

Practice: 484 - Mulching

Scenario: #1 - Natural Material, straw

Scenario Description:

Application of straw mulch or other other state approved natural material to reduce erosion and facilitate the establishment of vegetative cover. Mulch provides full coverage and is typically used with critical area planting. 2 tons per acre of straw applied and anchored with light tillage equipment, treader, knifed in, etc.

Before Situation:

Typical scenario is applying mulch on 1 acres of a disturbed site around a newly constructed structural practice. The potential for soil erosion is high and mulch is needed to stabilize the soil and facilitate the establishment of vegetative cover.

After Situation:

Straw mulch has been applied to areas needing mulch. Erosion and sedimentation is reduced, water and soil quality is protected, and vegetative cover is established.

Scenario Feature Measure: Area Covered by Mulch

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$444.20

Scenario Cost/Unit: \$444.20

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$24.41	2	\$48.82
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$38.70	1	\$38.70
Labor						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$22.38	2	\$44.76
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	\$18.71	4	\$74.84
Materials						
Straw	1237	Small grain straw (non organic and certified organic). Includes materials only.	Ton	\$118.54	2	\$237.08

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Scenario: #2 - Erosion Control Blanket

Scenario Description:

Installation of erosion control blanket on critical areas with steep slopes, grassed waterways or diversions. Blanket is typically made of coconut coir, wood fiber, or straw, and is typically covered on both sides with polypropylene netting. Used to help control erosion and establish vegetative cover.

Before Situation:

There are areas of concentrated flow and a grassed waterway is being installed and seeded to permanent cover. Soil erosion is a concern and there is little to no vegetation.

After Situation:

The erosion control blanket is placed on concentrated flow areas and secured with ground staples. Soil erosion is minimized and vegetative cover is established.

Scenario Feature Measure: Total Area Mulched

Scenario Unit: Square Foot

Scenario Typical Size: 5,000

Scenario Cost: \$966.56

Scenario Cost/Unit: \$0.19

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
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	\$18.71	16	\$299.36
Materials						
Erosion Control Blanket, biodegradable	1213	Biodegradable erosion control blanket, typically a composite of natural fibers with reinforcing polymer netting. Materials and shipping only.	Square Yard	\$1.20	556	\$667.20

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Scenario: #3 - Tree and Shrub, squares

Scenario Description:

Barrier fabric or other suitable natural or synthetic mulch is installed with a new tree and shrub planting. Typically used to retain moisture during the installation of conservation practices. Rate is per tree/shrub and assumes 1 square yard of barrier fabric and 5 staples/tree.

Before Situation:

Site conditions vary and erosion and wildlife habitat have been identified as concerns. Fabric squares (as mulch) are added to address soil moisture and temperature issues. Sites are often remote and trees may not be planted in rows, requiring each tree to be mulched individually.

After Situation:

Barrier fabric squares are installed with 5 sod staples each, around individual trees and shrubs to retain moisture and regulate soil temperature.

Scenario Feature Measure: Number of Trees Mulched

Scenario Unit: Each

Scenario Typical Size: 100

Scenario Cost: \$232.00

Scenario Cost/Unit: \$2.32

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<i>Equipment/Installation</i>						
Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.32	100	\$232.00

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Scenario: #4 - Tree and Shrub, rolls

Scenario Description:

Barrier fabric or other suitable natural or synthetic mulch is installed with a new tree and shrub planting. Typically used to retain soil moisture, control soil temperature, and minimize erosion by providing cover during the installation of conservation practices. Two 300 foot tree rows will use barrier fabric to conserve moisture. Rate is per linear foot (300' roll x 2= 600') and 3 staples/pins per tree.

Before Situation:

Site conditions vary, and erosion and wildlife habitat have been identified as concerns. Barrier fabric (as mulch) is added to address soil moisture loss. Sites are typically on field edges, each tree row to be mulched individually.

After Situation:

Barrier fabric rolls are installed with 3 metal pins/staples per tree. Moisture is retained, temperature controlled, and erosion is minimized.

Scenario Feature Measure: Number of Trees Installed

Scenario Unit: Linear Foot

Scenario Typical Size: 600

Scenario Cost: \$360.55

Scenario Cost/Unit: \$0.60

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$24.41	2	\$48.82
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	\$18.71	7	\$130.97
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$22.38	2	\$44.76
Materials						
Mulch, polyethylene plastic, 1.0 mil	1303	1.0 mil polyethylene plastic mulch, with anchoring. Includes materials and shipping only.	Square Yard	\$0.34	400	\$136.00

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Scenario: #5 - Hydro-mulching

Scenario Description:

Installation of mulch through hydraulic methods on critical areas with steep slopes, grassed waterways or diversions. The mulch is comprised of wood cellulose fiber pulp and may include seed, fertilizer, and other approved materials. Mulch is typically applied at a rate of 1500 pounds per acre as a slurry by using hydroseeding methods. Used to help control erosion and establish vegetative cover.

Before Situation:

Areas being seeded to permanent cover. Soil erosion is a concern and there is little to no vegetation.

After Situation:

The hydro-mulch is applied to appropriate areas as needed for vegetation establishment. Soil erosion is minimized and vegetative cover is established.

Scenario Feature Measure: Area Covered by Mulch

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$883.75

Scenario Cost/Unit: \$883.75

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<i>Equipment/Installation</i>						
Seeding Operation, hydroseeder	1291	Hydroseeding with typical 1500 to 3600 gallon seeder. Includes all costs for equipment, power unit, and labor.	Acre	\$883.75	1	\$883.75

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Scenario: #6 - Natural Materials, large area

Scenario Description:

Application of straw mulch or other other state approved natural material to reduce erosion and facilitate the establishment of vegetative cover on large areas including salt affected soils. Mulch provides full coverage and is typically used with critical area planting. 2 tons per acre of straw applied through mechanical methods.

Before Situation:

Typical scenario is applying mulch on large areas including salt affected soils after permanent cover planting. The potential for soil erosion is high and mulch is needed to stabilize the soil, reduce evaporative losses, and facilitate the establishment of vegetative cover.

After Situation:

Straw mulch has been applied to areas needing mulch. Erosion and sedimentation is reduced, evaporation losses are minimized, water and soil quality is protected, and vegetative cover is established.

Scenario Feature Measure: Area Covered by Mulch

Scenario Unit: Acre

Scenario Typical Size: 20

Scenario Cost: \$7,092.58

Scenario Cost/Unit: \$354.63

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Mulcher, straw blower	1305	Straw bale mulcher/blower to mechanically spread small or large straw bales. Labor not included.	Hour	\$47.37	20	\$947.40
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$24.41	22	\$537.02
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	\$18.71	20	\$374.20
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$22.38	22	\$492.36
Materials						
Straw	1237	Small grain straw (non organic and certified organic). Includes materials only.	Ton	\$118.54	40	\$4,741.60