SECTION 02270
SEDIMENTATION AND EROSION CONTROL

PART 1: GENERAL

1.1 SCOPE

A) Furnish labor, materials, equipment, and incidentals necessary to perform all installation, maintenance, removal and area cleanup related to erosion and sedimentation control work as specified herein and as required by other local, state, and federal permits.

B) The work shall include, but not necessarily be limited to, installation of temporary access ways and staging areas, silt fences, stone filter boxes, stone filter berms, sediment removal and disposal, device maintenance, removal of temporary devices, temporary mulching, excelsior matting, and final cleanup.

C) The work shall include, but may not be limited to, development, submittal, and approval of the CDPHE and the 5-2-1 Drainage Authority's Stormwater Construction Permits.

1.2 RELATED WORK

A) Trenching, Backfilling, and Compaction are included in Section 02226 of the Standard Specifications.

B) Surface Restoration is included in Section 02501 of the Standard Specifications.

1.3 STATUTORY REQUIREMENTS

A) Adequacy of sedimentation and erosion control practices shall be solely the responsibility of the Contractor. If the Owner and Engineer identifies that such measures are inadequate, additional measures may be ordered by the Engineer and the Contractor shall make immediate corrections at Contractor's expense.

1.4 SUBMITTALS

A) Submit sedimentation and erosion control plan and technical product literature for all commercial products to be used for sedimentation and erosion control in accordance with Section 01300 of the Standard Specifications at least 21 days before mobilization. The sedimentation and erosion control plan shall include, at a minimum, the following:

1) Facilities, products, and procedures to meet the requirements of erosion protection and sediment control requirements of all required project permits, and requirements in these specifications.

2) Drawings that clearly show erosion and sediment control devices.

3) Submit certification of weed free status for proposed straw and mulch.

4) Submit copies of the CDPHE and 5-2-1 Drainage Authority's Stormwater Construction Permits.

1.5 QUALITY ASSURANCE

A) Install and maintain all sedimentation control devices necessary to prevent the movement of sediment from the construction site to off site areas or into the stream system via surface runoff or underground drainage systems. Measures in addition to those shown on the Drawings necessary to prevent the movement of sediment off site shall be installed, maintained, removed, replaced, if necessary, following each precipitation or snowmelt event that results in runoff. No additional charges to the Owner will be considered.

PART 2: PRODUCTS

2.1 MATERIALS

A) Crushed stone for sediment filtration devices shall consist of sound, durable stone, free of any foreign material, angular in shape, free from structural defects and comparatively free of chemical decay. The stone shall be maximum size of 2-in and a minimum size of ½-in.

B) Silt Fence

1) Steel posts shall be a minimum of 42" in length, steel T-posts or U-posts or minimum 2" diameter wood posts.

2) Silt fence fabric shall be a woven, polypropylene, ultraviolet resistant material such as Mirafi 100X as manufactured by Mirafi, Inc., Charlotte, North Carolina or equal.

3) Adequate tie wires or staples for securing silt fence fabric to posts shall be used.

C) One quarter inch woven wire mesh shall be galvanized steel or hardware cloth.

D) Straw mulch shall be utilized on all newly graded areas to protect areas against washouts and erosion. Straw mulch shall be comprised of threshed straw of oats, wheat, barley, or rye that is certified weed free, and free of mold or other objectionable material. The straw mulch shall contain at least 50 percent by weight of material to be 10-inch or longer. Straw shall be in an air-dry condition and suitable for placement with blower equipment.

PART 3: EXECUTION

3.1 INSTALLATION

A) Silt Fence Installation

1) Silt fences shall be positioned as necessary to prevent off site movement of sediment produced by construction activities or as directed by the Engineer.

2) Dig trench approximately 6-in wide and 6-in deep along proposed fence lines.

3) Drive metal stakes, 8-ft on center (maximum) at back edge of trenches. Stakes shall be driven an adequate depth into ground to support fence.

4) Hang filter fabric on posts carrying to bottom of trench with about 4-inch of fabric laid across bottom of trench. Stretch fabric fairly taut along fence length and secure with tie wires 12-in on center both ways.

5) Backfill trench with excavated material and tamp.

B) Construct filter boxes from ¼-in woven wire mesh or hardware cloth and wood. Fill with crushed stone and place around drainage channels, spoil piles, and storm drain inlets. An alternate method is to ring each inlet with a silt fence.

C) Staging areas and non-paved access ways shall be surfaced with a minimum depth of 4-in of crushed stone.

3.2 MAINTENANCE AND INSPECTION

A) Inspections

1) Visually inspect all sedimentation control devices once per week and promptly after every rainstorm. If such inspection reveals that additional measures are needed to prevent movement of sediment to offsite areas, Contractor shall promptly install additional devices as needed. Maintain sediment controls promptly, whenever needed.

B) Device Maintenance

1) Silt Fences- Remove accumulated sediment once it builds up to one-half the height of the fabric. Replace damaged fabric, or patch with a 2-ft minimum overlap. Make other repairs as necessary to ensure that the fence is filtering all runoff directed to the fence.

2) Filter Boxes - Replace crushed stone when it becomes saturated with silt.

3) Add crushed stone to access ways and staging area as necessary to maintain a firm surface free of ruts and mud-holes.

3.3 REMOVAL AND FINAL CLEANUP

A) Once site has been fully stabilized against erosion, remove sediment control devices and all accumulated silt. Dispose of silt and waste materials in proper manner. Re-grade all areas disturbed during this process and stabilize against erosion.

PART 4: SPECIAL PROVISIONS

4.1 MEASUREMENT AND PAYMENT

A) When not listed in the proposal, all "SEDIMENTATION AND EROSION CONTROL" costs will be considered incidental work for which no separate payment will be made.

END OF SECTION