

**Practice:** 561 - Heavy Use Area Protection

**Scenario:** #2 - Rock/Gravel on Geotextile

**Scenario Description:** An eroding area where there is winter feeding of livestock will be stabilized with a rock and/or gravel pad on a geotextile fabric foundation. Installation includes all materials, equipment, vegetation of disturbed areas and labor to install this practice. Where contaminated runoff will cause a resource concern, make provisions to collect, store, utilize, and/or treat contaminated runoff in accordance with the appropriate Conservation Practice Standard. To reduce the potential for air quality problems from particulate matter associated with heavy use areas, consider the use of Windbreak/Shelterbelt Establishment (Code 380) or Herbaceous Wind Barriers (Code 603). This practice applies to all land uses where frequently and/or intensively used areas require treatment to address soil erosion and water quality degradation.

**Before Situation:** Typical situation is in a pasture setting where a small herd (< 30 head) is fed at a small winter feeding area away from surface water bodies. This pad is usually shared by 2 or more rotated pastures and has good grass or other filter area between it and water conveyance. The feeding area is muddy and eroding.

**After Situation:** The stabilized area is surfaced with approximately 1624 square feet (28 ft x 58 ft x 6 in thick) of rock/gravel over a geotextile. Approximately 200 square yards of geotextile fabric will be used. Excavation of 30 CY of material will be needed. The removed material will be spread in the adjacent area to a depth of 2". Revegetation of disturbed areas is assumed to extend 10 feet from the perimeter of the pad (2120 sf) and will include the spoil area of 4862 sf.

**Scenario Feature Measure:** Area of Rock and or Gravel

**Scenario Unit:** Square Foot

**Scenario Typical Size:** 1624

**Total Scenario Cost:** \$2,669.15

**Scenario Cost/Unit:** \$1.64

**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	30	\$1,212.99
Geotextile, non-woven, light weight	1209	Non-woven less than 8 ounce/square yard geotextile with staple anchoring. Materials and shipping only.	Square Yard	\$1.17	200	\$234.61
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$121.11	0.24	\$29.07
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	6.4	\$5.41
One Species, Cool Season, Annual Grass or Legume	2311	Cool season annual grass or legume. Includes material and shipping only.	Acre	\$39.29	0.16	\$6.29
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	8	\$5.27
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	8	\$3.97
Straw	1237	Small grain straw (non organic and certified organic). Includes materials only.	Ton	\$122.89	0.32	\$39.32
Three Species Mix, Cool Season, Introduced Perennial Grass	2315	Cool season, introduced grass mix. Includes material and shipping only.	Acre	\$46.58	0.16	\$7.45

**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	16	\$321.11

**Equipment Installation**

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	0.16	\$2.00
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Skidsteer, 80 HP	933	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$44.26	8	\$354.08
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**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:** 561 - Heavy Use Area Protection

**Scenario:** #6 - Concrete(reinforced) Curb on existing slab

**Scenario Description:** This practice is typically associated with confined animal feeding operation but can be considered for larger herds (> 50 head) on multiple pasture-based grazing systems where animals are managed in controlled central area for winter feeding and lounging. A Comprehensive Nutrient Management Plan (CNMP) would usually address use of this scenario on a confined animal feeding operation. Installation includes all materials, equipment, vegetation of disturbed areas and labor to install this practice, Where contaminated runoff will cause a resource concern, make provisions to collect, store, utilize, and/or treat contaminated runoff in accordance with the appropriate Conservation Practice Standard. To reduce the potential for air quality problems from particulate matter associated with heavy use areas, consider the use of Windbreak/Shelterbelt Establishment (Code 380) or Herbaceous Wind Barriers (Code 603). This practice applies to all land uses where frequently and/or intensively used areas require treatment to address soil erosion and water quality degradation.

**Before Situation:** Before the practice is installed cattle waste accumulates on the slab but can run off the edges of the slab since there are no curbs to contain it.

**After Situation:** A 12" tall by 8" wide reinforced concrete curb is installed on the two long sides of an existing 100' x 40' concrete slab. The curb is typically reinforced with #4 or #5 steel bars. The curbs will aid in manure management and reduce water quality degradation.

**Scenario Feature Measure:** Length of concrete curb in Ln Ft

**Scenario Unit:** Foot

**Scenario Typical Size:** 280

**Total Scenario Cost:** \$3,947.84

**Scenario Cost/Unit:** \$14.10

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**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	\$352.59	7	\$2,468.13
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.62	2	\$43.24

**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	\$20.07	24	\$481.67
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$39.78	24	\$954.80

**Practice:** 561 - Heavy Use Area Protection

**Scenario:** #8 - Concrete Slab, not rebar reinforced

**Scenario Description:** A small winter feeding area will be stabilized by installation of a 5 inch thick concrete slab that is .not rebar reinforced. Waste materials are removed periodically from the pad with small front end loader tractor and land applied at appropriate times. This practice is typically associated with pasture grazing operations and would be located to serve 2 or more pastures. Installation includes all materials, equipment, vegetation of disturbed areas, and labor to install this practice. Where contaminated runoff will cause a resource concern, make provisions to collect, store, utilize, and/or treat contaminated runoff in accordance with the appropriate Conservation Practice Standard. To reduce the potential for air quality problems from particulate matter associated with heavy use areas, consider the use of Windbreak/Shelterbelt Establishment (Code 380) or Herbaceous Wind Barriers (Code 603). This practice applies to all land uses where frequently and/or intensively used areas require treatment to address soil erosion and water quality degradation.

**Before Situation:** This scenario addresses stabilizing soil areas where livestock are fed, typically during winter months. Typical herd size is small to medium (~30 to 50 head). Currently the cattle are winter fed on the ground and they disturb the soil, degrading soil quality. Animal waste is also able to run off the site, causing potential degradation to water quality.

**After Situation:** The 25' by 25' x 5.5" thick (630 square foot) stabilized area is surfaced with approximately 11 cubic yards of concrete with fiber reinforcement on 8 cubic yards of graded aggregate gravel material for surfacing areas. Excavation of about 18 CY of soil is required. The removed material will be spread in the adjacent area to a depth of 2". Approximately 1400 square feet of disturbed areas and 3020 sf of spoil area is reseeded.

**Scenario Feature Measure:** Area of concrete

**Scenario Unit:** Square Foot

**Scenario Typical Size:** 630

**Total Scenario Cost:** \$2,792.10

**Scenario Cost/Unit:** \$4.43

**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	8	\$323.46
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$121.11	0.15	\$18.17
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	4	\$3.38
One Species, Cool Season, Annual Grass or Legume	2311	Cool season annual grass or legume. Includes material and shipping only.	Acre	\$39.29	0.1	\$3.93
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	5	\$3.30
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	5	\$2.48
Straw	1237	Small grain straw (non organic and certified organic). Includes materials only.	Ton	\$122.89	0.2	\$24.58
Three Species Mix, Cool Season, Introduced Perennial Grass	2315	Cool season, introduced grass mix. Includes material and shipping only.	Acre	\$46.58	0.1	\$4.66

**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	4	\$96.84
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**Equipment Installation**

Concrete, CIP, Slab on Grade, fiber reinforced	2001	Fiber reinforced concrete formed and cast-in-place 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	\$170.83	11	\$1,879.13
Seeding Operation, Broadcast, Ground	959	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Includes equipment, power unit and	Acre	\$12.53	0.1	\$1.25

		labor costs.				
Skidsteer, 80 HP	933	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$44.26	4	\$177.04

**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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