

**Practice:** 575 - Trails and Walkways

**Scenario:** #4 - Rock/Gravel on Geotextile, Walkway

**Scenario Description:** A walkway with a rock and/or gravel surface treatment over a geotextile fabric foundation will be installed to facilitate the movement of animals, people, or off-road vehicles to provide or improve access to forage, water, working/handling facilities, and/or shelter; improve grazing efficiency and distribution; protect ecologically sensitive, erosive and/or potentially erosive sites; provide pedestrian or off-road vehicle access to agricultural, construction, or maintenance operations; or provide walkways for recreational activities or access to recreation sites. Costs include excavation, shaping, grading, rock and/or gravel, geotextile, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice. This practice applies on all lands where management of animal or human movement is needed to address soil erosion and water quality resource concerns. This practice applies to a walkway constructed for use by off-road vehicles, such as All-Terrain Vehicles or snowmobiles, which are not designed for use on public roads. It does not apply to roads constructed for movement of equipment or vehicles. Use NRCS Conservation Practice Standard Access Road (Code 560).

**Before Situation:** A beef operation moves cattle between pastures frequently. The existing earthen path is eroding and muddy.

**After Situation:** The typical walkway is 12 foot wide and 300 foot long and is constructed of rock and/or gravel on a geotextile fabric foundation. The walkway will require approximately 67 CY of excavation, 67 CY of aggregate gravel, 460 SY of geotextile fabric (1.15 x 400 SY to account for overlap), and 7200 square feet of vegetation of the disturbed area (1800 square feet) and spoil area ( 5400 square feet). Stream Crossing (Code 578) will be used when the walkway crosses a stream or shallow water area. All culverts for drainage features will be applied under Structure for Water Control (Code 587). Consider the use of water bars to control and direct water flow in the walkway per the criteria in Access Road (Code 560). Use Diversion (Code 362) to keep clean water away from the walkway, as appropriate. Fencing (Code 382) will be used when needed to control animal movement. The surface material for the walkway will be designed in accordance with the criteria in Heavy Use Area Protection (Code 561) but all materials are included in this scenario.

**Scenario Feature Measure:** Area of Walkway

**Scenario Unit:** Square Foot

**Scenario Typical Size:** 3600

**Total Scenario Cost:** \$6,635.64

**Scenario Cost/Unit:** \$1.84

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**Materials**

Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic Yard	\$40.43	67	\$2,709.01
Geotextile, non-woven, heavy weight	1210	Non-woven greater than 8 ounce/square yard geotextile with staple anchoring. Materials and shipping only.	Square Yard	\$4.15	460	\$1,911.05
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$121.11	0.45	\$54.50
Nitrogen (N), Ammonium Nitrate	69	Price per pound of N supplied by Ammonium Nitrate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.85	12	\$10.14
One Species, Cool Season, Annual Grass or Legume	2311	Cool season annual grass or legume. Includes material and shipping only.	Acre	\$39.29	0.3	\$11.79
Phosphorus, P2O5	73	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.66	15	\$9.89
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.50	15	\$7.44
Straw	1237	Small grain straw (non organic and certified organic). Includes materials only.	Ton	\$122.89	0.6	\$73.73
Three Species Mix, Cool Season, Introduced Perennial Grass	2315	Cool season, introduced grass mix. Includes material and shipping only.	Acre	\$46.58	0.3	\$13.97

**Labor**

Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$24.21	8	\$193.69
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	\$20.07	8	\$160.56

Skilled Labor	230	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$25.14	8	\$201.11
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#### Equipment Installation

Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$65.63	8	\$525.02
Earthfill, Dumped and Spread	51	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic Yard	\$2.93	67	\$196.45
Excavation, Common Earth, side cast, small equipment	48	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$1.89	67	\$126.69
Seeding Operation, Broadcast, Ground	959	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Includes equipment, power unit and labor costs.	Acre	\$12.53	0.3	\$3.76
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.62	8	\$172.96

#### Mobilization

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$253.88	1	\$253.88
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**Practice:** 575 - Trails and Walkways

**Scenario:** #5 - Rock/Gravel in GeoCell on Geotextile, Walkway

**Scenario Description:** A walkway with rock and or gravel in a cellular containment grid on a geotextile fabric foundation surface treatment is installed to provide or improve access to forage, water, working/handling facilities, and/or shelter; improve grazing efficiency and distribution; protect ecologically sensitive, erosive and/or potentially erosive sites; provide pedestrian or off-road vehicle access to agricultural, construction, or maintenance operations; or provide a walkway for recreational activities or access to recreation sites. Costs include excavation, shaping, grading, wood chip surfacing, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice. This practice applies on all lands where management of animal or human movement is needed to address soil erosion and water quality resource concerns. This practice applies to a walkway constructed for use by off-road vehicles, such as All-Terrain Vehicles or snowmobiles, which are not designed for use on public roads. It does not apply to roads constructed for movement of equipment or vehicles. Use NRCS Conservation Practice Standard Access Road (Code 560).

**Before Situation:** A beef operation moves cattle between pastures frequently. The existing earthen path is eroding and muddy.

**After Situation:** The typical walkway is 12 foot wide and 300 foot long and is constructed of rock and/or gravel in a cellular containment grid on a geotextile fabric foundation surface treatment. The walkway will require 89 CY of gravel for surfacing with 4 inches in the geocell and 4 inches on top for protection. Approximately 1800 square feet of disturbed areas along the sides of the walkway and 3600 sf of spread spoil material (spread 4" deep) will be vegetated. The walkway consist of approximately 89 CY of excavation and 400 SY of 4 inch geocell on a 460 SY of geotextile fabric foundation (with 15% overlap). Stream Crossing (Code 578) will be used where the walkway crosses a stream or shallow water area. Consider the use of water bars to control and direct water flow in the trail per the criteria in Access Road (Code 560). All culverts for drainage features will be applied under Structure for Water Control (587). Use Diversion (Code 362) to keep clean water away from the walkway, as appropriate. Fencing (Code 382) will be used when needed to control animal movement. The surface material will be designed in accordance with the criteria in Heavy Use Area Protection (Code 561) but all materials are included in this scenario.

**Scenario Feature Measure:** Area of Walkway

**Scenario Unit:** Square Foot

**Scenario Typical Size:** 3600

**Total Scenario Cost:** \$16,941.54

**Scenario Cost/Unit:** \$4.71

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**Materials**

Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic Yard	\$40.43	89	\$3,598.54
GeoCell, 4"	1054	4-inch thick cellular confinement system, three-dimensional, expandable panels made from high-density polyethylene (HDPE), polyester or another polymer material. Includes materials, labor and equipment for the geocell only, does not include backfill	Square Yard	\$22.64	400	\$9,056.38
Geotextile, non-woven, heavy weight	1210	Non-woven greater than 8 ounce/square yard geotextile with staple anchoring. Materials and shipping only.	Square Yard	\$4.15	460	\$1,911.05
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$121.11	0.45	\$54.50
Nitrogen (N), Ammonium Nitrate	69	Price per pound of N supplied by Ammonium Nitrate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.85	12	\$10.14
One Species, Cool Season, Annual Grass or Legume	2311	Cool season annual grass or legume. Includes material and shipping only.	Acre	\$39.29	0.3	\$11.79
Phosphorus, P2O5	73	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.66	15	\$9.89
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.50	15	\$7.44
Straw	1237	Small grain straw (non organic and certified organic). Includes materials only.	Ton	\$122.89	0.6	\$73.73
Three Species Mix, Cool Season, Introduced Perennial Grass	2315	Cool season, introduced grass mix. Includes material and shipping only.	Acre	\$46.58	0.3	\$13.97

**Labor**

Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$24.21	8	\$193.69
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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	\$20.07	8	\$160.56
Skilled Labor	230	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$25.14	8	\$201.11

#### Equipment Installation

Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$65.63	8	\$525.02
Earthfill, Dumped and Spread	51	Earthfill, dumped and spread without compaction effort, includes equipment and labor	Cubic Yard	\$2.93	89	\$260.96
Excavation, Common Earth, side cast, small equipment	48	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$1.89	89	\$168.29
Seeding Operation, Broadcast, Ground	959	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Includes equipment, power unit and labor costs.	Acre	\$12.53	0.3	\$3.76
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.62	8	\$172.96

#### Mobilization

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$253.88	2	\$507.76
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