Practice: 350 - Sediment Basin

Scenario: #1 - Excavated Basin

Scenario Description:

A basin constructed by excavation in an existing drainage way on agricultural, urban, or construction sites for the purpose of trapping sediment to preserve the capacity of reservoirs, ditches, canals, diversions, waterways and streams and to prevent undesirable deposition on bottom lands and other developed lands. The sediment basin is created by excavation and impounds less than 3 feet against any embankment or spoil. Excavated material is spoiled, not placed in a designed embankment. Earthen spillway is constructed as needed. Resource concerns addressed include excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition. Surface water causes the sediment (and potentially pesticides and nutrients) to be transported into the riparian areas and water bodies downstream. The typical sediment basin has a drainage area of 5 acres.

Before Situation:

Disturbed areas on agricultural or urban land, or construction sites, have excessive erosion that leads to deterioration of downstream waters due to excessive sedimentation.

After Situation:

The typical sediment basin is constructed by excavating 900 cubic yards and spreading the spoil outside the pool area using a dozer or similar excavation equipment. Sediments will be collected in the basin and the basin will be emptied through an engineered outlet. Associated practice(s): Other practices that may need to be implemented along with sediment basin to address all of the site specific resource concerns include: Critical Area Planting (342) and Mulching (484) where necessary to prevent erosion following construction activities, Structure for Water Control (587) or Underground Outlet (620) if using a dewatering device, Pond Sealing or Lining (521A,521B,521C,521D).

Scenario Feature Measure: Excavated volume

Scenario Unit: Cubic Yard

Scenario Typical Size: 900

Scenario Cost: $3,983.85 **Scenario Cost/Unit:** $4.43

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation						
Excavation, common earth, large equipment, 150 ft	1223	Bulk excavation of common earth including sand and gravel with dozer >100 HP with average push distance of 150 feet. Includes equipment and labor.	Cubic Yard	$3.64	900	$3,276.00
Dozer, 140 HP	927	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	$124.76	3	$374.28
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	$24.95	3	$74.85
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$258.72	1	$258.72

Practice: 350 - Sediment Basin

Scenario: #2 - Embankment Basin

Scenario Description:

A sediment basin constructed with a low hazard class earthen embankment in an existing drainage way on agricultural, urban, or construction sites for the purpose of trapping sediment to preserve the capacity of reservoirs, ditches, canals, diversions, waterways and streams and to prevent undesirable deposition on bottom lands and other developed lands. The sediment basin is created by a compacted earth embankment and impounds more than 3 feet of water against the embankment. Resource concerns addressed include excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition. Surface water causes the sediment (and potentially pesticides and nutrients) to be transported into the riparian areas and water bodies downstream. The typical sediment basin has a drainage area of 5 acres.

Before Situation:

Disturbed areas on agricultural or urban land, or construction sites, have excessive erosion that leads to deterioration of downstream waters due to excessive sedimentation.

After Situation:

The typical sediment basin is an embankment of 1000 cy with excavated material from the pool area used to construct the embankment and auxiliary spillway. The embankment will be compacted earthfill. Sediments will be collected in the basin and the basin will be emptied through an engineered outlet. Associated practice(s): Other practices that may need to be implemented along with sediment basin to address all of the site specific resource concerns include: Critical Area Planting (342) and Mulching (484) where necessary to prevent erosion following construction activities, Structure for Water Control (587) or Underground Outlet (620) if using a dewatering device, Pond Sealing or Lining (521A,521B,521C,521D).

Scenario Feature Measure: Embankment volume

Scenario Unit: Cubic Yard

Scenario Typical Size: 1,000

Scenario Cost: $3,780.15 **Scenario Cost/Unit:** $3.78

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation						
Scraper, self propelled, 21 CY	1208	Self propelled earthmoving scraper with 21 CY capacity. Does not include labor.	Hour	$366.32	9	$3,296.88
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	$24.95	9	$224.55
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$258.72	1	$258.72