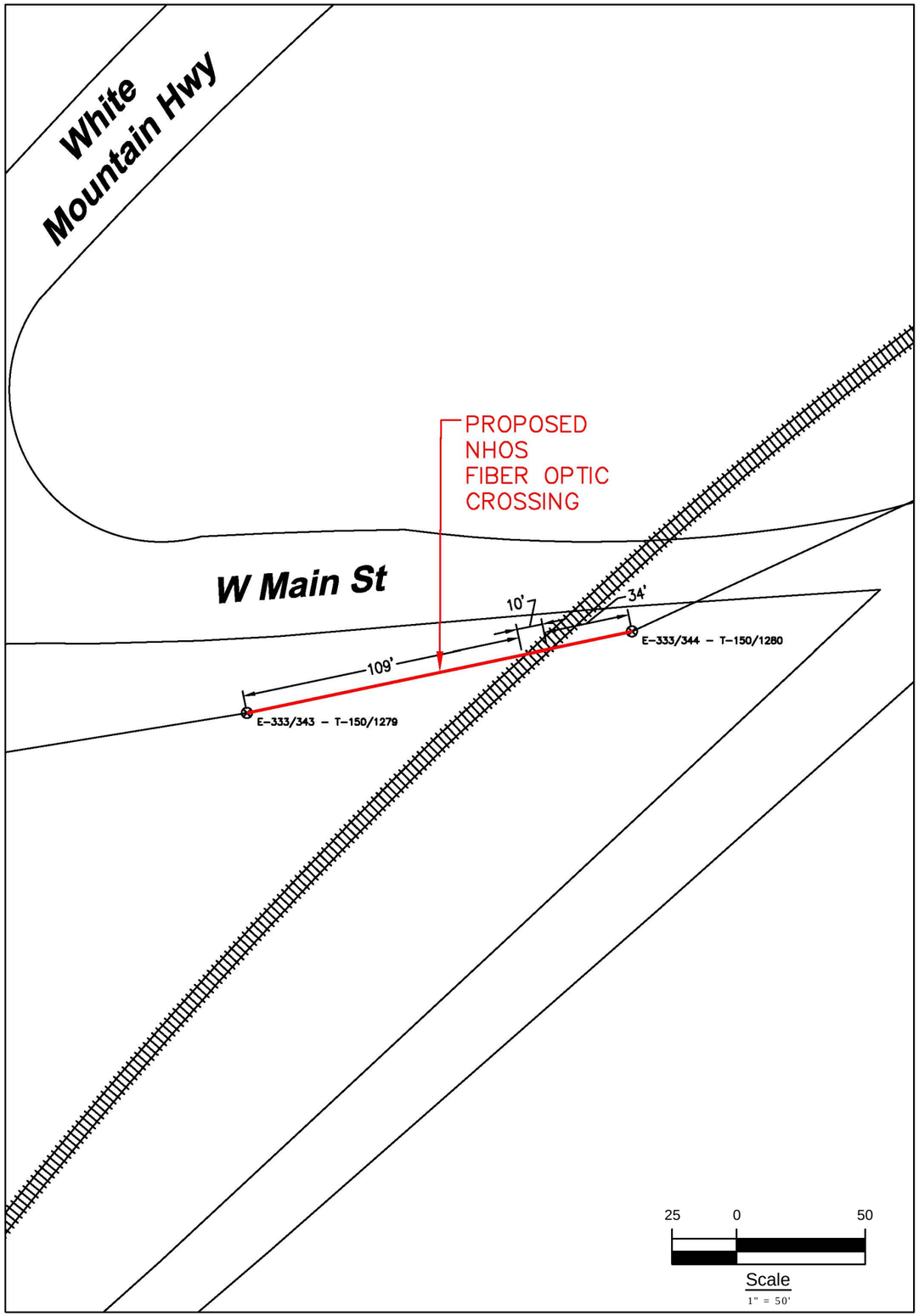

NHOS
New Hampshire Optical Systems
New Hampshire Optical Systems, Inc.
99 Pine Hill Rd.
Nashua, NH 03063
(603-821-6467)

Proposed
Railroad Crossing
Conway, NH

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Project # TID-170 - Primary 8
Drawing # AC-CONW-RR-3

Date: 12/06/11
Revision #

Proposed
Railroad Crossing
Conway, NH

Location:
West Main St., Conway, NH
Nearest cross street- Haven Ln.

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LOCUS MAP
(Not to Scale)

CommScope®

Spanmaster ® Release 3.1 Sag / Tension Computations

Waveguide
River and Rail Crossings

09/01/11 Waveguide

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	0.5782	2.70E+05	0.858	1.13E-05	0.1960	155982	651
Bundle			1.108		0.3170		

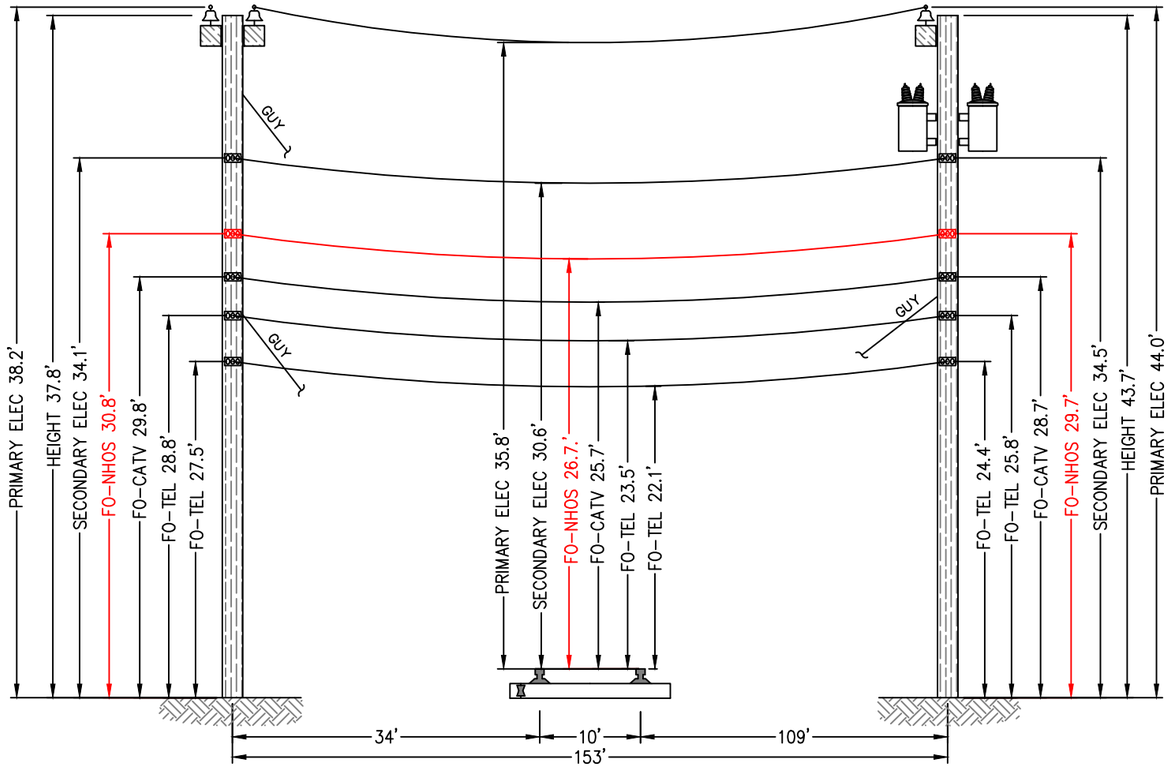
NESC RESULTS

Loading Condition	Temp. (F)	Ice Load lb/ft	Ice Thick in	Wind Constant lb/ft	Horz Wind Load lb/sq ft	Result Load + Const lb/ft	Sag ft	Tension lb	% Len Chg From Input Conditions	Sag @ Point 76.5 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	3.07	1704	0.08	3.08	1.45	2.71	28.1
232A1	120.0	0.000	.00	.0	0.0	0.317	1.91	486	0.01	1.91	0.00	1.91	0.0

Span Length = 153.00 ft
Span Sag = 1.53 ft (18.4 in)
Span Tension = 606 lb
Max Load = 6,650 lb
Usable load (60%) = 3,990 lb
Catenary Length = 153.041 ft
Stress Free Length @
Installed Temperature = 152.939 ft

Unloaded Strand
Sag = .82 ft (9.8 in) 0.54 %
Tension = 432 lb

Temp (F)	Midspan Sag (ft)	Tension (lb)	% Length Change	Clearance
-40.0	.92	1,012	-0.02	N/A
-30.0	.96	969	-0.02	N/A
-20.0	1.00	926	-0.02	N/A
-10.0	1.05	885	-0.01	N/A
.0	1.10	845	-0.01	N/A
10.0	1.15	806	-0.01	N/A
20.0	1.20	769	-0.01	N/A
30.0	1.26	733	-0.01	N/A
40.0	1.33	699	-0.01	N/A
50.0	1.39	666	0.00	N/A
60.0	1.46	635	0.00	N/A
70.0	1.53	606	0.00	N/A
80.0	1.60	578	0.00	N/A
90.0	1.68	553	0.01	N/A
100.0	1.75	529	0.01	N/A
110.0	1.83	506	0.01	N/A
120.0	1.91	486	0.01	N/A
130.0	1.99	467	0.02	N/A
140.0	2.07	449	0.02	N/A



E-333/344 – T-150/1280
(Existing joint owned utility pole (PSNH/Fairpoint) in existing Right-of-Way)

E-333/343 – T-150/1279
(Existing joint owned utility pole (PSNH/Fairpoint) in existing Right-of-Way)

E-333/344 – T-150/1280

Construction Notes:

NHOS proposes to install a ¼ 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-333/343 – T-150/1279

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

Proposed Railroad Crossing Conway, NH

Notes:

1. The heights of structures shown hereon are based on field measurements taken with a Nikon 362 total station during a site survey on 11/15/11.
2. Vertical distances are representative of attachment heights after utility make ready moves are completed.

Project # TID-170 - Primary 8
Drawing # AC-CONW-RR-3

Date: 12/06/11
Revision #

Proposed
Railroad Crossing
Conway, NH

Location:
West Main St., Conway, NH
Nearest cross street- Haven Ln.

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

Proposed Railroad Crossing Meredith, NH

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Project # TID-178 - Primary 8
Drawing # AC-MER-RR-1

Date: 12/12/11
Revision #

Proposed
Railroad Crossing
Meredith, NH

Location:
S. Main St., Meredith, NH
Nearest cross street- Railroad Ave.

Sheet 1 of 2

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LOCUS MAP
(Not to Scale)

CommScope®

Spanmaster ® Release 3.1 Sag / Tension Computations

Waveguide 09/01/11 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	0.5782	2.70E+05	0.858	1.13E-05	0.1960	155982	651
Bundle			1.108		0.3170		

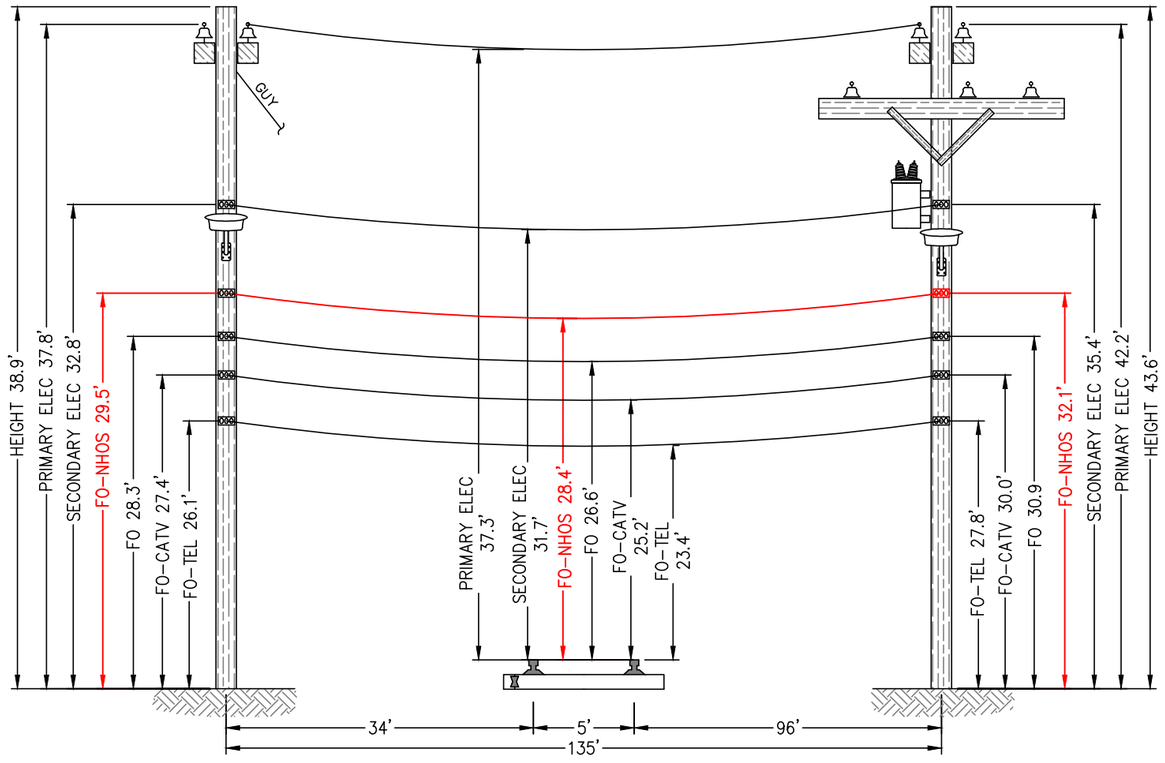
NESC RESULTS

Loading Condition	Temp. (F)	Ice Load lb/ft	Ice Thick in	Wind Constant lb/ft	Horz Wind Load lb/sq ft	Result Load + Const lb/ft	Sag ft	Tension lb	% Len Chg From Input Conditions	Sag @ Point 67.5 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	2.61	1561	0.07	2.62	1.23	2.30	28.1
232A1	120.0	0.000	.00	.0	0.0	0.317	1.70	424	0.02	1.70	0.00	1.70	0.0

Span Length = 135.00 ft
Span Sag = 1.35 ft (16.2 in)
Span Tension = 535 lb
Max Load = 6,650 lb
Usable load (60%) = 3,990 lb
Catenary Length = 135.036 ft
Stress Free Length @
Installed Temperature = 134.957 ft

Unloaded Strand
Sag = .75 ft (9.0 in) 0.56 %
Tension = 367 lb

Temp (F)	Midspan Sag (ft)	Tension (lb)	% Length Change	Clearance
-40.0	.77	933	-0.02	N/A
-30.0	.81	890	-0.02	N/A
-20.0	.85	848	-0.02	N/A
-10.0	.89	807	-0.01	N/A
.0	.94	767	-0.01	N/A
10.0	.99	729	-0.01	N/A
20.0	1.04	692	-0.01	N/A
30.0	1.10	657	-0.01	N/A
40.0	1.16	623	-0.01	N/A
50.0	1.22	592	0.00	N/A
60.0	1.28	562	0.00	N/A
70.0	1.35	535	0.00	N/A
80.0	1.42	509	0.00	N/A
90.0	1.49	485	0.01	N/A
100.0	1.56	463	0.01	N/A
110.0	1.63	442	0.01	N/A
120.0	1.70	424	0.02	N/A
130.0	1.78	406	0.02	N/A
140.0	1.85	390	0.02	N/A



E-121/1 – T-372/395
(Existing joint owned utility pole (NHEC/Fairpoint) in existing Right-of-Way)

E-120/78 – T-1/17
(Existing joint owned utility pole (NHEC/Fairpoint) in existing Right-of-Way)

E-121/1 – T-372/395

Construction Notes:

NHOS proposes to install a ¼ inch metal supporting strand between the existing utility poles shown above that will traverse the river. 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-120/78 – T-1/17

NHOS
New Hampshire Optical Systems

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Nashua, NH 03063
(603-821-6467)

Proposed Railroad Crossing Meredith, NH

Notes:

1. The heights of structures shown hereon are based on field measurements taken with a Nikon 362 total station during a site survey on 07/21/11.
2. Vertical distances are representative of attachment heights after utility make ready moves are completed.

Project # TID-178 - Primary 8
Drawing # AC-MER-RR-1

Date: 12/12/11
Revision #

Proposed
Railroad Crossing
Meredith, NH

Location:
S. Main St., Meredith, NH
Nearest cross street- Railroad Ave.

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