SECTION 02270 - EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 QUALITY ASSURANCE

A. Comply with applicable requirements of State of South Carolina and local officials having jurisdiction. The specifications and drawings are not represented as being comprehensive, but rather convey the intent to provide complete slope protection and erosion/water quality protection for both the Owner's and adjacent property.

B. Establish erosion control measures/devices prior to grading operations. Measures/devices shall be maintained during all phases of construction. On-site areas which are subject to severe erosion and off-site areas which are especially vulnerable to damage from erosion and/or sedimentation are to be identified and receive special attention.

C. All land disturbing activities are to be planned and conducted to minimize the size of the area to be exposed at any one time, and the length of time of exposure.

D. Surface water runoff originating upgrade of exposed areas shall be controlled to reduce erosion and sediment loss during the period of exposure.

E. When the increase in the peak rates and velocity of storm water runoff resulting from and land disturbing activity is sufficient to cause accelerated erosion of the receiving stream bed, provide measures to control both the velocity and rate of release so as to minimize accelerated erosion and increased sedimentation of the stream.

F. All slopes with a slope of 3:1 or greater shall be maintained daily and compacted to prevent rutting of the surface. Vegetation as specified on the drawings shall be established immediately after the slope is established.

G. Clean out and dispose of all sediment retained or collected by erosion control measures/devices once the storage capacity is reduced by one half.

H. Inspections are required after every rainfall event of 0.50 inches in 24 hours and at least once every 7 days. Replacement of erosion control measures/devices shall be required if deemed necessary by the Architect/Engineer or governing official. Additional measures/devices shall be required if deemed necessary by governing officials.

PART 2 PRODUCTS

2.01 MATERIALS

A. Straw bales: Bales shall be either wire bound or string tied with bindings orientated around the bale.

B. Crushed stone for stabilized construction entrance shall be in conformance with ASTM C-33, size no. 2 (2-1/2" to 1-1/2").

C. Silt fence shall be assembled using Mirafi 100x filter fabric (or approved equal) with galvanized wire mesh fence or industrial netting. Metal posts shall be placed at 8'-0" O.C.

D. All erosion control measures/devices shall conform to the State of South Carolina specifications.

PART 3 EXECUTION

3.01 STRAW BALE BARRIERS

A. Excavation shall be to the width of the bale and the length of the proposed barrier to a minimum depth of 4 inches.

B. Bales shall be placed in a single row, lengthwise on proposed line, with ends of adjacent bales tightly abutting one another. In swales and ditches the barrier shall extend to such a length that the bottoms of the end bales are higher in elevation than the top of the lower middle bale.

C. Staking shall be accomplished to securely anchor bales by driving at least two stakes or rebar through each bale to a minimum depth of 12 inches.

D. The gaps between bales shall be filled by wedging straw in the gaps to prevent water from escaping between the bales.

E. The excavated soil shall be backfilled against the barrier. Backfill shall conform to ground level on the downhill side and shall be built up to 4 inches on the uphill side. Loose straw shall then be scattered over the area immediately uphill from the straw barrier.

3.02 SILT FENCING

A. Excavate a 6 inch by 6 inch trench along the upstream side of the desired fence location.

B. Drive fence posts a minimum of 1'-6" into the ground.

C. Lay lower 12" of silt fence onto the trench, 6" deep and 6" wide. Backfill trench and compact.

D. Overlap joints in fabric at post to prevent leakage of silt at seam.

3.03 TEMPORARY EROSION CONTROL GRASSING

A. Spread uniformly over disturbed areas at the following application rates:
   1. 50 lbs./1,000 sq.ft.
   2. FERTILIZER 30 lbs./1,000 sq.ft.
   3. MULCH 2-1/2 tons/acre
      a. Spring/Summer: Bermuda/rye mixture 5 lbs./1,000 sq.ft.
      b. Fall/Winter: Fescue/rye mixture 12 lbs./1,000 sq.ft.
   4. Final grassing will be as specified in the Division 2 Specification “Landscaping”.

3.04 INLET PROTECTION

A. Install silt fence or straw bales around inlet as specified herein and shown on the drawings.

3.05 DUST CONTROL

A. Dust generated from the Contractor's performance of the work, either inside or outside the right-of-way, shall be controlled by the Contractor by applying either water or calcium chloride.

B. Water and calcium chloride shall be provided in the amounts and locations as ordered by the Architect/Engineer.

3.06 STABILIZED CONSTRUCTION ENTRANCE

A. Stone size: Use ASTM designation C-33, size No. 2 (1-1/2" to 2-1/2"). Use crushed stone.

B. Length: As effective, but not less than 50 feet.

C. Thickness: Not less than eight (8) inches.

D. Width: Not less than full width of all points on ingress or egress, but not less than 12 feet.

E. Washing: When necessary, wheels shall be cleaned to remove sediment prior to entrance onto public right-of-way. When washing is required it shall be done on an area stabilized with crushed stone which drains into an approved sediment trap or sediment basin. All sediment shall be prevented from entering any storm drain, ditch, or watercourse through the use of sand bags, gravel, boards or other approved methods.

F. Maintenance: The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed, or tracked onto public rights-of-way must be removed immediately.

END OF SECTION 02270