

Practice: 561 - Heavy Use Area Protection

Scenario # 1 Concrete HUA

Missouri

Scenario Description:

Installation of a concrete heavy use pad to provide a stable, non-eroding surface for areas frequently used by livestock, people or vehicles. 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 Practice Situation:

A 30 head cow/calf operation with a frequently used area that is unstable with an eroding surface. The area lacks vegetation and has severe compaction concerns as well as deep mud. Concentration of nutrients cannot be spread on adjacent fields due to the unstable surface. Livestock health is compromised as additional energy is being used to travel through mud. A need exists to improve water quality, air quality, livestock health, as well as reduce soil erosion and compaction.

After Practice Situation:

The stabilization of areas frequently and intensively used by livestock by installing a concrete surface to reduce soil erosion, improve water quality, air quality, and livestock health. Typical size is 3,900 square feet. The base consists of 4" of gravel. The concrete is a reinforced slab on grade with a thickness of 5". Payment incorporates site preparation through grading and shaping, concrete pad and gravel. Cost data is applicable to organic and conventional agricultural production systems.

Scenario Feature Measure:

Area of reinforced concrete

Scenario Typical Size:	3900	Square Foot	Tot Unit Cost	\$4.42
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Aggregate, Gravel, Graded	48	Cubic yard	\$24.76	\$1,188.48
Equip./Install.	Concrete, CIP, slab on grade, reinforced	61	Cubic yard	\$253.20	\$15,445.20
Equip./Install.	Excavation, Common Earth, side cast, small	72	Cubic yard	\$1.96	\$141.12
Mobilization	Mobilization, General labor	2	Hour	\$21.81	\$43.62
Mobilization	Mobilization, medium equipment	2	Each	\$200.43	\$400.86
Total Cost:					\$17,219.28

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$3.31	EQIP-HU	\$3.97
EQIP-NOI	\$3.31	EQIP-HUNOI	\$3.97
EQIP-MRBI	\$3.31	EQIP-HUMRBI	\$3.97

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Scenario # 2 Geocell and Gravel HUA

Missouri

Scenario Description:

Installation of a geocell and gravel heavy use pad to provide a stable, non-eroding surface for areas frequently used by livestock, people or vehicles. 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 Practice Situation:

A 30 head cow/calf operation with a frequently used area that is unstable with an eroding surface. The area lacks vegetation and has severe compaction concerns as well as deep mud. Concentration of nutrients cannot be spread on adjacent fields due to the unstable surface. Livestock health is compromised as additional energy is being used to travel through mud. A need exists to improve water quality, air quality, livestock health, as well as reduce soil erosion.

After Practice Situation:

The stabilization of an area frequently and intensively used by people, animals or vehicles by installing a gravel surface with geocells to reduce soil erosion and improve livestock health. Typical size is 3900 square feet. 4" of gravel is placed into a 4" geocell "matting material" and surfaced with a 3" layer of fines. Payment incorporates site preparation through grading and shaping, gravel (7" depth total with gravel and fines) and geoweb "matting material". An additional 8 hours of general labor is added to put the geocells in place. Cost data is applicable to organic and conventional agricultural production systems.

Scenario Feature Measure:

Area of rock-gravel GeoCell GeoTex

Scenario Typical Size:	3900	Square Foot	Tot Unit Cost	\$2.14
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Aggregate, Gravel, Graded	85	Cubic yard	\$24.76	\$2,104.60
Equip./Install.	GeoCell, 4"	433	Square Yard	\$12.66	\$5,481.78
Equip./Install.	Excavation, Common Earth, side cast, small	72	Cubic yard	\$1.96	\$141.12
Labor	General Labor	8	Hour	\$21.56	\$172.48
Mobilization	Mobilization, General labor	2	Hour	\$21.81	\$43.62
Mobilization	Mobilization, medium equipment	2	Each	\$200.43	\$400.86

Total Cost: \$8,344.46

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$1.60	EQIP-HU	\$1.93
EQIP-NOI	\$1.60	EQIP-HUNOI	\$1.93
EQIP-MRBI	\$1.60	EQIP-HUMRBI	\$1.93

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Scenario # 3 Access Ramp

Missouri

Scenario Description:

Installation of a gravel access ramp to provide a stable, non-eroding surface for areas frequently used by livestock for limited access to drinking water from a pond or stream. 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 Practice Situation:

A 30 head cow/calf operation with an unstable and eroding area at a pond or stream due to cattle accessing the water for drinking. The area lacks vegetation and has severe compaction concerns as well as deep mud. Livestock health is compromised as additional energy is being used to travel through mud. A need exists to improve water quality, air quality, livestock health, as well as reduce soil erosion.

After Practice Situation:

A 14 ft wide ramp for livestock access to surface water is constructed by excavating a 6:1 approach on the bank of the stream or pond. Average bank height is 4.6 feet. Thirty-nine cubic yards of earth will be excavated to create a reasonable slope to the surface water. Twenty-five cubic yards of gravel are placed over 68 square yards of geotextile fabric installed to create the travel surface on the ramp and a level section of 10 feet at the base. Earthwork includes construction of a low (2') berm 30 ft long above the approach to divert runoff water from the ramp area. An additional 8 hours of labor is added to construct the berm. The access ramp stabilizes stream banks used for livestock water, reduces soil erosion, and improves water quality and livestock health. Scenario includes earthwork, aggregate and geotextile fabric. Cost data is applicable to organic and conventional agricultural production systems.

Scenario Feature Measure:

Area of access ramp

Scenario Typical Size:	560	Square Foot	Tot Unit Cost	\$2.30
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Aggregate, Gravel, Graded	25	Cubic yard	\$24.76	\$619.00
Equip./Install.	Excavation, Common Earth, side cast, small	39	Cubic yard	\$1.96	\$76.44
Equip./Install.	Geotextile, woven	68	Square Yard	\$2.18	\$148.24
Mobilization	Mobilization, General labor	2	Hour	\$21.81	\$43.62
Mobilization	Mobilization, medium equipment	2	Each	\$200.43	\$400.86
Total Cost:					\$1,288.16

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$1.73	EQIP-HU	\$2.07
EQIP-NOI	\$1.73	EQIP-HUNOI	\$2.07
EQIP-MRBI	\$1.73	EQIP-HUMRBI	\$2.07

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Scenario # 4 Gravel without Geotextile

Missouri

Scenario Description:

Installation of a gravel heavy use pad to provide a stable, non-eroding surface for areas frequently used by livestock, people or vehicles. 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 Practice Situation:

A 30 head cow/calf operation with a frequently used area that is unstable with an eroding surface. The area lacks vegetation and has severe compaction concerns as well as deep mud. Concentration of nutrients cannot be spread on adjacent fields due to the unstable surface. Livestock health is compromised as additional energy is being used to travel through mud. A need exists to improve water quality, air quality, livestock health, as well as reduce soil erosion and compaction.

After Practice Situation:

The stabilization of areas frequently and intensively used by livestock by installing a gravel surface to reduce soil erosion, improve water quality, air quality, and livestock health. Typical size is 3,900 square feet. Gravel, 8" deep, is surfaced with a 3" layer of fines. Payment incorporates site preparation through grading and shaping, gravel and layer of fines. Cost data is applicable to organic and conventional agricultural production systems.

Scenario Feature Measure:

Area of gravel with out Geotext 8" thickness

Scenario Typical Size:	3900	Square Foot	Tot Unit Cost	\$1.16
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Aggregate, Gravel, Graded	133	Cubic yard	\$24.76	\$3,293.08
Equip./Install.	Dozer, 140 HP	6	Hour	\$105.67	\$634.02
Labor	Equipment Operators, Heavy	6	Hour	\$27.22	\$163.32
Mobilization	Mobilization, General labor	2	Hour	\$21.81	\$43.62
Mobilization	Mobilization, medium equipment	2	Each	\$200.43	\$400.86

Total Cost: \$4,534.90

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$0.87	EQIP-HU	\$1.05
EQIP-NOI	\$0.87	EQIP-HUNOI	\$1.05
EQIP-MRBI	\$0.87	EQIP-HUMRBI	\$1.05

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Scenario # 5 Gravel with Geotextile

Missouri

Scenario Description:

Installation of a gravel heavy use pad to provide a stable, non-eroding surface for areas frequently used by livestock, people or vehicles. 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 Practice Situation:

A 30 head cow/calf operation with a frequently used area that is unstable with an eroding surface. The area lacks vegetation and has severe compaction concerns as well as deep mud. Concentration of nutrients cannot be spread on adjacent fields due to the unstable surface. Livestock health is compromised as additional energy is being used to travel through mud. A need exists to improve water quality, air quality, livestock health, as well as reduce soil erosion and compaction.

After Practice Situation:

The stabilization of areas frequently and intensively used by livestock by installing a gravel surface to reduce soil erosion, improve water quality, air quality, and livestock health. Typical size is 3,900 square feet. Gravel, 5" deep, is placed over light geotextile fabric and surfaced with a 2" layer of fines. Payment incorporates site preparation through grading and shaping, gravel and layer of fines and light geotextile fabric. Cost data is applicable to organic and conventional agricultural production systems.

Scenario Feature Measure:

Area of gravel with Geotext 5" Thickness

Scenario Typical Size:	3900	Square Foot	Tot Unit Cost	\$1.10
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Aggregate, Gravel, Graded	85	Cubic yard	\$24.76	\$2,104.60
Equip./Install.	Dozer, 140 HP	6	Hour	\$105.67	\$634.02
Equip./Install.	Geotextile, woven	433	Square Yard	\$2.18	\$943.94
Labor	Equipment Operators, Heavy	6	Hour	\$27.22	\$163.32
Mobilization	Mobilization, General labor	2	Hour	\$21.81	\$43.62
Mobilization	Mobilization, medium equipment	2	Each	\$200.43	\$400.86

Total Cost: \$4,290.36

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$0.83	EQIP-HU	\$0.99
EQIP-NOI	\$0.83	EQIP-HUNOI	\$0.99
EQIP-MRBI	\$0.83	EQIP-HUMRBI	\$0.99