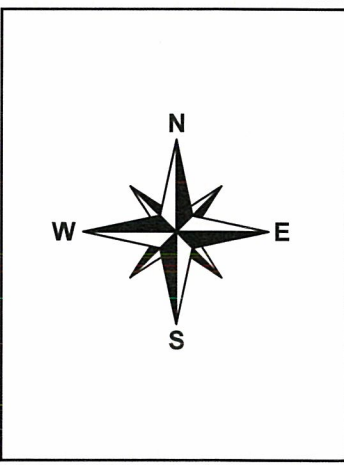


**NHOS**  
New Hampshire Optical Systems  
New Hampshire Optical Systems, Inc.  
99 Pine Hill Rd.  
Nashua, NH 03063  
(603-821-6467)

**Proposed  
Railroad Crossing  
Whitefield, NH**



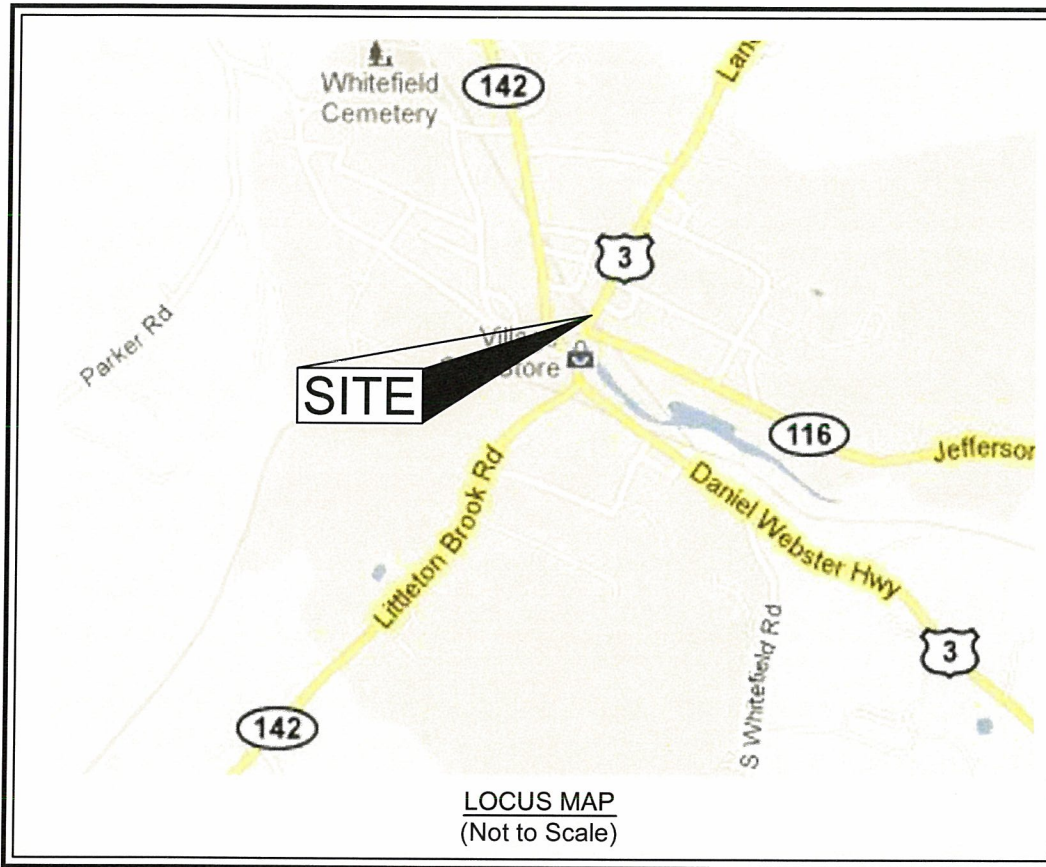
Project # TID-128 - Primary 6  
Drawing # AC-WHI-RR-2

Date: 11/16/11  
Revision #

**Proposed  
Railroad Crossing  
Whitefield, NH**

Location:  
Lancaster Rd, Whitefield NH  
Nearest cross street- Jefferson Rd.





**CommScope**  
Spanmaster® Release 3.1 Sag / Tension Computations  
09/01/11 Waveguide

Waveguide  
River and Rail Crossings

Selected Cables	X-SECT AREA (sq.in)	EFF MODULUS (psi)	NOMINAL DIAM (in)	EFF.EXP. COEFF. (1/F)	CABLE WEIGHT (lb/ft)	E*A LOAD BEARING CAPACITY (lbs)	MAX. RATED LOAD (lbs)
1/4*6.6mEHS	0.0352	2.60E+07	0.250	5.60E-06	0.1210	914940	6650
ORF-O-288-LN Bundle	0.5782	2.70E+05	0.858	1.13E-05	0.1960	155982	651
			1.108		0.3170		

**NESC RESULTS**

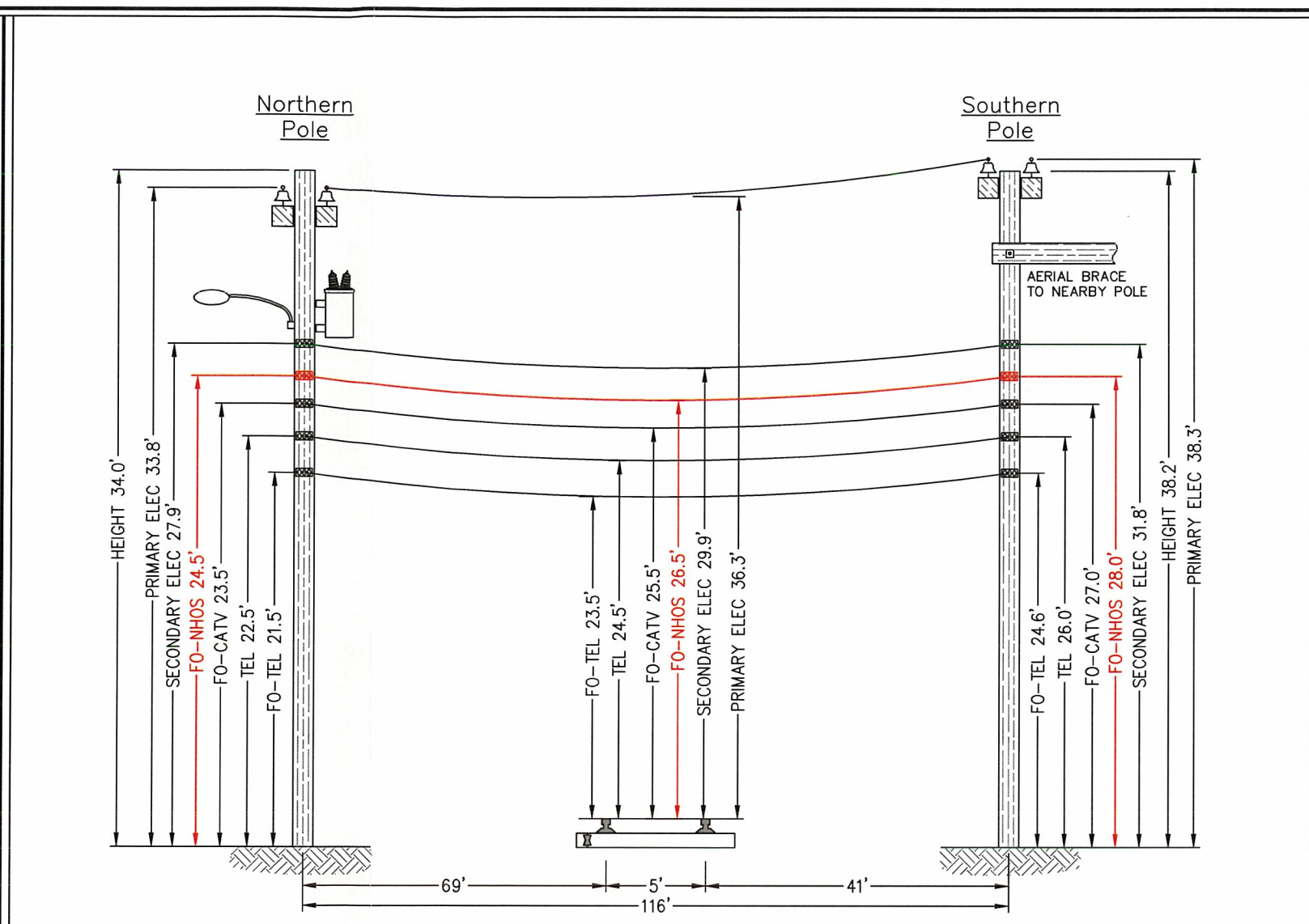
Loading Condition	Temp (F)	Ice Load (lb/ft)	Ice Thick (in)	Wind Constant (lb/ft)	Horz Wind Load (lb/ft)	Result Load + Const (lb/ft)	Sag (ft)	Tension (lb)	% Len Chg From Input Conditions	Sag @ Point 56 (ft)	Horz Sag Comp (ft)	Vert Sag Comp (ft)	Vector Angle (Deg)
Rule 251 - Heavy	0.0	1.000	.50	.3	4.0	1.793	2.14	1406	0.06	2.15	1.01	1.89	28.1
232A1	120.0	0.000	.00	.0	0.0	0.317	1.48	359	0.02	1.48	0.00	1.48	0.0

Temp (F)	Midspan Sag (ft)	Tension (lb)	% Length Change	Clearance
-40.0	.63	850	-0.02	N/A
-30.0	.66	806	-0.02	N/A
-20.0	.70	764	-0.02	N/A
-10.0	.74	723	-0.02	N/A
.0	.78	684	-0.01	N/A
10.0	.82	646	-0.01	N/A
20.0	.87	610	-0.01	N/A
30.0	.93	576	-0.01	N/A
40.0	.98	543	-0.01	N/A
50.0	1.04	513	-0.01	N/A
60.0	1.10	485	0.00	N/A
70.0	1.16	459	0.00	N/A
80.0	1.22	436	0.00	N/A
90.0	1.29	414	0.01	N/A
100.0	1.35	394	0.01	N/A
110.0	1.42	376	0.01	N/A
120.0	1.48	359	0.02	N/A
130.0	1.55	344	0.02	N/A
140.0	1.62	330	0.03	N/A

Span Length = 116.00 ft  
Span Sag = 1.16 ft (13.9 in)  
Span Tension = 460 lb  
Max Load = 6,650 lb  
Usable load (60%) = 3,990 lb  
Catenary Length = 116.031 ft  
Stress Free Length @ Installed Temperature = 115.973 ft

Unloaded Strand  
Sag = .68 ft (8.2 in) 0.59 %  
Tension = 299 lb



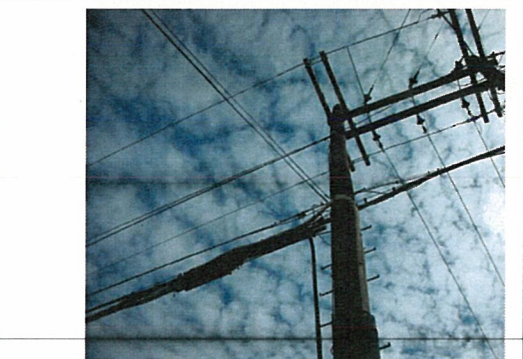
**E-42/14 - T-1/5**  
(Existing joint owned utility pole (PSNH/Fairpoint) in existing Right-of-Way)

**E-42/15 - T-1/4.5**  
(Existing joint owned utility pole (PSNH/Fairpoint) in existing Right-of-Way)



**E-42/14 - T-1/5**

**Construction Notes:**  
NHOS proposes to install a 1/4 inch metal supporting strand between the existing utility poles shown above that will traverse the railroad. The strand will be installed at the proposed height (see above). The supporting strand will be secured to each pole using double dead end attachments to prevent any sag in the wire and maintain proper clearances. NHOS will lash a one inch diameter fiber optic cable (PVC jacket) to the strand using a dual lash method to provide security of the fiber over the right of way. The fiber will be tagged with twenty four hour contact information at each pole clamp. NHOS will employ the proper safety personnel during the crossing installation. The proposed install will meet all proper clearances from other Utilities. (see above). Additional pole guys will be added per NESC Rule 264 and as directed by pole owners.



**E-42/15 - T-1/4.5**

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**Proposed  
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- Notes:**
- The heights of structures shown hereon are based on field measurements taken with a Nikon 362 total station during a site survey on 10/12/11.
  - Vertical distances are representative of attachment heights after utility make ready moves are completed.

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