

**The State of New Hampshire
Before the
Public Utilities Commission**

**PETITION OF SEGTEL, INC. FOR LICENSE TO CONSTRUCT AND MAINTAIN A
FIBER OPTIC CABLE OVER AND ACROSS THE CONTOOCCOOK RIVER
BETWEEN UTILITY POLES UES 736/1 AND UES 554/1, CE 6 NET IN
PENACOOK, NH.**

TO THE PUBLIC UTILITIES COMMISSION:

segTEL, Inc. a telecommunications company ("segTEL") in the State of New Hampshire, hereby petitions the Public Utilities Commission ("Commission"), pursuant to RSA 371:17, for a license to construct and maintain telecommunication lines over and across the Contoocook River in the Town of Penacook, New Hampshire and in support of its petition segTEL states as follows:

1. In order to meet reasonable requirements of service to the public, segTEL is proposing to construct a new fiber optic line. The new line will help to accommodate the growth demand and to obtain a greater level of service reliability.
2. The new line will cross the Contoocook River adjacent to the Village Street Bridge, See the attached location map.
3. The design and proposed construction of the crossing is shown on the attached engineer profile drawing. Based on the research and field inspection of the site it has been determined that the Contoocook River has been classified as a waterway not suitable for sail boating. See NESC Table 232-1. The acreage is less than 20 acres and does not provide access into any larger waterway
4. The proposed crossing will occur between two existing Utility poles that are joint owned by Unitil Electric and Fairpoint Communications. The existing poles area set approximately 220 feet apart. The existing pole on the north side of the Contoocook River, pole number UES 736/1 is approximately 42 feet tall. The existing pole on the south side of the Contoocook River pole # UES 554/1 CE 6 NET is approximately 41 feet tall. The pole survey performed determined there was no make ready work required for segTEL to attach to these poles. The segTEL fiber cable will be attached as shown on the accompanying drawing. The Existing poles are in good conditions age is unknown they will be used as is without the need for guys
5. There is adequate room for segTEL to attach safely and in compliance with NESC Standards. Existing conditions of other attachers may violate NESC Standards and should be brought into compliance if necessary. A safe and compliant segTEL attachment may be made to the pole without any remedial work being necessary to accommodate segTEL's attachment.
6. The line will be made up of two materials; 3/8", extra high strength (EHS) galvanized steel strand and 2 non-supporting cable, added diameter = 0.79", weight = 0.177 lb/ft, for each non-supporting cable. The strand and non-supporting cables will be sagged using

the Heavy Load condition with maximum tension of 6318 lbs under that load on the upper connection or the North pole. The RTS is 15,400 lbs.

7. The floodwater elevation for the Contoocook River is based on information from the Flood Insurance Rate Map (FIRM). For the City of Concord NH Merrimack County, Community Panel Number 330013C0336E. Revised April 19, 2010. These elevations are based on the National Geodetic Vertical Datum of 1988 (NGVD 88). For the purpose of this petition the more conservative 100-year flood elevation was used as the basis for design of the conductor clearance.
8. Using the above design criteria, the maximum sag of the non- supporting cable and minimum clearances for the crossing are as follows. The proposed wire will be constructed 12" above the existing cable. The required NESC Table 232-1 from the lowest wire is 17.5' to the 10-year water elevation, the measured distance to the lowest wire is 26.84', and the distance of our proposed wire is 35.35'.
9. There are no NHDES or NHDOT permits necessary specifically for the construction of the crossing.
10. The proposed crossing has been designed and will be constructed, maintained and operated by segTEL, its affiliates and contractors.
11. segTEL submits that the license petitioned for herein may be exercised without substantially affecting the rights of the public in the crossing of the Contoocook River. Minimum safe line clearances above the water surface will be maintained at all times. The use and enjoyment by the public of the river will not be diminished in any material respect as a result of the overhead line crossing.

WHEREFORE, segTEL respectfully requests that the Commission:

- a. Find that the license petitioned for herein may be exercised without substantially effecting the public rights in the public water which are the subject of this petition;
- b. Grant segTEL a license to construct and maintain communication lines over and across the public waters of the Contoocook River in Penacook, NH as specified in this petition; and
- c. Issue an Order Nisi and orders for its publication.

Respectfully submitted,
segTEL, Inc.
By

Kevin M. Shea

segTEL, Inc.
Kevin M. Shea
PO Box 610
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Attachments: Cable sag calculations

ALUMINUM COMPANY OF AMERICA SAG AND TENSION DATA
 SEGTEL FIBER OPTIC CABLE OVER CONTOOCCOOK RIVER PENNACOOK, NH
 June 10, 2011
 HES Proj. No.: 1120102

Conductor Nominal Diameter: 3/8" x 7 Strand Steel EHS
 Area = 0.0792 Sq. In. Dia. = 0.360 In. Weight = 0.273 Lbs/Ft

Data from Chart No. 1-1293 RTS = 15,400 Lbs
 English Units

Span= 220.8.0 Feet NESC Heavy Load Zone

Creep is NOT a factor

Design Points					Final		Initial	
Temp (F)	Ice (In)	Wind (Psf)	K (Lbs/Ft)	Weight (Lbs/Ft)	Sag (Ft)	Tension (Lbs)	Sag (Ft)	Tension (Lbs)
0	0.50	4.00	0.30	1.826	2.18	5105.	2.18	5105
32	0.50	4.00	0.00	.926	1.29	4366	1.28	4426
-20	0.00	0.00	0.00	0.273	.34	4856	.34	4880
0	0.00	0.00	0.00	0.273	.36	4604	.36	4650
30	0.00	0.00	0.00	0.273	.39	4227	.39	4302
60	0.00	0.00	0.00	0.273	.43	3850	.42	3951
90	0.00	0.00	0.00	0.273	.48	3475	.46	3599
120	0.00	0.00	0.00	0.273	.54	3101	.51	3247
167	0.00	0.00	0.00	0.273	.66	2522	.62	2702
212	0.00	0.00	0.00	0.273	.84	1981	.76	2194

Above: Initial Data Prior to Cable Installation

Below: 2 Non-Supporting Cable(s) Added, Dia = .790 In, Wt= .117 Lbs/Ft + .010 Lbs/Ft

0	0.50	4.00	0.30	4.116	3.98	6307	3.98	6307 *
32	0.50	4.00	0.00	3.216	3.54	5542	3.49	5621
-20	0.00	0.00	0.00	0.623	.77	4908	.75	5087
0	0.00	0.00	0.00	0.623	.81	4662	.78	4863
30	0.00	0.00	0.00	0.623	.88	4294	.84	4525
60	0.00	0.00	0.00	0.623	.97	3931	.91	4185
90	0.00	0.00	0.00	0.623	1.06	3572	.99	3846
120	0.00	0.00	0.00	0.623	1.18	3220	1.08	3510
167	0.00	0.00	0.00	0.623	1.41	2690	1.27	2996
212	0.00	0.00	0.00	0.623	1.71	2221	1.50	2530

* Design Condition 51.0% of rated strength

The table above shows sag and tension data for cable mounting points at the same elevation resulting in a sag point at mid-span and equal tension at each attachment point. Due to different ground elevations at either end of the actual span, the attachment point elevations will be approximately 3.55 feet different. Adjusting for this difference in elevation, the sag and tension values will be as follows (refer to attached plan for graphic representation):

Pole #1 – UES 736/1

Located on North End

Pole #2 – UES 554/1 CE 6 NET

Located on South End

Distance from Pole #1 to Sag Point = S2 = 134.36 ft.

Distance from Pole #2 to Sag Point = S1 = 86.22 ft.

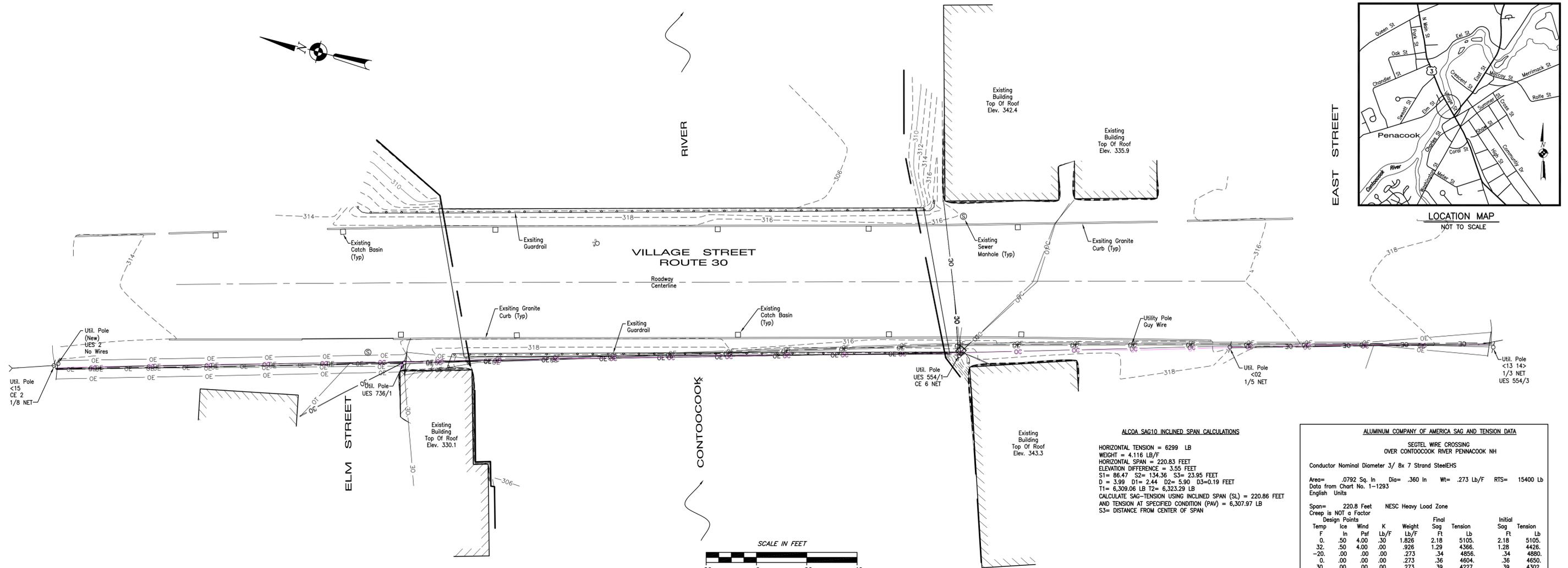
Tension at Pole #1 = 6323 Lbs, which is 41.0% of the rated strength of the messenger cable.

Tension at Pole #2 = 6309 Lbs, which is 41.0% of the rated strength of the messenger cable.

NESC guidelines recommend tension not exceed 60% of rated cable strength.

Elevation at Sag Point = 337.35 which is 35.35 feet above the 10 Year flood elevation of the Contoocook River at this location.

This crossing is located adjacent to the Village Street Bridge. The crossing is on the upstream side of the Bridge.



THE REFERENCE PARCEL LIES IN THE ZONE X FLOOD INSURANCE RATE MAPS, COMMUNITY-PANEL NUMBER 330013C0336E LAST REVISED APRIL 19, 2010

ALCOA SAG10 INCLINED SPAN CALCULATIONS
 HORIZONTAL TENSION = 6299 LB
 WEIGHT = 4.116 LB/F
 HORIZONTAL SPAN = 220.83 FEET
 ELEVATION DIFFERENCE = 3.55 FEET
 S1= 86.47 S2= 134.36 S3= 23.95 FEET
 D = 3.99 D1= 2.44 D2= 5.90 D3=0.19 FEET
 T1 = 6,309.06 LB T2= 6,323.29 LB
 CALCULATE SAG-TENSION USING INCLINED SPAN (SL) = 220.86 FEET
 AND TENSION AT SPECIFIED CONDITION (PAV) = 6,307.97 LB
 S3= DISTANCE FROM CENTER OF SPAN

ALUMINUM COMPANY OF AMERICA SAG AND TENSION DATA
 SEGTEL WIRE CROSSING
 OVER CONTOOCOOK RIVER PENACOOK NH
 Conductor Nominal Diameter 3/8 x 7 Strand SteelEHS

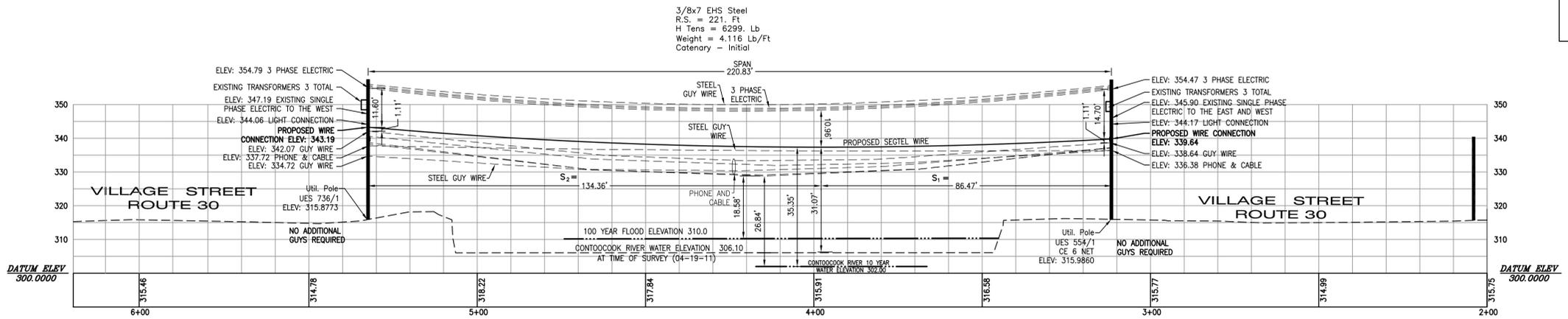
Area= .0792 Sq. In Dia= .360 In Wt= .273 Lb/F RTS= 15400 Lb
 Data from Chart No. 1-1293
 English Units

Span= 220.8 Feet NESC Heavy Load Zone
 Creep is NOT a Factor

Design Points		Final		Initial		
Temp	Ice	Wind	Weight	Sag	Tension	
F	In	Psf	Lb/F	Ft	Lb	
0.	.50	4.00	.30	1.826	2.18	5105.
32.	.50	4.00	.00	.926	1.29	4366.
-20.	.00	.00	.00	.273	.34	4856.
0.	.00	.00	.00	.273	.36	4604.
30.	.00	.00	.00	.273	.39	4227.
60.	.00	.00	.00	.273	.43	3850.
90.	.00	.00	.00	.273	.48	3475.
120.	.00	.00	.00	.273	.54	3101.
167.	.00	.00	.00	.273	.66	2522.
212.	.00	.00	.00	.273	.84	1981.

Above: Initial Data Prior to Cable Installation

Below:		2 Non-Supporting Cable(s)		Added, Dia= .790 In Wt= .170Lb/F+ .010Lb/F		
Temp	Ice	Wind	Weight	Sag	Tension	
F	In	Psf	Lb/F	Ft	Lb	
0.	.50	4.00	.30	4.116	3.98	6307.
32.	.50	4.00	.00	3.216	3.54	5542.
-20.	.00	.00	.00	.623	.77	4908.
0.	.00	.00	.00	.623	.81	4662.
30.	.00	.00	.00	.623	.88	4294.
60.	.00	.00	.00	.623	.97	3931.
90.	.00	.00	.00	.623	1.06	3572.
120.	.00	.00	.00	.623	1.18	3220.
167.	.00	.00	.00	.623	1.41	2690.
212.	.00	.00	.00	.623	1.71	2221.



3/8x7 EHS Steel
 R.S. = 221. Ft
 H Tens = 6299. Lb
 Weight = 4.116 Lb/Ft
 Catenary = Initial

SPAN 220.83'
 STEEL GUY WIRE 3 PHASE ELECTRIC
 STEEL GUY WIRE
 PROPOSED SEGTEL WIRE
 PHONE AND CABLE
 100 YEAR FLOOD ELEVATION 310.0
 CONTOOCOOK RIVER WATER ELEVATION 306.10
 AT TIME OF SURVEY (04-19-11)
 CONTOOCOOK RIVER 10 YEAR WATER ELEVATION 302.90

NO ADDITIONAL GUYS REQUIRED

UTIL. Pole UES 736/1 ELEV: 315.8773
 NO ADDITIONAL GUYS REQUIRED

UTIL. Pole UES 554/1 CE 6 NET ELEV: 315.9860
 NO ADDITIONAL GUYS REQUIRED

Profile Scale:
 HORIZ. 1"=20'
 VERT. 1"=2'

NESS TABLE 232-1
 SURFACE AREA OF WATER BODY LESS THAN 20 ACRES, NON NAVIGABLE FOR SAIL BOATS
 MIN CLEARANCE 17.5 FEET

HOLDEN ENGINEERING & SURVEYING, inc.

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 PO Box 480 Concord, NH. 03302
 (603) 225-6449
 9 Constitution Drive
 Bedford, NH. 03110
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**EXISTING CONDITIONS
 SEGTEL FIBER OPTIC CABLE
 OVER THE CONTOOCOOK RIVER, PENACOOK, NH**

Date:	Revisions Description	Dr. By	Chk. By	Book	Page	Date:
						05-10-11
						Scale: 1"=20'
						Dr. By: MK Ck By: BT
						Job No. 1120102
						Sheet no 1 of 1