

Practice: 570 - Stormwater Runoff Control

Scenario: #1 - Stormwater Runoff Control

Scenario Description: This scenario involves installation of silt fence, straw wattles, coconut fabric mats or jute mats, and synthetic mats on the construction site as part of one conservation engineering system. The combined system shall include two or more components and will address the resource concerns related with concentrated flow erosion, excessive sediment in surface waters as well as protection of existing inlets and structures depending on the combination. This practice may also be used in the installation of rain gardens, permeable pavement, and/or bioswales.

Before Situation: The combination scenario is applicable in all construction sites and watersheds. Which component would apply in a particular situation would depend on the site condition, slope etc.

After Situation: When properly installed, the combination structures slow down runoff flow velocity and reduce high velocity erosion, detain and filter the stormwater runoff and provide a controlled release to the downstream areas. In seeded areas, straw wattles also enable seeds to settle and germinate, aiding the revegetation process. By filtering overland runoff and holding sediment on the slope, Straw Wattles also help to protect lakes, ponds, rivers and streams from sediment pollution. When properly installed, coconut mats slow and spread the overland water flow and provide a filtering effect. They also help to reduce sediment transport and stabilize the construction area. Silt fence are installed along the downstream perimeter of a construction site to prevent sediment transport off construction areas. A typical silt fence consists of a synthetic filter fabric stretched between a series of fence stakes, with the stakes installed on the downstream side of the perimeter and the fabric trenched into the soil on the upstream side and backfilled. All erosion control blankets and straw mulches will be covered under 484 - Mulching. If earthen basins are warranted for water quality improvement purposes, use Sediment Basin (350) or Dam (402) as appropriate. If seeding is warranted for water quality and erosion control purpose, use Critical Area Planting (342).

Scenario Feature Measure: Area of construction site

Scenario Unit: Acre

Scenario Typical Size: 1

Total Scenario Cost: \$1,605.03

Scenario Cost/Unit: \$1,605.03

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Equipment Installation

Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.33	480	\$1,120.56
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.43	1.5	\$32.14

Materials

Silt Fence	43	Silt Fence with support post. Includes materials, equipment and labor	Foot	\$0.81	100	\$80.73
Wattles, straw, 8-9"x25'	1405	Tubes of rice straw, approximately 8-9 inch in diameter, 25 feet long . Includes materials and shipping only (including stakes).	Foot	\$0.95	100	\$94.65

Labor

General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$21.71	10	\$217.09
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$39.23	1.5	\$58.85

Mobilization

Mobilization, Material, distance > 50 miles	1043	Mobilization cost of materials for special cases where the distance from the supplier delivery point to the job site exceeds 50 miles. The costs for shipping by UPS or bulk freight shipping to a location within 50 miles of the job site have already been included in the component price.	Dollar	\$1.00	1	\$1.00
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