

## **PARTRIDGE HILL - PROPOSED CONDITIONS**

LAKE IROQUOIS-PATRICK BROOK WATERSHED ACTION PLAN WINOOSKI NATURAL RESOURCES CONSERVATION DISTRICT

75 150 Feet 1 in = 150 feet

STONE LINE SWALE

STONE LINE SWALE AND ADD CHECK DAMS

AND ADD CHECK DAMS INSTALL SEDIMENT TRAP

STONE LINE SWALE CLEAN OUT OR CONSIDER REMOVING CULVERT

> STONE LINE SWALES AND ADD CHECK DAMS CLEAN OUT SEDIMENT TRAP

CLEAN OUT CULVERT BLOCK SWALE CULVERT DIVERT FLOW ACROSS ROAD INSTALL STONE LINED SWALE AND TURNOUT

CLEAN OUT AND RESHAPE SWALE

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**1 SOUTH MAIN ST** SECOND FLOOR WATERBURY, VT 05676 802.882.8335

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FOR SEDIMENT

HEADER

Rock Apron Specifications						
Culvert Diameter (D)	Riprap Size	<b>T</b> (in.)	N (ft.)	W (ft.)	L (ft.)	
18 inches	(3-12 inch)	18	4.5	14.5	10.0	
24 inches	(3-12 inch)	18	6.0	20.0	14.0	





CULVERT CROSS SECTION

ZIMAX. FILL SLOPE





STONES

CULVERT INSTALLATION FLOW BYPASS

COUNCILS, NOVEMBER 1995, UPDATED 2002, 2009.







STONE ARMOR OR ROAD EDGE STABILIZATION

- RIRPAP SIZE IS BASED ON QUANTITY AND VELOCITY OF • WATER
- ALWAYS CONTACT A STREAM ALTERNATION ENGINEER ٠ BEFORE INSTALLING RIPRAP AT A STREAM BANK
- USE ANGULAR STONE •
- COVER WITH GRUBBINGS OR TOPSOIL AND SEED. IF ON A • STREAM BANK, ONLY APPLY ABOVE ORDINARY HIGH WATER.
- CONSIDER PLANTING WITH ADDITIONAL VEGETATION ٠



### SEDIMENT TRAP

- INSPECT ANNUALLY AND AFTER LARGE STORMS
- REMOVE ACCUMULATED SEDIMENT WHEN HALF FULL.



- AVOID DIRECT OUTLET TO SURFACE WATER
- STABILIZE OUTLET BASED ON SLOPE:
- 0% TO 5% STABILIZE WITH GRASS
- 5% TO 10% STABILIZE WITH 6-8 INCH ...
- GREATER THAN 10% STABILIZE WITH ...
- REMOVE ACCUMULATED SEDIMENT WHEN H

REFERENCE NOTE: ADAPTED FROM CLEAN WATER YOU CAN AFFORD" A & GEORGE D. AIKEN RESOURCE COM COUNCILS, NOVEMBER 1995, UPDAT

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ROAD	REVISIONS		
POWINISLOPE BLOCK		SHED ACTION PLAN	
RS MINUS STONE 12 INCH MINUS STONE IALF FULL	DETAILS - OTHER	.AKE IROQUOIS-PATRICK BROOK WATER	HINESBURG, VERMONT
"VERMONT BETTER BACKROADS MANUAL.		AOM DRAWN IOT TO SCA BRUARY 8,	JCL CHECKED LE 2024
PULICATION OF THE NORTHERN VERMONT NSERVATION DEVELOPMENT (R C& D) TED 2002, 2009.	PROJECT	14439.0000 №. DET-	<u>.</u> 3

PARTRIDGE HILL AND RED PINE - ROAD IMPROVEMENTS

Hinesburg, Vermont 14439.00006 February 16, 2024

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ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	COST	
CONSTRUCTION SETUP / CLOSEOUT					
Mobilization	LS	1	\$5,000	\$5,000	
Site preparation and remove minor vegetation	LS	1	\$2,000	\$2,000	
ROAD IMPROVEMENTS					
Install stone turnout	EA	3	\$300	\$900	
Install stone sediment trap	EA	3	\$350	\$1,050	
Grade to remove berm	LF	50	\$0.3	\$13	
Reshape grass swale	LF	250	\$5	\$1,250	
Line swale with stone	LF	1,600	\$35	\$56,000	
Add check dams to swale	LF	500	\$8	\$4,000	
Install driveway culvert	EA	3	\$2,000	\$6,000	
Install drainage culvert	EA	5	\$3,000	\$15,000	
Install stone at culvert	EA	1	\$500	\$500	
Remove sediment and debris from culvert	EA	3	\$500	\$1,500	
CONSTRUCTION SUBTOTAL (ROUNDED)				\$93,000	
FINAL DESIGN - check ex conditions, adjust plans				\$3,500	
GRANT ASSISTANCE (NGO) - no bid process, minor meetings and reporting					
CONSTRUCTION ASSISTANCE - answer questions, c	heck progre	ess, document	completion	\$5,000	
CONSTRUCTION CONTINGENCY (15%)				\$13,950	
TOTAL (ROUNDED)				\$120,000	



CONSIDER STONE LINING SWALE AND/OR INSTALLING NEW CROSS CULVERT

INSTALL NEW CROSS CULVERT



# **ENOS ROAD - PROPOSED CONDITIONS**

LAKE IROQUOIS - PATRICK BROOK WATERSHED ACTION PLAN WINOOSKI NATURAL RESOURCES CONSERVATION DISTRICT



Background imagery from Nearmap.

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1 SOUTH MAIN STREET SECOND FLOOR WATERBURY, VT 05676 802.882.8335





FOR SEDIMENT

HEADER

Rock Apron Specifications						
Culvert Diameter (D)	Riprap Size	<b>T</b> (in.)	N (ft.)	W (ft.)	L (ft.)	
18 inches	(3-12 inch)	18	4.5	14.5	10.0	
24 inches	(3-12 inch)	18	6.0	20.0	14.0	





CULVERT CROSS SECTION

ZIMAX. FILL SLOPE





STONES

CULVERT INSTALLATION FLOW BYPASS

COUNCILS, NOVEMBER 1995, UPDATED 2002, 2009.







STONE ARMOR OR ROAD EDGE STABILIZATION

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- USE ANGULAR STONE •
- COVER WITH GRUBBINGS OR TOPSOIL AND SEED. IF ON A • STREAM BANK, ONLY APPLY ABOVE ORDINARY HIGH WATER.
- CONSIDER PLANTING WITH ADDITIONAL VEGETATION ٠



### SEDIMENT TRAP

- INSPECT ANNUALLY AND AFTER LARGE STORMS
- REMOVE ACCUMULATED SEDIMENT WHEN HALF FULL.



- AVOID DIRECT OUTLET TO SURFACE WATER
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REFERENCE NOTE: ADAPTED FROM CLEAN WATER YOU CAN AFFORD" A & GEORGE D. AIKEN RESOURCE COM COUNCILS, NOVEMBER 1995, UPDAT

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ROAD	REVISIONS		
POWINISLOFE BLOCK		SHED ACTION PLAN	
RS MINUS STONE 12 INCH MINUS STONE IALF FULL	ETAILS - OTHER	AKE IROQUOIS-PATRICK BROOK WATERS	NESBURG, VERMONT
"VERMONT BETTER BACKROADS MANUAL.		AOM DRAWN	
PULICATION OF THE NORTHERN VERMONT NSERVATION DEVELOPMENT (R C& D) TED 2002, 2009.	PROJECT SHEET NO	DET-	3

**ENOS ROAD - ROAD IMPROVEMENTS** 

Hinesburg, Vermont

14439.00006 February 16, 2024

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ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	COST	
CONSTRUCTION SETUP / CLOSEOUT					
Mobilization	LS	1	\$5,000	\$5,000	
Site preparation and remove minor vegetation	LS	1	\$2,000	\$2,000	
ROAD IMPROVEMENTS					
New grass swale	LF	40	\$9	\$360	
Line swale with stone	LF	370	\$35	\$12,950	
Install drainage culvert	EA	3	\$3,000	\$9,000	
CONSTRUCTION SUBTOTAL (ROUNDED)				\$29,000	
FINAL DESIGN - check ex conditions, adjust plans				\$1,500	
GRANT ASSISTANCE (NGO) - no bid process, minor meetings and reporting					
CONSTRUCTION ASSISTANCE - answer questions, check progress, document completion					
CONSTRUCTION CONTINGENCY (15%)					
TOTAL (ROUNDED)				\$39,000	



## SHADOW LANE - PROPOSED CONDITIONS

LAKE IROQUOIS-PATRICK BROOK WATERSHED ACTION PLAN WINOOSKI NATURAL RESOURCES CONSERVATION DISTRICT 0 40 80 Feet

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1 SOUTH MAIN ST SECOND FLOOR WATERBURY, VT 05676 802.882.8335

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FOR SEDIMENT

HEADER

Rock Apron Specifications						
Culvert Diameter (D)	Riprap Size	<b>T</b> (in.)	N (ft.)	W (ft.)	L (ft.)	
18 inches	(3-12 inch)	18	4.5	14.5	10.0	
24 inches	(3-12 inch)	18	6.0	20.0	14.0	





CULVERT CROSS SECTION

ZIMAX. FILL SLOPE





STONES

CULVERT INSTALLATION FLOW BYPASS

COUNCILS, NOVEMBER 1995, UPDATED 2002, 2009.







STONE ARMOR OR ROAD EDGE STABILIZATION

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- CONSIDER PLANTING WITH ADDITIONAL VEGETATION ٠



### SEDIMENT TRAP

- INSPECT ANNUALLY AND AFTER LARGE STORMS
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ROAD	REVISIONS		
POWINISLOFE BLOCK		SHED ACTION PLAN	
RS MINUS STONE 12 INCH MINUS STONE IALF FULL	ETAILS - OTHER	AKE IROQUOIS-PATRICK BROOK WATERS	NESBURG, VERMONT
"VERMONT BETTER BACKROADS MANUAL.		AOM DRAWN	
PULICATION OF THE NORTHERN VERMONT NSERVATION DEVELOPMENT (R C& D) TED 2002, 2009.	PROJECT SHEET NO	DET-	3



#### **SHADOW LANE - ROAD IMPROVEMENTS**

Hinesburg, Vermont 14439.00006 February 16, 2024

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ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	COST		
CONSTRUCTION SETUP / CLOSEOUT						
Mobilization	LS	1	\$5,000	\$5,000		
Site preparation and remove minor vegetation	LS	1	\$2,000	\$2,000		
ROAD IMPROVEMENTS						
Install stone sediment trap	EA	5	\$350	\$1,750		
Grade to establish crown	LF	1,100	\$0.1	\$110		
Reshape grass swale	LF	60	\$5	\$300		
New grass swale	LF	350	\$9	\$3,150		
Line swale with stone	LF	1,350	\$35	\$47,250		
Add check dams to swale	LF	1,350	\$8	\$10,800		
Install storm drainage pipe	LF	120	\$75	\$9,000		
Remove sediment and debris from culvert	EA	16	\$500	\$8,000		
CONSTRUCTION SUBTOTAL (ROUNDED) * Grave	wetland	not included		\$87,000		
FINAL DESIGN - includes gravel wetland feasibility only, survey, wetland/shore permit						
GRANT ASSISTANCE (NGO) - simple bid process, outreach, and minor reporting						
CONSTRUCTION ASSISTANCE - answer questions, check progress, document completion						
CONSTRUCTION CONTINGENCY (15%)				\$13, <mark>050</mark>		
TOTAL (ROUNDED)*				\$143,000		



**UPPER SHADOW LANE TRIBUTARY - PROPOSED CONDITIONS** 15 LAKE IROQUOIS-PATRICK BROOK WATERSHED ACTION PLAN WINOOSKI NATURAL RESOURCES CONSERVATION DISTRICT

Feet 1 in = 30 feet 30

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**1 SOUTH MAIN ST** SECOND FLOOR WATERBURY, VT 05676 802.882.8335

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**OPERATION AND MAINTENANCE NOTES:** 

- 1. INSPECT FOR EROSION PATHS OR CONCENTRATED FLOW THROUGH BASIN, AS NEEDED REDISTRIBUTE STONE TO REMOVE CONCENTRATED FLOW PATHS.
- 2. THE ACCUMULATION OF SEDIMENT WITHIN THE SETTLING BASIN SHOULD BE MONITORED AND INSPECTED A MINIMUM OF ONCE ANNUALLY. REMOVE SEDIMENT AFTER APPROXIMATELY 12 INCHES OF SEDIMENT HAS ACCUMULATED.
- MAINTENANCE OF THE SYSTEM SHOULD ONLY OCCUR DURING LOW FLOW AND IN THE GROWING 3. SEASON AFTER SPRING RUNOFF.





### BALLPARK OPINION OF PROBABLE CONSTRUCTION COST

#### LAKE IROQUOIS-PATRICK BROOK WATERSHED ACTION PLAN

**UPPER SHADOW LANE TRIBUTARY - SETTLING BASIN AND ROCK ADDITION** 

Hinesburg, Vermont 14439.00006 February 16, 2024

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ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	COST	
CONSTRUCTION LABOR & EQUIPMENT					
Labor	HR	48	\$60	\$2,880	
Excavator / Operator	HR	24	\$150	\$3,600	
Haul Materials (assume 1 hr round trip)	HR	16	\$150	\$2,400	
CONSTRUCTION MATERIALS					
Stone for channel stabilization and settling basin	CY	50	\$65	\$3,250	
CONSTRUCTION MISCELLANEOUS					
Mobilization/ Demobilization	LS	1	\$3,000	\$3,000	
Traffic control	LS	1	\$2,000	\$2,000	
Buffer planting	LS	1	\$3,000	\$3,000	
Site Restoration	LS	1	\$5,000	\$5,000	
CONSTRUCTION SUBTOTAL (ROUNDED)				\$25,000	
FINAL DESIGN & PERMITTING - river permits, plans in GIS, no survey					
GRANT ASSISTANCE (NGO) - simple bid process, minor meetings and reporting					
CONSTRUCTION PHASE SERVICES - part time					
CONSTRUCTION CONTINGENCY (15%)				\$3,750	
TOTAL (ROUNDED)				\$45,000	



# SHADOW LANE TRIBUTARY - PROPOSED CONDITIONS

LAKE IROQUOIS-PATRICK BROOK WATERSHED ACTION PLAN WINOOSKI NATURAL RESOURCES CONSERVATION DISTRICT Background imagery from Nearmap.

40 Feet

1 in = 80 feet

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### BALLPARK OPINION OF PROBABLE CONSTRUCTION COST

#### LAKE IROQUOIS-PATRICK BROOK WATERSHED ACTION PLAN

LOWER SHADOW LANE TRIBUTARY - GULLY STABILIZATION AND BUFFER PLANTING

Hinesburg, Vermont 14439.00006 February 16, 2024

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ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	COST
CONSTRUCTION LABOR & EQUIPMENT				
Labor	HR	80	\$60	\$4,800
Excavator / Operator	HR	80	\$150	\$12,000
Haul Materials (assume 1 hr round trip)	HR	16	\$150	\$2,400
CONSTRUCTION SETUP				
Mobilization	LS	1	\$5,000	\$5,000
Site preparation and access	LS	1	\$5,000	\$5,000
GULLY WORK				
Cut and place down live trees, assumes onsite	EA	30	\$750	\$22,500
Stone for channel stabilization placement	CY	120	\$65	\$7,800
CONSTRUCTION CLOSEOUT				
Buffer planting	LS	1	\$5,000	\$5,000
Site restoration	LS	1	\$5,000	\$5,000
Demobilization	LS	1	\$5,000	\$5,000
CONSTRUCTION SUBTOTAL (ROUNDED)				\$70,000
FINAL DESIGN & PERMITTING - river permits, plans in	GIS, no s	urvey		\$10,000
GRANT ASSISTANCE (NGO) - simple bid process, mino	GRANT ASSISTANCE (NGO) - simple bid process, minor meetings and reporting			
CONSTRUCTION PHASE SERVICES - part time				\$10,000
CONSTRUCTION CONTINGENCY (15%)				\$10,500
TOTAL (ROUNDED)				\$106,000



STORMWATER MANAGEMENT - BOAT LAUNCH LAKE IROQUOIS-PATRICK BROOK WATERSHED ACTION PLAN WINOOSKI NATURAL RESOURCES CONSERVATION DISTRICT 0 12.5 25 Feet 1 in = 30 feet



1 SOUTH MAIN ST SECOND FLOOR WATERBURY, VT 05676 802.882.8335









STONE ARMOR OR ROAD EDGE STABILIZATION

- RIRPAP SIZE IS BASED ON QUANTITY AND VELOCITY OF • WATER
- ALWAYS CONTACT A STREAM ALTERNATION ENGINEER ٠ BEFORE INSTALLING RIPRAP AT A STREAM BANK
- USE ANGULAR STONE •
- COVER WITH GRUBBINGS OR TOPSOIL AND SEED. IF ON A • STREAM BANK, ONLY APPLY ABOVE ORDINARY HIGH WATER.
- CONSIDER PLANTING WITH ADDITIONAL VEGETATION ٠



### SEDIMENT TRAP

- INSPECT ANNUALLY AND AFTER LARGE STORMS
- REMOVE ACCUMULATED SEDIMENT WHEN HALF FULL.



- AVOID DIRECT OUTLET TO SURFACE WATER
- STABILIZE OUTLET BASED ON SLOPE:
- 0% TO 5% STABILIZE WITH GRASS
- 5% TO 10% STABILIZE WITH 6-8 INCH ...
- GREATER THAN 10% STABILIZE WITH ...
- REMOVE ACCUMULATED SEDIMENT WHEN H

REFERENCE NOTE: ADAPTED FROM CLEAN WATER YOU CAN AFFORD" A & GEORGE D. AIKEN RESOURCE COM COUNCILS, NOVEMBER 1995, UPDAT

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ROAD	REVISIONS		
POWINISLOPE BLOCK		SHED ACTION PLAN	
RS MINUS STONE 12 INCH MINUS STONE IALF FULL	TAILS - OTHER	KE IROQUOIS-PATRICK BROOK WATERS	SBURG, VERMONT
VERMONT BETTER BACKROADS MANUAL,		AOM DRAVEN NOT TO SCA BRUARY 8, 14439.0000	JCL JCL LE 2024
PULICATION OF THE NORTHERN VERMONT NSERVATION DEVELOPMENT (R C& D) TED 2002, 2009.	PROJECT	DET-	3

LAKE IROQUOIS BOAT LAUNCH RAIN GARDEN

Williston, Vermont 14439.00006 February 16, 2024

ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	COST
CONSTRUCTION LABOR & EQUIPMENT				
Mobilization/ Demobilization	LS	1	\$3,000	\$3,000
Labor	HR	16	\$60	\$960
Excavator / Operator	HR	16	\$150	\$2,400
Grader / Operator	HR	8	\$150	\$1,200
Haul Fill Off Site (1 hr round trip)	HR	5	\$120	\$600
Haul Materials to Site (assume 1 hr round trip)	HR	8	\$120	\$960
CONSTRUCTION MATERIALS				
Topsoil	CY	20	\$65	\$1,300
Woodchip Mulch	CY	5	\$70	\$350
Stone for forebay	CY	10	\$65	\$650
Stone for spillways	CY	10	\$65	\$650
Gravel for grading	CY	10	\$50	\$500
Straw Mulch	LS	1	\$500	\$500
Seed for Restoring Disturbed Areas	LS	1	\$500	\$500
Plants	LS	1	\$3,000	\$3,000
CONSTRUCTION SUBTOTAL (ROUNDED)				\$17,000

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RAIN GARDEN - HUNT PROPERTY LAKE IROQUOIS-PATRICK BROOK WATERSHED ACTION PLAN WINOOSKI NATURAL RESOURCES CONSERVATION DISTRICT

0 10 20 Feet 1 in = 20 feet



1 SOUTH MAIN ST SECOND FLOOR WATERBURY, VT 05676 802.882.8335



**INSTALLATION NOTES:** 

- 1. THE VERMONT RAINGARDEN MANUAL IS A GOOD EDUCATIONAL RESOURCE TO ACCOMPANY THIS PROJECT. ALTERNATIVES TO THE DETAILS PRESCRIBED IN THIS PLAN ARE AVAILABLE IN THAT MANUAL INCLUDING ADDITIONAL APPROPRIATE PLANT SPECIES.
- 2. PLANTING DENSITIES ARE RECOMMENDED TO BE ONE PERENNIAL EVERY 2.5 FEET ON CENTER OR ONE SHRUB EVERY 5 FEET ON CENTER.

#### **OPERATION AND MAINTENANCE NOTES:**

- 1. MAINTENANCE OF THE RAIN GARDEN IS VERY SIMILAR TO PLANTED LANDSCAPED BEDS. REPLACEMENT OF SOME MULCH MAY BE REQUIRED IN THE SPRING. OCCASIONAL WEEDING WILL BE REQUIRED TO MAINTAIN THE SELECTED PLANTS AESTHETICALLY PLEASING.
- 2. DURING THE FIRST YEAR OF OPERATION, WATERING, WEEDING, AND REPLACEMENT OF DEAD PLANTS IS IMPORTANT FOR PROPER ESTABLISHMENT.
- 3. THE ACCUMULATION OF SEDIMENT WITHIN THE RAIN GARDEN SHOULD BE MONITORED. REMOVE SEDIMENT AFTER APPROXIMATELY 3 INCHES OF SEDIMENT HAS ACCUMULATED OR RAKE AWAY WHEN DOES NOT DRAIN WITHIN 1 DAY.
- 4. ANNUALLY INSPECT MAKE SURE NO INVASIVE SPECIES ARE PRESENT.



NOT TO SCALE

DESIGN NOTES FOR FINAL DESIGN: 1. TEST INFILTRATION RATE, SHOULD BE AT LEAST 0.2 INCHES PER HOUR. 2. GRADE TO DIRECT WATER AWAY FROM DRIVEWAY. 3. INVESTIGATE SOILS TO DETERMINE AMENDMENTS NEEDED TO PROVIDE 24 INCHES OF USDA SAND TO LOAMY SAND AS NOTED IN THE VERMONT STORMWATER TREATMENT STANDARDS.

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REVISIONS						
RAIN GARDEN DETAILS		LAKE IROQUOIS-PATRICK BROOK WATERSHED ACTION PLAN			HINESBURG, VERMONT CONCEPT DESIGN	
AON DESIGNE SCALE	AOM DESIGNED AOM ORWAWN JCL OCIECTED   NOT TO SCALE OUECONED   MARCH 6, 2024 14439.000006   PROJECT NO. DETT-1					

HUNT RAIN GARDEN

St. George, Vermont 14439.00006 February 16, 2024

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ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	COST
CONSTRUCTION LABOR & EQUIPMENT				
Mobilization/ Demobilization	LS	1	\$2,000	\$2,000
Labor	HR	16	\$60	\$960
Excavator / Operator	HR	8	\$150	\$1,200
Haul Fill Off Site (1 hr round trip)	HR	4	\$120	\$480
Haul Materials to Site (assume 1 hr round trip)	HR	4	\$120	\$480
CONSTRUCTION MATERIALS				
Topsoil	CY	10	\$65	\$650
Woodchip Mulch	CY	3	\$70	\$210
Stone for spillway	CY	4	\$65	\$260
Straw Mulch	LS	1	\$500	\$500
Seed for Restoring Disturbed Areas	LS	1	\$500	\$500
Plants	LS	1	\$2,000	\$2,000
CONSTRUCTION SUBTOTAL (ROUNDED)				\$9,000
FINAL DESIGN - plans in GIS, no survey				\$4,000
GRANT ASSISTANCE (NGO) - simple bid process, r	ninor mee	etings and rep	orting	\$2,500
CONSTRUCTION PHASE SERVICES - part time				\$5,000
CONSTRUCTION CONTINGENCY (15%)				\$1,350
TOTAL (ROUNDED)				\$22,000



RAIN GARDEN - CARROLL PROPERTY LAKE IROQUOIS-PATRICK BROOK WATERSHED ACTION PLAN WINOOSKI NATURAL RESOURCES CONSERVATION DISTRICT 10 20 Feet 1 in = 20 feet

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SOUTH MAIN ST SECOND FLOOR WATERBURY, VT 05676

802.882.8335



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JRCE TO ACCOMPANY THIS PROJECT. ABLE IN THAT MANUAL INCLUDING ADDITIONAL RY 2.5 FEET ON CENTER OR ONE SHRUB EVERY 5	REVISIONS	
NDSCAPED BEDS. REPLACEMENT OF SOME ILL BE REQUIRED TO MAINTAIN THE SELECTED REPLACEMENT OF DEAD PLANTS IS IMPORTANT D BE MONITORED. REMOVE SEDIMENT AFTER AWAY WHEN DOES NOT DRAIN WITHIN 1 DAY.	AIN GARDEN DETAILS	AKE IROQUOIS-PATRICK BROOK WATERSHED ACTION PLAN VESBURG, VERMONT CONCEPT DESIGN
APPROXIMATELY 5' WIDE BY 3' LONG BY 1 FOOT DEEP TO CONTROL WATER LEVEL IN BIO-RETENTION AREA		Image: March 6, 2024 Image: March 6, 2024
	PROJEC	DET-1

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CARROLL RAIN GARDEN

Hinesburg, Vermont 14439.00006 February 16, 2024

16, 2024

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ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	COST
CONSTRUCTION LABOR & EQUIPMENT				
Mobilization/ Demobilization	LS	1	\$2,000	\$2,000
Labor	HR	24	\$60	\$1,440
Excavator / Operator	HR	16	\$150	\$2,400
Haul Fill Off Site (1 hr round trip)	HR	4	\$120	\$480
Haul Materials to Site (assume 1 hr round trip)	HR	4	\$120	\$480
CONSTRUCTION MATERIALS				
Topsoil	CY	10	\$65	\$650
Woodchip Mulch	CY	3	\$70	\$210
Stone for spillway	CY	4	\$65	\$260
Gutters	LF	40	\$50	\$2,000
Straw Mulch	LS	1	\$500	\$500
Seed for Restoring Disturbed Areas	LS	1	\$500	\$500
Plants	LS	1	\$2,000	\$2,000
CONSTRUCTION SUBTOTAL (ROUNDED)				\$13,000
FINAL DESIGN - plans in GIS, elevation checks				\$4,000
GRANT ASSISTANCE (NGO) - simple bid process, m	inor meet	ings and repo	rting	\$2,500
CONSTRUCTION PHASE SERVICES - part time \$5,				
CONSTRUCTION CONTINGENCY (15%)				\$1,950
TOTAL (ROUNDED)				\$26,000



# PINE SHORE DRIVE - PROPOSED CONDITIONS

LAKE IROQUOIS-PATRICK BROOK WATERSHED ACTION PLAN WINOOSKI NATURAL RESOURCES CONSERVATION DISTRICT Feet

PLANT NATIVE TREES AN SHRUBS TO CREATE BUFFER AROUND POND

EXCAVATE SETTLING AREA AND PLANT WITH RAIN GARDEN VEGETATION

#### NSTALL FILTER BERM AT OUTLE

LOW FLOW SWALE

EXISTING VEGETATED SETTLING AREA

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REVISIONS				
DETAILS	LAKE IROQUOIS-PATRICK BROOK WATERSHED ACTION PLAN	HINESBURG, VERMONT CONCEPT DESIGN		
AOM Designed AOM DRAWN JCL OHECKED   NOT TO SCALE MARCH 6, 2024   DATE 14439.000006   PROJECT NO. PROJECT NO.				
DET-1				

**PINE SHORE DRIVE RAIN GARDENS** 

Hinesburg, Vermont

14439.00006 February 16, 2024

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ITEM/DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	COST
CONSTRUCTION LABOR & EQUIPMENT				
Mobilization/ Demobilization	LS	1	\$2,000	\$2,000
Labor	HR	80	\$60	\$4,800
Excavator / Operator	HR	24	\$150	\$3,600
Haul Fill Off Site (1 hr round trip)	HR	8	\$120	\$960
Haul Materials to Site (assume 1 hr round trip)	HR	8	\$120	\$960
CONSTRUCTION MATERIALS				
Topsoil	CY	30	\$65	\$1,950
Woodchip Mulch	CY	7	\$70	\$490
Stone for spillways / berms	CY	20	\$65	\$1,300
Straw Mulch	LS	1	\$750	\$750
Seed for Restoring Disturbed Areas	LS	1	\$750	\$750
Plants	LS	1	\$3,000	\$3,000
Buffer planting	LS	1	\$3,000	\$3,000
CONSTRUCTION SUBTOTAL (ROUNDED)				\$24,000
FINAL DESIGN - plans in GIS, elevation checks				
GRANT ASSISTANCE (NGO) - simple bid process, minor meetings and reporting				
CONSTRUCTION PHASE SERVICES - part time				
CONSTRUCTION CONTINGENCY (15%)				\$3,600
TOTAL (ROUNDED)				\$42,000