

Long Trail Engineering P.C.

April 2, 2016

Mr. Josh Carvajal  
River Management Engineer  
430 Asa Bloomer Building  
88 Merchants Row  
Rutland, VT 05701



**Re: The Annex at Mountain Top Inn, Chittenden**

Dear Josh:

As per our recent conversation, enclosed is Application for Coverage Under the Stream Alteration Permit For Reporting Activity for the Annex at the Mountain Top Inn. The application includes the following:

- Permit Application
- USGS Location Map
- Drainage Basin USGS & Soil Type Map
- Basis of Design dated 03/16/15
- Site Plan, Sheet C5, d. 03/06/15
- Erosion Prevention & Misc. Details, Sheet C11, d. 03/06/15
- Abutters List

As we've discussed, the proposed driveway to serve the Annex project will cross an unnamed tributary of Hewitt Brook. The stream will be crossed with an open bottomed bridge. The bridge abutments will be outside of the Ordinary High Water.

If you have any questions, please do not hesitate to call.

Respectfully submitted,

Long Trail Engineering, P.C.

Frank Parent, P.E., President  
VT Registered Professional Engineer

Encl.

c: Khele Sparks  
Chittenden Town Clerk  
Chittenden Planning Commission  
Rutland Regional Planning Commission  
Abutting Property Owners

VERMONT AGENCY OF NATURAL RESOURCES  
APPLICATION FOR COVERAGE UNDER THE STREAM ALTERATION GENERAL PERMIT  
FOR REPORTING ACTIVITY (SECTION C.2.2)

10 VSA, SECTIONS 1022 & 7503



Applicant Name RMT Associates, c/o Khele Sparks

Mailing Address 195 Mountain Top Road

Chittenden, VT 05737

Phone (802) 483-2311 Cell \_\_\_\_\_ Email khelle@mountaintopinn.com

Landowner (if different than applicant) Same

Landowner Mailing Address \_\_\_\_\_ Phone \_\_\_\_\_

\_\_\_\_\_ Email \_\_\_\_\_

Project Location: Address off Beach Road Town Chittenden Lat 43°43'40"

Unnamed tributary to

River Hewitt Brook Drainage Area 0.33 sq. mi. Long 72°54'26"

Brief Project Description Construction of access road with bridge crossing for proposed Annex project at Mountain Top Inn

Consultant or Designer (if known) Franklin Parent, P.E. Phone (802) 366-1366 Email \_\_\_\_\_

Long Trail Engineering, P.C.

Contractor (if known) TBD Phone \_\_\_\_\_ Email \_\_\_\_\_

**Required Attachments** (additional information may be required after initial application review)

Location Map

List of adjacent landowners; names and addresses

2 copies of project design drawings including:

plan view, cross sections, existing and proposed conditions, bankfull width (channel width at high water)

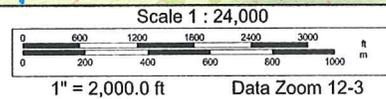
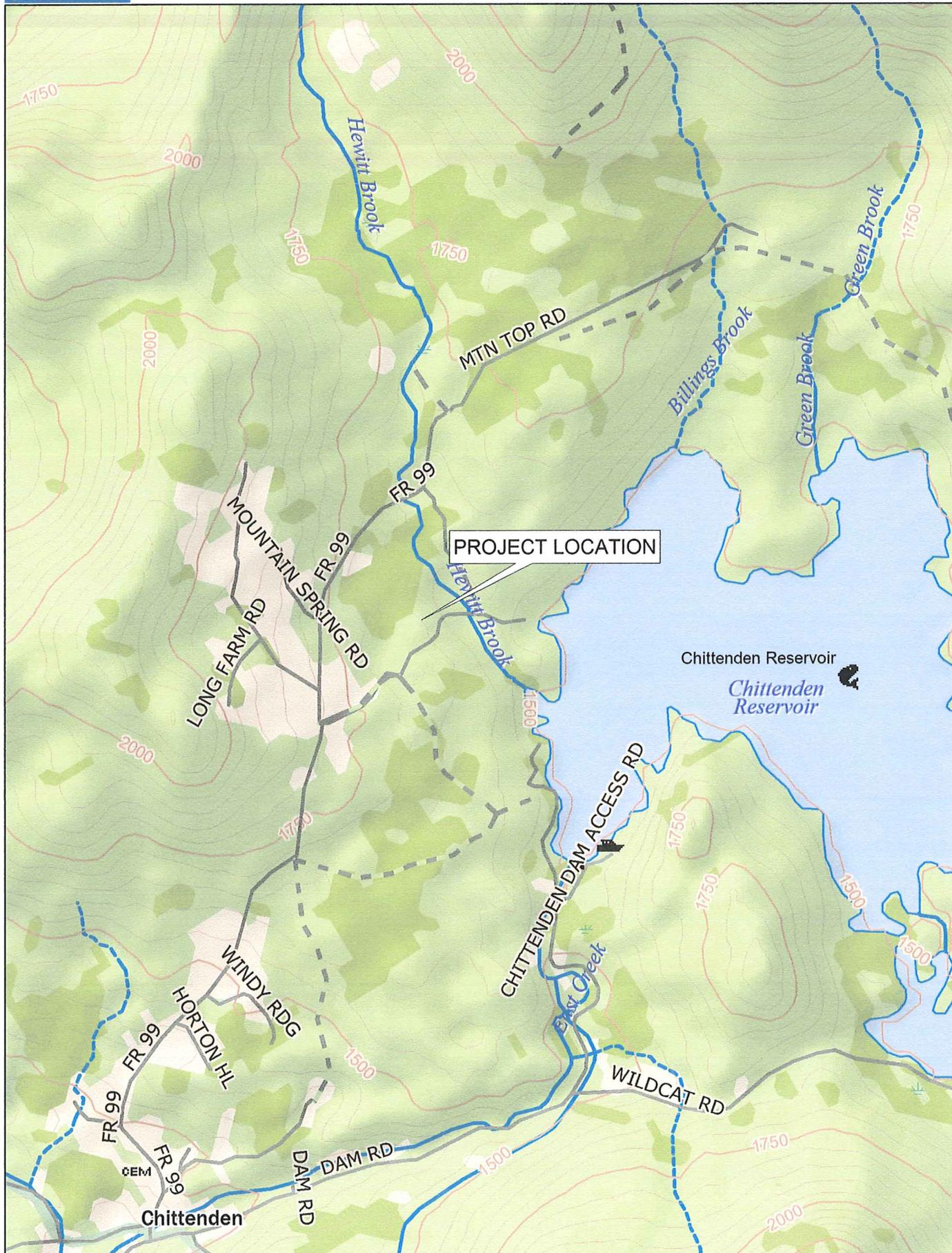
**\*\* APPLICANT MUST FILE COPY OF THIS APPLICATION WITH TOWN CLERK AND ADJOINERS \*\***

CERTIFICATION: I hereby certify that the information on this application is, to the best of my knowledge, true and accurate and that I have provided a copy of this application to the Clerk of the municipality in which this activity is located, the local and regional planning commissions, and to each adjoining landowner as required in the Vermont Stream Alteration Rule. **I recognize that by signing this application I am giving consent to employees of the State to enter the subject property for the purpose of processing this application and for ensuring compliance with subsequent agency decisions relating to the project.**

Print Full Name Khele Sparks, RMT Associates

Applicant Signature *Khele Sparks* Date 3/12/15

**NOTE:** A PERMIT MAY BE REQUIRED FROM THE US ARMY CORPS OF ENGINEERS. For information contact:  
USA Corps of Engineers, VT Project Office, 8 Carmichael Street Suite 205, Essex Jct VT 05452 802-872-2893





Mountain Top Inn  
Proposed Annex  
Chittenden, VT

Long Trail Engineering, P.C.  
Job No. 0807.2  
copyright 2015  
March 16, 2015

### 100 Year Rainfall Event Runoff

#### Method 1: Rational Method

$$Q = ciA$$

c runoff coefficient  
i rainfall intensity, (in/hour)  
A drainage area (acres)

#### Calculate i

t(c)	0.38	hours (per TR55)
	23	minutes
i	3.8	inches/hour (see Rainfall Intensity-Duration-Frequency Curve, Burlington VT)

c (pervious)	0.2	(forested)
c (impervious)	0.5	(gravel roadways, drives)
i	3.8	in/hr

#### Calculate Q

Q(total) = Q(pervious) + Q(impervious)	
Q (imp)	4.8 cfs
Q (perv)	156.6 cfs
<b>Q(total)</b>	<b>161.4 cfs</b>

#### Method 2: Regression Equation

$$Q(100) = 153A^{(0.865)} * L^{(-0.336)} * E^{(0.125)} * Y^{(-0.420)}$$

A	0.3259	Drainage Area at Subject Property, square miles
L	0.2	Percentage of Lake, Ponds & Impoundments, plus 1
E	101.0	Percentage of basin over 1,200' msl, plus 1
Y	5.495	VT State Plan Northing, divided by 100,000, plus 1

**Q (100) 94 cfs**

Regression equation from USGS Flow-Frequency Characteristics of Vermont Streams, Water Resources Investigation Report 02-4238, dated 2002

**Use conservative (higher) runoff value of : 161.4 cfs**

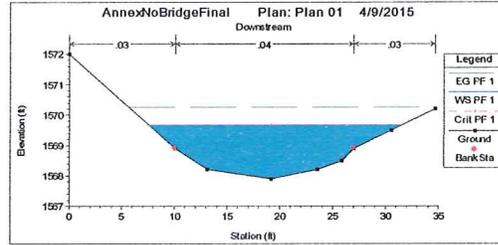
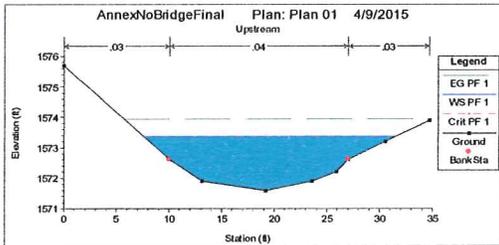
Cross Sections & Water Surface Elevations

	Bottom Bridge Girder	Upgradient Edge of Bridge		Downgradient Edge of Bridge	
		WSEL (ft)	Velocity (fps)	WSEL (ft)	Velocity (fps)
Existing (No Bridge)	1577.5	1573.4	6.3	1569.7	6.3
Proposed (With Bridge)	1577.5	1573.4	6.3	1569.7	6.3

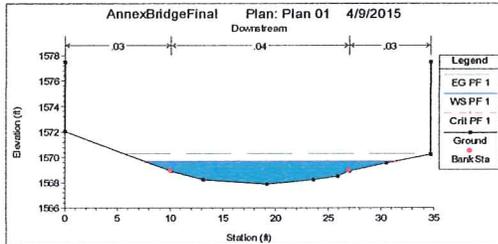
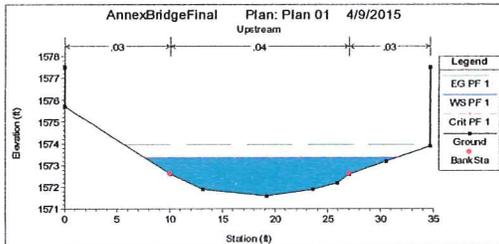
**Note: width of 100 year rainfall event does not widen far enough to reach bridge abutments; rainfall remains within existing channel. Therefore existing and proposed WSELs & velocities are the same.**

WSEL @ 100 year event, upgradient edge	1573.4
<b>Minimum freeboard required</b>	<b>1.0</b>
Minimum elevation, bottom of girder	1574.4
Actual elevation, bottom of girder	1577.5
<b>Actual freeboard provided</b>	<b>3.1</b>

Existing Cross Sections (No Bridge)



Proposed Cross Sections (With Bridge)



WSEL & Cross Sections as per HEC-RAS Calculations

Mike Kundrath, Public Service Dept.  
Energy Efficiency Division  
112 State Street, Drawer 20  
Montpelier, VT 05620-2601

Kevin Jones & Rachel Levins  
P.O. Box 84  
Chittenden, VT 05737

David Ingram & Alice Sargent  
159 Mountaintop Road  
Chittenden, VT 05737

Dundonald & Sarah Cochrane  
163 Mountaintop Road  
Chittenden, VT 05737

Joseph & Donna Sepkowski  
167 Mountain Top Road  
Chittenden, VT 05737

Paul & Sandra Reiber  
172 Mountaintop Road  
Chittenden, VT 05737

Regi Dubin  
178 Mountaintop Road  
Chittenden, VT 05737

Katherine Hall  
182 Mountaintop Road  
Chittenden, VT 05737

Gerry Goremly  
214 Mountaintop Road  
Chittenden, VT 05737

Neil & Eveline Vicars-Harris  
415 W EST 24th Street, Apt. 6J  
New York, NY 10011

Lori & Dave Germain  
8 Hunter CT  
East Brunswick, NJ 08816

Edmund & Olga Neuhaus  
967 W EST Shelley Rd.  
North Bellmore, NY 11710

Peter & Linda Cancro  
P.O. Box 372  
Alanwood, NJ 08720

William Stamm  
10 East Gate Ave  
Plainview, NY 11803

Zane Desilva, Hackman Ltd.  
c/o J. Newman, Kenlan, Schwiebert,  
Facey & Goss  
P.O. Box 578  
Rutland, VT 05702

William Wolfe  
15 Mountain View Road  
Chittenden, VT 05737

Mary Ellen KillGallen  
P.O. Box 32  
Chittenden, VT 05737

Elizabeth Kitson  
21 Long Farm Road.  
Chittenden, VT 05737

Betsy & David Moakley  
48 Tyler City Road  
Orange, CT 06477

Joseph Lee, Executor  
Lloyd & Dorothy Widney  
73 Cedar Grove Road  
Toms River, NJ 08752

Marie Pavini  
35 Mountain Spring Road  
Chittenden, VT 05737

Donald Meyer & Arlene Courtesis  
81-36 Langdale Street  
New Hyde Park, NY 11040

Robert & Joann Pye  
39 Mountain Spring Road  
Chittenden, VT 05737

E Jay & Andrea Bishop  
40 Mountain Spring Road  
Chittenden, VT 05737

David Maura  
49 Mountain Spring Road  
Chittenden, VT 05737

Stanley Fishkin & Nancy Marshall  
P.O. Box 39  
Chittenden, VT 05737

Youssef & Sylvia Chegade  
P.O. Box 493  
Shrewsbury, MA 01545

Barry & Joanne Kane  
9 State Road  
Plymouth, MA 01560

Andrew Royce  
245 East 87 Street  
New York, NY 10128

CVPS  
77 Grove Street  
Rutland, VT 05701

Christopher Murphy  
138 Passaic Ave.  
Roseland, NJ 07068

USFS, Middlebury Ranger District  
RR 4, Box 1260  
Middlebury, VT 05753

Sherwin & Ellrena Williams  
1006 US Route 7 North  
Rutland, VT 05701

John & Miriam Sargent  
1394 Belmont Street  
Manchester, NH 03104

Joe Kusa  
36 Pine Street  
Bedford, MA 01730

Bob Bieniki  
24 Mtn View Rd  
Chittenden Vermont 05737

Neil Harris  
330 8<sup>th</sup> St  
Jersey City NJ 07302

Bob McGowan  
9 Woodward Trail  
Rockaway, NJ 07866

ER Limited  
PO Box HM 496  
Hamilton HMCX Bermuda

Angela Moncrieff  
50 Mtn Spring Rd  
Chittenden, VT 05737

Pat Max  
52 Mtn Spring Rd  
Chittenden, VT 05737

Chris Ling  
21 Armen Way  
Needham, MA 02492

Brian O'Conner  
3788 Park Ave  
Edison, NJ 08820

Joe Corpora  
265 Bluff PT RD  
South Glastonbury, CT 06073

Mike Gunther  
100 Manhattan Ave Apt 1  
Union City, NJ 07087

Joe Fahys  
11 Barnstable Lane  
Greenwich, CT 06830

Mountaintop Lot Owners Assoc.  
C/o Charles McLaughlin  
26 Mountain View Road  
Chittenden, VT 05737

Town of Chittenden Select Board  
P.O. Box 89  
Chittenden, VT 05737

Town of Chittenden Planning  
Commission  
P.O. Box 89  
Chittenden, VT 05737

Rutland Regional PC  
P.O. Box 965  
Rutland, VT 05702