Greenville County
EC-03

SEEDING/STABILIZATON NOTES
Regulatory Requirements

Temporary Stabilization

Temporary Stabilization is defined as a condition where exposed soils or disturbed areas are provided a temporary vegetative and/or non-vegetative protective cover to prevent erosion and sediment loss. Temporary stabilization may include temporary seeding, geotextiles, mulches, and other techniques to reduce or eliminate erosion until either final stabilization can be achieved or until further construction activities take place to re-disturb this area.

Initiating Temporary Stabilization

Initiate temporary stabilization by mulch or temporary stabilization by seeding within 7 calendar days where land disturbing activities have temporarily ceased on the Project and will not resume for a period exceeding 14 calendar days. Where land disturbing activities on a portion of the Project are temporarily ceased, and the land disturbing activities are resumed within 14 days, temporary stabilization measures are not required to be initiated on that portion of the Project.

Temporary stabilization by seeding is required if the Project will not be worked for a period longer than 60 days.

Initiate temporary stabilization measures as soon as practicable for areas where initiating temporary stabilization measures within 7 days is infeasible (e.g., where snow cover, frozen ground, or drought conditions preclude stabilization).

Temporary Stabilization

Acceptance of Temporary Stabilization

Before acceptance of temporary stabilization by the regulatory agency and the Design Engineer or Landscape Architect, temporary stabilization is required that is sufficient to control erosion for a given area and length of time before the next phase of construction or the establishment of permanent seeding is to commence. A satisfactory stand of temporary stabilization meeting the requirements of this Specification is required regardless of the time of the year the work is performed.

Temporary Cover by Mulch

Use temporary cover by mulch where it is not feasible or practicable to bring an area to final slope and grade. Finish the surface so that permanent seeding can be performed without subsequent disturbance by additional grading.

Temporary Cover by Seeding

Following the preparation of the seedbed, sow seed per the seeding Tables and apply an appropriate Mulch prior to a rainfall event that compacts the seedbed. The CONTRACTOR may add granular lime and fertilizer as necessary to enhance growth.

Final Stabilization

Final Stabilization is defined that all land-disturbing activities at the construction site have been completed and that on all areas not covered by permanent structures, either

(1) A uniform (e.g., evenly distributed, without large bare areas) permanent vegetative cover with a density of 70 percent has been established, or

(2) Equivalent permanent stabilization measures (such as the use of landscaping mulch, riprap, pavement, and gravel) have been implemented to provide effective cover for exposed portions of the construction site not stabilized with permanent vegetation.

Final stabilization by vegetation must be achieved with permanent perennial vegetation prior to issuing the Notice of Termination (NOT).

Permanent Seeding

Initiate permanent seeding within 7 calendar days where land disturbing activities have permanently ceased on the Project. Where land disturbing activities are resumed within 14 days, stabilization measures are not required to be initiated on that portion of the Project. Initiate permanent seeding measures as soon as practicable for areas where initiating permanent seeding measures within 7 days is infeasible (e.g., where snow cover, frozen ground, or drought conditions preclude stabilization).

When performing permanent seeding for permanent detention ponds, ensure that the detention pond is cleaned of any deposited sediment and graded to the required permanent detention basin configuration. Ensure the seedbed for the permanent seeding is established in accordance with this Specification.

Acceptance of Permanent Seeding

Before acceptance, a uniform perennial vegetative cover with a density of 70% of each square yard of the seeded area is required. A well developed root system must be established to sufficiently survive dry periods and winter weather and be capable of reestablishment in the spring.

Permanent Seeding Installation

Following the preparation of the seedbed, perform permanent seeding per the seeding Tables and apply an appropriate Mulch within 5 working days and/or prior to a rainfall event that compacts the prepared seedbed. If a rain event occurs that compacts or erodes the seedbed prior to performing permanent seeding, the seedbed must be re-prepared prior to conducting permanent seeding. Add fertilizer and lime as required by a soil test.

Sod

Initiate Sod applications within 7 calendar days where land disturbing activities have permanently ceased on the Project. Initiate Sod applications measures as soon as practicable for areas where initiating Sod applications within 7 days is infeasible (e.g., where snow cover, frozen ground, or drought conditions preclude stabilization). Use Sod on slopes less than 2H:1V.

Acceptance of Sod

Acceptance is contingent on establishing a satisfactory stand of perennial grass. Sod application areas are acceptable when all requirements including maintenance are met and a healthy, evenly colored, viable stand of grass is established. A satisfactory stand of grass must have a root system that is sufficient to survive dry periods and winter weather and is capable of re-establishing in the spring.

Do not use sodding on slopes steeper than 2H:1V, and if sodding is mowed, do not place on slopes greater than 3H:1V. Install Warm Season Sod between March 1st and September 1st. Install Cool Season Sod anytime during the year as long as the soil is not frozen. Do not place Sod on:

- Soil that is frozen and/or when the 10-day forecasted low temperature remains below 35 degrees Fahrenheit;
- Soil that is excessively wet;
- Soil that is excessively dry (periods of heat or drought) unless watering is specified;
- Soil that is composed of compacted clay; and
- Soil than has been treated with pesticides.

Sod Bed Preparation

- Ensure the Sod bed is uniform and conforms to the finished grade of the Project.
- Loosen the Sod Bed to a minimum depth of 3 inches before placing Sod.
- Furnish and place topsoil or compost in the Sod Bed in areas where the existing Sod Bed has little or no topsoil,
- Lay Sod when Sod Bed is moist. Moisten dry Sod Beds before sod is laid.

Sod Material

Provide Sod with living, well-established growth, with a dense root mat of predominant grass Specified. Provide vigorous, well rooted, healthy turf, free from disease, insect pests, weeds, other grasses, stones, and any other harmful or detrimental materials.

Sod Installations

Ensure Sod is not installed until the end of the Project or when final stabilization is achieved on adjacent areas of the Project that drain or discharge to the Sod application.

Amendments

Lime

Agricultural Granular Lime

Use agricultural grade, standard ground limestone for all permanent seeding applications and Sodding applications.

Applying Granular Lime

A soil analysis is recommended prior to application. Apply at a rate within ±10% of weight recommendation of soil analysis. Do not apply more than 2,500 lbs/acre of in a single application.

Fast Acting Lime

Use fast acting liquid and/or dry forms of lime for all temporary seeding and permanent seeding applications.

Fertilizer

Granular Fertilizer

Use for all permanent seeding applications and all Sodding applications. Proper mixture is dependent on the existing soil conditions and it is recommended that a soil analysis be performed if the soil conditions are uncertain in the area of fertilizer application.

Use fertilizer that incorporates a minimum of 50% water insoluble (slow release) nitrogen. Animal by-product or municipal waste fertilizers are NOT acceptable under this Specification.

Unless a soil analysis is performed to determine otherwise, a good rule of thumb granular fertilizer to apply in the Upstate of South Carolina is 10-10-10. In no case should a 20-20-20 fertilizer be used due to the potential burning of the seedbed.

Compost Soil Amendment

For seedbeds that have little or no topsoil, are highly acidic, or are lacking sufficient nutrients to sustain a health stand of grass place, and mix certified weed free compost into the seedbed to ensure a good stand of grass.

Biological Growth Stimulant

Use for all permanent seeding, Sodding, and temporary seeding applications. Animal by-products or municipal waste products are NOT acceptable. Liquid fertilizers are not acceptable, and can cause burning of the seedbed if applied as such.

Seeding Dates and Rates of Application

Perform seeding during the periods and at the rates specified in the seeding tables. Do not use temporary cover by seeding or permanent seeding for projects when:

- The ground is frozen and/or when the 10-day forecasted low temperature remains below 35 degrees Fahrenheit;
- The ground is excessively wet; or
- The ground is excessively dry (periods of drought) unless watering is specified.

During periods of adverse conditions, use temporary cover by mulch.

Seedbed Preparation

- Ensure that the areas receiving permanent seeding are uniform and conform to the finished grade of the Project.
- Perform minor shaping and evening of uneven and rough areas outside of the graded area in order to provide for more effective erosion control and for ease of subsequent mowing operations.
- Loosen the seedbed (including cut slopes) to a minimum depth of three (3) inches before initiating permanent seeding and temporary seeding.
- An acceptable method of preparing the seedbed on slopes is vertically tracking the seedbed up and down the slope with proper equipment.
- Remove stones larger than two and one-half (2½) inches in any dimension, large dirt clods, roots, or other debris brought to the surface. seedbed up and
- Use compost if good seedbed material is not located on site or results of the soil test show the seedbed is excessively nutrient deficient to the extent of requiring costly fertilizer additions and or have excessively low PH values (lower than 5.0).
- Consider the use of mechanical seed drills to perform permanent seeding on areas where temporary seeding or temporary cover by mulch was previously utilized.

Mulch

Required for all permanent seeding, temporary seeding, and temporary cover applications. Do not use Mulch in areas where concentrated flow is expected. Use HECP Mulch for temporary seeding and temporary cover applications when the application area will require additional grading prior to permanent seeding. Do not use Erosion Control Blankets (ECB) or Turf Reinforcement Matting (TRM) in this situation.

Wood Chip Mulch

Wood chip mulch is NOT acceptable for seeding applications. If wood chip mulch is used for temporary cover by mulch, it must be removed prior to performing permanent seeding

Straw or Hay Mulch with Tackifier

Use material that is certified weed. Do not use on slopes steeper than 4H:1V. Anchor using one of the following tacking agents:

- Organic or Chemical Tackifier
- Hydraulic Straw Tackifiers
- Emulsified Asphalt

Applying Straw or Hay Mulch

Uniformly apply material at the rate of 2,000 pounds per acre.

Compost Mulch

Only use from producer that participates in the USCC STA program. Do not use materials that have been treated with chemical preservatives as a compost mulch. Do NOT use mixed municipal solid waste compost.

Hydraulic Erosion Control Products (HECPs)

Use as an allowable mulch for temporary cover by mulch, temporary cover by seeding or permanent cover by seeding applications. Do not use as a channel liner or for areas receiving concentrated flow.

Temporary Erosion Control Blankets (ECB) and Turf Reinforcement Matting (TRM)

Consider for permanent seeding application areas with steep slopes or areas where there is a significant erosion problem or potential for erosion. Use in areas where concentrated flow is expected. Do not use for temporary seeding applications when the application areas will require additional grading or modifications prior to permanent seeding.

Protection of Structures

Cover any parts of bridges, culverts, guardrails, signs, sidewalks, curb and gutters, catch basins, pipe ends, and other structures as necessary to prevent discoloration before spraying HECPs, organic or chemical tackifiers.

Slope Interruption Devices

The maximum allowable continuous slope length for straw or hay mulch, HECPs, compost and ECB applications is 50 feet. Slope interruption devices (such as sediment tubes) or TRMs are required for continuous slope length longer than 50 feet.

Inspection

Ensure that all seed, Sod, fast acting lime, biological growth stimulants, agricultural granular lime, granular fertilizer, straw and hay mulch, HECPs, compost mulch, and ECBs are applied as Specified. The Design Engineer or Landscape Architect, or member of the Design Engineer or Landscape Architect staff must document on-site that these materials are applied correctly by completing and signing proper forms.

Maintenance

Perform all maintenance necessary to keep Stabilization areas in a satisfactory condition until the work is finally accepted. This includes mowing, repairing areas of erosion and washes, and applying additional seed, fertilizer, and mulch to areas where a satisfactory stand of grass has not been achieved.

Mowing

Mow road shoulders and medians when vegetation reaches a height of approximately 18 to 24 inches. Do not perform excessive mowing of Slopes resulting in ruts, furrows or grooves. Do not perform excessive mowing of Slopes that inhibits the establishment of the slope vegetation.Do not perform mowing when soil and weather conditions are such that rutting or other damage to the Project may occur.

Ensure mowing results in a uniform vegetation height of 4 to 6 inches, unless otherwise directed. When utilizing a nurse crop for permanent seeding, mow Millet (no lower than 3 inches) once it reaches a height of 18 inches to reduce competitiveness with the permanent vegetation. Mow Wheat and Rye Grain (no lower than 3 inches) once they reach a height of 6-8 inches to reduce competitiveness with permanent vegetation.

SEE SEEDING AND MULCHING SCHEDULES SHEET 10.

SOUTH CAROLINA TIDEWATER ENGINEERING INC. No.5610 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No.34207

7-7-17

TIDEWATER ENGINEERING, INC.
200 PLANTATION CHASE, SUITE 14
ST. SIMONS ISLAND, GEORGIA 31522
PHONE (912) 268-2164 FAX (912) 289-0361

DURBAN GROUP
106 Foster Avenue Charlotte, NC 28203
Tel. 704.469.7100

REV.	DATE:	DESCRIPTION	BY:

FAMILY DOLLAR
1145 WHITE HORSE ROAD
GREENVILLE, SC 29605

SEEDING AND STABILIZATION NOTES

DRAWN:	pss
APPROVED:	pss
DATE:	6-1-17
PROJ#:	17-016
SCALE:	AS SHOWN

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