

Practice: 638 - Water & Sediment Control Basin

Scenario: #1 - WASCOB > 100 LF Embankment

Scenario Description:

An earth embankment or a combination ridge and channel constructed across the slope of minor watercourses to form a sediment trap and water detention basin with a stable outlet. The typical scenario is for the construction of an embankment with sufficient capacity to control the runoff from a 10-year frequency, 24-hour duration storm using a combination of flood storage and discharge through the outlet. Sediment removal from the basin will be handled by an Operation and Maintenance Plan. The typical embankment is 150 feet long, 4 foot high, 3 foot top width, 5:1 side slopes, constructed from on-site fill, compacted by the construction equipment. A core trench is used to intercept seepage. The outlet is typically a standpipe with underground outlet. This practice is utilized to reduce watercourse and gully erosion, trap sediment, reduce and manage onsite and downstream runoff. Sheet and rill erosion will be controlled by other conservation practices.

Associated Practices: Critical Area Planting (342), Underground Outlet (620)

Before Situation:

Farming fields with excessive slope length has resulted in multiple rills and/or ephemeral gullies that will continue to worsen over time. The excessive erosion may lead to deterioration of receiving waters due to excessive sedimentation and nutrient transport. Resource concern addressed includes soil erosion and water quality by trapping sediment and/or reduce erosion in a field to protect riparian areas and water bodies from sediment deposition. Surface water causes erosion and the sediment (and potentially pesticides) to be transported into the riparian areas and water bodies downstream.

After Situation:

A 150 foot long embankment is constructed with 755 CY of excavation/earthfill with a dozer to build a Water and Sediment Control Basin . Rill and/or gully erosion is reduced.

Scenario Feature Measure: Length of WASCOB Embankment in LF

Scenario Unit: Foot

Scenario Typical Size: 150

Scenario Cost: \$3,647.57

Scenario Cost/Unit: \$24.32

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Stripping and stockpiling, topsoil	1199	Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor.	Cubic Yard	\$0.87	81	\$70.47
Dozer, 140 HP	927	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	\$126.14	20	\$2,522.80
Foregone Income						
FI, Wheat Dryland	1963	Dryland Wheat is Primary Crop	Acre	\$248.86	0.0375	\$9.33
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$343.51	0.0375	\$12.88
FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$334.10	0.075	\$25.06
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	\$37.38	20	\$747.60
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$259.43	1	\$259.43

Practice: 638 - Water & Sediment Control Basin

Scenario: #2 - WASCOB < 100 Feet

Scenario Description:

An earth embankment or a combination ridge and channel constructed across the slope of minor watercourses to form a sediment trap and water detention basin with a stable outlet. The typical scenario is for the construction of an embankment with sufficient capacity to control the runoff from a 10-year frequency, 24-hour duration storm using a combination of flood storage and discharge through the outlet. Sediment removal from the basin will be handled by an Operation and Maintenance Plan. The typical embankment is 75 feet long, 3 foot high, 3 foot top width, 5:1 side slopes, constructed from on-site fill, compacted by the construction equipment. A core trench is used to intercept seepage. The outlet is typically a standpipe with underground outlet. This practice is utilized to reduce watercourse and gully erosion, trap sediment, reduce and manage onsite and downstream runoff. Sheet and rill erosion will be controlled by other conservation practices.

Associated Practices: Critical Area Planting (342), Underground Outlet (620)

Before Situation:

Farming fields with excessive slope length has resulted in multiple rills and/or ephemeral gullies that will continue to worsen over time. The excessive erosion may lead to deterioration of receiving waters due to excessive sedimentation and nutrient transport. Resource concern addressed includes soil erosion and water quality by trapping sediment and/or reduce erosion in a field to protect riparian areas and water bodies from sediment deposition. Surface water causes erosion and the sediment (and potentially pesticides) to be transported into the riparian areas and water bodies downstream.

After Situation:

A 75 foot long embankment is constructed with 300 CY of excavation/earthfill with a dozer to build a Water and Sediment Control Basin . Rill and/or gully erosion is reduced.

Scenario Feature Measure: Length of WASCOB Embankment in LF

Scenario Unit: Foot

Scenario Typical Size: 75

Scenario Cost: \$2,279.22

Scenario Cost/Unit: \$30.39

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Stripping and stockpiling, topsoil	1199	Stripping and stockpiling of topsoil adjacent to stripping area. Includes equipment and labor.	Cubic Yard	\$0.87	39	\$33.93
Dozer, 140 HP	927	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	\$126.14	12	\$1,513.68
Foregone Income						
FI, Wheat Dryland	1963	Dryland Wheat is Primary Crop	Acre	\$248.86	0.019	\$4.73
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$343.51	0.019	\$6.53
FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$334.10	0.037	\$12.36
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	\$37.38	12	\$448.56
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$259.43	1	\$259.43