

Practice: 362 - Diversion

Scenario: #1 - Diversion

Scenario Description: An earthen channel and ridge constructed across long slopes, to divert runoff away from farmsteads, agricultural waste systems, gullies, critical erosion areas, construction areas or other sensitive areas. Outlet may be waterway, underground outlet, or other suitable outlet. Typical diversion is 1000 feet long installed on a field slope of 1-3 percent, requiring 1 CY excavation per LF. Channel may be level or gradient, and the ridge may be vegetated or farmed. The quantity of excavation and fill is balanced.

Before Situation: Excessive sedimentation and soil erosion as a result of gully, rill or sheet erosion which exceeds "T" from farm fields and other locations. Also may be associated with animal feeding operations, with surface or roof runoff to be diverted from potential contamination sources, or contaminated water needing diverted to storage or treatment structures.

After Situation: Diversion is installed using a dozer, scraper, or other earth-moving equipment. Field system meets "T", contaminated water or "clean" storm water runoff is diverted away from a contamination source to minimize the volume of runoff that is contaminated by agricultural waste. Associated practices are Critical Area Planting (342), Grassed Waterway (412), Underground Outlet (620), Mulching (484), and Subsurface Drain (606).

Scenario Feature Measure: Diversion Fill Volume

Scenario Unit: Cubic Yard

Scenario Typical Size: 1000

Total Scenario Cost: \$2,012.40

Scenario Cost/Unit: \$2.01

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Mobilization

Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$471.90	1	\$471.90
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Equipment Installation

Excavation, common earth, large equipment, 50 ft	1222	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 50 feet. Includes equipment and labor.	Cubic Yard	\$1.54	1000	\$1,540.50
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Scenario: #2 - Diversion Minor Structure

Scenario Description: An earthen channel and ridge on the lower side constructed across the slope, commonly referred to as road bars, kickers, and gully plugs. Typical minor structures are less than 200 feet long, have a maximum height of 5 feet in the gully section and 2.5 feet in the spillway section, and an embankment volume less than 200 cubic yards. The drainage area above an individual structure shall be 15 acres or less. The total area above several structures in series shall be limited to 40 acres or less.

Before Situation: Soil erosion as a result of gully, rill, or sheet erosion which exceeds "T" from farm fields, range land, earthen roadways, and other locations. Also may be associated with animal feeding operations, with surface or roof runoff to be diverted from potential contamination sources, or contaminated water needing diverted to storage or treatment structures.

After Situation: Diversion is installed using a backhoe, dozer, or other earth-moving equipment. Field system meets "T", contaminated water or "clean" storm water runoff is diverted away from a contamination source to minimize the volume of runoff that is contaminated by agricultural waste. Associated practices are Critical Area Planting (342), Grassed Waterway (412), Underground Outlet (620), Mulching (484), and Subsurface Drain (606).

Scenario Feature Measure: Diversion Fill Volume

Scenario Unit: Cubic Yard

Scenario Typical Size: 100

Total Scenario Cost: \$803.82

Scenario Cost/Unit: \$8.04

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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Equipment Installation

Earthfill, Manually Compacted	50	Earthfill, manually compacted, includes equipment and labor	Cubic Yard	\$5.57	100	\$556.66
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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	\$247.16	1	\$247.16
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Scenario: #3 - Net Wire Diversion

Scenario Description: A low barrier constructed of posts and mesh wire across shallow depressions or other areas where surface water concentrates. Practice is typically installed in drainage areas located primarily on range land to reduce sheet and rill erosion. Wire height will not be less than 12 inches or more than 18 inches. The diversion shall be constructed on the contour or on grade not to exceed 0.5 foot per 100 feet. Posts may be juniper with a minimum top diameter of 3 inches, treated wood posts with a minimum top diameter of 4 inches, T, U, or I section steel posts, or iron pipe of not less than 1 1/4 inches inside diameter. Posts shall be set a minimum of 1 1/2 feet in the ground for a 1' tall structure and 2' in the ground for a 1-1/2' tall structure and spaced at 10 feet or less. Wire mesh diversions trap sediment, spread or disperse overland water flows to reduce erosion from concentrated flow and aid in the infiltration of surface flows by slowing water movement. Typical scenario size is 20 feet long, with 3 metal tee posts, with wire mesh 12 to 18 inches

Before Situation: Soil erosion is accelerated as a result of gully, rill, or sheet erosion which exceeds "T" on range land, pasture land, and other locations due to excessive sheet flow. Excessive sheet flow results in head cuts, small channels or gullies and increased sheet erosion. Due to excessive erosion more precipitation is running off the site versus infiltrating the soil.

After Situation: Net Wire Diversion is installed using post driving equipment and/or manual labor. Sheet flows are slowed and or spread across the land form to decrease concentrated flow and resulting soil erosion (sheet, rill, and small gullies) and aid the soil in the infiltration of sheet flows.

Scenario Feature Measure: Diversion Length

Scenario Unit: Foot

Scenario Typical Size: 20

Total Scenario Cost: \$229.10

Scenario Cost/Unit: \$11.45

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
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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	\$166.24	1	\$166.24
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Materials

Post, Steel T, 1.25 lbs, 5'	2372	Steel Post, Studded 5' - 1.25 lb. Includes materials and shipping only.	Each	\$4.59	3	\$13.76
Wire Mesh Screen, galvanized, 2"x 4", V-mesh	2371	Galvanized V-mesh wire screen, 2" x 4". Materials only.	Foot	\$2.45	20	\$49.10