

Scenario Worksheet

Practice and Scenario Description:	
Information Type	Data
Region	Mid Atlantic
State	New Jersey
Discipline Group	Engineering General
Practice Code/Name	578 - Stream Crossing
Scenario ID	1
Scenario Name	Bridge

Scenario Description
 Install a bridge to allow stream flows to cross under access road or animal trail. Bridge opening determined by sizing for storm event dictated in standard. Scenario includes dewatering, abutments, girders, decking. Work consists of site preparation, dewatering, acquiring and installing abutments, girders, decking with necessary hardware, backfilling abutments, and armoring with geotextile and riprap. Riprap and geotextile are used to stabilize and protect abutments as needed. Scenario based on cast in place concrete abutments, steel girders, and timber deck. Travel surface shall be wooden deck surface. If a different travel surface is needed, refer to another appropriate standard for the surfacing. Span is 30 feet. Load is H-20. Width is 12 feet including curbs. Abutments are <= 6 feet. Use this option assumes permits require extensive stream diversion or pumping bypass during construction. Use (396) Aquatic Organism Passage instead, when the primary intent is biological concerns, not hydrologic. Associated practices could be (342) Critical Area Planting, (560) Access Road, (575) Animal Trails and Walkways, (566) Recreational Trails and

Before Practice Situation
 Water flow could not cross access road or trail without erosion; or access road or trail could not cross channel.

After Practice Situation
 Access and waterflow are able to cross each other in a stable manner. Stream flow is not impeded and a stable base exists for equipment, people and/or animals to cross.

Scenario Feature Measure	square footage of bridge deck
Scenario Unit	Square Foot
Scenario Typical Size	360

Cost Summary:		
Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$9,077.40	\$25.22
Equipment/Installation	\$1,426.61	\$3.96
Labor	\$4,589.40	\$12.75
Mobilization	\$857.70	\$2.38
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$15,951.11	\$44.31

Scenario Worksheet

Practice and Scenario Description:	
Information Type	Data
Region	Mid Atlantic
State	New Jersey
Discipline Group	Engineering General
Practice Code/Name	578 - Stream Crossing
Scenario ID	2
Scenario Name	Culvert installation

Scenario Description	Install a new culvert. Work includes dewatering, site preparation and removing any old crossing, acquiring and installing culvert pipe with gravel bedding and fill (compacted), and building headwalls. If a different travel surface is needed, refer to another appropriate standard for the surfacing. 36 inch Culvert installation with <75 cy of fill needed and < 2 yds rock riprap for headwalls. Pipe is 40 feet long. Use of this option assumes permits require extensive stream diversion or pumping bypass during construction. Use (396) Aquatic Organism Passage instead, when the primary intent is biological concerns, not hydrologic. Use (587) Structure for Water Control instead, for ditch cross culverts and other intermittent flows. Associated practices could be (342) Critical Area Planting, (560) Access Road, (575) Animal Trails and Walkways, (566) Recreational Trails and Walkways, (500) Obstruction Removal, or (584) Channel Stabilization. (561) Heavy Use Area, (382) Fence
Before Practice Situation	Water flow could not cross access road or trail without erosion; or access road or trail could not cross channel.
After Practice Situation	Access road and waterflow are able to cross each other in a stable manner. Stream flow is not impeded and a stable base exists for equipment, people and/or animals to cross. Typical crossing is 36" diameter pipe by 40 foot long. Practice payment based on diameter in inches times the length of pipe in feet.
Scenario Feature Measure	Culvert, inches diameter x length of pipe
Scenario Unit	Inch-Foot
Scenario Typical Size	1440

Cost Summary:		
Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$4,559.72	\$3.17
Equipment/Installation	\$4,916.66	\$3.41
Labor	\$1,211.00	\$0.84
Mobilization	\$880.47	\$0.61
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$11,567.85	\$8.03

Scenario Worksheet

Practice and Scenario Description:	
Information Type	Data
Region	Mid Atlantic
State	New Jersey
Discipline Group	Engineering General
Practice Code/Name	578 - Stream Crossing
Scenario ID	4
Scenario Name	Stream Crossing Ramp only

Scenario Description	Install a stable ramp for a channel crossing with a stable bottom. Medium includes but not limited to precast concrete blocks, geocells, pavers, and rip rap. If a different travel surface is needed, refer to another appropriate standard for the surfacing. Use (396) Aquatic Organism Passage instead, when the primary intent is biological concerns, not hydrologic. Approach stabilization paid by associated practices. Associated practices could be (342) Critical Area Planting, (560) Access Road, (575) Animal Trails and Walkways, (566) Recreational Trails and Walkways, (500) Obstruction Removal, or (584) Channel Stabilization, (561) Heavy Use Area,(382) Fence.
Before Practice Situation	Water flow could not cross access road or trail without erosion; or access road or trail could not cross channel.
After Practice Situation	A 12' Wide ramp is installed at a 5:1 slope on a 4' bank height for a total area of 240 SF per approach or 480 SF total. Access road, animal trails and walkway, heavy use area and waterflow are able to cross each other in a stable manner.Stream flow is not impeded and a stable base exists for equipment, people and/or animals to cross. Payment measured from top of ramp to toe of slope times design width using low bank to set top of ramp. Areas above this that need stabilization paid under associated practices.
Scenario Feature Measure	Square foot of approach
Scenario Unit	Square Foot
Scenario Typical Size	480

Cost Summary:		
Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$1,690.28	\$3.52
Equipment/Installation	\$361.28	\$0.75
Labor	\$327.04	\$0.68
Mobilization	\$571.80	\$1.19
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,950.40	\$6.15

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Mid Atlantic
State	New Jersey
Discipline Group	Engineering General
Practice Code/Name	578 - Stream Crossing
Scenario ID	5
Scenario Name	Stream Crossing Ramps and channel

Scenario Description

Install a stable ramp and stabilize bottom for a channel crossing with an unstable bottom. Medium includes but not limited to precast concrete blocks, geocells, pavers, and rip rap. If a different travel surface is needed, refer to another appropriate standard for the surfacing. State permits have minimal requirements for water management during installation. Use (396) Aquatic Organism Passage instead, when the primary intent is biological concerns, not hydrologic. Approach stabilization paid by associated practices. Associated practices could be (342) Critical Area Planting, (560) Access Road, (575) Animal Trails and Walkways, (566) Recreational Trails and Walkways, (500) Obstruction Removal, or (584) Channel Stabilization, (561) Heavy Use Area, (382) Fence.

Before Practice Situation

Water flow could not cross access road or trail without erosion; or access road or trail could not cross channel.

After Practice Situation

A 12' Wide ramp is installed at a 5:1 slope on a 4' bank height for a total area of 240 SF per approach or 480 SF total for ramps. In addition, a 30' long bottom is also stabilized for an additional 360 SF or a total of 600 SF. Access road, animal trails and walkway, heavy use area and waterflow are able to cross each other in a stable manner. Stream flow is not impeded and a stable base exists for equipment, people and/or animals to cross. Payment measured from top of ramp to toe of slope times design width using low bank to set top of ramp plus the width of the channel bottom times the width. Areas above this that need stabilization paid under associated practices.

Scenario Feature Measure	SF of total crossing
Scenario Unit	Square Foot
Scenario Typical Size	600

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$1,744.18	\$2.91
Equipment/Installation	\$407.32	\$0.68
Labor	\$408.80	\$0.68
Mobilization	\$571.80	\$0.95
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$3,132.10	\$5.22

