

B-4010**Project Special Provisions
Erosion Control****Ashe County****Seeding And Mulching****(6)**

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined by the Engineer. All rates are in pounds per acre (kilograms per hectare).

August 1 - June 1

100# (110kg) Tall Fescue
 15# (17kg) Kentucky Bluegrass
 15# (17kg) Hard Fescue
 500# (560kg) Fertilizer
 4000# (4500kg) Limestone

May 1 - September 1

100# (110kg) Tall Fescue
 15# (17kg) Kentucky Bluegrass
 15# (17kg) Hard Fescue
 25# (28kg) Kobe or Korean Lespedeza
 500# (560kg) Fertilizer
 4000# (4500kg) Limestone

Approved Tall Fescue Cultivars:

Adventure	Adventure II	Amigo	Anthem
Apache	Apache II	Arid	Austin
Brookstone	Bonanza	Bonanza II	Chapel Hill
Chesapeake	Chieftain	Coronado	Crossfire II
Debutante	Duster	Falcon	Falcon II
Finelawn Petite	Finelawn	Finelawn I	Genesis
Grande	Guardian	Houndog	Jaguar
Jaguar III	Kentucky 31	Kitty Hawk	Monarch
Montauk	Mustang	Olympic	Pacer
Phoenix	Pixie	Pyramid	Rebel
Rebel Jr.	Rebel II	Renegade	Safari
Shenandoah	Tempo	Titan	Tomahawk
Trailblazer	Tribute	Vegas	Wolfpack
Wrangler			

Approved Kentucky Bluegrass Cultivars:

Adelphi	Baron	Bristol	Challenger
Columbia	Fylking	Glade	Kenblue
Merit	Plush	Ram I	Rugby
Sydsport	Touchdown	Vantage	

Approved Hard Fescue Cultivars:

Aurora	Bardur	Crystal	Reliant	Scaldis
Spartan	Valda	Waldina	Warwick	

On cut and fill slopes 2:1 or steeper add 25# (28kg) Rye Grain November 1 - March 1.

On cut and fill slopes 2:1 or steeper add 30# (35 kg) Sericea Lespedeza January 1 - December 31.

Fertilizer shall be 10-20-20 analysis. Upon written approval of the Engineer, a different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis.

Temporary Seeding:

Fertilizer shall be the same analysis as specified for "Seeding and Mulching" and applied at the rate of 400 pounds (450kg) and seeded at the rate of 50 pounds per acre (55kg per hectare). Kobe or Korean Lespedeza, German Millet, or Browntop Millet shall be used in summer months and rye grain during the remainder of the year. The Engineer will determine the exact dates for using each kind of seed.

Fertilizer Topdressing:

Fertilizer used for topdressing shall be 16-8-8 grade and shall be applied at the rate of 500 pounds per acre (560 kg per hectare). Upon written approval of the Engineer, a different analysis of fertilizer may be used provided the 2-1-1 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 16-8-8 analysis.

Supplemental Seeding:

The kinds of seed and proportions shall be the same as specified for "Seeding and Mulching", and the rate of application may vary from 25# to 75# per acre (28kg to 85kg per hectare). The actual rate per acre (hectare) will be determined by the Engineer prior to the time of topdressing and the Contractor will be notified in writing of the rate per acre (hectare), total quantity needed, and areas on which to apply the supplemental seed. Minimum tillage equipment, consisting of a sod seeder shall be used for incorporating seed into the soil as to prevent disturbance of existing vegetation. A clodbuster (ball and chain) may be used where degree of slope prevents the use of a sod seeder.

Mowing:

The minimum mowing height on this project shall be six inches (150 mm).

Lawn Type Appearance

All areas adjacent to lawns must be hand finished as directed by the Engineer to give a "lawn type appearance". Remove all trash, debris, and stones 3/4 inch (19 mm) and larger in diameter or other obstructions that could interfere with providing a smooth "lawn type appearance". These areas shall be reseeded to match their original vegetative conditions, unless directed otherwise by the Field Operations Engineer.

Specialized Hand Mowing:

The work covered by this section consists of specialized hand mowing around or under fixed objects, including but not limited to guardrails, signs, barriers and slopes in a method acceptable to the Engineer.

The work of specialized hand mowing shall be completed with mechanically powered trimmers, string trimmers, hand operated rotary mowers, or self-propelled mowers of sufficient size and quality to perform the work timely and efficiently.

The quantity of mowing to be performed will be affected by the actual conditions which occur during the construction of the project. The quantity of mowing may be increased, decreased or eliminated entirely at the direction of the Engineer. Such variations in quantity will not be considered as alterations in the details of construction or a change in the character of the work.

The quantity of specialized hand mowing to be paid for will be the actual number of man hours worked while hand mowing along the surface of the ground, at the direction of the Engineer. Where an area has been mowed more than once, at the direction of the Engineer, separate measurement will be made each time the area is mowed.

Payment will be made under:

Specialized Hand Mowing..... HR

High Quality Waters:

The South Fork New River has been identified as high quality waters. This designation requires special procedures to be used for clearing and grubbing, temporary stream crossings, and grading operations within the "Environmentally Sensitive Areas" identified on the plans. This also requires special procedures to be used for seeding and mulching and staged seeding.

Seeding and Mulching:

Seeding and mulching shall be performed in accordance with Section 1660 of the Standard Specifications and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment.

Seeding and mulching shall be performed on the areas disturbed by construction immediately following final grade establishment. No appreciable time shall lapse into the contract time without stabilization of slopes, ditches and other areas within the "High Quality Water Zone(s)" as indicated on the E.C. Plans.

Stage Seeding:

The work covered by this section shall consist of the establishment of a vegetative cover on cut and fill slopes as grading progresses. Seeding and mulching shall be done in stages on cut and fill slopes which are greater than 20 feet (6 meters) in height or greater than 2 acres (0.8 hectares) in area. Each stage shall not exceed the limits stated above.

All work described above will be paid for at the contract unit prices established in the contract for the work involved. Additional payments will not be made for the requirements of this section as the cost for this work should be included in the contract unit prices for the work involved.

Environmentally Sensitive Areas:

Clearing and Grubbing:

In areas identified on the erosion control plans as "Environmentally Sensitive Areas", the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Section 200, Article 200-1, in the Standard Specifications. The "Environmentally Sensitive Area" shall be defined as a 50 foot (16 meter) buffer zone on both sides of the stream, measured from top of streambank. Only clearing operations (not grubbing) shall be allowed in this buffer zone until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation.

Grading:

Once grading operations begin in identified "Environmentally Sensitive Area", work will progress in a continuous manner until complete. All construction within these areas must progress in a continuous manner such that each phase is complete and areas permanently stabilized prior to beginning of next phase. Failure on the part of the Contractor to complete any phase of construction in a continuous manner in "Environmentally Sensitive Areas" as specified will be just cause for the Engineer to direct the suspension of work in accordance with Section 108-7 of the Standard Specifications.

Temporary Stream Crossings:

Any crossing of streams within the limits of this project must be accomplished in accordance with Section 107-13(b) of the Standard Specifications.

Minimize Removal Of Vegetation

The Contractor shall minimize removal of vegetation at stream banks and disturbed areas within the project limits as directed by the Engineer.

Stockpile Areas

The Contractor shall install and maintain erosion control devices sufficient to contain sediment around any erodible material stockpile areas as directed by the Engineer.

Waste Areas And Borrow Sources:

Payment for temporary erosion control measures, except those made necessary by the Contractor's own negligence or for his own convenience, will be paid for at the appropriate contract unit price for the devices or measures utilized in borrow sources and waste areas.

No additional payment will be made for erosion control devices or permanent seeding and mulching in any commercial borrow or waste pit. All erosion and sediment control practices which may be required on a commercial borrow or waste site will be done at the Contractor's expense.

Gravel Construction Entrance:**Description:**

The work covered by this section consists of furnishing, installing, and maintaining and removing any and all material required for the construction of a Gravel Construction Entrance.

Materials:

The filter fabric shall meet the requirements of Section 1056 for Type 2 Fabric.

Stone shall be Class A Stone and shall meet the requirements of Section 1042 for Stone for Erosion Control, Class A.

Construction:

The Contractor shall install a Gravel Construction Entrance in accordance with the details in the plans and at locations as directed by the Engineer.

Method Of Measurement:

Gravel Construction Entrance will not be measured for payment under this section.

Basis Of Payment:

Payment for installation of Filter Fabric shall be paid for at the contract unit price per square yard (square meter) "Filter Fabric for Drainage".

Payment for installation of Class A Stone shall be paid for at the contract unit price per ton (metric ton) "Stone for Erosion Control, Class A".

Such price and payment shall be considered full compensation for all work covered by this provision including all materials, construction, maintenance, and removal of Gravel Construction Entrance as directed by the Engineer.

Special Stilling Basin(s):

Description:

The work covered by this section consists of furnishing, placing, and removing a special stilling basin(s) as directed by the Engineer. The special stilling basin(s) shall be used to filter pumped water during construction of drilled piers.

Materials:

The filter fabric shall meet the requirements of Section 1056 for Type 2 Fabric.

Sediment control stone shall meet the requirements of Section 1005. Install stone according to the detail shown on the plans.

The special stilling basin(s) shall be a water permeable fabric bag that traps sand, silt, and fines as sediment laden water is pumped into it. This device shall be constructed such that it is portable and can be used adjacent to each drilled pier.

The special stilling basin(s) shall be a bag constructed to a minimum size of 10' x 15' made from a nonwoven fabric. It shall have a sewn-in 8 in. (maximum) spout for receiving pump discharge. The bag seams shall be sewn with a double needle machine using a high strength thread. The seams shall have a minimum wide width strength as follows:

Test Method	Minimum Specifications
ASTM D-4884	60 lb/in

The fabric used to construct the bag shall be stabilized to provide resistance to ultra-violet degradation and meet the following specifications for flow rates, strength, and permeability:

Property	Test Method	Units	Minimum Specifications
Weight	ASTM D-3776	oz/yd	8.0
Grab tensile	ASTM D-4632	lb	200.0
Puncture	ASTM D-4833	lb	130.0
Flow rate	ASTM D-4491	gal/min/sf	80.0
Permittivity	ASTM D-4991	1/sec	1.5
UV Resistance	ASTM D-4355	%	70.0

Construction:

The Contractor shall install the special stilling basin in accordance with the details in the plans and at locations as directed by the Engineer.

The special stilling basin(s) shall be placed so the incoming water flows into and through the bag without causing erosion. The neck or spout of the bag shall be tied off tightly to stop the water from flowing out of the bag without going through the walls.

The special stilling basin(s) shall be replaced and disposed of when it is 3/4 full of sediment or when it is impractical for the bag to filter the sediment out at a reasonable flow rate. Prior approval from the Engineer must be received before removal and replacement.

The Contractor shall be responsible for providing a sufficient quantity of bags to contain silt from pumped effluent during construction of drilled piers.

Method Of Measurement:

The quantity of special stilling basin(s) to be paid for will be the actual number of bags used during drilled pier construction as specified and accepted by the Engineer.

Measurement of filter fabric will be made by the number of square yards (square meters) as measured over the surface of the ground over which filter fabric has been acceptably placed.

The quantity of sediment control stone will be measured according to Article 1610-4.

Basis Of Payment:

Payment for special stilling basin will be as follows:

Filter Fabric for Drainage	SY(SM)
Sediment Control Stone	TON (MT)
Special Stilling Basin	EA

Such price and payment will be full compensation for all work covered by this provision, including but not limited to, furnishing all materials, placing and maintaining the special stilling basin(s), and removal and disposal of silt accumulations and bag.