Practice: 397 - Aquaculture Pond

Scenario: #1 - Aquaculture Pond

Scenario Description:

Typical practice is 1 acre pond surface area, 3:1 side slopes, average 5' depth. The construction of a aquaculture pond to facilitate the efficient collection and transfer of waste, the containment of cultured fish, efficient use of water and the maintenance of water quality. The resorce concerns addressed include excess nutrients in surface and ground waters, inefficient water use, and habitat degradation. Typical pond outlet shall is Structure for Water Control (587). Costs include all equipment necessary to excavate, grade and shape an aquaculture pond. Water Control Structure and Seeding not included.

Before Situation:

In the before situation, an aquaculture producer has an aquaculture pond system that one or more of the following concerns: excessive seepage or frequent release of nutrient laden aquaculture water, potential of loss of non-native aquaculture production fish species to the native environment, and/or poor growing conditions for the current aquaculture species.

After Situation:

Aquaculture pond is typically 1 acre in surface area, 5 feet deep with 3:1 side slopes. The practice is installed using a dozer. Drainage tile, if needed, will be installed accoring to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). Liner if needed will be installed using Pond Sealing (521 A, B, C, or D). Water Well, Pumps, and Access Roads may also be needed and will be installed using those standards as appropriate.

Scenario Feature Measure: Acre of Aquaculture Pond

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: $21,292.13 **Scenario Cost/Unit:** $21,292.13

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	$3.00	6990	$20,970.00
Labor						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$36.21	2	$72.42
Mobilization						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$249.71	1	$249.71

Practice: 397 - Aquaculture Pond

Scenario: #2 - With Kettle

Scenario Description:

Typical practice is 1 acre pond surface area, 3:1 side slopes, average 5' depth with a harvest kettle constructed with 10 CY of reinforced concrete. The construction of a aquaculture pond to facilitate the efficient collection and transfer of waste, the containment of cultured fish, efficient use of water and the maintenance of water quality. The resorce concerns addressed include excess nutrients in surface and ground waters, inefficient water use, and habitat degradation. Typical pond outlet shall is Structure for Water Control (587). Costs include all equipment necessary to excavate, grade and shape an aquaculture pond, and reinforce concrete “kettle”. Water Control Structure and Seeding not included.

Before Situation:

In the before situation, an aquaculture producer has an aquaculture pond system that one or more of the following concerns: excessive seepage or frequent release of nutrient laden aquaculture water, potential of loss of non-native aquaculture production fish species to the native environment, and/or poor growing conditions for the current aquaculture species.

After Situation:

Aquaculture pond is typically 1 acre in surface area, 5 feet deep with 3:1 side slopes with a reinforced concrete harvest kettle. The practice is installed using a dozer. Reinforce concrete harvest kettle is installed with laborers. Drainage tile, if needed, will be installed accoring to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). Liner if needed will be installed using Pond Sealing (521 A, B, C, or D). Water Well, Pumps, and Access Roads may also be needed and will be installed using those standards as appropriate.

Scenario Feature Measure: Acre of Aquaculture Pond

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: $25,328.71 **Scenario Cost/Unit:** $25,328.71

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price ($/unit)	Quantity	Cost
Equipment/Installation						
Concrete, CIP, formed reinforced	38	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$333.36	10	$3,333.60
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	$3.00	6990	$20,970.00
Labor						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$36.21	4	$144.84
Skilled Labor	230	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	$26.82	8	$214.56
Materials						
Dimension Lumber, Treated	1044	Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners	Board Foot	$0.73	100	$73.00
Wire Mesh Screen, galvanized, 1/16 in	1229	Wire Mesh Screen, galvanized, 1/16 inch grid spacing. Materials only.	Square Foot	$2.45	140	$343.00
Mobilization						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$249.71	1	$249.71

Practice: 397 - Aquaculture Pond

Scenario: #3 - With Rock Bottom

Scenario Description:

Typical practice is 1 acre pond surface area, 3:1 side slopes, average 5' depth with a 6" gravel placed in pond bottom as required for certain species of fish. The construction of a aquaculture pond to facilitate the efficient collection and transfer of waste, the containment of cultured fish, efficient use of water and the maintenance of water quality. The resorce concerns addressed include excess nutrients in surface and ground waters, inefficient water use, and habitat degradation. Typical pond outlet shall is Structure for Water Control (587). Costs include all equipment necessary to excavate, grade and shape an aquaculture pond and furnishing and placing gravel. Water Control Structure and Seeding not included.

Before Situation:

In the before situation, an aquaculture producer has an aquaculture pond system that one or more of the following concerns: excessive seepage or frequent release of nutrient laden aquaculture water, potential of loss of non-native aquaculture production fish species to the native environment, and/or poor growing conditions for the current aquaculture species.

After Situation:

Aquaculture pond is typically 1 acre in surface area, 5 feet deep with 3:1 side slopes with 6” of gravel on the bottom. The practice is installed using a dozer. Drainage tile, if needed, will be installed accoring to Subsurface Drain (606). Outlets, if needed will be installed using Structure for Water Control (587). Liner if needed will be installed using Pond Sealing (521 A, B, C, or D). Water Well, Pumps, and Access Roads may also be needed and will be installed using those standards as appropriate.

Scenario Feature Measure: Acre of Aquaculture Pond

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: $39,874.95 **Scenario Cost/Unit:** $39,874.95

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	$3.00	7581	$22,743.00
Labor						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$36.21	2	$72.42
Materials						
Aggregate, Gravel, Graded	46	Gravel, includes materials, equipment and labor to transport and place. Includes washed and unwashed gravel.	Cubic yard	$24.23	690	$16,718.70
Mobilization						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$249.71	1	$249.71
Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	$91.12	1	$91.12

Practice: 397 - Aquaculture Pond

Scenario: #4 - Aquaculture Split Pond

Scenario Description:

Typical practice is 7 to 10 acre pond surface area, 3:1 side slopes, average 5' depth that will be split with a cross levee. The construction of a aquaculture split pond is to facilitate the efficient processing of nutrients, increase efficient use of water, increase energy use efficeincy and the maintenance of water quality. The resorce concerns addressed include excess nutrients in surface and ground waters, inefficient water use, inefficient energy use, and habitat degradation. Costs include all equipment necessary to excavate, grade and shape an cross levee for an aquaculture spilt pond. Water Control Structure, pumping plant, and Seeding not included.

Before Situation:

In the before situation, an aquaculture producer has an aquaculture pond system that one or more of the following concerns: excessive seepage or frequent release of nutrient laden aquaculture water, excessive energy consumption, excessive groundwater demand, and/or poor growing conditions for the current aquaculture species.

After Situation:

Aquaculture pond is typically 7 to10 acre in surface area, 5 feet deep with 3:1 side slopes with a ~330 ft cross levee constructed to split the pond (80/20). The practice is installed using a dozer or dirt buckets. Water control structure, Pumps, and Access Roads may also be needed and will be installed using those standards as appropriate.

Scenario Feature Measure: Acre of Aquaculture Pond

Scenario Unit: Acre

Scenario Typical Size: 7

Scenario Cost: $7,471.13 **Scenario Cost/Unit:** $1,067.30

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	$3.00	2383	$7,149.00
Labor						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	$36.21	2	$72.42
Mobilization						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	$249.71	1	$249.71