

SECTION 2270 SLOPE PROTECTION AND EROSION CONTROL

PART 1.0 – GENERAL

1.01 SCOPE OF WORK

This work includes all erosion control required and necessary during the course of construction and the maintenance of erosion control throughout the first winter following completion of construction. Refer to the project-specific Storm Water Pollution Prevention and Erosion Control Plan included in the Drawings for further requirements.

1.02 QUALITY ASSURANCE

- A. Notification - No site work shall be performed without notification of the Engineer at least 2 full working days prior to commencement of work.
- B. Site Information - The Contractor shall satisfy himself as to the nature and quantity of materials to be moved and other work to be performed, and any differences between site conditions shown on the drawings and actual conditions immediately prior to commencement of work.

PART 2.0 – PRODUCTS

- 2.01 Culvert Pipe - Pipe for use as a temporary culvert shall be sufficient size and strength for the intended, i.e. temporary roadway crossing, non-structural drainage diversion, or other such use meeting the intent of California RWQCB Best Management Practices, Erosion and Sediment Control (BMP ESC 22). Pipe that is to be part of the permanent construction shall conform to the Plans.
- 2.02 Filter Cloth - Filter cloth to be used as part of temporary erosion control shall be commercially available product manufactured for such applications.
- 2.03 Silt Fence - Fence material shall be wood posts, steel posts, filter fabric and backing fabric manufactured for temporary applications and meeting the requirement of BMP ESC 50.
- 2.04 Straw Bales - Straw bales shall be commercially available baled straw, with bale ties sufficiently strong to hold the bales intact for the temporary erosion control period and meeting the intent of BMP ESC 51.
- 2.05 Hydroseed - Hydroseed shall consist of a mixture of seed, fertilizer, and stabilizing emulsion, or any combination therefore, with fiber and water. The seed mix shall be as shown on the plans or other, proposed by a reputable local licensed landscape contractor familiar with the soil and climate conditions. The proposed seed mix shall be submitted to the Engineer for approval at least two work days prior to expected use. Hydroseeded areas shall have uniform coverage and color.

- 2.06 Erosion Control Mat - Erosion control mats or blankets are biodegradable or synthetic mats that are used for temporary or permanent stabilization of disturbed soils. Erosion control mats to be used are North American Green C125.
- 2.07 Jute Netting - Shall be cloth of a uniform plain weave of undyed and unbleached single-jute yarn, 48 inches in width (plus or minus 1 inch) and weighing an average of 0.9 pounds per square yard of cloth (plus or minus 5 percent). The yarn shall be of a loosely twisted construction and shall not vary in thickness by more than one half its normal diameter.

PART 3.0 – EXECUTION

- 3.01 Drainage - During construction, all fill surfaces shall be sloped to provide positive surface drainage to prevent ponding of water. In the event of oncoming rainy weather, the Contractor shall roll the surface with smooth rollers or rubber-tired equipment to seal the surface against excessive infiltration of water. Temporary drains and ditches shall be provided by the Contractor as necessary.
- 3.02 Erosion Control during Construction - The Contractor shall take all measures necessary to provide and maintain erosion control devices in order to protect slope areas and adjacent properties from storm damage and flood hazard originating from the site. Temporary erosion control devices such as straw bale barriers and silt fences shall be maintained throughout the construction period. The Contractor shall maintain slopes in their as-graded condition until all slopes are in satisfactory compliance with the job specifications.
- 3.03 Temporary Access - The Contractor shall construct temporary access roads only in the locations shown on the Plans and approved in advance by the Engineer and Owner. Temporary culverts shall be installed where necessary to maintain drainage, such as along existing gutters and natural drainage way crossings to conform to the intent of BMP ESC 22. All fills placed for temporary roads shall be compacted to at least 85% relative density, or greater, sufficient to minimize sloughing and erosion.
- 3.04 Silt Fences - Silt fences shall be constructed to encircle each immediate work area, around trees and other features designated to be protected and in other locations required to provide effective erosion protection. Silt fences shall be built as specified under BMP ESC 50.
- 3.05 Straw Bale Barriers - Straw Bale Barriers shall be constructed in the locations shown on the Plans and at other locations required for effective control of erosion. Straw Bale Barriers shall be constructed as specified under BMP ESC 51.
- 3.06 Hydroseeding - Upon completion of all earthwork, the excavated and graded surfaces, including haul roads and other areas disturbed during construction, shall be hydroseeded in accordance with Caltrans Standard Specification, Section 20-3.

The surface shall be roughened as necessary and hydroseeded with components compatible with the soil and climate conditions.

- 3.07 Erosion Control Mat – Following placement of hydroseed, all constructed, re-graded or disturbed slopes 2:1 or steeper shall be covered with erosion control mats. Adjacent lengths of netting shall overlap 4 inches along all edges and shall be secured to the slope by wooden pegs, wire pins, or other approved devices to prevent movement of the netting after it has been placed.
- 3.08 Jute Netting - Prior to the completion of the work, all constructed, re-graded or disturbed slopes 4:1 or steeper shall be covered with jute netting. Adjacent lengths of netting shall overlap 4 inches along all edges and shall be secured to the slope by wooden pegs, wire pins, or other approved devices to prevent movement of the netting after it has been placed.
- 3.09 Permanent Surface Drainage - The Contractor shall furnish and install permanent surface drainage including earth lined ditches above the retaining walls as shown on the Plans. Surface water collected in the V-ditch shall be collected in drop inlets and discharged into the existing storm drainage system.
- 3.10 First Winter Maintenance - After completion of all other work, the Contractor shall maintain all surface and subsurface drainage facilities and erosion control measures for six months or through the following April 15, whichever is longer. Such maintenance shall include, but not be limited to, repair of erosion gullies, reseeding of eroded areas, backfilling, clean out of ditches, re-excavation of drainage swales and sediment basins, and other work necessary to fully control surface and subsurface water.

END OF SECTION