

Practice: 412 - Grassed Waterway

Scenario # 1 Waterway, over 0.2 acres

New York

Scenario Description: Actual Scenario # 1

Typical practice is 1244 ' long by 35' wide by 1.2' deep parabolic channel. The waterway is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Costs include excavation and associated work to construct the overall shape and grade of the waterway.

Associated Practices: Diversion (362), Critical Area Seeding (342), Mulching (484), Underground Outlet (620), Structure for Water Control (587), Subsurface Drainage (606), Water and Sediment Control Basin (638).

Before Practice Situation:

The field has a small gully which is cutting deeper into the field as time goes on, so it needs to be stopped or controlled. Excessive sedimentation and soil erosion as a result from ephemeral or classic gully erosion. Gully has formed in field as a result of excessive runoff and poor cropping techniques. Grassed waterway is also commonly installed to covey runoff from concentrated flows, terrarces, diversions, or water control structures or similar practices to a suitable, stable outlet.

After Practice Situation:

Installed grassed waterway is 1244' long by 35' wide by 1.2' deep parabolic earthen channel. The practice is installed using a dozer. Topsoil stripped and replaced. Use Critical Area Planting (342) for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed accoring to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).

Scenario Feature Measure:

Acre of Waterway

Scenario Typical Size:	1	Acre	Tot Unit Cost	\$4,455.93
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Equip./Install.	Excavation, common earth, large	1739	Cubic Yard	\$1.68	\$2,921.52
Equip./Install.	Stripping and stockpiling, topsoil	806	Cubic Yard	\$0.95	\$765.70
Labor	General Labor	4	Hour	\$23.16	\$92.64
Labor	Supervisor or Manager	2	Hour	\$45.77	\$91.54
Mobilization	Mobilization, medium equipment	1	Each	\$282.78	\$282.78
Forgone IncomFI, Corn Dryland		0.5	Acre	\$313.51	\$156.76
Forgone IncomFI, Soybeans Dryland		0.25	Acre	\$340.36	\$85.09
Forgone IncomFI, Wheat Dryland		0.25	Acre	\$239.62	\$59.91

Total Cost: \$4,455.93

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$3,417.39	EQIP-HU	\$4,040.51
WHIP	\$0.00	WHIP-HU	\$0.00

Practice: 412 - Grassed Waterway

Scenario # 2 Waterway, small, 0.2 Acres or less

New York

Scenario Description: Actual Scenario # 2

Typical practice is 200' long by 35' wide by 1.2' deep parabolic channel. The waterway is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Costs include excavation and associated work to construct the overall shape and grade of the waterway.

Associated Practices: Diversion (362), Critical Area Seeding (342), Mulching (484), Underground Outlet (620), Structure for Water Control (587), Subsurface Drainage (606), Water and Sediment Control Basin (638).

Before Practice Situation:

The field has a small gully which is cutting deeper into the field as time goes on, so it needs to be stopped or controlled. Excessive sedimentation and soil erosion as a result from ephemeral or classic gully erosion. Gully has formed in field as a result of excessive runoff and poor cropping techniques. Grassed waterway is also commonly installed to convey runoff from concentrated flows, terraces, diversions, or water control structures or similar practices to a suitable, stable outlet.

After Practice Situation:

Installed grassed waterway is 200' long by 35' wide by 1.2' deep parabolic earthen channel. The practice is installed using a dozer. Topsoil stripped and replaced. Use Critical Area Planting (342) for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed according to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).

Scenario Feature Measure:

Area of Waterway

Scenario Typical Size:	6970	Square Foot	Tot Unit Cost	\$0.14
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Equip./Install.	Excavation, common earth, large	280	Cubic Yard	\$1.68	\$470.40
Equip./Install.	Stripping and stockpiling, topsoil	130	Cubic Yard	\$0.95	\$123.50
Labor	General Labor	1	Hour	\$23.16	\$23.16
Labor	Supervisor or Manager	1	Hour	\$45.77	\$45.77
Mobilization	Mobilization, medium equipment	1	Each	\$282.78	\$282.78
Forgone Incom/FI, Corn Dryland		0.08	Acre	\$313.51	\$25.08
Forgone Incom/FI, Soybeans Dryland		0.04	Acre	\$340.36	\$13.61
Forgone Incom/FI, Wheat Dryland		0.04	Acre	\$239.62	\$9.58

Total Cost: \$993.89

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	\$0.11	EQIP-HU	\$0.13
WHIP	\$0.00	WHIP-HU	\$0.00

Practice: 412 - Grassed Waterway

Scenario # 3 Grass Waterway with Stone Checks

New York

Scenario Description: Actual Scenario # 3

Typical practice is 1244 ' long by 35' wide by 1.2' deep parabolic channel. A waterway that is a shaped or graded channel and is established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet. Instead of using Mulching to allow vegetative establishment, stone checks are installed every 100 feet along the length of the waterway perpendicular to waterflow and are 2/3 the waterway top width to reduce maintenance and provide temporary protection until vegetation is established. Stone Checks are installed 18" deep. This practice addresses Concentrated Flow Erosion (Classic Gully & Ephemeral Erosion) and Excessive Sediment in surface waters. Waterway area measured from top of bank to top of bank. Costs include excavation and associated work to construct the overall shape and grade of the waterway.

Associated Practices: Diversion (362), Critical Area Seeding (342), Mulching (484), Underground Outlet (620), Structure for Water Control (587), Subsurface Drainage (606), Water and Sediment Control Basin (638).

Before Practice Situation:

The field has a small gully which is cutting deeper into the field as time goes on, so it needs to be stopped or controlled. Excessive sedimentation and soil erosion as a result from ephemeral or classic gully erosion. Gully has formed in field as a result of excessive runoff and poor cropping techniques. Grassed waterway is also commonly installed to convey runoff from concentrated flows, terraces, diversions, or water control structures or similar practices to a suitable, stable outlet.

After Practice Situation:

Installed grassed waterway is 1244' long by 35' wide by 1.2' deep parabolic earthen channel. Stone checks are installed every 100 feet along the length of the waterway. The practice is installed using a dozer. Stone checks are installed with small backhoe and labor. Use Critical Area Planting (342) for establishment of waterway vegetation. If erosion control blankets or mulching for seedbed establishment/protection are needed, use conservation practice Mulching (484). Drainage tile, if needed, will be installed according to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). If inlet Structures are needed with the drainage tile, then those will be installed using Underground Outlet (620).

Scenario Feature Measure:

Acre of Waterway

Scenario Typical Size:	1	Acre	Tot Unit Cost	\$6,285.62
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Geotextile, non-woven, light weight	181	Square Yard	\$1.08	\$195.48
Materials	Aggregate, Gravel, Graded	36	Cubic yard	\$30.22	\$1,087.92
Equip./Install.	Backhoe, 80 HP	7	Hour	\$61.42	\$429.94
Equip./Install.	Excavation, common earth, large	1739	Cubic Yard	\$1.68	\$2,921.52
Equip./Install.	Stripping and stockpiling, topsoil	806	Cubic Yard	\$0.95	\$765.70
Labor	General Labor	11	Hour	\$23.16	\$254.76
Labor	Supervisor or Manager	1	Hour	\$45.77	\$45.77
Mobilization	Mobilization, medium equipment	1	Each	\$282.78	\$282.78
Forgone Incom FI, Corn Dryland		0.5	Acre	\$313.51	\$156.76
Forgone Incom FI, Soybeans Dryland		0.25	Acre	\$340.36	\$85.09
Forgone Incom FI, Wheat Dryland		0.25	Acre	\$239.62	\$59.91

Payment types:

Total Cost: \$6,285.62

<u>PayType</u>	<u>Unit Payment</u>	<u>PayType</u>	<u>Unit Payment</u>
EQIP	\$4,789.65	EQIP-HU	\$5,687.23
WHIP	\$0.00	WHIP-HU	\$0.00