

The State of New Hampshire

Before the

Public Utilities Commission

Docket No. 12-215

AMENDED PETITION OF SOVERNET FIBER CORP.
FOR LICENSE
TO CONSTRUCT AND MAINTAIN FIBER OPTIC CABLES
OVER AND ACROSS THE FOLLOWING NEW HAMPSHIRE PUBLIC WATERS:

- MASCOMA RIVER IN LEBANON, NEW HAMPSHIRE (GLEN ROAD)
- MASCOMA RIVER IN LEBANON, NEW HAMPSHIRE (BUCKINGHAM PLACE).
- MASCOMA RIVER IN LEBANON, NEW HAMPSHIRE (HIGH ST. & HWY 4).
- CONNECTICUT RIVER IN LEBANON, NEW HAMPSHIRE (BRIDGE STREET).

TO THE PUBLIC UTILITIES COMMISSION:

Sovernet Fiber Corp. (“SFC”) hereby petitions the Public Utilities Commission (“Commission”), pursuant to the RSA 371:17 for a license to construct and maintain fiber optic cables over and across the public waters of the aforementioned rivers at four locations in the City of Lebanon, New Hampshire.

Construction and maintenance of the cables at these river crossings will promote the public good as the fiber are part of an 800 mile network that will connect over 340 schools, libraries, hospitals and government facilities in Vermont, as well as several adjoining areas of New Hampshire and Massachusetts.

In support of its petition SFC states as follows:

1. Sovernet Fiber Corp., d/b/a Vermont FiberConnect, is authorized by the New Hampshire Public Utilities Commission to provide local exchange services throughout the State of New Hampshire. Authorization No. CL 06-001-11.
2. SFC is constructing and will own, maintain and operate a fiber optic, middle mile network that will connect approximately 340 community anchor institutions, in accordance with the requirements of a grant to the Vermont Telecommunications Authority (“VTA”) by the National Telecommunications Information Administration and the Vermont Department of Libraries. Small portions of the grant-funded network will extend into New Hampshire.

3. SFC requests a license to construct and maintain fiber optic cables over and across the public waters at four locations in the City of Lebanon, New Hampshire:
 - a. Mascoma River at Glen Road, between utility poles National Grid (“N/GP”) #82 / FairPoint (“FP”) #44 and N/GP #291-1 / FP#45.
 - b. Mascoma River at Buckingham Place, between utility poles N/GP #291/35 / FP #311/132 and N/GP #157/47 / FP #311/133.
 - c. Mascoma River at High Street and Highway 4, between utility poles N/GP #53/2 / FP#60 and N/GP #53/1 / FP #60/5.
 - d. Connecticut River at Vermont-New Hampshire state border, between utility poles Power Pole (“PP”) #Not Available (“N/A”) / FP #311/5 and PP/ #N/A / FP #311/8 / GMP#N/A.
4. Each of the river segments for which a crossing license is requested is listed as public water in the “Official List of Public Waters”, issued March 1, 2011, published by the New Hampshire Department of Environmental Sciences, Dam Bureau (“NHDES”).¹
5. A separate engineering package is provided for each of the four crossings, with location maps detailing where and how the new line will cross each body of water.
6. The design and proposed construction of each crossing is shown on the attached profile drawings. Based on the research and field inspection of SFC’s consulting engineer, it has been determined that the crossings are classified as waterways not suitable for sail boating per NESC, Table 232-1.
7. At each crossing, SFC’s cable will be placed between two existing utility poles within the existing public right-of-way. The attached diagrams provide exact distances between poles, and the height of each pole. Vertical distances are representative of the attachment heights after the completion of all moves deemed necessary by the pole owners during their make-ready assessments.
8. Each of SFC’s attachment will be made up of four components: strand, duct, cable and over lash wire (collectively “overhead line crossing”). A strand wire will be placed across the river between existing utility poles. The strand will be nominal diameter 5/16th inch, 11.2m, 7-strand steel, EHS. A 2” duct will be over lashed to the strand. A non-self-supporting 288-count Pureband (ZWP) single-mode fiber optic cable will be placed within the duct.
9. Sag and tension calculations were done per National Electrical Safety Code (“NESC”), articles 232.A1 and 251, using the heavy load conditions (0 degrees Fahrenheit temperature, 4.0 pounds per square foot (psf) wind loading, and ½” radial ice). In all cases, the calculations for Article 251, using the heavy load conditions, were found to be the governing condition for both sag and tension. The maximum tension under heavy load conditions were calculated for each individual crossing as depicted on the attached plans, and were found to not exceed 60% of usable strand

¹ See <http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/olpw.pdf>.

load of 11,200 pounds. The calculations demonstrate that the cables should not fail under these heavy load conditions.

10. Vertical clearances are calculated from the Federal Emergency Management Agency (“FEMA”) 10-year flood profile. The location of data referenced for the drawing is provided in the attachments. For most crossings, a conservative flood elevation was calculated by adding the delta between the river bed elevation and the 10-year flood elevation to the surveyed water level.
11. Where the crossing is within 10 feet horizontally of an existing bridge structure that may already have an impact on the use of the waterway, a simplified drawing is submitted with vertical distances measured to the deck of that structure. This process simplifies the preparation and review of the crossing without jeopardizing its intent to protect the safe usage of the waterway.
12. NHDES and New Hampshire Department of Transportation permits are not required for the construction of each crossing.
13. The proposed crossings have been designed and will be constructed, maintained and operated by SFC, its affiliates and contractors, in accordance with the NESC.
14. SFC submits that the license petition for herein may be exercised without affecting the rights of the public in the public waters of each river. Minimum safe line clearances above the water surface and affected shorelines will be maintained at all times. The use and enjoyment of the public of each waterway will not be diminished in any material respect as a result of the overhead line crossing.
15. SFC has submitted an application to the United States Army Corps of Engineers (USACE) New England District (NAE) for New Hampshire and Vermont to construct and maintain a fiber optic communication cable over the Connecticut River at Bridge Street (Hwy. 14) in White River Jct., Vermont and Lebanon, New Hampshire. SFC will file documentation of USACE approvals with the Commission upon receipt.
16. For the Commission’s reference, a completed Form 3 – FairPoint Itemized Pole Make-Ready Work Charges – is attached to this Petition. The pole numbers on the attached plans do reflect the pole numbers in the field. Please note that the pole numbers on the Form 3 may not in all cases match the pole numbers tagged on the pole in the field due to lags in updates to FairPoint’s internal records.

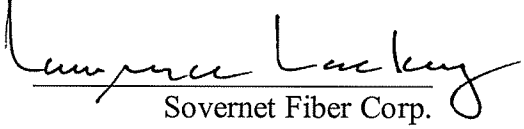
WHEREFORE, SOVERNET FIBER COPRORATION respectfully requests that the Commission:

- A. Find that the license petitioned for herein may be exercised without affecting the public rights in the public waters which are part of this petition.

- B. Grant Sovernet Fiber Corp. a license to construct and maintain fiber optic cables over and across the public waters of each river as specified in this petition; and
- C. Issue an Order Nisi and orders for its publication.

Dated at Bellows Falls, Vermont the 7th day of January, 2013.

Respectfully Submitted
Sovernet Fiber Corp.
By its Director of Regulatory Affairs

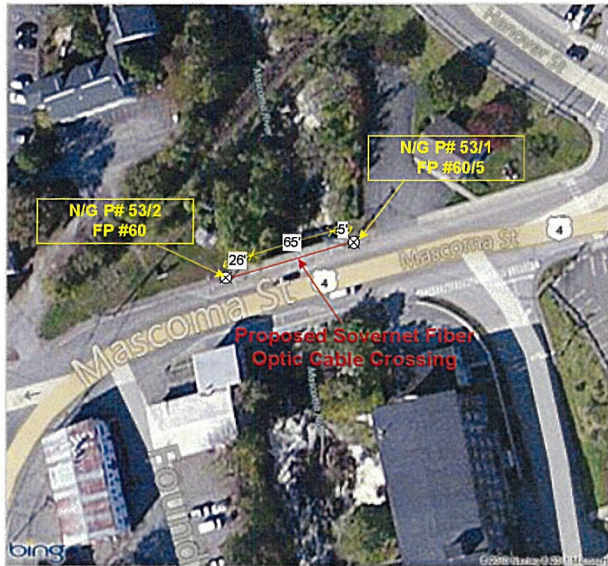

Sovernet Fiber Corp.
5 Canal Street
Bellows Falls, Vermont 05101

Mascoma River Crossing at High St. & Hwy 4

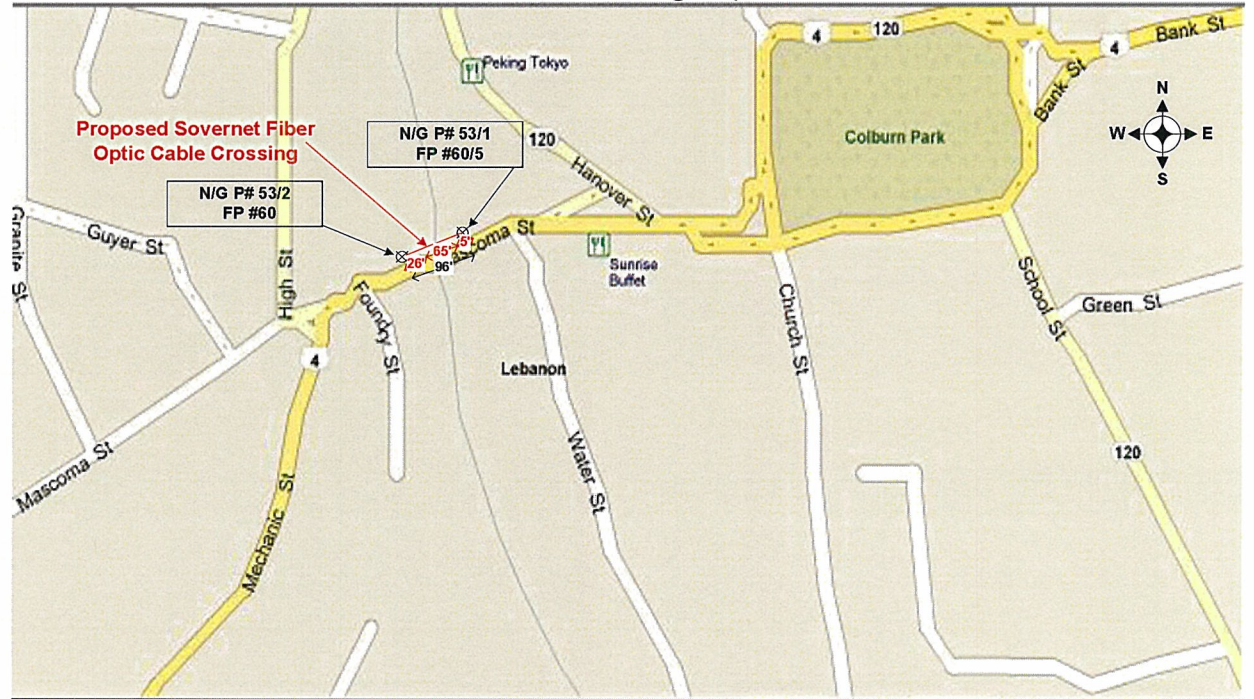
bing Maps

Mascoma River Crossing # 3 at High St & Hwy 4

On the go? Use m.bing.com to find maps, directions, businesses, and more



Sovernet NH Fiber Crossing Map



Mascoma River Crossing at High St. & Hwy 4

0 yds 100 200 300



SOVERNET
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5 Canal Street
Bellow Falls, VT 05101
802-460-9100

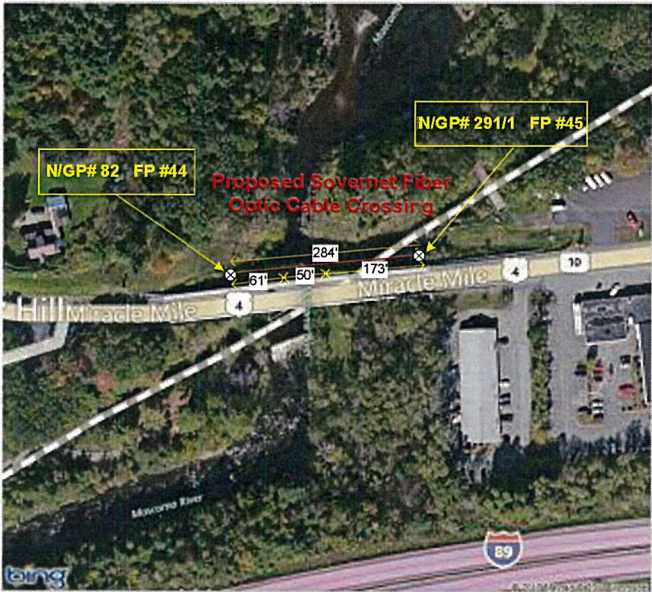
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ROUTE:	Zone 12		
ROW:	Public	DATE	
STAKED BY:	DLY	DATE	11-11-12
REV BY:		DATE	
PROJECT:			
ROUTE:	Mascoma River crossing High St.#3		
SHEET:	1	OF	2

Mascoma River Crossing at Glen Rd

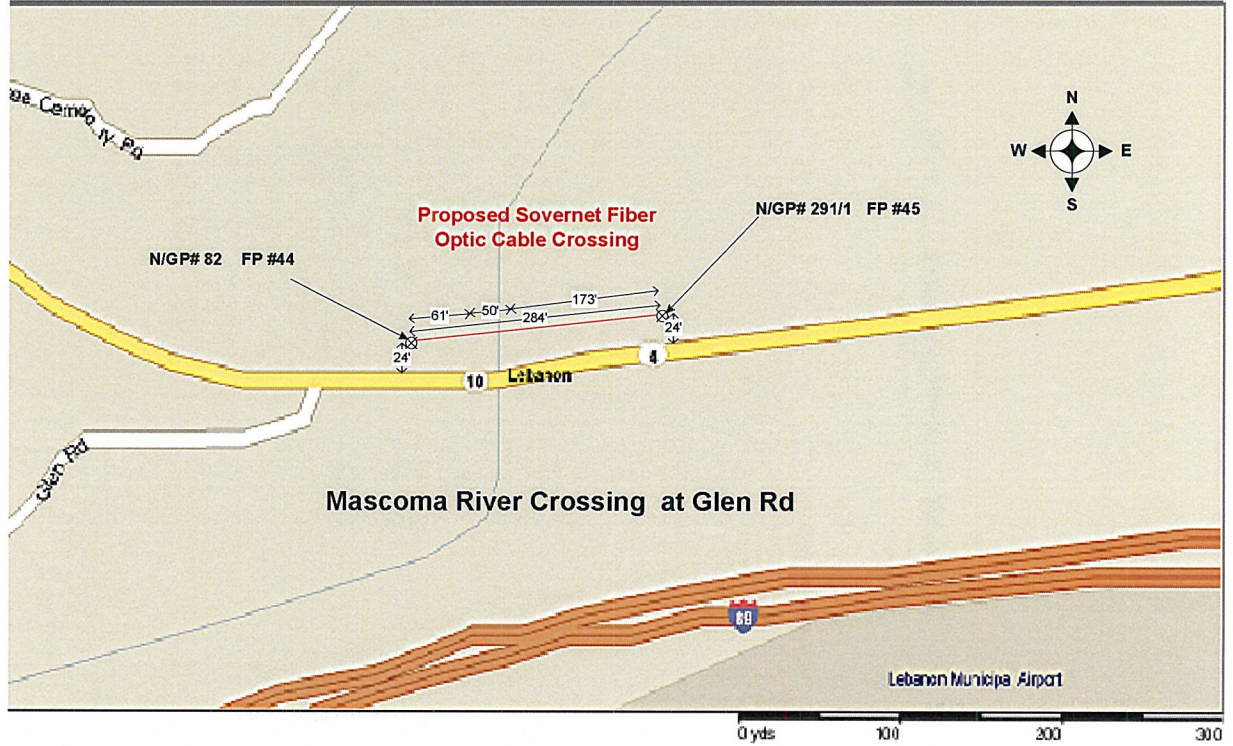
bing Maps

Mascoma River crossing # 1 @ Glen Rd.

On the go? Use m.bing.com to find maps, directions, businesses, and more.



Sovernet NH Fiber Crossing Map

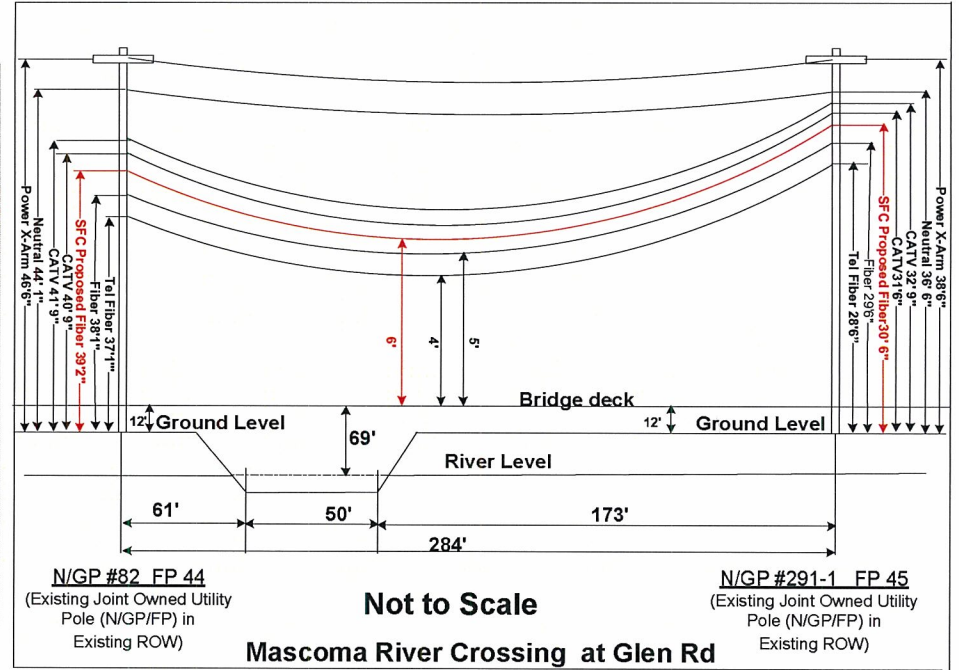
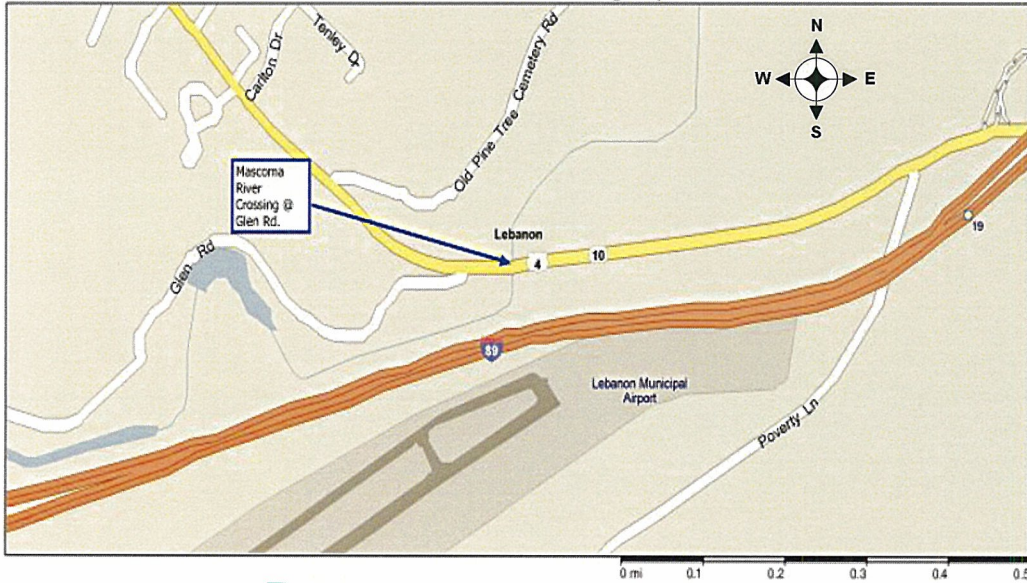


SOVERNET
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5 Canal Street
Bellow Falls, VT 05101
802-460-9100

WO:	SOVERNET COMMUNICATIONS		
ROUTE:	Zone 12		
ROW:	Public	DATE	
STAKED BY:	DLY	DATE	11-11-12
REV BY:		DATE	
PROJECT:			
ROUTE:	Mascoma River crossing Glen St. #1		
SHEET:	1	OF	2

Mascoma River Crossing at Glen Rd Sovernet NH Fiber Crossing Map



Spanmaster Release 3.1 Sag / Tension Computations

Sovernet Fiber Corporation 01/05/12 Mascoma at Glen Rd.
Mascoma River Crossing North side of Route 4 at Glen Rd. in Lebanon

Selected Cable	AREA (sq in)	MODULUS (psi)	NEUTRAL DIAM (in)	WGT (lb/ft)	CONDUCTOR WEIGHT (lb/ft)	PLA TION CAPACITY (lb)	MAX HULLD LOAD (lb)
3191 1.2in EHG	0.0995	2.40E+07	0.313	5.00E-06	0.2050	1542900	11200
CRF-2 D-2x288	4.4300	1.20E+05	2.375	6.70E-06	1.0250	531600	2580
Munda			2.6366		1.2300		

NESC RESULTS

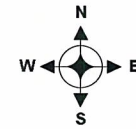
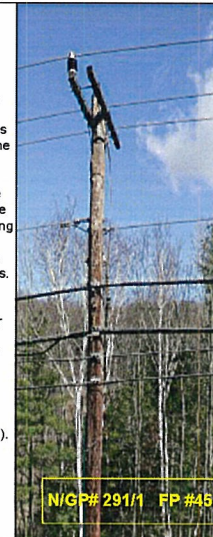
Length (ft)	Temp (F)	Midspan Sag (ft)	Tension (lb)	% Length Change	Clearance (ft)
120.0	0.0	16.75	753	0.03	2.04
150.0	0.0	18.40	760	0.02	5.00
180.0	0.0	19.75	776	-0.03	6.28
210.0	0.0	20.80	787	-0.02	6.95
240.0	0.0	21.50	794	-0.01	7.41
270.0	0.0	21.90	797	-0.01	7.69
300.0	0.0	22.00	798	-0.01	7.85
330.0	0.0	21.90	797	-0.01	7.95
360.0	0.0	21.50	794	-0.01	8.00
390.0	0.0	20.80	787	0.01	8.05
420.0	0.0	19.75	776	0.01	8.05
450.0	0.0	18.40	760	0.01	8.05
480.0	0.0	16.75	753	0.01	8.05
510.0	0.0	15.44	740	-0.01	8.05
540.0	0.0	14.24	726	-0.01	8.05
570.0	0.0	13.14	713	-0.01	8.05
600.0	0.0	12.14	701	-0.01	8.05
630.0	0.0	11.24	690	-0.01	8.05
660.0	0.0	10.44	680	-0.01	8.05
690.0	0.0	9.74	671	-0.01	8.05
720.0	0.0	9.14	663	-0.01	8.05
750.0	0.0	8.64	656	-0.01	8.05
780.0	0.0	8.24	650	-0.01	8.05
810.0	0.0	7.94	645	-0.01	8.05
840.0	0.0	7.74	641	-0.01	8.05
870.0	0.0	7.64	638	-0.01	8.05
900.0	0.0	7.64	636	-0.01	8.05
930.0	0.0	7.74	635	-0.01	8.05
960.0	0.0	7.94	635	-0.01	8.05
990.0	0.0	8.24	636	-0.01	8.05
1020.0	0.0	8.64	638	-0.01	8.05
1050.0	0.0	9.14	641	-0.01	8.05
1080.0	0.0	9.74	645	-0.01	8.05
1110.0	0.0	10.44	650	-0.01	8.05
1140.0	0.0	11.24	656	-0.01	8.05
1170.0	0.0	12.14	663	-0.01	8.05
1200.0	0.0	13.14	671	-0.01	8.05
1230.0	0.0	14.24	680	-0.01	8.05
1260.0	0.0	15.44	690	-0.01	8.05
1290.0	0.0	16.75	701	-0.01	8.05
1320.0	0.0	18.14	713	-0.01	8.05
1350.0	0.0	19.75	726	-0.01	8.05
1380.0	0.0	21.50	740	-0.01	8.05
1410.0	0.0	23.40	753	-0.01	8.05
1440.0	0.0	25.44	763	-0.01	8.05
1470.0	0.0	27.64	770	-0.01	8.05
1500.0	0.0	30.00	776	-0.01	8.05

Mascoma River Crossing at Glen Rd



Construction Notes:

Sovernet Fiber Co proposes to install a 10 M Steel Stranded Cable between the existing poles shown above that will traverse the River. The new strand will be installed at the height shown. There will be a 2" duct Double lashed to the strand in which the fiber will be placed. The supporting Strand will be dead-ended on each Pole so that SFC's cable sag matches the adjacent cables. There will be an information tag installed at each Pole on the fiber at the time the fiber is installed. The cable will be placed using the correct safety Personnel when installing the Fiber. The proposed fiber will be installed with proper Clearance to the other cables Already in place. (See info Above).



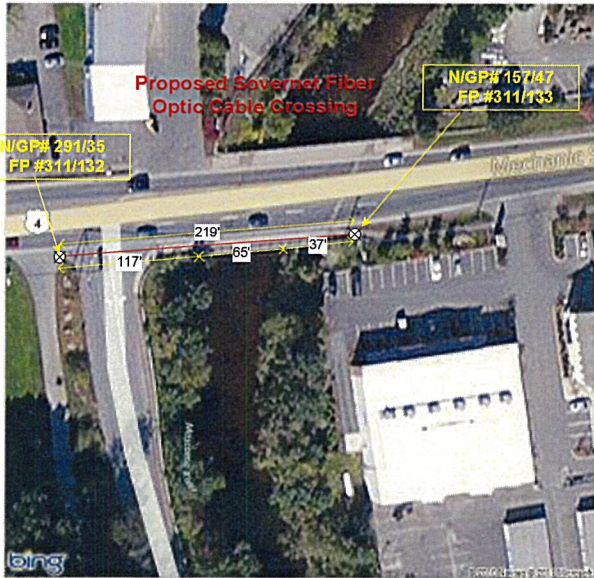
5 Canal Street
Bellow Falls, VT 05101
802-460-9100

WO:	SOVERNET COMMUNICATIONS		
ROUTE:	Zone 12		
ROW:	Public	DATE	
STAKED BY:	DLY	DATE	11-11-12
REV BY:		DATE	
PROJECT:			
ROUTE:	Mascoma River crossing Glen St. #1		
SHEET:	2	OF	2

bing Maps

Mascoma River Crossing # 2 At Buckingham Place & Hwy 4

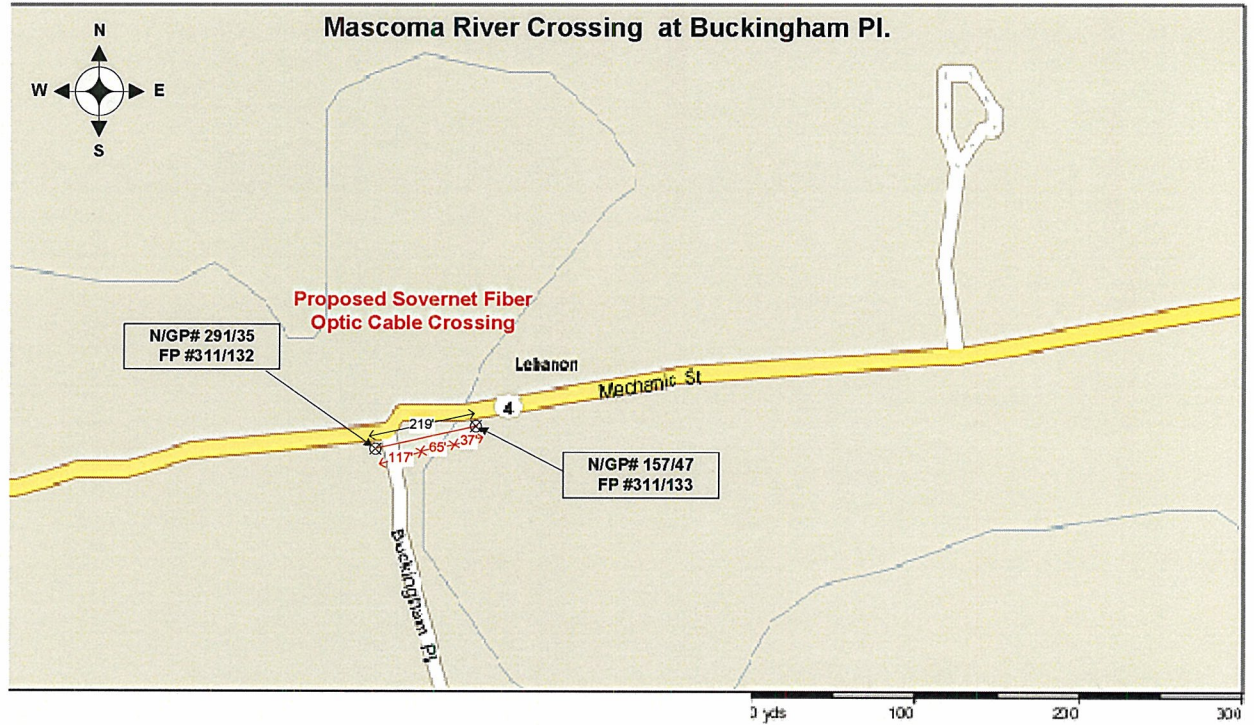
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Mascoma River Crossing at Buckingham Pl.

Sovernet NH Fiber Crossing Map

Mascoma River Crossing at Buckingham Pl.



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5 Canal Street
Bellow Falls, VT 05101
802-460-9100

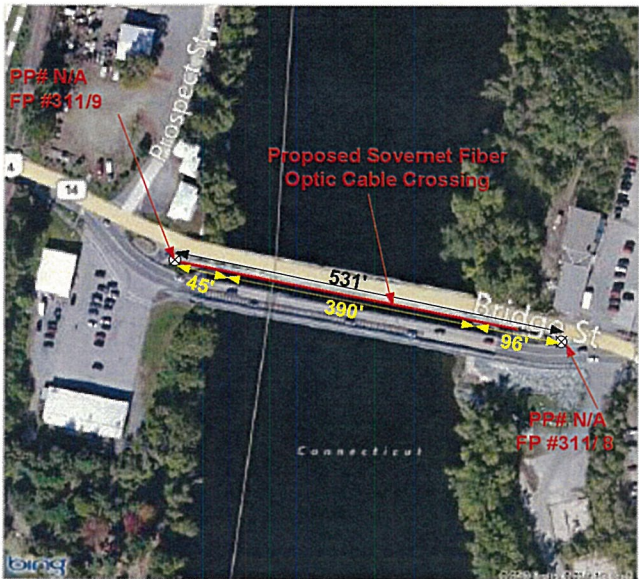
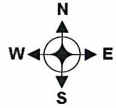
WO:	SOVERNETH COMMUNICATIONS		
ROUTE:	Zone 12		
ROW:	Public	DATE	
STAKED BY:	DLY	DATE	11-11-12
REV BY:		DATE	
PROJECT:			
ROUTE:	Mascoma River crossing Buck.Pl. #2		
SHEET:	1	OF	2

Connecticut River Crossing at Bridge St.

bing Maps

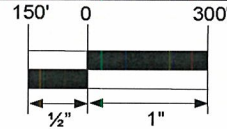
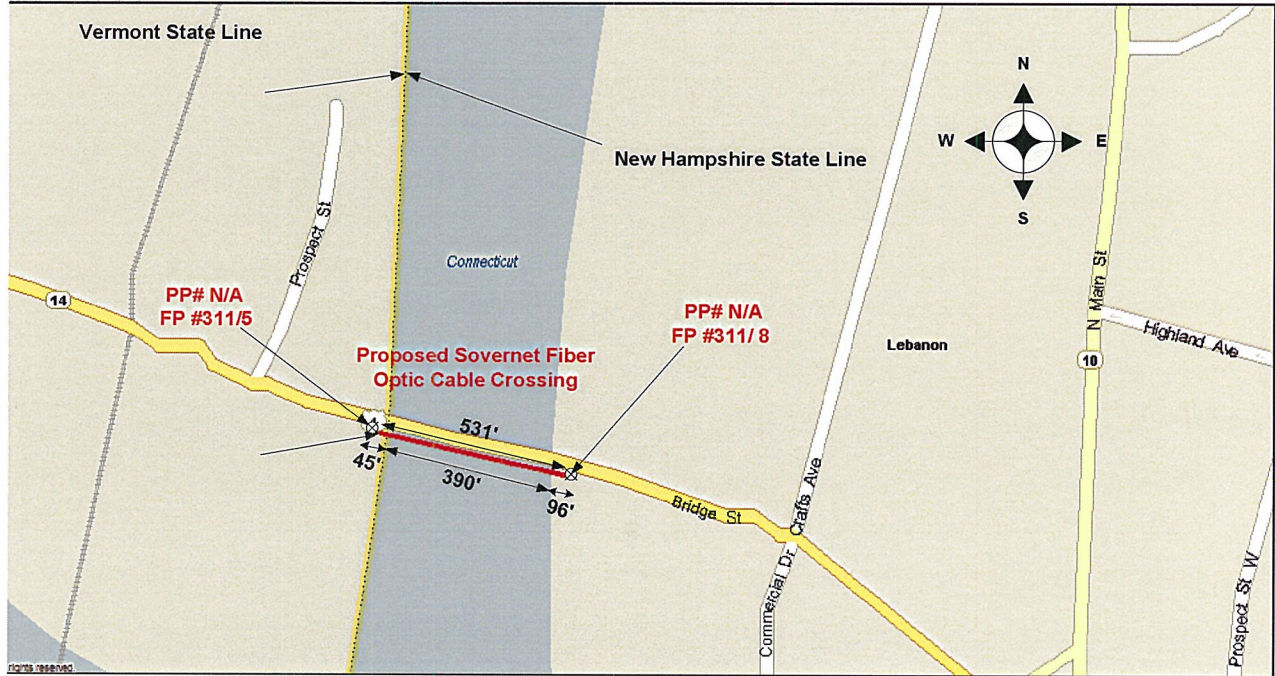
N H Bridge permit for Maple St & Bridge St, Rt 14.

On the go? Use m.bing.com to find maps, directions, businesses, and more.



<http://www.bing.com/maps/print.aspx?mk=en-us&z=18&s=b&cp=43.650684,-72.314432...> 3/31/2012

Connecticut River Crossing at Bridge St.



SCALE
1"=300'

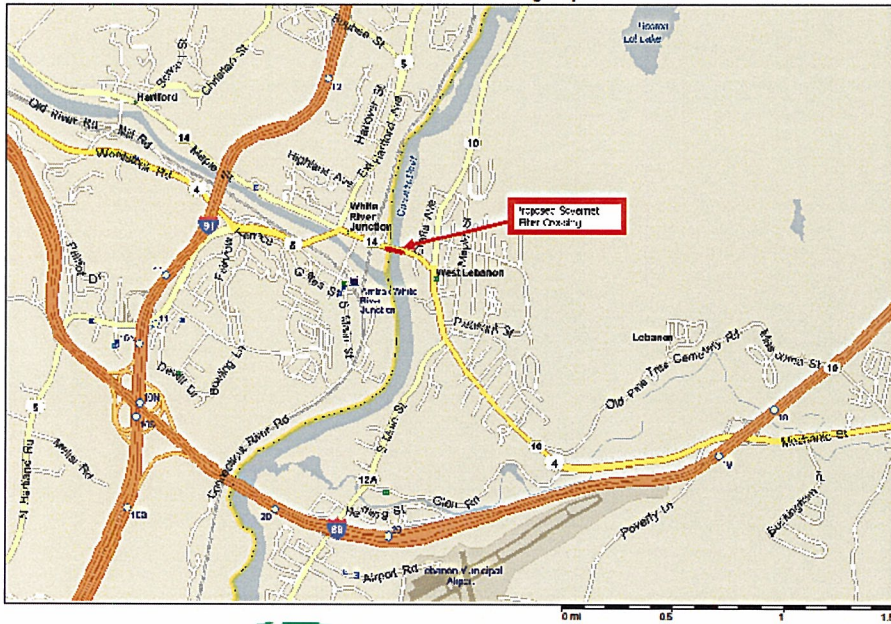


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5 Canal Street
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WO:			
ROUTE: Zone 12			
ROW:	Public	DATE	
STAKED BY:	DLY	DATE	11-11-12
REV BY:		DATE	
PROJECT:			
ROUTE:	Connecticut River crossing Hwy 4		
SHEET:	1	OF	2

Connecticut River Crossing at Bridge St.



Spanmaster @ Release 3.1 Sag / Tension Computations

Sovernet Fiber Corporation 03/05/18 Connecticut at Bridge St. Connecticut River Crossing south of Bridge Street at Maple St. from White River Junction, VT to West Lebanon, NH.

Selected Cable	X SECT AREA (sq.in)	EFF MODULUS (psi)	NOMINAL DIAM (in)	EFF EXP. COEFF. (1/F)	CABLE WEIGHT (lb/ft)	B/A LOAD CAPACITY (lbs)	MAX. RATED LOAD (lbs)
516"11 3x1FHS	0.0595	2.40E+07	0.313	5.40E-04	0.21050	1545.060	11,200
ORF-2"D-2x288	4.1300	1.20E+05	2.375	6.70E-08	1.0250	531.800	2,500
Power Guy					12.300		

NESC RESULTS

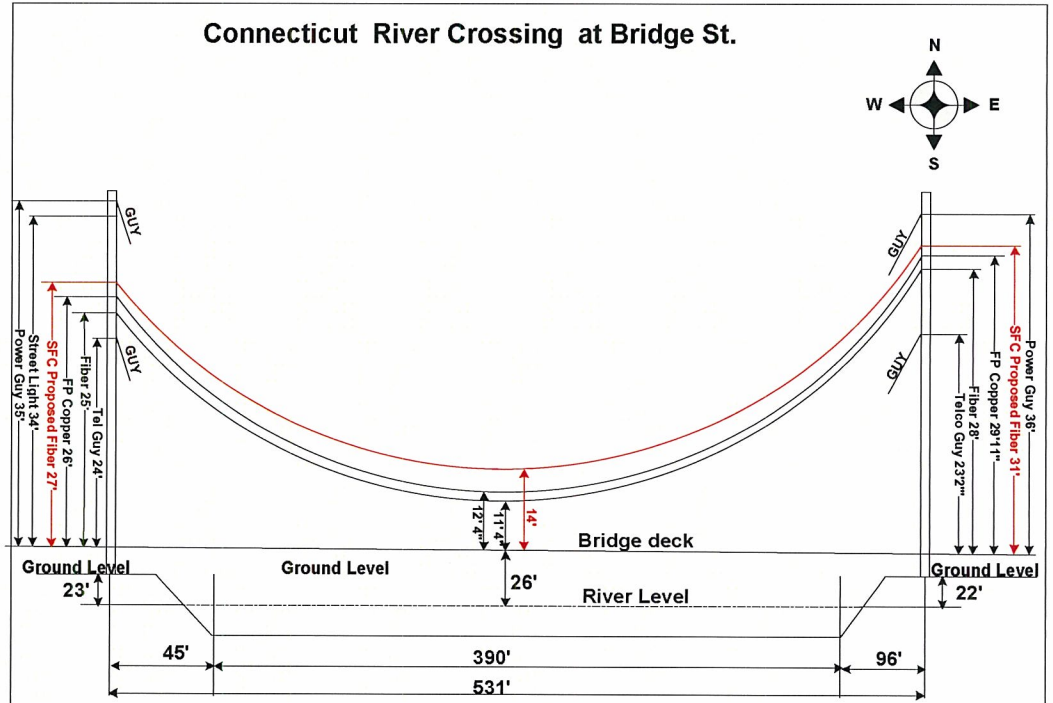
Line	Temp (F)	Line Load (lb/ft)	Line Weight (lb/ft)	Wind Speed (mph)	Wind Angle (deg)	125% Wind Speed (mph)	125% Wind Angle (deg)	125% Line Load (lb/ft)	125% Line Weight (lb/ft)	125% Wind Speed (mph)	125% Wind Angle (deg)	125% Line Load (lb/ft)	125% Line Weight (lb/ft)
Halic 251 Heavy 232A1	0.0	1.582	.50	0.0	0.0	3.739	30.24	65.08	0.19	0.72	7.25	18.90	20.9
	120.0	0.000	.00	0.0	0.0	1.230	15.19	28.56	0.02	0.54	0.00	15.19	0.0

Span Length = 531.00 ft
 Span Sag = 14.50 ft (174.8 in)
 Span Tension = 2,990 lb
 Max Load = 11,200 lb
 Usable load (60%) = 6,720 lb
 Clearance Length = 539.05 ft
 Stowed Wire Length @ Installed Temperature = 531.02 ft

Unloaded Strand Sag = 6.15 ft (97.8 in) 1.53% Tension = 667 lb

Temp (F)	Midspan Sag (ft)	Tension (lb)	% Length Change	Clearance 14 ft
-10.0	12.99	3,334	-0.04	15.51
-30.0	13.13	3,299	-0.04	15.37
-20.0	13.26	3,266	-0.03	15.24
-10.0	13.48	3,233	-0.03	15.10
0	13.54	3,200	-0.03	14.96
10.0	13.67	3,168	0.02	14.83
20.0	13.81	3,137	-0.02	14.69
30.0	13.95	3,107	0.01	14.55
40.0	14.09	3,077	0.01	14.41
50.0	14.22	3,047	0.01	14.28
60.0	14.36	3,016	0.00	14.14
70.0	14.50	2,980	0.00	14.00
80.0	14.64	2,962	0.00	13.86
90.0	14.77	2,935	-0.01	13.73
100.0	14.91	2,906	-0.01	13.59
110.0	15.05	2,882	0.02	13.45
120.0	15.19	2,856	0.02	13.31
130.0	15.32	2,831	0.02	13.18
140.0	15.46	2,806	0.03	13.04

Connecticut River Crossing at Bridge St.



FP 311/5
 (Existing Joint Owned Utility Pole (PP/NA) in Existing ROW)

Not to Scale

FP 311/8
 (Existing Joint Owned Utility Pole (PP/NA) in Existing ROW)



PP# N/A
 FP #311/5

Construction Notes:

Sovernet Fiber Co proposes to install a 10 M Steel Stranded Cable between the existing poles shown above that will traverse the River. The new strand will be installed at the height shown. There will be a 2" duct Double lashed to the strand in which the fiber will be placed. The supporting Strand will be dead-ended on each Pole so that SFC's cable sag matches the adjacent cables. There will be an Information tag installed at each Pole on the fiber at the time the fiber is installed. The cable will be placed using the correct safety Personnel when installing the Fiber. The proposed fiber will be installed with proper Clearance to the other cables Already in place. (See info Above).



PP# N/A
 FP #311/8



5 Canal Street
 Below Falls, VT 05101
 802-460-9100

WO:	SOVERNET COMMUNICATIONS		
ROUTE:	Zone 12		
ROW:	Public	DATE	
STAKED BY:	DLY	DATE	11-11-12
REV BY:		DATE	
PROJECT:	Connecticut River crossing Hwy 4		
SHEET:	2	OF	2