Practice: 378 - Pond

Scenario # 1 **Excavated, all spoil**

Scenario Description: **Actual Scenario # 1** **New York**

A low-hazard water impoundment structure is installed by excavating a pit and spreading the spoil outside the pool area. Structure is installed on agricultural lands to maintain or improve water quality and to provide water for livestock, fish and wildlife, fire control, developing renewable energy systems, and other related uses. The pond is created solely by excavating material and impounds less than 3 feet against the embankment or spoil. The excavated material is spoiled, not placed in a designed embankment. An earthen spillway is constructed as needed. The resource concerns addressed include inadequate livestock water, excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition. Associated Practices: Critical area Seeding (382), Livestock Pipeline (516), Pond Sealing or Lining, Flexible Membrane (521A), Pumping Plant (533), Watering Facility (614),Structure for Water Control (587), Aquatic Organism Passage (396).

Before Practice Situation:

Agricultural land has inadequate livestock water, excessive suspended sediment and turbidity in surface water, damage from sediment deposition and/or reduced capacity of conveyances by sediment deposition. An area exists where water could naturally pool or run off to create a pond for livestock, wildlife, fire control, developing renewable energy systems, and other related uses, and to maintain or improve water quality. Failure of the pond will not result in loss of life; damage to homes, commercial or industrial buildings, main highways, or railroads; or in interruption of the use or service of public utilities.

After Practice Situation:

A low-hazard water impoundment pond is constructed by excavating 3,100 cubic yards. The spoil is spread outside the pool area using a dozer or similar excavation equipment. Water quality and/or quantity resource concerns are addressed.

Scenario Feature Measure:

Excavated Volume

Scenario Typical Size:	3100	Cubic Yard	Tot Unit Cost	$2.50

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Equip./Install.	Dozer, 140 HP	40	Hour	$136.36	$5,454.40
Labor	Supervisor or Manager	5	Hour	$45.77	$228.85
Labor	Equipment Operators, Heavy	40	Hour	$36.55	$1,462.00
Labor	Skilled Labor	8	Hour	$39.82	$318.56
Mobilization	Mobilization, medium equipment	1	Each	$282.78	$282.78
				Total Cost:	$7,746.59

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	$1.87	EQIP-HU	$2.25
WHIP	$0.00	WHIP-HU	$0.00

Practice: 378 - Pond

Scenario # 2 Excavated, embankment less than 3 ft

Scenario Description: **Actual Scenario # 2** **New York**

An earthen embankment, low-hazard water impoundment structure with a principal spillway conduit and earthen auxiliary spillway (if needed) is constructed on agricultural land to improve water quality and to provide water for livestock, fish and wildlife, recreation, fire control, crop and orchard irrigation, and other related uses. The resource concerns addressed include inadequate livestock water, excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition. Associated Practices: Critical area Seeding (382), Livestock Pipeline (516), Pond Sealing or Lining, Flexible Membrane (521A), Pumping Plant (533), Watering Facility (614),Structure for Water Control (587), Aquatic Organism Passage (396).

Before Practice Situation:

Agricultural land has inadequate livestock water, excessive suspended sediment and turbidity in surface water, damage from sediment deposition and/or reduced capacity of conveyances by sediment deposition. An area exists where water could naturally pool or run off to create a pond for livestock, wildlife, fire control, or irrigation. Failure of the pond will not result in loss of life; damage to homes, commercial or industrial buildings, main highways, or railroads; or in interruption of the use or service of public utilities.

After Practice Situation:

A low hazard pond is constructed by excavating the pool area, preparing the foundation as designed, and using 800 cubic yards to create a 500 foot embankment. The maximum embankment height is less than 3 feet at the auxiliary spillway. The emergency spill way is earthen. If auxiliary controls are needed, use appropriate practice standard. Water quality and/or quantity resource concerns are addressed.

Scenario Feature Measure:

Embankment Volume

Scenario Typical Size:	800	Cubic Yard	Tot Unit Cost	$3.95

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Equip./Install.	Track Loader, 95HP	8	Hour	$97.13	$777.04
Equip./Install.	Dozer, 140 HP	8	Hour	$136.36	$1,090.88
Labor	Supervisor or Manager	2	Hour	$45.77	$91.54
Labor	Skilled Labor	16	Hour	$39.82	$637.12
Mobilization	Mobilization, medium equipment	2	Each	$282.78	$565.56
				Total Cost:	$3,162.14

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	$2.96	EQIP-HU	$3.56
WHIP	$0.00	WHIP-HU	$0.00

Practice: 378 - Pond

Scenario # 3 Embankment Pond without Pipe

Scenario Description: **Actual Scenario # 3** **New York**

An earthen embankment structure with an earthen auxiliary spillway is constructed on agricultural land to maintain or improve water quality or to provide water for livestock, fish and wildlife, recreation, fire control, developing renewable energy systems, and other related uses. The resource concerns addressed include inadequate livestock water, excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition.

Associated Practices: Critical area Seeding (382), Livestock Pipeline (516), Pond Sealing or Lining, Flexible Membrane (521A), Pumping Plant (533), Watering Facility (614),Structure for Water Control (587), Aquatic Organism Passage (396).

Before Practice Situation:

Agricultural land has inadequate livestock water, excessive suspended sediment and turbidity in surface water, damage from sediment deposition and/or reduced capacity of conveyances by sediment deposition. An area exists where water could naturally pool or run off to create a pond for livestock, wildlife, fire control, developing renewable energy systems, and other related uses, and to maintain or improve water quality. Failure of the pond will not result in loss of life; damage to homes, commercial or industrial buildings, main highways, or railroads; or in interruption of the use or service of public utilities.

After Practice Situation:

An impoundment pond is constructed by excavating the pool area, constructing the auxiliary spillway, preparing the foundation as designed, and using 3100 cubic yards to create an embankment. The product of the storage times the effective height of the dam is less than 3,000. The effective height of the dam is 35 feet or less. The earthen auxiliary spillway will be constructed as designed. No principle spillway pipe will be used. Water quality and/or quantity resource concerns are addressed.

Scenario Feature Measure:

Embankment Volume

Scenario Typical Size:	3100	Cubic Yard	Tot Unit Cost	$5.45

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Equip./Install.	Roller, vibratory, towed	40	Hour	$62.46	$2,498.40
Equip./Install.	Track Loader, 95HP	40	Hour	$97.13	$3,885.20
Equip./Install.	Dozer, 140 HP	40	Hour	$136.36	$5,454.40
Labor	Supervisor or Manager	8	Hour	$45.77	$366.16
Labor	Equipment Operators, Heavy	80	Hour	$36.55	$2,924.00
Labor	General Labor	40	Hour	$23.16	$926.40
Mobilization	Mobilization, medium equipment	3	Each	$282.78	$848.34
				Total Cost:	$16,902.90

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	$4.09	EQIP-HU	$4.91
WHIP	$0.00	WHIP-HU	$0.00

378 3 Embankment Pond without Pipe

Practice: 378 - Pond

Scenario # 4 Embankment Pond with Pipe

Scenario Description: **Actual Scenario # 4** **New York**

An earthen embankment with principle spillway conduit and earthen auxiliary spillway is constructed on agricultural land to maintain or improve water quality and to provide water for livestock, fish and wildlife, recreation, fire control, developing renewable energy systems, and other related uses. The resource concerns addressed include inadequate livestock water, excessive suspended sediment and turbidity in surface water, damage from sediment deposition, and reduced capacity of conveyances by sediment deposition.
Associated Practices: Critical area Seeding (382), Livestock Pipeline (516), Pond Sealing or Lining, Flexible Membrane (521A), Pumping Plant (533), Watering Facility (614),Structure for Water Control (587), Aquatic Organism Passage (396).

Before Practice Situation:

Agricultural land has inadequate livestock water, excessive suspended sediment and turbidity in surface water, damage from sediment deposition and/or reduced capacity of conveyances by sediment deposition. An area exists where water could naturally pool or run off to create a pond for livestock, wildlife, fire control, developing renewable energy systems, and other related uses, and to maintain or improve water quality. Failure of the pond will not result in loss of life; damage to homes, commercial or industrial buildings, main highways, or railroads; or in interruption of the use or service of public utilities.

After Practice Situation:

The typical low hazard pond is constructed by excavating the pool area, constructing the auxiliary spillway, preparing the foundation as designed, and using 3100 cubic yards to create an embankment. The product of the storage times the effective height of the dam is less than 3,000. The effective height of the dam is 35 feet or less. The principal spillway is installed using an approved conduit material. The earthen auxiliary spillway will be constructed as designed.

Scenario Feature Measure:

Embankment Volume

Scenario Typical Size:	3100	Cubic Yard	Tot Unit Cost	$8.23

Cost Category	Component Name	Quantity	Unit	Unit Cost	Cost
Materials	Aggregate, Sand, Graded, Washed	19.6	Cubic yard	$29.81	$584.28
Materials	Pipe, CMP, 18", 16 Gauge	98	Foot	$18.05	$1,768.90
Materials	Pipe, CMP, 30", 16 Gauge	8	Foot	$28.89	$231.12
Materials	Trash Guard, metal	118	Pound	$2.42	$285.56
Equip./Install.	Roller, vibratory, towed	48	Hour	$62.46	$2,998.08
Equip./Install.	Track Loader, 95HP	48	Hour	$97.13	$4,662.24
Equip./Install.	Excavation, Common Earth, side	1.6	Cubic yard	$2.48	$3.97
Equip./Install.	Concrete, CIP, formed reinforced	3	Cubic yard	$477.12	$1,431.36
Equip./Install.	Dozer, 140 HP	48	Hour	$136.36	$6,545.28
Labor	Supervisor or Manager	8	Hour	$45.77	$366.16
Labor	Equipment Operators, Heavy	96	Hour	$36.55	$3,508.80
Labor	Skilled Labor	48	Hour	$39.82	$1,911.36
Mobilization	Mobilization, small equipment	2	Each	$190.19	$380.38
Mobilization	Mobilization, medium equipment	3	Each	$282.78	$848.34

Total Cost: $25,525.82

Payment types:

PayType	Unit Payment	PayType	Unit Payment
EQIP	$6.18	EQIP-HU	$7.41
WHIP	$0.00	WHIP-HU	$0.00

378 4 Embankment Pond with Pipe