

Practice: 560 - Access Road

Scenario: #1 - New earth road in dry, level terrain.

Scenario Description: Newly constructed compacted earth road in relatively level terrain and dry areas. Terrain should be considered level for slopes of 0-5%. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface material, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice.

Before Situation: An agricultural enterprise which requires, but does not have, a fixed travelway for equipment and vehicles for various resource activities and where use of equipment and vehicles within the enterprise without a defined access road would result in compaction, excessive sediment and turbidity in surface water, reduced visibility, and emissions of fugitive dust. This scenario is applicable where the resource activity areas consist of relatively dry and level terrain lands.

After Situation: The road will be 14 feet wide at the top, mostly in embankment less than 3 feet in height, (average 2 ft) typical side slopes 2:1. A properly constructed, well defined access road will greatly reduce or eliminate compaction in land use areas where it is harmful, reduce emissions of fugitive dust and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport and improving drainage of irrigated lands. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373). Mulching should be addressed under Mulching (484).

Scenario Feature Measure: Length of Roadway

Scenario Unit: Foot

Scenario Typical Size: 500

Total Scenario Cost: \$4,584.97

Scenario Cost/Unit: \$9.17

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Equipment Installation

Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic Yard	\$4.47	670	\$2,996.46
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	\$2.37	210	\$496.96
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.86	0.12	\$0.82
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$10.42	0.12	\$1.25

Labor

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	\$42.19	10	\$421.88
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Mobilization

Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$487.39	1	\$487.39
Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$171.69	1	\$171.69

Materials

One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	0.12	\$8.51
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Practice: 560 - Access Road

Scenario: #2 - New 12 inch gravel road in wet, level terrain

Scenario Description: Newly Constructed gravel road with min. 12 inch thick compacted gravel surface over geotextile in relatively level ground in wet areas. Terrain should be considered level for slopes of 0-5%. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface material, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice.

Before Situation: An agricultural enterprise which requires, but does not have, a fixed travel way for equipment and vehicles for various resource activities and where use of equipment and vehicles within the enterprise without a defined access road would result in compaction, excessive sediment and turbidity in surface water, reduced visibility, and emissions of fugitive dust. This scenario is applicable where the resource activity areas consist of relatively wet and swampy but level terrain lands.

After Situation: The road will be 14 feet wide with geotextile and 12 inch gravel surfacing at the top. It is mostly in embankment less than 3 feet in height, (average 2 ft) typical side slopes 2:1. A properly constructed, well defined access road will greatly reduce sheet, rill and wind erosion, eliminate compaction in land use areas where it is harmful, reduce emissions of particulate matter (PM) and PM precursors and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373). Mulching should be addressed under Mulching (484).

Scenario Feature Measure: Length of Roadway

Scenario Unit: Foot

Scenario Typical Size: 500

Total Scenario Cost: \$13,558.98

Scenario Cost/Unit: \$27.12

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Equipment Installation

Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic Yard	\$4.47	410	\$1,833.65
Excavation, common earth, wet, side cast, large equipment	1228	Bulk excavation and side casting of wet common earth with hydraulic excavator or dragline with greater than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$4.31	210	\$905.09
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.86	0.12	\$0.82
Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.58	1000	\$2,576.40
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$10.42	0.12	\$1.25

Labor

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	\$42.19	10	\$421.88
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Materials

Aggregate, Gravel, Ungraded, Quarry Run	1099	Includes materials, equipment and labor	Cubic Yard	\$24.86	275	\$6,836.59
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	0.12	\$8.51

Mobilization

Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$487.39	2	\$974.78
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Practice: 560 - Access Road

Scenario: #3 - New geocell road in wet, level terrain

Scenario Description: Newly Constructed geotextile, gravel, and geocell road with min. 6 inch thick compacted gravel with geocell surface in relatively level ground in wet areas. Terrain should be considered level for slopes of 0-5%. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface material, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice.

Before Situation: An agricultural enterprise which requires, but does not have, a fixed travel way for equipment and vehicles for various resource activities and where use of equipment and vehicles within the enterprise without a defined access road would result in compaction, excessive sediment and turbidity in surface water, reduced visibility, and emissions of fugitive dust. This scenario is applicable where the resource activity areas consist of relatively wet and swampy but level terrain lands.

After Situation: The road will be 14 feet wide with geotextile, 6 inch gravel, and geocell surfacing. It is mostly in embankment less than 3 feet in height, (average 2 ft) typical side slopes 2:1. A properly constructed, well defined access road will greatly reduce sheet, rill and wind erosion, eliminate compaction in land use areas where it is harmful, reduce emissions of particulate matter (PM) and PM precursors and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373). Mulching should be addressed under Mulching (484).

Scenario Feature Measure: Length of Roadway

Scenario Unit: Foot

Scenario Typical Size: 500

Total Scenario Cost: \$42,591.35

Scenario Cost/Unit: \$85.18

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Equipment Installation

Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic Yard	\$4.47	410	\$1,833.65
Excavation, common earth, wet, side cast, large equipment	1228	Bulk excavation and side casting of wet common earth with hydraulic excavator or dragline with greater than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$4.31	210	\$905.09
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.86	0.12	\$0.82
Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.58	1000	\$2,576.40
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$10.42	0.12	\$1.25

Labor

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	\$42.19	10	\$421.88
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Materials

Aggregate, Gravel, Ungraded, Quarry Run	1099	Includes materials, equipment and labor	Cubic Yard	\$24.86	175	\$4,350.56
Geocell, 6"	1842	6-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	\$39.40	800	\$31,518.41
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	0.12	\$8.51

Mobilization

Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$487.39	2	\$974.78
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Practice: 560 - Access Road

Scenario: #4 - Rehabilitation of existing earth road in dry, level terrain

Scenario Description: Repair and rehabilitation of compacted earth road in existing alignment in dry, level terrain. Terrain should be considered level for slopes of 0-5%. The extent of construction work over an existing alignment is assumed to average 30% of the work for a new installation. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface material, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice.

Before Situation: An agricultural enterprise with an existing access road which is beyond its useful lifespan, can no longer be used as intended without rehabilitation. If left in its current condition, it will result in continued compaction, excessive sediment in surface water and emissions of fugitive dusts. This scenario is applicable where the resource activity areas with an existing but dilapidated access road consist of relatively dry and level terrain lands.

After Situation: The damaged portions of the road will be repaired to a full 14 feet width at the top, mostly in embankment less than 3 feet in height, (average 2 ft), typical side slopes 2:1. A properly repaired access road will greatly reduce or eliminate compaction in land use areas where it is harmful, reduce emissions of fugitive dust and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport and improving drainage of irrigated lands. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373). Mulching should be addressed under Mulching (484).

Scenario Feature Measure: Length of Roadway

Scenario Unit: Foot

Scenario Typical Size: 500

Total Scenario Cost: \$2,162.20

Scenario Cost/Unit: \$4.32

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Equipment Installation

Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic Yard	\$4.47	205	\$916.83
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	\$2.37	65	\$153.82
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.86	0.12	\$0.82
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$10.42	0.12	\$1.25

Labor

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	\$42.19	10	\$421.88
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Mobilization

Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$487.39	1	\$487.39
Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$171.69	1	\$171.69

Materials

One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	0.12	\$8.51
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Practice: 560 - Access Road

Scenario: #5 - Rehabilitation of existing road using gravel in wet, level terrain

Scenario Description: Repair and rehabilitation of a compacted earth or gravel road where it is determined that gravel is needed for the repair with min. 12 inch thick compacted gravel surface over geotextile on existing alignment in wet, level terrain. Terrain should be considered level for slopes of 0-5%. The extent of construction work over an existing alignment is assumed to average 30% of the work for a new installation. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface materials, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice.

Before Situation: An agricultural enterprise with an existing access road which is beyond its useful lifespan, can no longer be used as intended without rehabilitation. If left in its current condition, it will result in continued compaction, excessive sediment in surface water and emissions of fugitive dusts. This scenario is applicable where the resource activity areas with an existing but dilapidated access road consist of relatively wet and swampy but level terrain lands.

After Situation: The damaged portions of the road will be repaired to a full 14 feet width with a geotextile and 12" gravel surface at the top, mostly in embankment less than 3 feet in height, (average 2 ft), typical side slopes 2:1. A properly repaired access road will greatly reduce or eliminate compaction in land use areas where it is harmful, reduce emissions of fugitive dust and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport and improving drainage of irrigated lands. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided.. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373). Mulching should be addressed under Mulching (484).

Scenario Feature Measure: Length of Roadway

Scenario Unit: Foot

Scenario Typical Size: 500

Total Scenario Cost: \$5,132.48

Scenario Cost/Unit: \$10.26

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Equipment Installation

Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic Yard	\$4.47	125	\$559.04
Excavation, common earth, wet, side cast, large equipment	1228	Bulk excavation and side casting of wet common earth with hydraulic excavator or dragline with greater than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$4.31	65	\$280.15
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.86	0.12	\$0.82
Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.58	300	\$772.92
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$10.42	0.12	\$1.25

Labor

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	\$42.19	10	\$421.88
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Materials

Aggregate, Gravel, Ungraded, Quarry Run	1099	Includes materials, equipment and labor	Cubic Yard	\$24.86	85	\$2,113.13
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	0.12	\$8.51

Mobilization

Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds	Each	\$487.39	2	\$974.78
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		or loads requiring over width or over length permits.				
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Practice: 560 - Access Road

Scenario: #6 - Rehabilitation of existing road using geocell in wet, level terrain

Scenario Description: Repair and rehabilitation of compacted earth, gravel, or geocell road where it is determined that geocell is required for the repair with min. 6 inch thick compacted gravel with geocell surface on existing alignment in wet, level terrain. Terrain should be considered level for slopes of 0-5%. The extent of construction work over an existing alignment is assumed to average 30% of the work for a new installation. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface material, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice.

Before Situation: An agricultural enterprise with an existing access road which is beyond its useful lifespan, can no longer be used as intended without rehabilitation. If left in its current condition, it will result in continued compaction, excessive sediment in surface water and emissions of fugitive dusts. This scenario is applicable where the resource activity areas with an existing but dilapidated access road consist of relatively wet and swampy but level terrain lands.

After Situation: The road will be 14 feet wide with geotextile, 6 inch gravel, and geocell surfacing. It is mostly in embankment less than 3 feet in height, (average 2 ft) typical side slopes 2:1. A properly constructed, well defined access road will greatly reduce sheet, rill and wind erosion, eliminate compaction in land use areas where it is harmful, reduce emissions of particulate matter (PM) and PM precursors and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373). Mulching should be addressed under Mulching (484).

Scenario Feature Measure: Length of Roadway

Scenario Unit: Foot

Scenario Typical Size: 500

Total Scenario Cost: \$13,842.19

Scenario Cost/Unit: \$27.68

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Equipment Installation

Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic Yard	\$4.47	125	\$559.04
Excavation, common earth, wet, side cast, large equipment	1228	Bulk excavation and side casting of wet common earth with hydraulic excavator or dragline with greater than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$4.31	65	\$280.15
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.86	0.12	\$0.82
Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.58	300	\$772.92
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$10.42	0.12	\$1.25

Labor

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	\$42.19	10	\$421.88
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Materials

Aggregate, Gravel, Ungraded, Quarry Run	1099	Includes materials, equipment and labor	Cubic Yard	\$24.86	55	\$1,367.32
Geocell, 6"	1842	6-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	\$39.40	240	\$9,455.52
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	0.12	\$8.51

Mobilization

Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$487.39	2	\$974.78
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Practice: 560 - Access Road

Scenario: #7 - New earth road in dry, sloped terrain

Scenario Description: Newly constructed compacted earth road in steep sloped terrain but relatively dry areas. Terrain should be considered sloped for slopes of >5%. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface material, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice.

Before Situation: An agricultural enterprise which requires, but does not have, a fixed travelway for equipment and vehicles for various resource activities and where use of equipment and vehicles within the enterprise without a defined access road would result in compaction, excessive sediment and turbidity in surface water, reduced visibility, and emissions of fugitive dust. This scenario is applicable where the resource activity areas consist of relatively dry lands with steep slopes.

After Situation: The road will be 14 feet wide at the top, 50% in embankment and 50% in excavation less than 3 feet in height, (average 2 ft) typical cut and fill side slopes 2:1. Out of total excavation, 60% is considered common earth and 40% hard dig or rocks. A properly constructed, well defined access road will greatly reduce or eliminate compaction in land use areas where it is harmful, reduce emissions of fugitive dust and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport and improving drainage of irrigated lands. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373). Mulching should be addressed under Mulching (484).

Scenario Feature Measure: Length of Roadway

Scenario Unit: Foot

Scenario Typical Size: 500

Total Scenario Cost: \$6,351.59

Scenario Cost/Unit: \$12.70

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Equipment Installation

Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic Yard	\$4.47	670	\$2,996.46
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	\$2.37	395	\$934.76
Excavation, Rock, Ripping	47	Excavation, rock, mechanical ripping, includes equipment and labor	Cubic Yard	\$5.01	265	\$1,328.82
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.86	0.12	\$0.82
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$10.42	0.12	\$1.25

Labor

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	\$42.19	10	\$421.88
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Mobilization

Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$487.39	1	\$487.39
Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$171.69	1	\$171.69

Materials

One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	0.12	\$8.51
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Practice: 560 - Access Road

Scenario: #8 - New 12 inch gravel road in wet, sloped terrain

Scenario Description: Newly Constructed gravel road with min. 12 inch thick compacted gravel surface over geotextile in steep sloped ground in wet areas. Terrain should be considered sloped for slopes of >5%. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface material, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice.

Before Situation: An agricultural enterprise which requires, but does not have, a fixed travelway for equipment and vehicles for various resource activities and where use of equipment and vehicles within the enterprise without a defined access road would result in compaction, excessive sediment and turbidity in surface water, reduced visibility, and emissions of fugitive dust. This scenario is applicable where the resource activity areas consist of wet and swampy land areas with steep sloped terrain.

After Situation: The road will be 14 feet wide with a geotextile and 12 inch gravel surfacing at the top. It is 50% in embankment and 50% in excavation less than 3 feet in height, (average 2 ft) typical side slopes 2:1. Out of total excavation, 60% is considered common earth and 40% hard dig or rocks. A properly constructed, well defined access road will greatly reduce sheet, rill and wind erosion, eliminate compaction in land use areas where it is harmful, reduce emissions of particulate matter (PM) and PM precursors and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373). Mulching should be addressed under Mulching (484).

Scenario Feature Measure: Length of Roadway

Scenario Unit: Foot

Scenario Typical Size: 500

Total Scenario Cost: \$15,685.14

Scenario Cost/Unit: \$31.37

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Equipment Installation

Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic Yard	\$4.47	410	\$1,833.65
Excavation, common earth, wet, side cast, large equipment	1228	Bulk excavation and side casting of wet common earth with hydraulic excavator or dragline with greater than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$4.31	395	\$1,702.43
Excavation, Rock, Ripping	47	Excavation, rock, mechanical ripping, includes equipment and labor	Cubic Yard	\$5.01	265	\$1,328.82
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.86	0.12	\$0.82
Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.58	1000	\$2,576.40
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$10.42	0.12	\$1.25

Labor

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	\$42.19	10	\$421.88
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Materials

Aggregate, Gravel, Ungraded, Quarry Run	1099	Includes materials, equipment and labor	Cubic Yard	\$24.86	275	\$6,836.59
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	0.12	\$8.51

Mobilization

Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds	Each	\$487.39	2	\$974.78
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		or loads requiring over width or over length permits.				
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Practice: 560 - Access Road

Scenario: #9 - New geocell road in wet, sloped terrain

Scenario Description: Newly Constructed geotextile, gravel, and geocell road with min. 6 inch thick compacted gravel and geocell surface in steep sloped ground in wet areas. Terrain should be considered sloped for slopes of >5%. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface material, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice.

Before Situation: An agricultural enterprise which requires, but does not have, a fixed travel way for equipment and vehicles for various resource activities and where use of equipment and vehicles within the enterprise without a defined access road would result in compaction, excessive sediment and turbidity in surface water, reduced visibility, and emissions of fugitive dust. This scenario is applicable where the resource activity areas consist of relatively wet and swampy but level terrain lands.

After Situation: The road will be 14 feet wide with geotextile, 6 inch gravel, and geocell surfacing. It is mostly in embankment less than 3 feet in height, (average 2 ft) typical side slopes 2:1. Out of total excavation, 60% is considered common earth and 40% hard dig or rocks. A properly constructed, well defined access road will greatly reduce sheet, rill and wind erosion, eliminate compaction in land use areas where it is harmful, reduce emissions of particulate matter (PM) and PM precursors and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373). Mulching should be addressed under Mulching (484).

Scenario Feature Measure: Length of Roadway

Scenario Unit: Foot

Scenario Typical Size: 500

Total Scenario Cost: \$44,717.52

Scenario Cost/Unit: \$89.44

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Equipment Installation

Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic Yard	\$4.47	410	\$1,833.65
Excavation, common earth, wet, side cast, large equipment	1228	Bulk excavation and side casting of wet common earth with hydraulic excavator or dragline with greater than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$4.31	395	\$1,702.43
Excavation, Rock, Ripping	47	Excavation, rock, mechanical ripping, includes equipment and labor	Cubic Yard	\$5.01	265	\$1,328.82
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.86	0.12	\$0.82
Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.58	1000	\$2,576.40
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$10.42	0.12	\$1.25

Labor

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	\$42.19	10	\$421.88
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Materials

Aggregate, Gravel, Ungraded, Quarry Run	1099	Includes materials, equipment and labor	Cubic Yard	\$24.86	175	\$4,350.56
Geocell, 6"	1842	6-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	\$39.40	800	\$31,518.41
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	0.12	\$8.51

Mobilization

Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$487.39	2	\$974.78
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Practice: 560 - Access Road

Scenario: #10 - Rehabilitation of existing earth road in wet, sloped terrain

Scenario Description: Repair and rehabilitation of compacted earth road in existing alignment in relatively dry but steep sloped terrain. Terrain should be considered sloped for slopes of >5%. The extent of construction work over an existing alignment is assumed to average 30% of the work for a new installation. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface material, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice.

Before Situation: An agricultural enterprise with an existing access road which is beyond its useful lifespan, can no longer be used as intended without rehabilitation. If left in its current condition, it will result in continued compaction, excessive sediment in surface water and emissions of fugitive dusts. This scenario is applicable where the resource activity areas with an existing but dilapidated access road consist of relatively dry lands with steep sloped terrain.

After Situation: The damaged portions of the road will be repaired to a full 14 feet width at the top, 50% in embankment and 50% in excavation less than 3 feet in height, (average 2 ft), typical side slopes 2:1. Out of total excavation, 60% is considered common earth excavation and 40% hard dig or rocks. A properly repaired access road will greatly reduce or eliminate compaction in land use areas where it is harmful, reduce emissions of fugitive dust and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport and improving drainage of irrigated lands. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373). Mulching should be addressed under Mulching (484).

Scenario Feature Measure: Length of Roadway

Scenario Unit: Foot

Scenario Typical Size: 500

Total Scenario Cost: \$2,671.14

Scenario Cost/Unit: \$5.34

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Equipment Installation

Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic Yard	\$4.47	200	\$894.47
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	\$2.37	120	\$283.98
Excavation, Rock, Ripping	47	Excavation, rock, mechanical ripping, includes equipment and labor	Cubic Yard	\$5.01	80	\$401.15
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.86	0.12	\$0.82
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$10.42	0.12	\$1.25

Labor

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	\$42.19	10	\$421.88
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Mobilization

Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$487.39	1	\$487.39
Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$171.69	1	\$171.69

Materials

One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	0.12	\$8.51
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Practice: 560 - Access Road

Scenario: #11 - Rehabilitation of existing road using gravel in wet, sloped terrain

Scenario Description: Repair and rehabilitation of compacted earth or gravel road where it is determined that gravel is needed for the repair with min. 12 inch thick compacted gravel surface over geotextile on existing alignment in wet, steep sloped terrain. Terrain should be considered sloped for slopes of >5%. The extent of construction work over an existing alignment is assumed to average 30% of the work for a new installation. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface material, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice.

Before Situation: An agricultural enterprise with an existing access road which is beyond its useful lifespan, can no longer be used as intended without rehabilitation. If left in its current condition, it will result in continued compaction, excessive sediment in surface water and emissions of fugitive dust. This scenario is applicable where the resource activity areas with an existing but dilapidated access road consist of relatively wet and swampy land with steep sloped terrain.

After Situation: The damaged portions of the road will be repaired to a full 14 feet width with a geotextile and 12" gravel surface at the top, 50% in embankment and 50% in excavation less than 3 feet in height, (average 2 ft), typical side slopes 2:1. Out of total excavation, 60% is considered common earth and 40% hard dig or rocks. A properly repaired access road will greatly reduce or eliminate compaction in land use areas where it is harmful, reduce emissions of fugitive dust and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport and improving drainage of irrigated lands. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373). Mulching should be addressed under Mulching (484).

Scenario Feature Measure: Length of Roadway

Scenario Unit: Foot

Scenario Typical Size: 500

Total Scenario Cost: \$5,770.68

Scenario Cost/Unit: \$11.54

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Equipment Installation

Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic Yard	\$4.47	125	\$559.04
Excavation, common earth, wet, side cast, large equipment	1228	Bulk excavation and side casting of wet common earth with hydraulic excavator or dragline with greater than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$4.31	120	\$517.20
Excavation, Rock, Ripping	47	Excavation, rock, mechanical ripping, includes equipment and labor	Cubic Yard	\$5.01	80	\$401.15
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.86	0.12	\$0.82
Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.58	300	\$772.92
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$10.42	0.12	\$1.25

Labor

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	\$42.19	10	\$421.88
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Materials

Aggregate, Gravel, Ungraded, Quarry Run	1099	Includes materials, equipment and labor	Cubic Yard	\$24.86	85	\$2,113.13
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	0.12	\$8.51

Mobilization

Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$487.39	2	\$974.78
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Practice: 560 - Access Road

Scenario: #12 - Rehabilitation of existing road using geocell in wet, sloped terrain

Scenario Description: Repair and rehabilitation of compacted earth, gravel, or geocell road where it is determined that geocell is needed for the repair with min. 6 inch thick compacted gravel with geocell surface on existing alignment in wet, steep sloped terrain. Terrain should be considered sloped for slopes of >5%. The extent of construction work over an existing alignment is assumed to average 30% of the work for a new installation. A properly constructed, well defined access road will address resource concerns related with compaction, emissions of fugitive dust, and excessive sediment in surface water. It also improves the plant productivity, vigor and health and substantially reduces the chance of wild fire hazards. Short term air quality deterioration may result if proper dust control measures are not implemented during the practice installation. Costs include excavation, shaping, grading, surface material, vegetation of disturbed areas, and all equipment, labor and incidental materials necessary to install the practice.

Before Situation: An agricultural enterprise with an existing access road which is beyond its useful lifespan, can no longer be used as intended without rehabilitation. If left in its current condition, it will result in continued compaction, excessive sediment in surface water and emissions of fugitive dusts. This scenario is applicable where the resource activity areas with an existing but dilapidated access road consist of relatively wet and swampy but level terrain lands.

After Situation: The road will be 14 feet wide with geotextile, 6 inch gravel, and geocell surfacing. It is mostly in embankment less than 3 feet in height, (average 2 ft) typical side slopes 2:1. Out of total excavation, 60% is considered common earth and 40% hard dig or rocks. A properly constructed, well defined access road will greatly reduce sheet, rill and wind erosion, eliminate compaction in land use areas where it is harmful, reduce emissions of particulate matter (PM) and PM precursors and also reduce excessive sediment in surface water by reducing uncontrolled sediment transport. Planned grades will include all dips and water bars. If clearing and grubbing of land in the alignment area is required, use Land Clearing (460). Pipe culverts installed as part of access road should be covered by either Structures for Water Control (587) or Stream Crossings (578) depending on the type of structure. Earthfill embankment above the culvert structure would still be covered by this Practice. Diversions constructed as part of access road should be covered by Diversion (362). All seeding or revegetation of disturbed areas is provided. Dust control must be addressed under Dust Control on Unpaved Roads and Surfaces (373). Mulching should be addressed under Mulching (484).

Scenario Feature Measure: Length of Roadway

Scenario Unit: Foot

Scenario Typical Size: 500

Total Scenario Cost: \$14,480.39

Scenario Cost/Unit: \$28.96

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Equipment Installation

Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic Yard	\$4.47	125	\$559.04
Excavation, common earth, wet, side cast, large equipment	1228	Bulk excavation and side casting of wet common earth with hydraulic excavator or dragline with greater than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$4.31	120	\$517.20
Excavation, Rock, Ripping	47	Excavation, rock, mechanical ripping, includes equipment and labor	Cubic Yard	\$5.01	80	\$401.15
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.86	0.12	\$0.82
Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.58	300	\$772.92
Lime application	953	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$10.42	0.12	\$1.25

Labor

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	\$42.19	10	\$421.88
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Materials

Aggregate, Gravel, Ungraded, Quarry Run	1099	Includes materials, equipment and labor	Cubic Yard	\$24.86	55	\$1,367.32
Geocell, 6"	1842	6-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	\$39.40	240	\$9,455.52

One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	0.12	\$8.51
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Mobilization

Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$487.39	2	\$974.78
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