Scenario Worksheet

Practice and Scenario Description:	
Information Type	**Data**
Region	Mid Atlantic
State	New Jersey
Discipline Group	Environmental Engineering
Practice Code/Name	367 - Roofs and Covers
Scenario ID	1
Scenario Name	Flexible Roof
Scenario Description	A flexible membrane or fabric-like roof placed on a steel truss hoop-like supports attached to an existing wall or with its own simple support system. Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff as well as odor issues. **Associated Practices:** Animal Mortality Facility (316), Composting Facility (317), Heavy Use Area Protection (561), Roof Runoff Structure (558), Waste Storage Facility (313), and Waste Treatment (629).
Before Practice Situation	Applicable where the exclusion of precipitation from an animal waste storage and/or treatment facility will improve of an existing or planned system. Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff as well as odor issues.
After Practice Situation	A flexible membrane or fabric-like roof placed on a steel truss hoop-like supports and supporting foundation. Roof or cover will be engineered and installed in accordance with appropriate building codes and permits. Typical size is 40'x40 'square feet and is over an approved animal waste management facility as a component of a CNMP. It is designed to prevent precipitation to allow proper management of animal waste streams (manure or compost streams), thus mitigating the negative factors from the "before practice implementation".
Scenario Feature Measure	Footprint of the building
Scenario Unit	Square Foot
Scenario Typical Size	1,600

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$12,048.00	$7.53
Equipment/Installation	$0.00	$0.00
Labor	$0.00	$0.00
Mobilization	$79.16	$0.05
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$12,127.16	$7.58

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost	Component Justification	Quantity Justification
Materials	1668	Roof, Hoop Truss Arch Structure, 30-60' wide	Hoop Truss Arch Structure with fabric cover - 30' to 60' width, includes materials, equipment, and installation. Does not include foundation preparation.	Square Foot	$7.53	1600	$12,048.00		
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$79.16	1	$79.16		

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Information Type	**Data**
Region	Mid Atlantic
State	New Jersey
Discipline Group	Environmental Engineering
Practice Code/Name	367 - Roofs and Covers
Scenario ID	4
Scenario Name	Timber Frame Roof
Scenario Description	A timber framed building with a timber or steel "sheet" roof. Anchor to existing facility located under roof or simple supports in ground. Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storagg es or cause nutrients to leach from solid manure piles leading to uncontrolled runoff as well as odor issues. **Associated Practices:** Animal Mortality Facility (316), Composting Facility (317), Heavy Use Area Protection (561), Roof Runoff Structure (558), Waste Storage Facility (313), and Waste Treatment (629).
Before Practice Situation	Applicable where the exclusion of precipitation from an animal waste storage and/or treatment facility will improve an existing or planned system. Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff as well as odor issues.
After Practice Situation	A timber framed building with a timber or steel "sheet" roof and supporting foundation by asssociated practice. Engineered and installed in accordance with appropriate building codes and permits. Typical size is 5,000 square feet and is over an approved animal waste management facility as a component of a CNMP. It is designed to prevent precipitation to allow proper management of animal waste streams (manure or compost streams), thus mitigating the negative factors from the "before practice implementation".
Scenario Feature Measure	Footprint of building
Scenario Unit	Square Foot
Scenario Typical Size	5,000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$36,300.00	$7.26
Equipment/Installation	$0.00	$0.00
Labor	$0.00	$0.00
Mobilization	$444.22	$0.09
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$36,744.22	$7.35

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost	Component Justification	Quantity Justification
Materials	1676	Roof, Post Frame Building, 30' to 60' wide	Post Frame Building, no sides, - 30' to 60' width, includes materials, equipment, and installation. Does not include foundation preparation.	Square Foot	$7.26	5000	$36,300.00		
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	$79.16	2	$158.32		
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	$285.90	1	$285.90		

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Practice and Scenario Description:	
Information Type	**Data**
Region	Mid Atlantic
State	New Jersey
Discipline Group	Environmental Engineering
Practice Code/Name	367 - Roofs and Covers
Scenario ID	5
Scenario Name	Timber Frame Roof, complex foundation
Scenario Description	A timber framed building with a timber or steel "sheet" roof and complex supporting foundation. Requires construction of anchor holes with concrete. Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff as well as odor issues. **Associated Practices:** Animal Mortality Facility (316), Composting Facility (317), Heavy Use Area Protection (561), Roof Runoff Structure (558), Waste Storage Facility (313), and Waste Treatment (629).
Before Practice Situation	Applicable where the exclusion of precipitation from an animal waste storage and/or treatment facility will improve of an existing or planned system. Manure is stored as a liquid in basins, tanks, and as a solid on concrete and earthen surfaces. Excess precipitation can cause premature filling of storages or cause nutrients to leach from solid manure piles leading to uncontrolled runoff as well as odor issues.
After Practice Situation	A timber framed building with a timber or steel "sheet" roof and supporting foundation. Engineered and installed in accordance with appropriate building codes and permits. Typical size is 5,000 square feet and is over an approved animal waste management facility as a component of a CNMP. It is designed to prevent precipitation to allow proper management of animal waste streams (manure or compost streams), thus mitigating the negative factors from the "before practice implementation".
Scenario Feature Measure	Footprint of building
Scenario Unit	Square Foot
Scenario Typical Size	5000

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	$36,300.00	$7.26
Equipment/Installation	$3,744.25	$0.75
Labor	$356.64	$0.07
Mobilization	$390.26	$0.08
Acquisition of Technical Knowledge	$0.00	$0.00
Foregone Income	$0.00	$0.00
Total	$40,791.15	$8.16

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price ($/unit)	Quantity	Cost	Component Justification	Quantity Justification
Materials	1676	Roof, Post Frame Building, 30' to 60' wide	Post Frame Building, no sides, - 30' to 60' width, includes materials, equipment, and installation. Does not include foundation preparation.	Square Foot	$7.26	5000	$36,300.00		
Equipment/Installation	933	Skidsteer, 80 HP	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	$34.86	16	$557.76	Move fill around for holes	
Equipment/Installation	36	Concrete, CIP, formless, non reinforced	Non reinforced concrete cast-in-placed without forms by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	$158.32	3	$474.96	Anchor posts 7/side or 14	.2 CY/postx14=3 CY
Equipment/Installation	50	Earthfill, Manually Compacted	Earthfill, manually compacted, includes equipment and labor	Cubic yard	$5.37	9	$48.33	Backfill holes	
Equipment/Installation	2049	Auger, Truck Mounted	Truck mounted auger for large diameter excavation. Includes equipment and labor.	Hour	$332.90	8	$2,663.20	Drill Holes	
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	$22.29	16	$356.64		
Mobilization	1138	Mobilization, small equipment	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	$195.13	2	$390.26		