

**Practice:** 362 - Diversion

**Scenario:** #1 - Diversion

**Scenario Description:** An earthen channel constructed across long slopes with supporting ridge on lower side, 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, 500 feet long installed on a field slope of 5 percent and requires 1 CY excavation per LF. Channel may be level or gradient and 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, roof runoff or surface runoff that becomes contaminated with agricultural wastes that significantly contributes to the amount of runoff that has to be stored or treated.

**After Situation:** Diversion is installed using a dozer. Field system meets "T" or "clean" storm water runoff is diverted away from an agricultural waste management system 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 Drainage (606).

**Scenario Feature Measure:** Diversion Fill Volume

**Scenario Unit:** Cubic Yard

**Scenario Typical Size:** 500

**Total Scenario Cost:** \$1,336.61

**Scenario Cost/Unit:** \$2.67

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**Equipment Installation**

Excavation, Common Earth, side cast, small equipment	48	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$1.97	500	\$985.18
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**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	\$22.04	2	\$44.09
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	\$39.85	2	\$79.70

**Mobilization**

Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$227.64	1	\$227.64
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**Practice:** 362 - Diversion

**Scenario:** #2 - Water Bars\_Dips

**Scenario Description:** An earthen channel constructed across long slopes with supporting ridge on lower side, to divert runoff off roads/travel ways, and away from gullies, critical erosion areas, construction areas or other sensitive areas in order to prevent concentrated flow down slopes. Outlet may be waterway, culvert, underground outlet, or other suitable stable outlet. Estimated cost is based on a 500 ft section access road and firebreak having a width of 14 ft and slope of 12%. In order to prevent gully erosion a system of 13 water bars and rolling dips each with a 3 ft top width, 4H:1V slope, average height of 1.5 ft and, 20 linear feet (total of 260 LF) are constructed including one on the top where the grade breaks. The quantity of excavation and fill is balanced.

**Before Situation:** Excessive sedimentation and soil erosion as a result of gully, rill and sheet erosion which exceeds "T" from farm fields and other locations. Eroded soil is transported via concentrated flow from natural gullies and ruts from vehicle and/or animal traffic directly to a stream at the base of the slope.

**After Situation:** Water bars and rolling dips are installed along the road at approximately every 5 ft of vertical change and at the top of the hill using a dozer. Field system meets "T" or "clean" storm water runoff is diverted to stable outlets such as prevent concentrated flow along the road. Associated practices are Critical Area Planting (342), Grassed Waterway (412), Underground Outlet (620), Mulching (484), and Subsurface Drainage (606).

**Scenario Feature Measure:** Length of Diversion

**Scenario Unit:** Foot

**Scenario Typical Size:** 260

**Total Scenario Cost:** \$748.63

**Scenario Cost/Unit:** \$2.88

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**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	\$27.99	6	\$167.91
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**Equipment Installation**

Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$58.85	6	\$353.07
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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	\$227.64	1	\$227.64
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