertilizing requirements shall conform in all respects to those specified above.

END OF SECTION