

Practice: 620 - Underground Outlet

Scenario # 1 UO<=6"

Scenario Description:

Louisiana

Install 500 feet of 6" approved plastic pipe to convey stormwater from one location to a suitable and stable outlet. Trench is excavated 52" deep and 24" wide by hydraulic track excavator. Costs include 6" SCH-40, PVC pipe, Precast concrete drop inlet with steel grate, trench excavation, trench backfill, rodent guard and laid up stone headwall at outlet. This practice is often installed in conjunction with terraces, diversions, sediment control basins, waterways or similar practices.

Before Practice 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 Practice Situation:

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), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)

Scenario Feature Measure:

Length of Conduit

Scenario Typical Size:	500	Foot	Unit Cost	\$8.30
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Catch Basin, concrete, 2'x2'x6'	1	Cubic Yard	\$471.03	\$471.03
Materials	Rock Riprap, Placed with geotextile	1	Cubic yard	\$57.49	\$57.49
Materials	Pipe, PVC, 6", SCH 40	500	Foot	\$5.35	\$2,675.00
Equip./Install.	Compaction, earthfill, vibratory plate	2	Cubic Yard	\$1.78	\$3.56
Equip./Install.	Excavation, common earth, small equipment, 50 ft	170	Cubic Yard	\$2.04	\$346.80
Equip./Install.	Excavation, common earth, side cast, large equipment	170	Cubic Yard	\$1.50	\$255.00
Labor	Supervisor or Manager	2	Hour	\$36.21	\$72.42
Mobilization	Mobilization, medium equipment	2	Each	\$133.51	\$267.02
Forgone Income	Foregone income, place holder	0	Acre	\$0.00	\$0.00
				Total Cost:	\$4,148.32

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Scenario # 2 UO<=6" w Riser

Scenario Description:

Louisiana

Install 500 feet of 6" approved plastic pipe to convey stormwater from one location to a suitable and stable outlet. Trench is excavated approximately 54" deep and 15" wide by trencher. Costs include 6" HDPE corrugated single wall plastic tubing, 8" Perforated PVC Riser Inlet, trench excavation, trench backfill, rodent guard and laid up stone headwall at outlet. This practice is often installed in conjunction with terraces, diversions, sediment control basins, waterways or similar practices.

Before Practice 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 Practice Situation:

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), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)

Scenario Feature Measure:

Length of Conduit

Scenario Typical Size:	500	Foot	Unit Cost	\$5.25
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Pipe, HDPE, 6", CPT, Single Wall	500	Foot	\$1.11	\$555.00
Materials	Rock Riprap, Placed with geotextile	1	Cubic yard	\$57.49	\$57.49
Materials	Inlet, riser, 8"	2	Each	\$123.42	\$246.84
Equip./Install.	Excavation, common earth, small equipment, 50 ft	105	Cubic Yard	\$2.04	\$214.20
Equip./Install.	Compaction, earthfill, vibratory plate	2	Cubic Yard	\$1.78	\$3.56
Equip./Install.	Trencher, wheel type	5	Hour	\$222.26	\$1,111.30
Labor	Equipment Operators, Light	5	Hour	\$19.22	\$96.10
Labor	Supervisor or Manager	2	Hour	\$36.21	\$72.42
Mobilization	Mobilization, medium equipment	2	Each	\$133.51	\$267.02
				Total Cost:	\$2,623.93

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Scenario # 3 6" <UO <= 12"

Scenario Description:

Louisiana

Install 500 feet of 8" approved plastic pipe to convey stormwater from one location to a suitable and stable outlet. Trench Excavation is 58" deep and 28" wide. Costs include 8" SCH 40, PVC pipe, Precast concrete drop inlet with steel grate, trench excavation, trench backfill, rodent guard and laid up stone headwall at outlet. This practice is often installed in conjunction with terraces, diversions, sediment control basins, waterways or similar practices.

Before Practice 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 Practice Situation:

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), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)

Scenario Feature Measure:

Length of Conduit

Scenario Typical Size:

500	Foot	Unit Cost	\$11.45
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Pipe, PVC, 8", SCH 40	500	Foot	\$8.08	\$4,040.00
Materials	Rock Riprap, Placed with geotextile	1	Cubic yard	\$57.49	\$57.49
Materials	Catch Basin, concrete, 2'x2'x6'	1	Cubic Yard	\$471.03	\$471.03
Equip./Install.	Excavation, common earth, side cast, large equipment	210	Cubic Yard	\$1.50	\$315.00
Equip./Install.	Excavation, common earth, small equipment, 50 ft	210	Cubic Yard	\$2.04	\$428.40
Equip./Install.	Compaction, earthfill, vibratory plate	2	Cubic Yard	\$1.78	\$3.56
Labor	Supervisor or Manager	4	Hour	\$36.21	\$144.84
Mobilization	Mobilization, medium equipment	2	Each	\$133.51	\$267.02
				Total Cost:	\$5,727.34

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Scenario # 4 6" <UO<=12" w Riser

Scenario Description:

Louisiana

Install 500 feet of 10" approved plastic pipe to convey stormwater from one location to a suitable and stable outlet. Trench Excavation is 58" deep and 28" wide. Costs include 10" HDPE pipe, 12" Perforated PVC Riser Inlet, trench excavation, trench backfill, rodent guard and laid up stone headwall at outlet. This practice is often installed in conjunction with terraces, diversions, sediment control basins, waterways or similar practices.

Before Practice 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 Practice Situation:

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), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)

Scenario Feature Measure:

Length of Conduit

Scenario Typical Size:

500	Foot	Unit Cost	\$101.45
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Pipe, HDPE, CPT, Double Wall, Soil Tight, 10"	500	Foot	\$5.42	\$2,710.00
Materials	Inlet, riser, 10"	2	Each	\$170.56	\$341.12
Materials	Rock Riprap, Placed with geotextile	1	Cubic yard	\$57.49	\$57.49
Equip./Install.	Excavation, common earth, small equipment, 50 ft	210	Cubic Yard	\$2.04	\$428.40
Equip./Install.	Compaction, earthfill, vibratory plate	2	Cubic Yard	\$1.78	\$3.56
Equip./Install.	Trencher, wheel type	210	Hour	\$222.26	\$46,674.60
Labor	Equipment Operators, Light	5	Hour	\$19.22	\$96.10
Labor	Supervisor or Manager	4	Hour	\$36.21	\$144.84
Mobilization	Mobilization, medium equipment	2	Each	\$133.51	\$267.02
				Total Cost:	\$50,723.13

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Scenario # 5 12" <UO <= 18"

Scenario Description:

Louisiana

Install 500 feet of 18" approved plastic pipe to convey stormwater from one location to a suitable and stable outlet. Trench excavation is 66" deep x 39" wide. Costs include 18" HDPE pipe, Precast concrete drop inlet with steel grate, trench excavation, bedding material, trench backfill, rodent guard and laid up stone headwall at outlet. This practice is often installed in conjunction with terraces, diversions, sediment control basins, waterways or similar practices.

Before Practice 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 Practice Situation:

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), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)

Scenario Feature Measure:

Length of Conduit

Scenario Typical Size:	500	Foot	Unit Cost	\$17.79
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Rock Riprap, Placed with geotextile	1	Cubic yard	\$57.49	\$57.49
Materials	Aggregate, Gravel, Graded	60	Cubic yard	\$24.23	\$1,453.80
Materials	Catch Basin, concrete, 2'x2'x6'	1	Cubic Yard	\$471.03	\$471.03
Materials	Pipe, HDPE, CPT, Double Wall, Soil Tight, 18"	500	Foot	\$10.66	\$5,330.00
Equip./Install.	Excavation, common earth, side cast, large equipment	330	Cubic Yard	\$1.50	\$495.00
Equip./Install.	Excavation, common earth, small equipment, 50 ft	330	Cubic Yard	\$2.04	\$673.20
Equip./Install.	Compaction, earthfill, vibratory plate	2	Cubic Yard	\$1.78	\$3.56
Labor	Supervisor or Manager	4	Hour	\$36.21	\$144.84
Mobilization	Mobilization, medium equipment	2	Each	\$133.51	\$267.02
				Total Cost:	\$8,895.94

Practice: 620 - Underground Outlet

Scenario # 6 18"<UO<=24"

Scenario Description:

Louisiana

Install 500 feet of 24" approved plastic pipe to convey stormwater from one location to a suitable and stable outlet. Trench excavation is 72" x 48" wide. Costs include 24" HDPE pipe, Precast concrete drop inlet with steel grate, 24" HDPE pipe, trench excavation, bedding material, trench backfill, rodent guard and laid up stone headwall at outlet. Practice is often installed in conjunction with terraces, diversions, sediment control basins, waterways or similar practices.

Before Practice 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 Practice Situation:

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), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)

Scenario Feature Measure:

Length of Conduit

Scenario Typical Size:	500	Foot	Unit Cost	\$27.47
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Rock Riprap, Placed with geotextile	1	Cubic yard	\$57.49	\$57.49
Materials	Aggregate, Gravel, Graded	85	Cubic yard	\$24.23	\$2,059.55
Materials	Catch Basin, concrete, 2'x2'x6'	1	Cubic Yard	\$471.03	\$471.03
Materials	Pipe, HDPE, CPT, Double Wall, Soil Tight, 24"	500	Foot	\$18.31	\$9,155.00
Equip./Install.	Excavation, common earth, side cast, large equipment	445	Cubic Yard	\$1.50	\$667.50
Equip./Install.	Excavation, common earth, small equipment, 50 ft	445	Cubic Yard	\$2.04	\$907.80
Equip./Install.	Compaction, earthfill, vibratory plate	2	Cubic Yard	\$1.78	\$3.56
Labor	Supervisor or Manager	4	Hour	\$36.21	\$144.84
Mobilization	Mobilization, medium equipment	2	Each	\$133.51	\$267.02
				Total Cost:	\$13,733.79

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Scenario # 7 24"<UO<=30"

Scenario Description:

Louisiana

Install 500 feet of 30" approved plastic pipe to convey stormwater from one location to a suitable and stable outlet. Trench excavation is 78" deep x 56" wide. Costs include 30" HDPE pipe, Precast concrete drop inlet with steel grate, trench excavation, bedding material, trench backfill, rodent guard and laid up stone headwall at outlet. This practice is often installed in conjunction with terraces, diversions, sediment control basins, waterways or similar practices.

Before Practice 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 Practice Situation:

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), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)

Scenario Feature Measure:

Length of Conduit

Scenario Typical Size:	500	Foot	Unit Cost	\$37.06
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Rock Riprap, Placed with geotextile	1	Cubic yard	\$57.49	\$57.49
Materials	Aggregate, Gravel, Graded	105	Cubic yard	\$24.23	\$2,544.15
Materials	Pipe, HDPE, CPT, Double Wall, Soil Tight, 30"	500	Foot	\$25.65	\$12,825.00
Equip./Install.	Excavation, common earth, side cast, large equipment	565	Cubic Yard	\$1.50	\$847.50
Equip./Install.	Excavation, common earth, small equipment, 50 ft	565	Cubic Yard	\$2.04	\$1,152.60
Equip./Install.	Compaction, earthfill, vibratory plate	2	Cubic Yard	\$1.78	\$3.56
Equip./Install.	Catch Basin, concrete, 3'x3'x6'	1	Each	\$686.73	\$686.73
Labor	Supervisor or Manager	4	Hour	\$36.21	\$144.84
Mobilization	Mobilization, medium equipment	2	Each	\$133.51	\$267.02
				Total Cost:	\$18,528.89

Practice: 620 - Underground Outlet

Scenario # 8 UO>30"

Scenario Description:

Louisiana

Install 500 feet of 36" approved plastic pipe to convey stormwater from one location to a suitable and stable outlet. Trench excavation is 84" deep x 64" wide. Costs include 36" HDPE pipe, Precast concrete drop inlet with steel grate, trench excavation, bedding material, trench backfill, rodent guard and laid up stone headwall at outlet. This practice is often installed in conjunction with terraces, diversions, sediment control basins, waterways or similar practices.

Before Practice 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 Practice Situation:

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), Terrace (600), Diversion (342), Water and Sediment Control Basin (638), and Subsurface Drainage (606)

Scenario Feature Measure:

Length of Conduit

Scenario Typical Size:	500	Foot	Unit Cost	\$46.72
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Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Rock Riprap, Placed with geotextile	1	Cubic yard	\$57.49	\$57.49
Materials	Aggregate, Gravel, Graded	135	Cubic yard	\$24.23	\$3,271.05
Materials	Pipe, HDPE, CPT, Double Wall, Soil Tight, 36"	500	Foot	\$32.97	\$16,485.00
Equip./Install.	Excavation, common earth, side cast, large equipment	690	Cubic Yard	\$1.50	\$1,035.00
Equip./Install.	Excavation, common earth, small equipment, 50 ft	690	Cubic Yard	\$2.04	\$1,407.60
Equip./Install.	Compaction, earthfill, vibratory plate	2	Cubic Yard	\$1.78	\$3.56
Equip./Install.	Catch Basin, concrete, 3'x3'x6'	1	Each	\$686.73	\$686.73
Labor	Supervisor or Manager	4	Hour	\$36.21	\$144.84
Mobilization	Mobilization, medium equipment	2	Each	\$133.51	\$267.02
				Total Cost:	\$23,358.29