

**Practice: 342 - Critical Area Planting**

**Scenario: #1 - Grass/legume mix-normal tillage**

**Scenario Description:**

Establishment of permanent vegetation on a site that is void or nearly void of vegetation due to a natural occurrence or a newly constructed conservation practice. Costs include seedbed preparation with typical tillage implements, grass/legume seed, companion crop, and fertilizer and lime with application.

**Before Situation:**

Areas that are void or nearly void of vegetation, resulting in bare soil being exposed to erosive processes. The exposed areas may be caused from recent natural occurrences (fire, flood, wind, etc.) or due to newly constructed conservation practices such as waterways, terraces, water and sediment basins or dams. The exposed areas will be subject to wind erosion, sheet and rill erosion, or visible rills may have already occurred. Runoff from the area flows into streams, water courses or other water bodies causing degradation to the receiving waters. The soil typically has a pH imbalance and low fertility.

**After Situation:**

This typical 1.0 acre critical area is stabilized by applying fertilizer, lime and seed. Soil amendments will be incorporated at an depth of six inches to improve fertility and ensure establishment of permanent vegetative cover. Apply 30 lbs of nitrogen, 60 lbs of phosphate, and 60 lbs of potash, along with an application of 2 tons of lime. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, drill the following mixture for a vegetative cover: Tall Fescue (50 lbs/ac), and Red Clover (8 lbs/ac) with a nurse crop of Cereal Rye at a seeding rate of 15 lbs per acre.

**Scenario Feature Measure:** area seeded

**Scenario Unit:** Acre

**Scenario Typical Size:** 1

**Scenario Cost:** \$548.12

**Scenario Cost/Unit:** \$548.12

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.77	2	\$21.54
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.58	1	\$6.58
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.65	1	\$20.65
Cultipacking	1100	Includes equipment, power unit and labor costs.	Acre	\$8.20	1	\$8.20
<b>Materials</b>						
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	1	\$70.93
Nitrogen (N), Urea	71	Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.64	30	\$19.20
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	\$0.78	60	\$46.80
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.59	60	\$35.40
One Species, Cool Season, Introduced Perennial Grass	2313	Introduced, cool season perennial grass. Includes material and shipping only.	Acre	\$32.72	1	\$32.72
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$143.05	2	\$286.10

**Practice: 342 - Critical Area Planting**

**Scenario: #3 - Native seeding - normal tillage**

**Scenario Description:**

Establishment of permanent vegetation on a site that is void or nearly void of vegetation due to a natural occurrence or a newly constructed conservation practice. Costs include seedbed preparation with typical tillage implements, native grass seed, and fertilizer and lime with application.

**Before Situation:**

Areas that are void or nearly void of vegetation, resulting in bare soil being exposed to erosive processes. The exposed areas may be caused from recent natural occurrences (fire, flood, etc) or due to newly constructed conservation practices such as waterways, terraces, water and sediment basins or dams. The exposed areas will be subject to wind erosion, sheet and rill erosion, or visible rills may have already occurred. Runoff from the area flows into streams, water courses or other water bodies causing degradation to the receiving waters. The soil typically has a pH imbalance and low fertility.

**After Situation:**

This typical 1.0 acre critical area is stabilized by applying fertilizer, lime and seed. Soil amendments will be incorporated at an depth of six inches to improve fertility and ensure establishment of permanent vegetative cover. Apply 60 lbs of phosphate and 60 lbs of potash, along with an application of 2 tons of lime. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, drill the following mixture for a vegetative cover: Big Bluestem (14 lbs/ac) and Switchgrass (2 lbs/ac) with a nurse crop of oats at a seeding rate of 32 lbs per acre.

**Scenario Feature Measure:** area seeded

**Scenario Unit:** Acre

**Scenario Typical Size:** 1

**Scenario Cost:** \$496.20

**Scenario Cost/Unit:** \$496.20

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.65	1	\$20.65
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.77	2	\$21.54
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.58	1	\$6.58
Cultipacking	1100	Includes equipment, power unit and labor costs.	Acre	\$8.20	1	\$8.20
<b>Materials</b>						
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	\$0.78	60	\$46.80
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.59	60	\$35.40
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$143.05	2	\$286.10
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	1	\$70.93

**Practice: 342 - Critical Area Planting**

**Scenario: #4 - Grass/legume mix-moderate grading**

**Scenario Description:**

Establishment of permanent vegetation on a site that is void or nearly void of vegetation due to a natural or human disturbance. Costs include a dozer for grading and shaping of small gullies, seedbed preparation with typical tillage implements, grass/legume seed, companion crop, and fertilizer and lime with application.

**Before Situation:**

Areas that are void or nearly void of vegetation, resulting in bare soil being exposed to erosive processes. The exposed areas may be caused from natural occurrences (fire, flood, etc) or human disturbance. The exposed areas have visible rills and small gullies averaging 1 foot in depth and 1 foot in width. Runoff from the area flows into streams, water courses or other water bodies causing degradation to the receiving waters. The soil typically has a pH imbalance and low fertility.

**After Situation:**

This typical 1.0 acre critical area is stabilized by grading and shaping the small gullies with a dozer (4 hours) and then applying fertilizer, lime and seed. Soil amendments will be incorporated at an depth of six inches to improve fertility and ensure establishment of permanent vegetative cover. Apply 30 lbs of nitrogen, 60 lbs of phosphate, and 60 lbs of potash, along with an application of 2 tons of lime. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, drill the following mixture for a vegetative cover: Tall Fescue (50 lbs/ac), and Red Clover (8 lbs/ac) with a nurse crop of Cereal Rye at a seeding rate of 15 lbs per acre.

**Scenario Feature Measure:** area seeded

**Scenario Unit:** Acre

**Scenario Typical Size:** 1

**Scenario Cost:** \$1,174.56

**Scenario Cost/Unit:** \$1,174.56

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$68.65	4	\$274.60
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.77	2	\$21.54
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.58	1	\$6.58
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.65	1	\$20.65
Cultipacking	1100	Includes equipment, power unit and labor costs.	Acre	\$8.20	1	\$8.20
<b>Labor</b>						
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	\$22.66	4	\$90.64
<b>Materials</b>						
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.59	60	\$35.40
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	\$0.78	60	\$46.80
One Species, Cool Season, Introduced Perennial Grass	2313	Introduced, cool season perennial grass. Includes material and shipping only.	Acre	\$32.72	1	\$32.72
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	1	\$70.93
Nitrogen (N), Urea	71	Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.64	30	\$19.20
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$143.05	2	\$286.10

**Mobilization**

**Mobilization**

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$261.20	1	\$261.20
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**Practice: 342 - Critical Area Planting**

**Scenario: #5 - Native seeding-moderate grading**

**Scenario Description:**

Establishment of permanent vegetation on a site that is void or nearly void of vegetation due to a natural or human disturbance. Costs include a dozer for grading and shaping of small gullies, seedbed preparation with typical tillage implements, native grass seed, companion crop, and fertilizer and lime with application.

**Before Situation:**

Areas that are void or nearly void of vegetation, resulting in bare soil being exposed to erosive processes. The exposed areas may be caused from natural occurrences (fire, flood, etc) or human disturbance. The exposed areas have visible rills and small gullies averaging 1 foot in depth and 1 foot in width. Runoff from the area flows into streams, water courses or other water bodies causing degradation to the receiving waters. The soil typically has a pH imbalance and low fertility.

**After Situation:**

This typical 1.0 acre critical area is stabilized by grading and shaping the small gullies with a dozer (4 hours) and then applying fertilizer, lime and seed. Soil amendments will be incorporated at an depth of six inches to improve fertility and ensure establishment of permanent vegetative cover. Apply 60 lbs of phosphate and 60 lbs of potash, along with an application of 2 tons of lime. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, drill the following mixture for a vegetative cover: Big Bluestem (14 lbs/ac) and Switchgrass (2 lbs/ac) with a nurse crop of oats at a seeding rate of 32 lbs per acre.

**Scenario Feature Measure:** area seeded

**Scenario Unit:** Acre

**Scenario Typical Size:** 1

**Scenario Cost:** \$1,122.64

**Scenario Cost/Unit:** \$1,122.64

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.77	2	\$21.54
Cultipacking	1100	Includes equipment, power unit and labor costs.	Acre	\$8.20	1	\$8.20
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.65	1	\$20.65
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$68.65	4	\$274.60
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.58	1	\$6.58
<b>Labor</b>						
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	\$22.66	4	\$90.64
<b>Materials</b>						
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	1	\$70.93
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$143.05	2	\$286.10
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.59	60	\$35.40
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	\$0.78	60	\$46.80
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$261.20	1	\$261.20

**Practice: 342 - Critical Area Planting**

**Scenario: #6 - Grass/legume mix-heavy grading**

**Scenario Description:**

Establishment of permanent vegetation on a site that is void or nearly void of vegetation due to a natural or human disturbance. Costs include a dozer for grading and shaping of moderate to severe gullies, seedbed preparation with typical tillage implements, grass/legume seed, companion crop, and fertilizer and lime with application.

**Before Situation:**

Areas that are void or nearly void of vegetation, resulting in bare soil being exposed to erosive processes. The exposed areas may be caused from natural occurrences (fire, flood, etc) or human disturbance. The exposed areas have visible rills and moderate to severe gullies averaging 3 feet in depth and 3 feet in width. Runoff from the area flows into streams, water courses or other water bodies causing degradation to the receiving waters. The soil typically has a pH imbalance and low fertility.

**After Situation:**

This typical 1.0 acre critical area is stabilized by grading and shaping the moderate to severe gullies with a dozer (10 hours) and then applying fertilizer, lime and seed. Soil amendments will be incorporated at an depth of six inches to improve fertility and ensure establishment of permanent vegetative cover. Apply 30 lbs of nitrogen, 60 lbs of phosphate, and 60 lbs of potash, along with an application of 2 tons of lime. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, drill the following mixture for a vegetative cover: Tall Fescue (50 lbs/ac), and Red Clover (8 lbs/ac) with a nurse crop of Cereal Rye at a seeding rate of 15 lbs per acre.

**Scenario Feature Measure:** area seeded

**Scenario Unit:** Acre

**Scenario Typical Size:** 1

**Scenario Cost:** \$1,722.42

**Scenario Cost/Unit:** \$1,722.42

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Cultipacking	1100	Includes equipment, power unit and labor costs.	Acre	\$8.20	1	\$8.20
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$68.65	10	\$686.50
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.77	2	\$21.54
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.58	1	\$6.58
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.65	1	\$20.65
<b>Labor</b>						
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	\$22.66	10	\$226.60
<b>Materials</b>						
Nitrogen (N), Urea	71	Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.64	30	\$19.20
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	1	\$70.93
One Species, Cool Season, Introduced Perennial Grass	2313	Introduced, cool season perennial grass. Includes material and shipping only.	Acre	\$32.72	1	\$32.72
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$143.05	2	\$286.10
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.59	60	\$35.40
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	\$0.78	60	\$46.80
<b>Mobilization</b>						

**Mobilization**

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$261.20	1	\$261.20
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**Practice: 342 - Critical Area Planting**

**Scenario: #7 - Native seeding-heavy grading**

**Scenario Description:**

Establishment of permanent vegetation on a site that is void or nearly void of vegetation due to a natural or human disturbance. Costs include a dozer for grading and shaping of moderate to severe gullies, seedbed preparation with typical tillage implements, grass/legume seed, companion crop, and fertilizer and lime with application.

**Before Situation:**

Areas that are void or nearly void of vegetation, resulting in bare soil being exposed to erosive processes. The exposed areas may be caused from natural occurrences (fire, flood, etc) or human disturbance. The exposed areas have visible rills and moderate to severe gullies averaging 3 feet in depth and 3 feet in width. Runoff from the area flows into streams, water courses or other water bodies causing degradation to the receiving waters. The soil typically has a pH imbalance and low fertility.

**After Situation:**

This typical 1.0 acre critical area is stabilized by grading and shaping the moderate to severe gullies with a dozer (10 hours) and then applying fertilizer, lime and seed. Soil amendments will be incorporated at an depth of six inches to improve fertility and ensure establishment of permanent vegetative cover. Apply 60 lbs of phosphate and 60 lbs of potash, along with an application of 2 tons of lime. Prepare a firm, weed free seedbed so that proper germination and stand establishment are ensured. Once the seedbed has been prepared, drill the following mixture for a vegetative cover: Big Bluestem (14 lbs/ac) and Switchgrass (2 lbs/ac) with a nurse crop of oats at a seeding rate of 32 lbs per acre.

**Scenario Feature Measure:** area seeded

**Scenario Unit:** Acre

**Scenario Typical Size:** 1

**Scenario Cost:** \$1,670.50

**Scenario Cost/Unit:** \$1,670.50

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Cultipacking	1100	Includes equipment, power unit and labor costs.	Acre	\$8.20	1	\$8.20
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.65	1	\$20.65
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.58	1	\$6.58
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$68.65	10	\$686.50
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.77	2	\$21.54
<b>Labor</b>						
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	\$22.66	10	\$226.60
<b>Materials</b>						
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	1	\$70.93
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$143.05	2	\$286.10
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.59	60	\$35.40
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	\$0.78	60	\$46.80
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$261.20	1	\$261.20

**Practice: 342 - Critical Area Planting**

**Scenario: #8 - Hydroseeding**

**Scenario Description:**

Seed, fertilizer and mulch are sprayed onto site using hydroseeding equipment to stabilize soil on an erosion prone site too steep for conventional seeding.

**Before Situation:**

Road bank on a mountain site has a 2:1 or steeper slope that is eroding and threatens stability of adjacent farm path, as well as causing non-point source water pollution. Site is too steep and narrow for use of conventional seeding equipment.

**After Situation:**

A permanent cover of perennial vegetation protects the slope from erosion.

**Scenario Feature Measure:** Area planted

**Scenario Unit:** Acre

**Scenario Typical Size:** 0

**Scenario Cost:** \$433.61

**Scenario Cost/Unit:** #Div/0!

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<i>Equipment/Installation</i>						
Seeding Operation, hydroseeder	1291	Hydroseeding with typical 1500 to 3600 gallon seeder. Includes all costs for equipment, power unit, and labor.	Acre	\$867.21	0.5	\$433.61

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**Scenario: #9 - Hydroseeding with Grading**

**Scenario Description:**

A gullied area on steep slope is graded smooth using s dozer, then seed, fertilizer and mulch are sprayed onto site using hydroseeding equipment to stabilize soil on an erosion prone site too steep for conventional seeding.

**Before Situation:**

Road bank on a mountain site has a 2:1 or steeper slope that is eroding and threatens stability of adjacent farm path, as well as causing non-point source water pollution. Site is too steep and narrow for use of convnetioanl seeding equipment. Site has a gully that needs treatment to stop head-cutting erosion.

**After Situation:**

A pemannet cover of perennial vegetation protects the slope from erosion.

**Scenario Feature Measure:** Area planted

**Scenario Unit:** Acre

**Scenario Typical Size:** 0

**Scenario Cost:** \$877.43

**Scenario Cost/Unit:** #Div/0!

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Seeding Operation, hydroseeder	1291	Hydroseeding with typical 1500 to 3600 gallon seeder. Includes all costs for equipment, power unit, and labor.	Acre	\$867.21	0.5	\$433.61
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$68.65	2	\$137.30
<b>Labor</b>						
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	\$22.66	2	\$45.32
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$261.20	1	\$261.20

**Practice: 342 - Critical Area Planting**

**Scenario: #10 - Bermudagrass**

**Scenario Description:**

A fine, uniform seedbed is prepared by repeated disking. Lime and fertilizer are broadcast and incrootpated. Then hulled Bermudagrass seed and Browntop millet seed are broadcast at rates of 15 lbs. (each) per acre.

**Before Situation:**

A coastal plain site with moderate to well drain soil has a slope that requires permanent vegetative cover to protect it from erosion.

**After Situation:**

A stand of millet emerges first, then by end of growing season the perennial Bermudagrass has become well enough established to provide a permanent protective cover.

**Scenario Feature Measure:** Acre planted

**Scenario Unit:** Acre

**Scenario Typical Size:** 1

**Scenario Cost:** \$491.09

**Scenario Cost/Unit:** \$491.09

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.77	1	\$10.77
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$20.65	1	\$20.65
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.58	1	\$6.58
<b>Materials</b>						
Lime, ENM	75	Fertilizer: Limestone Spread on field.	Ton	\$143.05	2	\$286.10
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	\$0.78	60	\$46.80
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.59	30	\$17.70
One Species, Warm Season, Introduced Perennial Grass (seed or sprigs)	2323	Introduced, warm season perennial grass seed or sprig. Includes material and shipping only.	Acre	\$64.09	1	\$64.09
Nitrogen (N), Urea	71	Price per pound of N supplied by Urea. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.64	60	\$38.40

**Practice: 342 - Critical Area Planting**

**Scenario: #11 - Streambank Vegetation**

**Scenario Description:**

Protection of streambanks consisting of conventional plantings of vegetation to stabilize and protect against scour and erosion. The purpose of this practice is to stabilize the eroded banks of natural or constructed channels. The typical scenario includes broadcast grasses and 3'x3' spacing woody cuttings with no appreciable bank shaping on a 6-foot high bank at 3(H):1(V) slope for 1000 linear feet, with an area of 19,000 sf.

Resource Concerns: Soil Erosion - Excessive Bank Erosion from Streams, Shoreline and Water Conveyance Channels; Water Quality Degradation - Excessive Sediment in Surface Waters; Water Quality Degradation - Elevated Water Temperature; Excess/Insufficient Water - Excessive Sediment in Surface Waters; Inadequate Habitat for Fish and Wildlife- Habitat Degradation.

Associated Practices include: 580 - Streambank and Shoreline Protection, 391 - Riparian Forest Buffer; 390 - Riparian Herbaceous Cover; 395 - Stream Habitat Improvement and Management

**Before Situation:**

A stream bisects the agricultural property and has had all of the woody vegetation removed due to overgrazing or human manipulation; the stream has marginally degraded streambanks that are unstable and show signs of active erosion.

Soil Erosion: The streambank is unstable.

Water Quality Degradation: The sediment load has increased in the stream resulting in elevated water temperatures.

Excess/Insufficient Water: The excessive sediment load has reduced the water conveyance capacity, storage capacity and flow within the stream.

Inadequate Habitat for Fish and Wildlife: The deficiencies in the stream's habitat limit survival, growth, reproduction, and/or diversity of aquatic organisms within the stream.

**After Situation:**

The streambank is stable against further erosion and encourages natural sediment transport and deposition. Loss of riparian areas and sediment load is reduced in the stream.

For Soil Erosion: The streambank is stable.

For Water Quality Degradation: The sediment load has decreased in the stream resulting in improved aquatic habitat.

For Excess/Insufficient Water: The water conveyance capacity, storage capacity and flow within the stream has been stabilized.

For Inadequate Habitat for Fish and Wildlife: The reduction in the sediment load promotes survival, growth, reproduction, and/or diversity of aquatic organisms within the stream's habitat.

**Scenario Feature Measure:** Slope area of streambank planted

**Scenario Unit:** Square Foot

**Scenario Typical Size:** 19,000

**Scenario Cost:** \$5,338.70

**Scenario Cost/Unit:** \$0.28

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
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	\$12.21	0.5	\$6.11
<b>Labor</b>						
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	\$18.79	224	\$4,208.96
<b>Materials</b>						
Cuttings, woody, medium size	1308	Woody cuttings, live stakes or whips typically 1/4" to 1" diameter and 24" to 48" long. Includes materials and shipping only.	Each	\$0.49	1667	\$816.83
One Species, Cool Season, Introduced Perennial Grass	2313	Introduced, cool season perennial grass. Includes material and shipping only.	Acre	\$32.72	0.44	\$14.40
One Species, Warm Season, Native Perennial Grass	2322	Native, warm season perennial grass. Includes material and shipping only.	Acre	\$70.93	0.44	\$31.21
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$261.20	1	\$261.20