

Practice: 561 - Heavy Use Area Protection

Scenario: #1 - Gravel - Pad

Scenario Description:

Gravel pad installed to stabilize areas around watering troughs, barn entrances, etc. The stabilization of an area that is frequently and intensively used by people, livestock and equipment by surfacing with rock and or gravel on a geotextile fabric foundation to provide a stable, non-eroding surface. Installation includes all materials, equipment, and labor to install this practice, The stabilized area will address the resource concerns of soil erosion and water quality degradation.

Before Situation:

This practice applies to all land uses where frequently and/or intensively used areas requiring treatment to address soil erosion and water quality degradation.

After Situation:

Typical scenario is a pad which is 25' x 25'. Typically, site is excavated below topsoil. ~12" of bankrun gravel or similar material is directly placed by dump truck on non-woven geotextile and compacted to form a hard durable surface. Practice will address soil erosion and water quality degradation. Any needed treatment of stream crossings must use Stream Crossing (578). Any needed vegetation of disturbed areas must use Critical Area Planting (342). Provisions to collect, store, utilize, and or treat contaminated runoff must use Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate. To reduce the potential for air quality problems from particulate matter associated with heavy use areas, consider the use of Windbreak/Shelterbelt Establishment (380) or Herbaceous Wind Barriers (603).

Scenario Feature Measure: Area of Gravel Pad

Scenario Unit: Square Foot

Scenario Typical Size: 625

Scenario Cost: \$2,403.69

Scenario Cost/Unit: \$3.85

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Geotextile, woven	42	Woven Geotextile Fabric. Includes materials, equipment and labor	Square Yard	\$2.51	70	\$175.70
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	\$2.36	24	\$56.64
Earthfill, Manually Compacted	50	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$5.75	24	\$138.00
Dozer, 140 HP	927	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	\$127.70	3	\$383.10
Labor						
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	\$40.82	1	\$40.82
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	\$24.48	3	\$73.44
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	\$33.69	3	\$101.07
Materials						
Aggregate, Gravel, Ungraded, Quarry Run	1099	Includes materials, equipment and labor	Cubic yard	\$24.63	8	\$197.04
Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$35.73	15	\$535.95
Mobilization						

Mobilization

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	\$176.65	1	\$176.65
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$262.64	2	\$525.28

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Scenario: #2 - Curb with Footer

Scenario Description:

The stabilization of areas around facilities that are frequently and intensively used by people, animals or vehicles by surfacing with reinforced concrete with curb on a sand or gravel foundation to provide a stable, non-eroding surface. Curb is necessary to directly contaminated runoff to proper location. Installation includes all materials, equipment, and labor to install this practice, The stabilized area will address the resource concerns soil erosion and water quality degradation.

Before Situation:

This practice applies to all land uses where frequently and/or intensively used areas requiring treatment to address soil erosion and water quality degradation.

After Situation:

Curb is installed to direct contaminated runoff to proper location and to assist in the movement, handling and management of manure. Concrete curb is 24" tall and 8" wide and 100' long. Footing is 3' wide and 6" deep. Curbing is reinforced with rebar. Curb is underlain by 6" of drainfill. Area is frequently and intensively used by people, animals or vehicles and will address soil erosion and water quality degradation. Associated practices are Access Road (560), Stream Crossing (578), Critical Area Planting (342). Provisions to store, utilize, and/or treat contaminated runoff shall be addressed under Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate. To reduce the potential for air quality problems from particulate matter associated with heavy use areas, consider the use of Windbreak/Shelterbelt Establishment (380) or Herbaceous Wind Barriers (603).

Scenario Feature Measure: Length of Curb

Scenario Unit: Linear Foot

Scenario Typical Size: 100

Scenario Cost: \$7,129.12

Scenario Cost/Unit: \$71.29

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Concrete, CIP, formed reinforced	38	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$499.74	11	\$5,497.14
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	\$2.36	11	\$25.96
Earthfill, Manually Compacted	50	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$5.75	6	\$34.50
Skidsteer, 80 HP	933	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$44.33	4	\$177.32
Labor						
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	\$40.82	2	\$81.64
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	\$24.48	5	\$122.40
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$24.30	4	\$97.20
Materials						
Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$35.73	6	\$214.38

Mobilization

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$262.64	2	\$525.28
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	\$176.65	2	\$353.30

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Scenario: #3 - Curb without Footer

Scenario Description:

The stabilization of areas around facilities that are frequently and intensively used by people, animals or vehicles by surfacing with reinforced concrete with curb on a sand or gravel foundation to provide a stable, non-eroding surface. Curb is necessary to directly contaminated runoff to proper location. Installation includes all materials, equipment, and labor to install this practice, The stabilized area will address the resource concerns soil erosion and water quality degradation.

Before Situation:

This practice applies to all land uses where frequently and/or intensively used areas requiring treatment to address soil erosion and water quality degradation.

After Situation:

Curb is installed to direct contaminated runoff to proper location and to assist in the movement, handling and management of manure. Concrete curb is 24" tall and 8" wide and 100' long. Curb is installed on top of existing slab, no footing. Hole are drilled into existing slab to accommodate vertical rebar. Area is frequently and intensively used by people, animals or vehicles and will address soil erosion and water quality degradation. Associated practices are Access Road (560), Stream Crossing (578), Critical Area Planting (342). Provisions to store, utilize, and/or treat contaminated runoff shall be addressed under Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate. To reduce the potential for air quality problems from particulate matter associated with heavy use areas, consider the use of Windbreak/Shelterbelt Establishment (380) or Herbaceous Wind Barriers (603).

Scenario Feature Measure: Length of Curb

Scenario Unit: Linear Foot

Scenario Typical Size: 100

Scenario Cost: \$3,178.44

Scenario Cost/Unit: \$31.78

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Concrete, CIP, formed reinforced	38	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$499.74	5	\$2,498.70
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	\$24.48	10	\$244.80
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	\$40.82	2	\$81.64
Mobilization						
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	\$176.65	2	\$353.30

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Scenario: #4 - Concrete with Curb upto 1000 SF

Scenario Description:

The stabilization of areas around facilities that are frequently and intensively used by people, animals or vehicles by surfacing with reinforced concrete with curb on a sand or gravel foundation to provide a stable, non-eroding surface. Curb is necessary to directly contaminated runoff to proper location. Installation includes all materials, equipment, and labor to install this practice, The stabilized area will address the resource concerns soil erosion and water quality degradation.

Before Situation:

This practice applies to all land uses where frequently and/or intensively used areas requiring treatment to address soil erosion and water quality degradation.

After Situation:

Unstable area is surfaced with 630 square feet of concrete with curbing. Curb is installed to direct contaminated runoff to proper location and to assist in the movement, handling and management of manure. Concrete slab is 5" thick with 6" of compacted drainfill underneath. Concrete curb is 24" tall and 8" wide with 3' wide footing, with reinforcing steel. Area is frequently and intensively used by people, animals or vehicles and will address soil erosion and water quality degradation. Associated practices are Access Road (560), Stream Crossing (578), Critical Area Planting (342). Provisions to store, utilize, and/or treat contaminated runoff shall be addressed under Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate. To reduce the potential for air quality problems from particulate matter associated with heavy use areas, consider the use of Windbreak/Shelterbelt Establishment (380) or Herbaceous Wind Barriers (603).

Scenario Feature Measure: Area of Concrete Pad

Scenario Unit: Square Foot

Scenario Typical Size: 630

Scenario Cost: \$9,453.30

Scenario Cost/Unit: \$15.01

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Earthfill, Manually Compacted	50	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$5.75	12	\$69.00
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	\$2.36	47	\$110.92
Concrete, CIP, formed reinforced	38	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$499.74	11	\$5,497.14
Concrete, CIP, slab on grade, reinforced	37	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$229.51	10	\$2,295.10
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	\$24.48	4	\$97.92
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	\$40.82	2	\$81.64
Materials						
Aggregate, Sand, Graded, Washed	45	Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place	Cubic yard	\$35.25	12	\$423.00

Mobilization

Mobilization

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$262.64	2	\$525.28
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	\$176.65	2	\$353.30

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Scenario: #5 - Concrete without Curb upto 1000 SF

Scenario Description:

The stabilization of areas around facilities that are frequently and intensively used by people, animals or vehicles by surfacing with reinforced concrete with curb on a sand or gravel foundation to provide a stable, non-eroding surface. Installation includes all materials, equipment, and labor to install this practice, The stabilized area will address the resource concerns soil erosion and water quality degradation.

Before Situation:

This practice applies to all land uses where frequently and/or intensively used areas requiring treatment to address soil erosion and water quality degradation.

After Situation:

Unstable area is surfaced with 630 square feet of concrete, no curbing. Concrete slab is 5" thick with 6" of compacted drainfill underneath. Area is frequently and intensively used by people, animals or vehicles and will address soil erosion and water quality degradation. Associated practices are Access Road (560), Stream Crossing (578), Critical Area Planting (342). Provisions to store, utilize, and/or treat contaminated runoff shall be addressed under Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate. To reduce the potential for air quality problems from particulate matter associated with heavy use areas, consider the use of Windbreak/Shelterbelt Establishment (380) or Herbaceous Wind Barriers (603).

Scenario Feature Measure: Area of Concrete Pad

Scenario Unit: Square Foot

Scenario Typical Size: 630

Scenario Cost: \$3,956.16

Scenario Cost/Unit: \$6.28

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Earthfill, Manually Compacted	50	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$5.75	12	\$69.00
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	\$2.36	47	\$110.92
Concrete, CIP, slab on grade, reinforced	37	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$229.51	10	\$2,295.10
Labor						
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	\$40.82	2	\$81.64
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	\$24.48	4	\$97.92
Materials						
Aggregate, Sand, Graded, Washed	45	Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place	Cubic yard	\$35.25	12	\$423.00
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$262.64	2	\$525.28
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	\$176.65	2	\$353.30

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Scenario: #6 - Concrete with Curb over 1000 SF

Scenario Description:

The stabilization of areas around facilities that are frequently and intensively used by people, animals or vehicles by surfacing with reinforced concrete with curb on a sand or gravel foundation to provide a stable, non-eroding surface. Curb is necessary to directly contaminated runoff to proper location. Installation includes all materials, equipment, and labor to install this practice, The stabilized area will address the resource concerns soil erosion and water quality degradation.

Before Situation:

This practice applies to all land uses where frequently and/or intensively used areas requiring treatment to address soil erosion and water quality degradation.

After Situation:

Unstable area is surfaced with 2500 square feet of concrete with curbing. Curb is installed to direct contaminated runoff to proper location and to assist in the movement, handling and management of manure. Concrete slab is 5" thick with 6" of compacted drainfill underneath. Concrete curb is 24" tall and 8" wide with 3' wide footing, with reinforcing steel. Area is frequently and intensively used by people, animals or vehicles and will address soil erosion and water quality degradation. Associated practices are Access Road (560), Stream Crossing (578), Critical Area Planting (342). Provisions to store, utilize, and/or treat contaminated runoff shall be addressed under Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate. To reduce the potential for air quality problems from particulate matter associated with heavy use areas, consider the use of Windbreak/Shelterbelt Establishment (380) or Herbaceous Wind Barriers (603).

Scenario Feature Measure: Area of Concrete Pad

Scenario Unit: Square Foot

Scenario Typical Size: 2,500

Scenario Cost: \$22,956.77

Scenario Cost/Unit: \$9.18

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Concrete, CIP, slab on grade, reinforced	37	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$229.51	39	\$8,950.89
Concrete, CIP, formed reinforced	38	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$499.74	21	\$10,494.54
Earthfill, Manually Compacted	50	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$5.75	46	\$264.50
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	\$2.36	185	\$436.60
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	\$24.48	6	\$146.88
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	\$40.82	4	\$163.28
Materials						
Aggregate, Sand, Graded, Washed	45	Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place	Cubic yard	\$35.25	46	\$1,621.50

Mobilization

Mobilization

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$262.64	2	\$525.28
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	\$176.65	2	\$353.30

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Scenario: #7 - Concrete without Curb over 1000 SF

Scenario Description:

The stabilization of areas around facilities that are frequently and intensively used by people, animals or vehicles by surfacing with reinforced concrete with curb on a sand or gravel foundation to provide a stable, non-eroding surface. Installation includes all materials, equipment, and labor to install this practice, The stabilized area will address the resource concerns soil erosion and water quality degradation.

Before Situation:

This practice applies to all land uses where frequently and/or intensively used areas requiring treatment to address soil erosion and water quality degradation.

After Situation:

Unstable area is surfaced with 2500 square feet of concrete, no curbing. Concrete slab is 5" thick with 6" of compacted drainfill underneath. Area is frequently and intensively used by people, animals or vehicles and will address soil erosion and water quality degradation. Associated practices are Access Road (560), Stream Crossing (578), Critical Area Planting (342). Provisions to store, utilize, and/or treat contaminated runoff shall be addressed under Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate. To reduce the potential for air quality problems from particulate matter associated with heavy use areas, consider the use of Windbreak/Shelterbelt Establishment (380) or Herbaceous Wind Barriers (603).

Scenario Feature Measure: Area of Concrete Pad

Scenario Unit: Square Foot

Scenario Typical Size: 2,500

Scenario Cost: \$12,462.23

Scenario Cost/Unit: \$4.98

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Earthfill, Manually Compacted	50	Earthfill, manually compacted, includes equipment and labor	Cubic yard	\$5.75	46	\$264.50
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	\$2.36	185	\$436.60
Concrete, CIP, slab on grade, reinforced	37	Steel reinforced concrete formed and cast-in-placed as a slab on grade by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$229.51	39	\$8,950.89
Labor						
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	\$40.82	4	\$163.28
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	\$24.48	6	\$146.88
Materials						
Aggregate, Sand, Graded, Washed	45	Sand, typical ASTM C33 gradation, includes materials, equipment and labor to transport and place	Cubic yard	\$35.25	46	\$1,621.50
Mobilization						
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	\$176.65	2	\$353.30
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$262.64	2	\$525.28

Practice: 561 - Heavy Use Area Protection

Scenario: #8 - Asphalt Pad (Light Load)

Scenario Description:

The stabilization of areas around facilities that are frequently and intensively used by people, animals or vehicles by surfacing with reinforced asphalt on a sand or gravel foundation to provide a stable, non-eroding surface. Pad is designed for barnyards or other HUA's where light loads are anticipated such as light weight tractors and skidsteer loaders. Installation includes all materials, equipment, and labor to install this practice, The stabilized area will address the resource concerns soil erosion and water quality degradation.

Before Situation:

This practice applies to all land uses where frequently and/or intensively used areas requiring treatment to address soil erosion and water quality degradation.

After Situation:

Unstable area is surfaced with 630 square feet of asphalt, no curbing. Asphalt is 4" thick and underlain with 4" of compacted drainfill material. Area is frequently and intensively used by people, animals or light vehicles/equipment and will address soil erosion and water quality degradation. Associated practices are Access Road (560), Stream Crossing (578), Critical Area Planting (342). Provisions to store, utilize, and/or treat contaminated runoff shall be addressed under Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate. To reduce the potential for air quality problems from particulate matter associated with heavy use areas, consider the use of Windbreak/Shelterbelt Establishment (380) or Herbaceous Wind Barriers (603).

Scenario Feature Measure: Area of Asphalt Pad

Scenario Unit: Square Foot

Scenario Typical Size: 630

Scenario Cost: \$3,544.06

Scenario Cost/Unit: \$5.63

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
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	\$2.36	47	\$110.92
Roller, static, smooth, self propelled	1392	Self propelled smooth drum static roller compactor, typically 1.5 ton with 34" roller. Equipment cost only. Does not include labor.	Hour	\$22.83	4	\$91.32
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	\$24.48	4	\$97.92
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$24.30	4	\$97.20
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	\$40.82	2	\$81.64
Materials						
Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$35.73	8	\$285.84
Asphalt, pavement	1867	Bituminous Concrete, includes materials, equipment and labor for 4" layer, base not included.	Square Foot	\$2.60	630	\$1,638.00
Mobilization						
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	\$176.65	2	\$353.30

Mobilization

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$262.64	3	\$787.92
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Practice: 561 - Heavy Use Area Protection

Scenario: #9 - Asphalt Pad (Heavy Load)

Scenario Description:

The stabilization of areas around facilities that are frequently and intensively used by people, animals or vehicles by surfacing with reinforced asphalt on a sand or gravel foundation to provide a stable, non-eroding surface. Pad is designed for barnyards, bunk silos or other HUA's where heavy (H20) loads are anticipated such as payloaders and large tractors. Installation includes all materials, equipment, and labor to install this practice, The stabilized area will address the resource concerns soil erosion and water quality degradation.

Before Situation:

This practice applies to all land uses where frequently and/or intensively used areas requiring treatment to address soil erosion and water quality degradation.

After Situation:

Unstable area is surfaced with 630 square feet of asphalt, no curbing. Asphalt is 4" thick and underlain with 9" (two lifts) of compacted drainfill material. Area is frequently and intensively used by people, animals or heavy vehicles/equipment and will address soil erosion and water quality degradation. Associated practices are Access Road (560), Stream Crossing (578), Critical Area Planting (342). Provisions to store, utilize, and/or treat contaminated runoff shall be addressed under Sediment Basin (350), Waste Storage Facility (313), or Waste Treatment (629) as appropriate. To reduce the potential for air quality problems from particulate matter associated with heavy use areas, consider the use of Windbreak/Shelterbelt Establishment (380) or Herbaceous Wind Barriers (603).

Scenario Feature Measure: Area of Asphalt Pad

Scenario Unit: Square Foot

Scenario Typical Size: 630

Scenario Cost: \$4,089.88

Scenario Cost/Unit: \$6.49

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
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	\$2.36	47	\$110.92
Roller, static, smooth, self propelled	1392	Self propelled smooth drum static roller compactor, typically 1.5 ton with 34" roller. Equipment cost only. Does not include labor.	Hour	\$22.83	8	\$182.64
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	\$24.48	4	\$97.92
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$24.30	8	\$194.40
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	\$40.82	2	\$81.64
Materials						
Asphalt, pavement	1867	Bituminous Concrete, includes materials, equipment and labor for 4" layer, base not included.	Square Foot	\$2.60	630	\$1,638.00
Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	\$35.73	18	\$643.14
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$262.64	3	\$787.92

Mobilization

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	\$176.65	2	\$353.30
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