Vermont Better Roads Grant Program Application

Please complete one application per category and/or project you are applying for. You may make copies of the application for multiple applications per category and/or multiple categories.

Please check the Category you are applying for:

- [ ] B. Correction of a Road Related Erosion Problem and/or Stormwater Mitigation Retrofit for both gravel and paved roads
- [x] C. Correction of a Stream Bank or Slope Related Problem
- [ ] D. Structure/culvert upgrades

Town/Organization: Town of Stowe

Project Name: River Road Stream Bank Stabilization Extention

Road Name: River Rd **TH #:** 95 **Structure # (if applicable):** _____

Road Type: Unpaved Uncurbed

Class 3

Watershed: Little River / Winooski

Please provide a thorough description of the problem (ex. Roadway has steep slope with no ditch which is causing roadway erosion):

Little River is incised and tends to be mobile within its valley. On the west side of the valley is River Rd. This project location is adjacent to a portion of the stream bank that was stabilized in 2012 by the Town. The erosion of the River Rd bank has migrated further downstream from the 2012 stonework and River Rd and primary electrical transmission lines are in jeopardy due to the severe bank erosion that is occuring.

Description of Project and how you plan to complete the work (ex. Stone line 500' of ditch by reshaping ditch and stone lining, working from the top of the project down to the bottom):

Excavate appx. 80' of the bank in order to install Stone Fill. Key stone fill into the river as detailed.

Expected Effects (+ & -) on water quality (ex. Erosion will be eliminated by placing the stone ditch):

Erosion from the river bank / roadside slope will be stabilized with stone fill. This will prevent the Little River from continuing to undermine the slope and roadway, introduce sediment loading into the river and jeopardizing public infrastructure.

Distance from end of project to nearest water (stream, lake, or stormwater system that outlets directly to water). 0-50'

Progress to Date:
Past improvements in 2012. Continued monitoring.

Is there an emergency reason this project must be completed quickly? If yes, please explain:
Yes, River Road is vulnerable, as well as a utility pole which carries primary electrical distribution to this part of Stowe.

Has this project been identified through a municipal road inventory, capital budget plan, tactical basin plan, culvert inventory, or other management plan? If yes, please list which.

◉ Yes: municipal road inventory (Act 64) & tact. basin plan ○ No

Please list any professionals you may have contacted for assistance with this project (ANR River Management Engineer, Army Corps of Engineers, VTrans District Technical staff, Basin Planner etc.):
Met onsite with Jaron Borg, ANR River Management Engineer on 4-8-16.

Email correspondence attached

Is the project located in the town "Right of Way?" Yes, No, Both (if "Both" please explain further).
Yes

Will the town road crew complete this work? Yes, No, Some (if "some" please explain further).
No

Describe how the grant funds will be spent and/or attach a project budget:

Estimate attached

How do you plan to meet the required 20% match on this grant?:

Highway Department Operating funds or other available Town tax funds.

Requested Grant Amount ($20,000 max Category B, $40,000 max Categories C & D): $ 19,640.00

Estimated Total Project Cost (including 20% local match): $ 4,910.00

Estimated Completion Date: 09/30/2016

REQUIRED ATTACHMENTS:

- [x] Itemized Cost Estimate (labor, equipment, materials)
  (For assistance, call Better Backroads at 802-828-4585)
- [x] Project Location Map
  (Please show location of affected water; 1:12,000 USGS map, if possible)
- [x] Sketch of proposed erosion control measures, including:
  - [x] Distances (ft.)
  - [x] Estimate of waste & borrow quantities
  - [x] Approx. location of town/other right-of-way and/or property lines
- [x] Photo(s) of the project area.
- [x] Agreement for Entry and/or Deed of Easement (if project is outside Town ROW).
- [x] If project involves stream or river/road conflict, include documentation of consultation with a River Management Engineer.
- [ ] Other appropriate supporting documents.

By signing this application I certify that all the information provided is accurate to the best of my knowledge. We will comply with all the requirements of the grant including making our books available for audit if required.

SIGNATURE OF APPLICANT: (Must be Town Administrator/Manager or Select Board Chair)

Name: Charles Seffert Title: Town Manager

Cost Estimate Worksheet

Town and Road Name: River Road, Stowe, VT

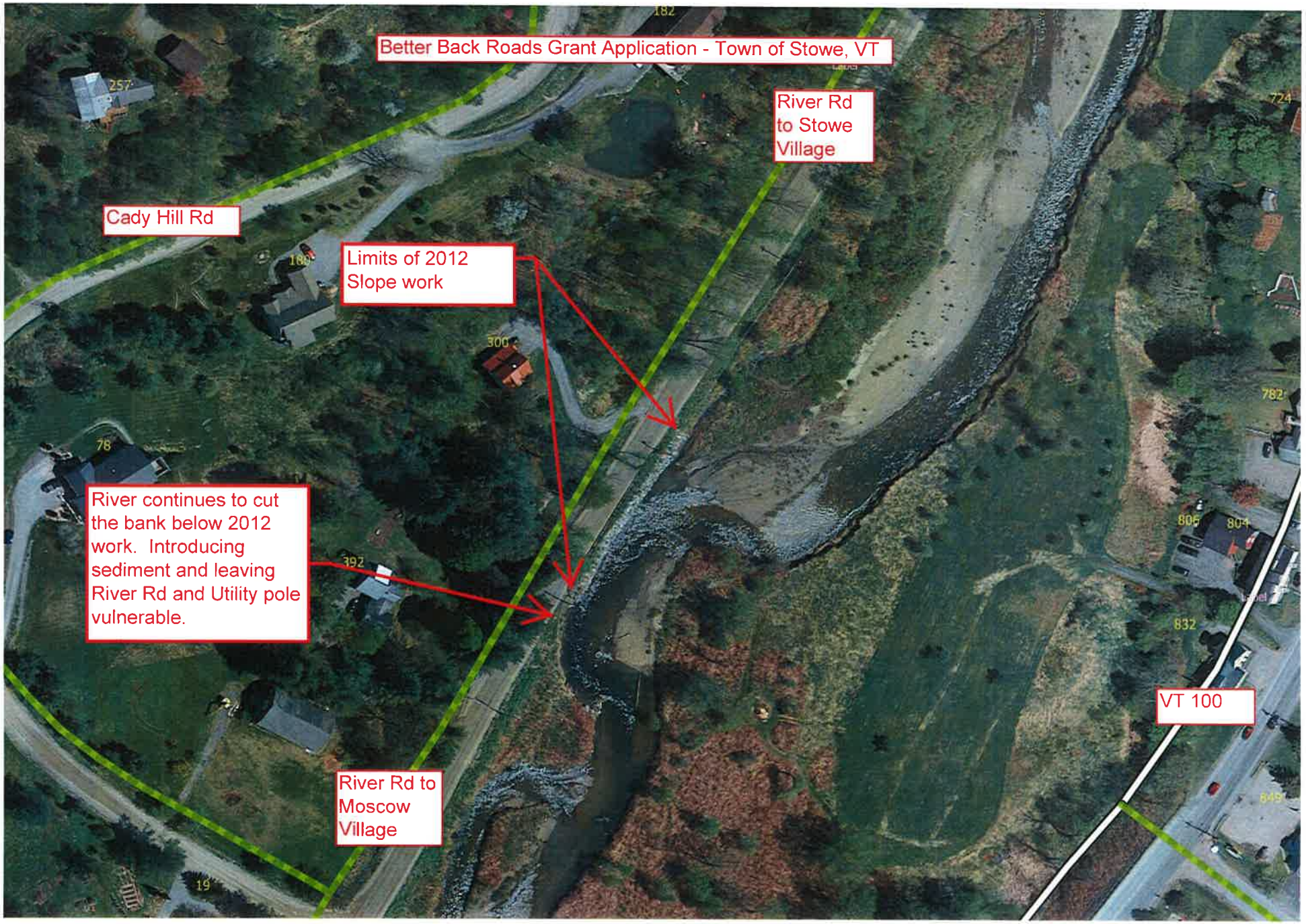
Project Name: River Rd Stone Slope extension

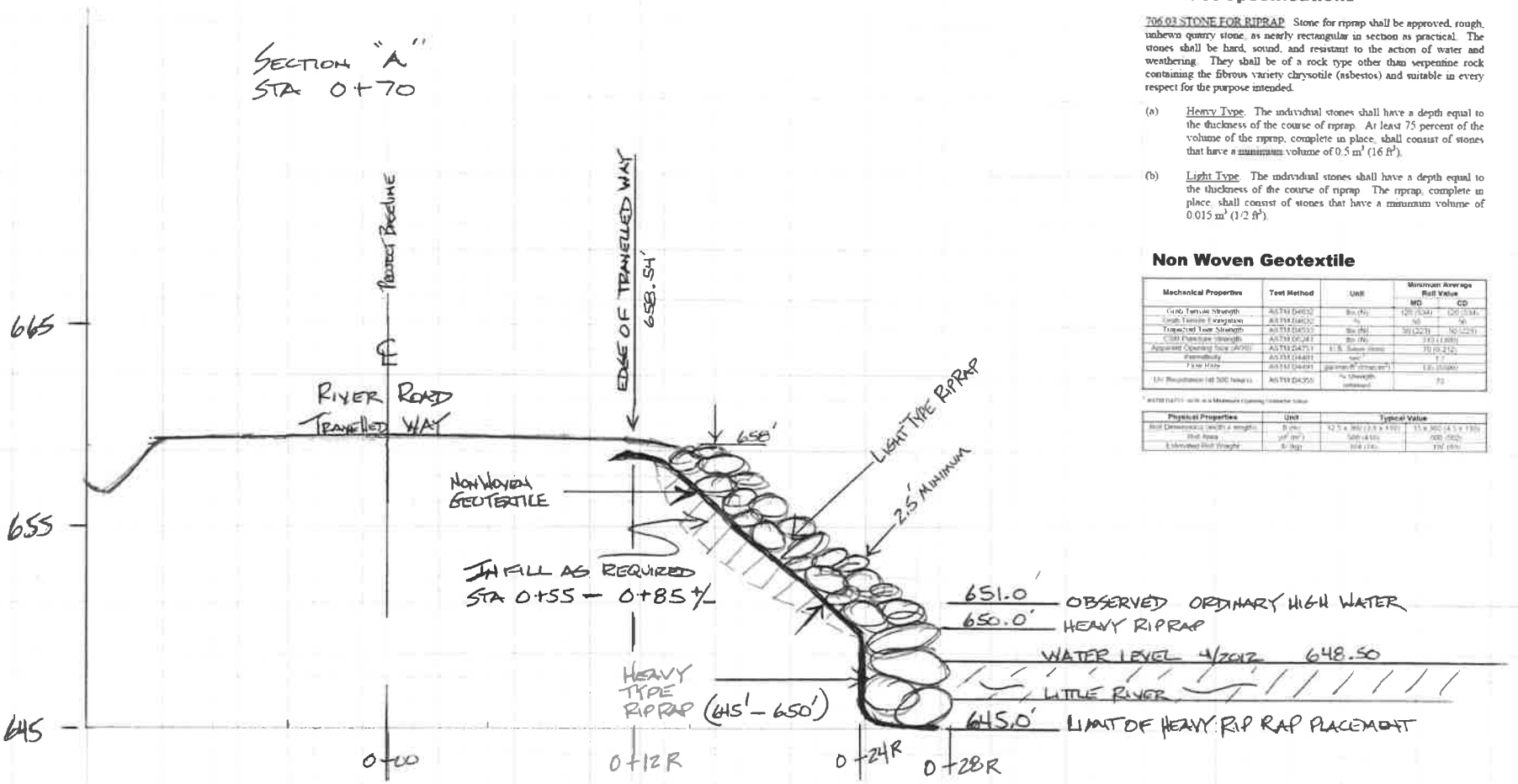
Labor	Rate	# Hours	Total (Rate x Hours)
Skilled Labor	$50.00	40 hr	$2,000.00
		Labor Total	$2,000.00

Equipment	Rate	# Hours	Total (Rate x Hours)
Excavator (4 days)	$200.00	40 hr	$8,000.00
Dump Truck (excavation spoils hauled off-site)	$80.00	40 hr	$3,200.00
(two trucks running for half the project duration)			
		Equipment Total	$11,200.00

Materials	Rate	Amount	Total (Rate x Amount)
Stone Fill (delivered to site)	$30.00	200.00 cy	$6,000.00
8.0 oz / SY non-woven geotextile	$3.00	250 sy	$750.00
Steel Beam Guardrail - weathering steel	$25.00	100 lf	$2,500.00
anchor for Steel Beam Guardrail	$600.00	1 ea	$600.00
24" HDPE cluvert	$20.00	40 lf	$800.00
1 1/2" Crushed Gravel (delivered to site)	$20.00	15 cy	$350.00
3/4" Crushed Stone - pipe bedding (delivered to site)	$20.00	15 cy	$350.00
		Materials Total	$11,350.00

Miscellaneous	Rate	Amount	Total (Rate x Hours)
		Miscellaneous Total	$0.00
		Grand Total	$24,550.00
		Match	$4,910.00


Better Back Roads Grant Application - Town of Stowe, VT
River Rd to Stowe Village
Cady Hill Rd
Limits of 2012 Slope work
River continues to cut the bank below 2012 work. Introducing sediment and leaving River Rd and Utility pole vulnerable.
River Rd to Moscow Village
VT 100



Product Specifications

706.03 STONE FOR RIPRAP. Stone for riprap shall be approved, rough, unhewn quarry stone, as nearly rectangular in section as practical. The stones shall be hard, sound, and resistant to the action of water and weathering. They shall be of a rock type other than serpentine rock containing the fibrous variety chrysotile (asbestos) and suitable in every respect for the purpose intended.

(a) Heavy Type. The individual stones shall have a depth equal to the thickness of the course of riprap. At least 75 percent of the volume of the riprap, complete in place, shall consist of stones that have a minimum volume of 0.5 m^3 (16 ft^3).

(b) Light Type. The individual stones shall have a depth equal to the thickness of the course of riprap. The riprap, complete in place, shall consist of stones that have a minimum volume of 0.015 m^3 (1/2 ft^3).

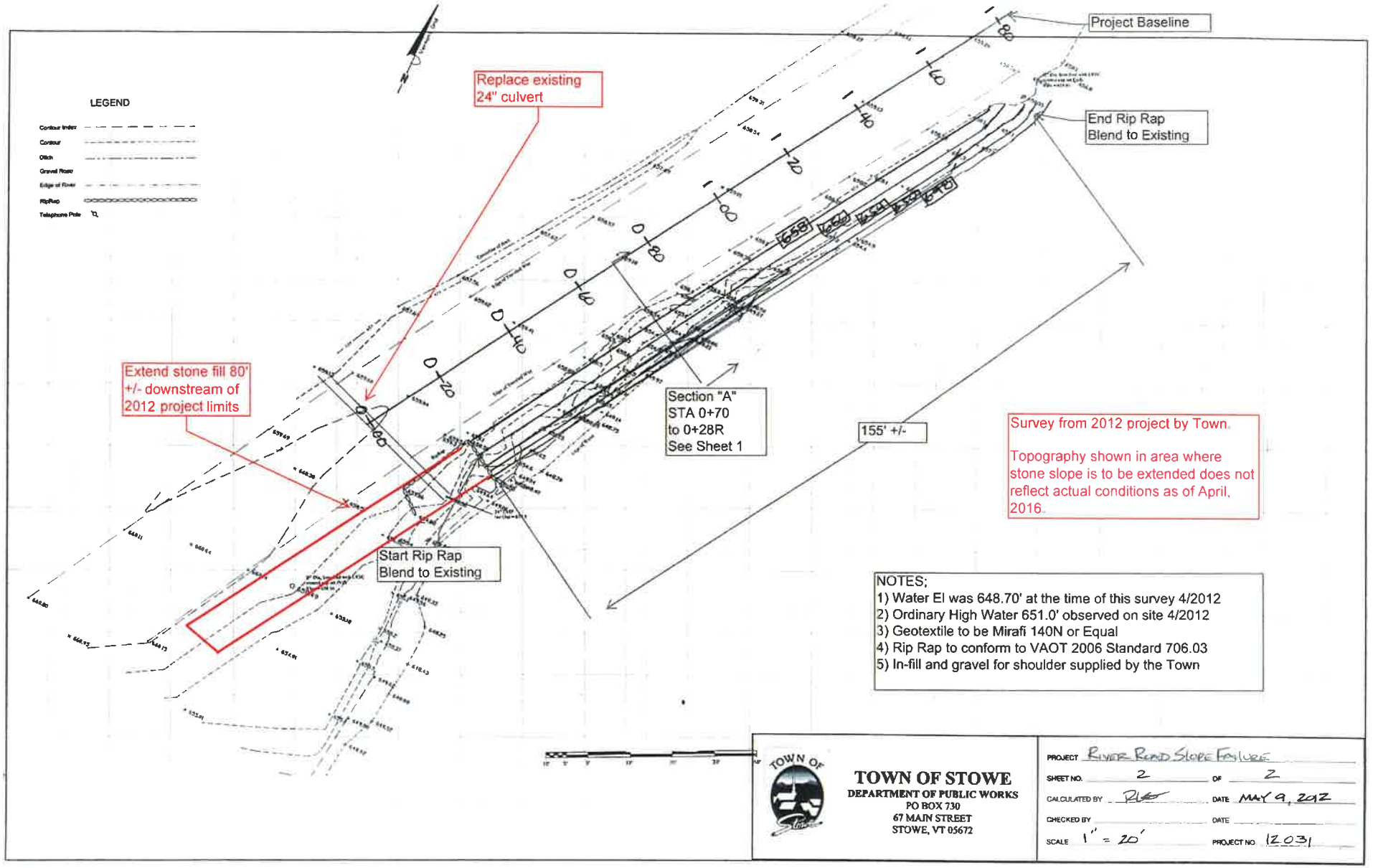
Non Woven Geotextile

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value	
			MD	CD
Grab Tensile Strength	ASTM D4632	lbs (N)	120 (534)	120 (534)
Grab Tensile Elongation	ASTM D4632	%	50	50
Trapezoid Tear Strength	ASTM D4533	lbs (N)	50 (222)	50 (222)
CBR Puncture Strength	ASTM D6241	lbs (N)	310 (1,380)	
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve (mm)	70 (0.212)	
Permittivity	ASTM D4491	sec^{-1}	1.7	
Flow Rate	ASTM D4491	gal/min/ft^2 (l/min/m^2)	135 (5,500)	
UV Resistance (at 500 hours)	ASTM D4355	% Strength retained	70	

Physical Properties	Unit	Typical Value	
Roll Dimensions (width x length)	ft (m)	12.5 x 360 (3.8 x 110)	15 x 360 (4.5 x 110)
Roll Area	yd^2 (m^2)	500 (410)	600 (502)
Estimated Roll Weight	lb (kg)	164 (74)	197 (89)

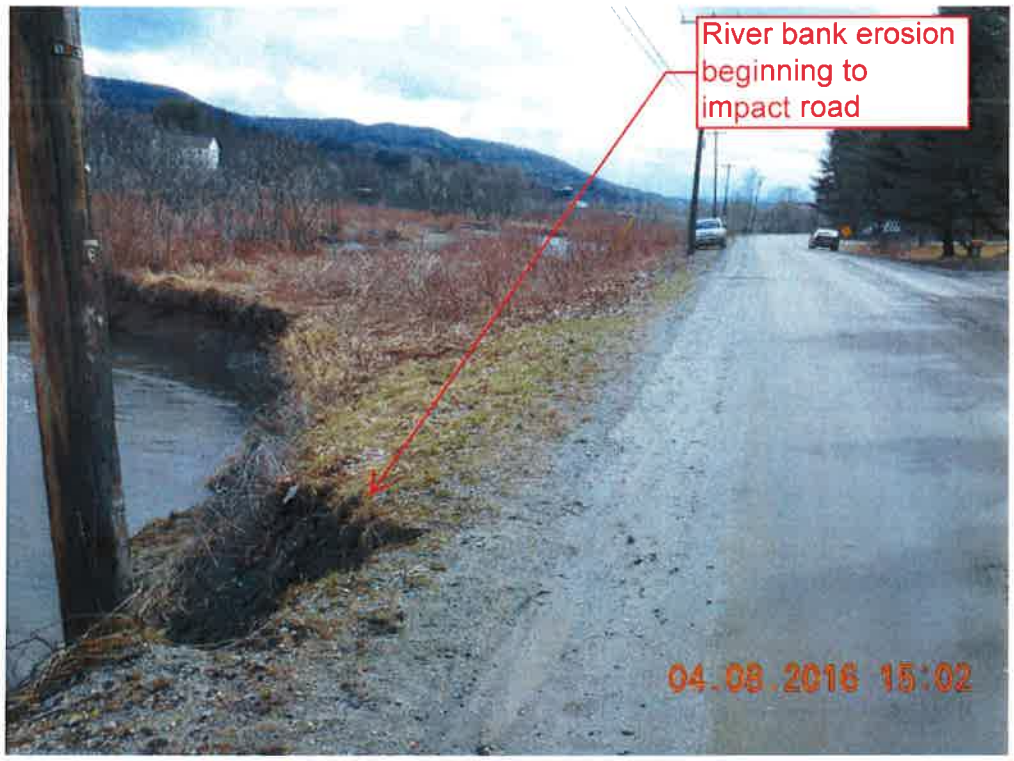
TOWN OF STOWE
DEPARTMENT OF PUBLIC WORKS
PO BOX 730
67 MAIN STREET
STOWE, VT 05672

PROJECT River Road Slope Failure
SHEET NO. 1 OF 2
CALCULATED BY RLG DATE MAY 9, 2012
CHECKED BY _____ DATE _____
SCALE 1" = 5' PROJECT NO. 12031

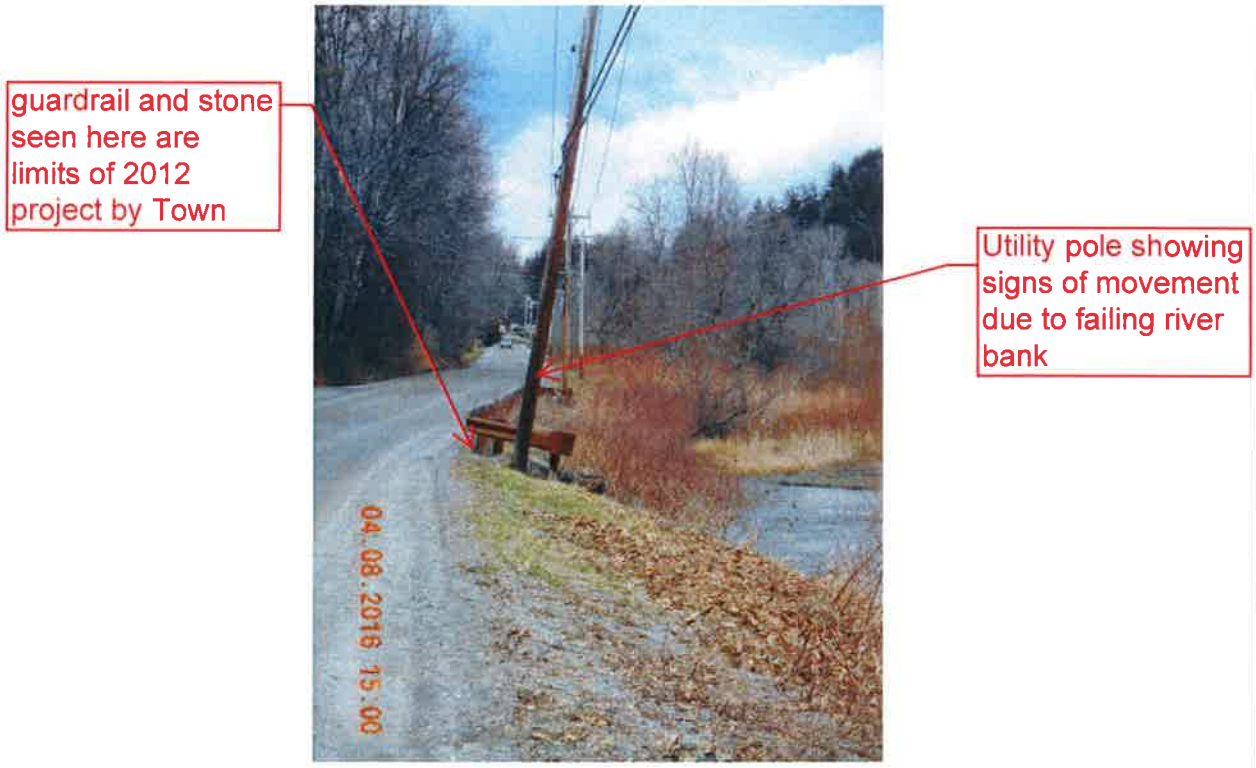


TOWN OF STOWE
DEPARTMENT OF PUBLIC WORKS
PO BOX 730
67 MAIN STREET
STOWE, VT 05672

PROJECT River Road Slope Failure
SHEET NO. 2 OF 2
CALCULATED BY RLG DATE May 9, 2012
CHECKED BY DATE
SCALE 1" = 20' PROJECT NO. 12031



Utility Pole made vulnerable by failing slope



Utility pole is visibly displaced

Exposed soils on bank – limits of 2012 stone fill work visible

Failing slope as seen from River Rd – roadway runoff creating head-cut at unsupported slope

Chris Jolly

From: Borg, Jaron <Jaron.Borg@vermont.gov>
Sent: Monday, April 11, 2016 1:26 PM
To: 'Chris Jolly'
Subject: RE: Stowe

Chris,

Thank you for the follow up. This project still requires a Stream Alteration Permit. However; it falls under our Next Flood Measure category, e.g. no public notice or comment period. All that will be necessary for permitting at these sites is a plan view , typical cross section, and photos of the existing conditions. The plans do not need to be detailed, but should have correct dimensions. The nearest 5' is an acceptable level of accuracy. Hope this helps.

Jaron Borg, River Management Engineer
Watershed Management Division, Rivers Program
Vermont Department of Environmental Conservation
1 National Life Drive, Main 2
Montpelier, VT 05620-3522
802-371-8342 / Jaron.Borg@vermont.gov
On the Web @ http://www.anr.state.vt.us/dec/waterq/rivers.htm

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From: Chris Jolly [mailto:cjolly@townofstowevermont.org]
Sent: Monday, April 11, 2016 1:17 PM
To: Borg, Jaron <Jaron.Borg@vermont.gov>
Subject: Stowe

Jaron –

Thanks for taking the time to look at our project sites on Friday.

Just wanted to follow up / confirm that the River Road slope erosion that is adjacent to the roadway does not require a Stream Alteration Permit. I believe the phrase you used was "next flood critical" which means that if conditions are such that public infrastructure is clearly in jeopardy when the next 5-year rain event arrives, those projects can be stabilized without having to submit a S.A.P., but rather, we should be in direct contact with you to get permission for the in-stream work.

Chris

Chris Jolly
Town of Stowe
Assistant Town Engineer
PO Box 730
Stowe, VT05672
802-253-8770

Lamoille County Planning Commission

PO Box 1637
Demars Building, 52 Portland Street, Second Floor
Morrisville, Vermont 05661
www.lcpcvt.org
(802) 888-4548 ● e-mail: lcpc@lcpcvt.org ● fax: (802) 888-6938

April 14, 2016

Alan May
Agency of Transportation
Municipal Assistance Bureau
1 National Life Drive
Montpelier, Vermont 05633
Phone (802) 828-4585

To the Review Committee,

The Lamoille County Planning Commission is pleased to offer our support for the Town of Stowe's FY17 Better Roads grant proposal to complete two projects on River Road: category B for culvert replacement and stabilization; category C for riverbank stabilization to protect public infrastructure. These proposed projects will address water quality degradation related to excessive sediment being carried from gravel roads into streams. By identifying erosion problems and developing remediation strategies to correct these problems, Stowe demonstrates a commitment to implementing improvements in a timely and manageable way.

Erosion from gravel roads has been documented as a significant source of sediment and nutrients to Vermont's waterways. This project will result in better road management, improved water quality and improved habitat and inform local stakeholders/user groups on erosion issues from town roads.

Best regards,

Robert Moore
Regional Transportation Planner

Public Works Department
PO Box 730
67 Main Street
Stowe, VT 05672
802-253-8770

April 11, 2016

John and Mary Chudzik
1437 River Rd
Stowe, Vermont 05672

Subject: Memorandum of Understanding
River Road culvert erosion

Dear John and Mary,

Confirming the conversation you had with my assistant, Chris Jolly, earlier today, thank you for permission to enter your property to repair the eroding swale that conveys water from a culvert under River Rd to the Little River. We intend to pursue grant funding to perform minor alignment excavation to reshape the swale and line it with stone. Upon completion of the work, your property will be restored to current or better conditions.

If you have any questions on this matter, please contact Chris Jolly at 253-6153, or cjolly@townofstowevermont.org. Please sign and return the space provided below and return to the Public Works office via Chris's email, or mail a hard copy to the address above.

Sincerely,

Harry J. Shepard

Harry J. Shepard III, PE
Public Works Director/Town Engineer

This Memorandum of Understanding is agreed and accepted.

Name: Mary Chudzik

Title:

Signature: Mary Chudzik

Date: 4/14/16