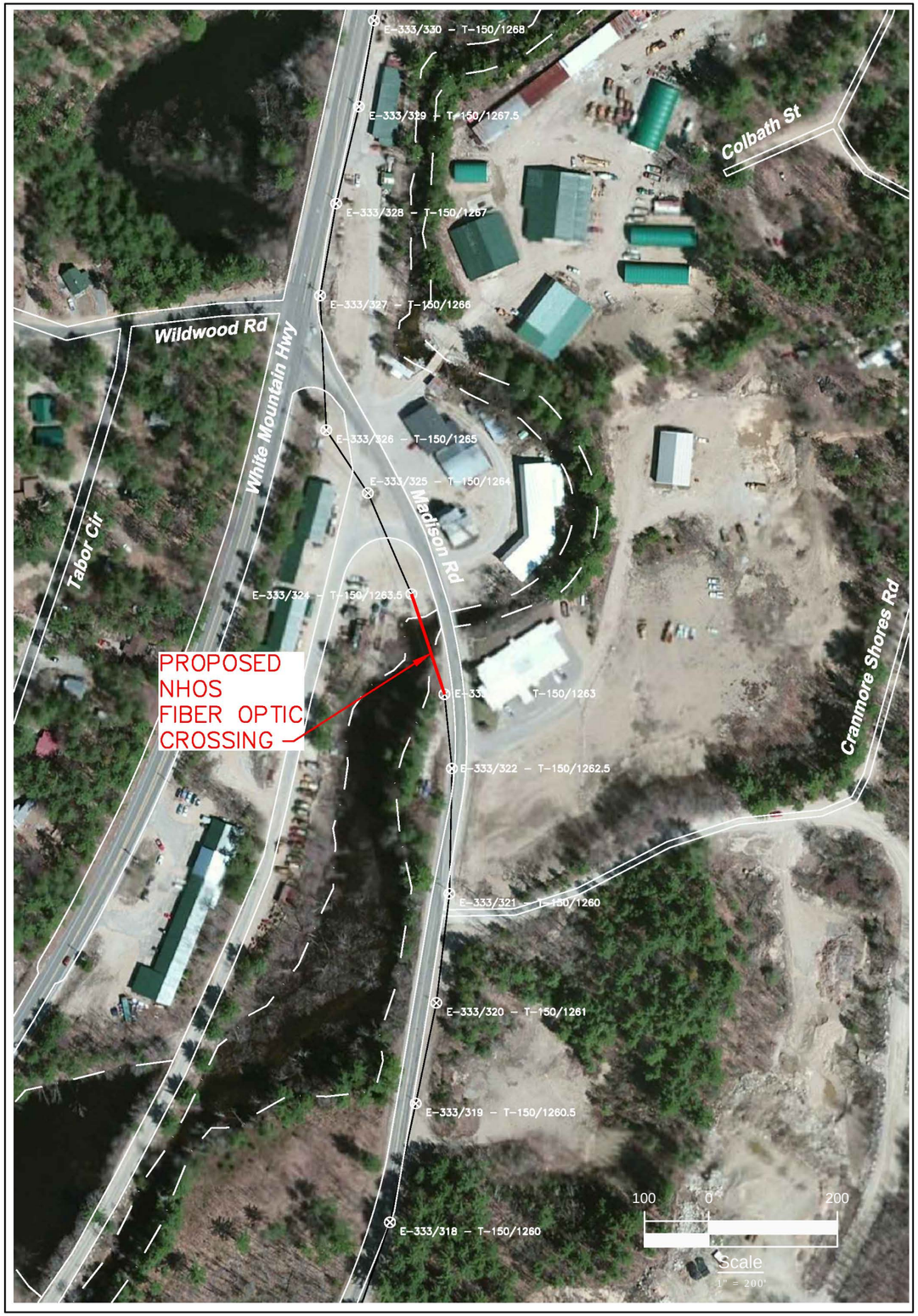

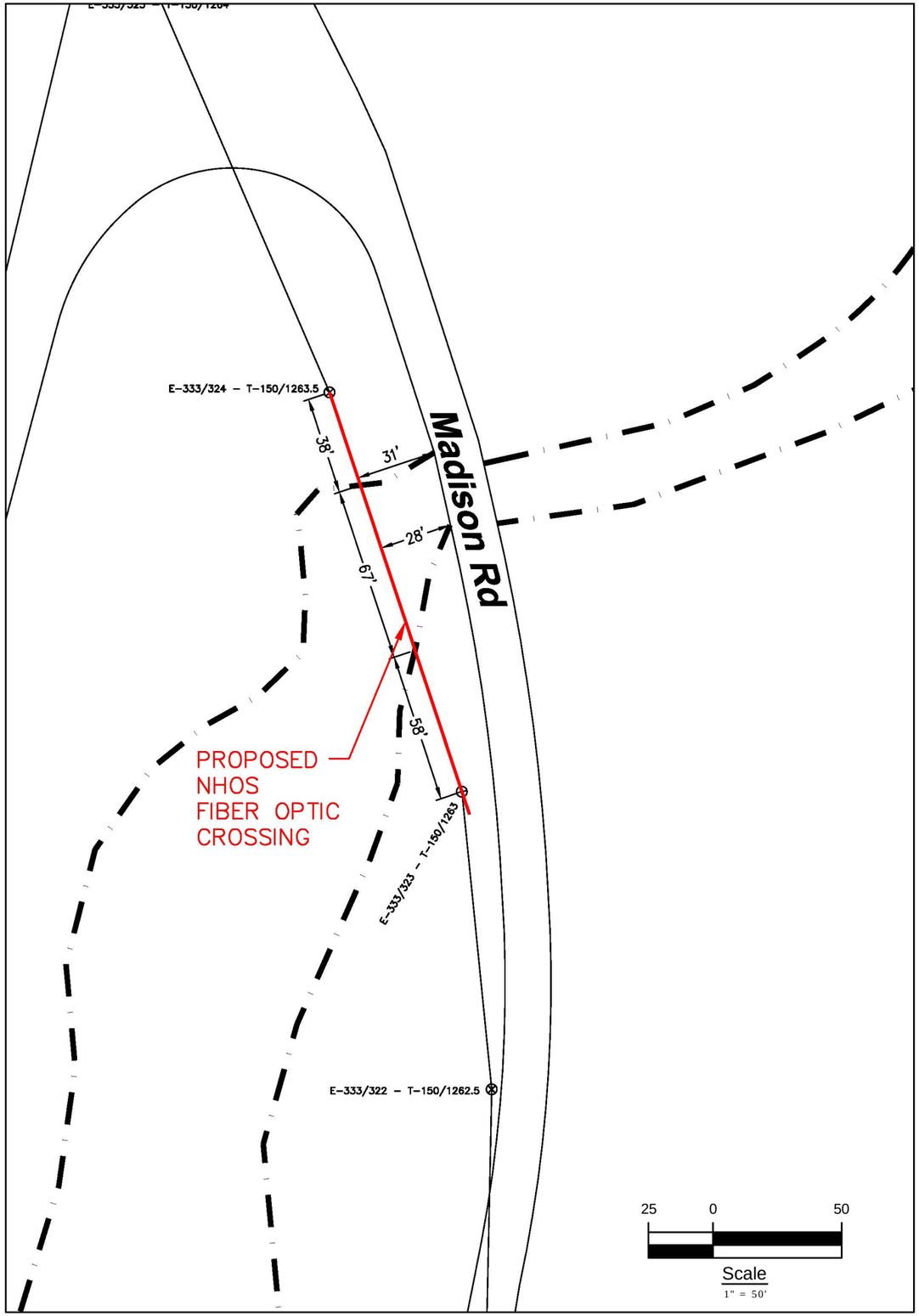

NHOS
New Hampshire Optical Systems
New Hampshire Optical Systems, Inc.
99 Pine Hill Rd.
Nashua, NH 03063
(603-821-6467)

Proposed
River Crossing
Albany, NH

N
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Project # TID-172 - Primary 8
Drawing # AC-ALB-RIV-1

Date: 12/09/11
Revision #

Proposed
River Crossing
Albany, NH

Location:
New Hampshire 113, Albany, NH
Nearest cross street- White Mtn. Hwy.

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LOCUS MAP
(Not to Scale)

CommScope®

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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		

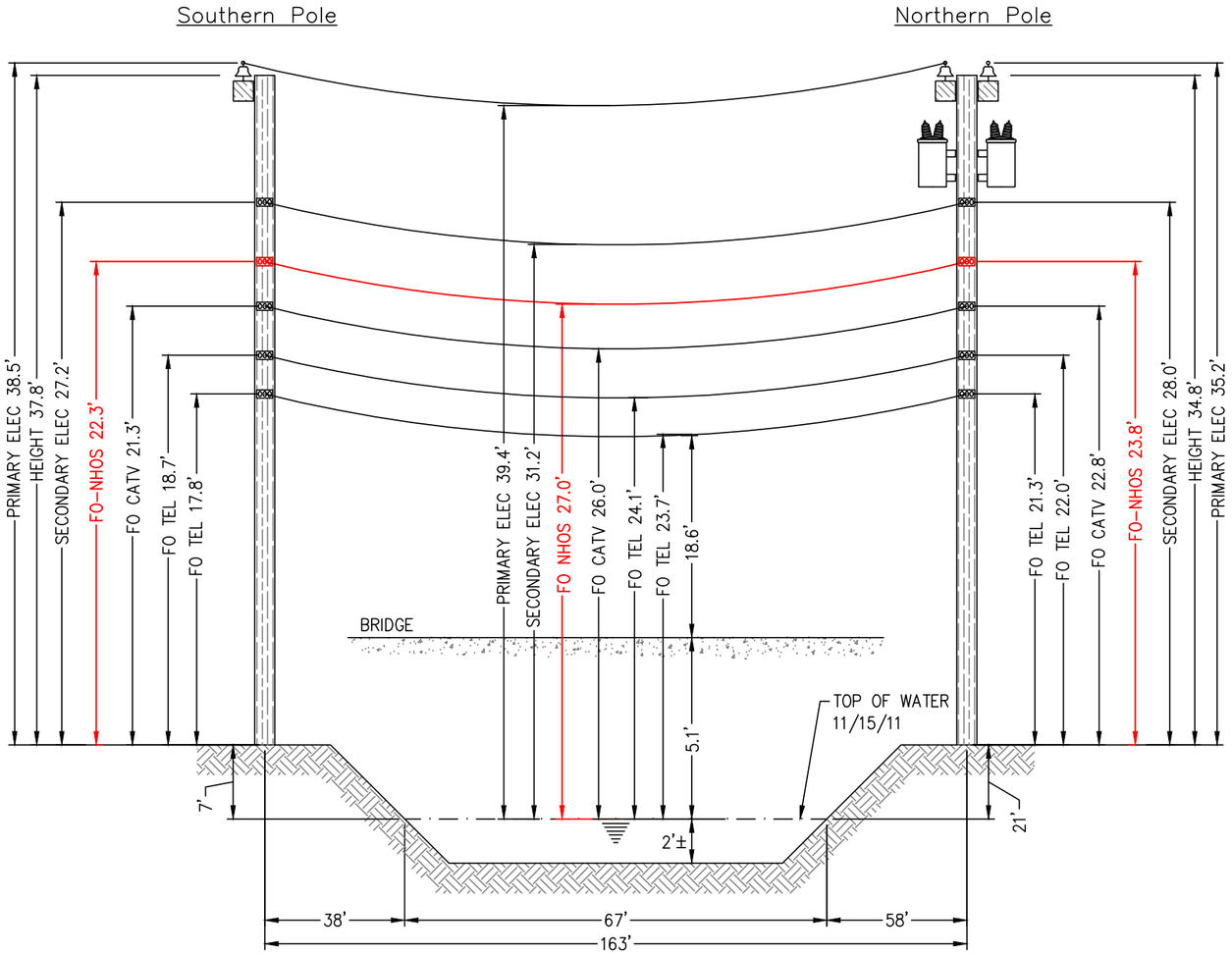
NESC RESULTS

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 81.5 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	3.34	1781	0.09	3.34	1.57	2.94	28.1
232A1	120.0	0.000	.00	.0	0.0	0.317	2.02	521	0.01	2.02	0.00	2.02	0.0

Span Length = 163.00 ft
Span Sag = 1.63 ft (19.6 in)
Span Tension = 646 lb
Max Load = 6,650 lb
Usable load (60%) = 3,990 lb
Catenary Length = 163.043 ft
Stress Free Length @
Installed Temperature = 162.928 ft

Unloaded Strand
Sag = .86 ft (10.3 in) 0.53 %
Tension = 469 lb

Temp (F)	Midspan Sag (ft)	Tension (lb)	% Length Change	Clearance
-40.0	1.00	1,055	-0.02	N/A
-30.0	1.04	1,012	-0.02	N/A
-20.0	1.08	970	-0.01	N/A
-10.0	1.13	928	-0.01	N/A
.0	1.18	888	-0.01	N/A
10.0	1.24	849	-0.01	N/A
20.0	1.30	811	-0.01	N/A
30.0	1.36	775	-0.01	N/A
40.0	1.42	740	-0.01	N/A
50.0	1.49	707	0.00	N/A
60.0	1.56	675	0.00	N/A
70.0	1.63	645	0.00	N/A
80.0	1.70	617	0.00	N/A
90.0	1.78	590	0.01	N/A
100.0	1.86	566	0.01	N/A
110.0	1.94	542	0.01	N/A
120.0	2.02	521	0.01	N/A
130.0	2.10	500	0.02	N/A
140.0	2.19	482	0.02	N/A



E-333/323 – T-150/1263
(Existing joint owned utility pole (PSNH/Fairpoint) in existing Right-of-Way)

E-333/324 – T-150/1263.5
(Existing joint owned utility pole (PSNH/Fairpoint) in existing Right-of-Way)

E-333/323 – T-150/1263

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-333/324 – T-150/1263.5

NHOS
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Proposed River Crossing Albany, 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. The horizontal distance between the nearest bridge edge and the existing overhead wires ranges from 28' to 31'.
3. The smallest vertical distance from the top of existing bridge deck to the lowest existing overhead wires is 18.6'.
4. The vertical distance between the top of water and bridge deck is approximately 5.1'.
5. The waterway is classified as unsuitable for sail boating and per NESC Table 232-1 a vertical clearance of 14' must be maintained between the lowest conductor and 10 year floodplain.
6. Based on the FEMA Flood Insurance Rate Map for Carroll County Map Number (33003C0335D) dated April 29, 2011 there is currently no flood data available for this area.
7. Vertical distances are representative of attachment heights after utility make ready moves are completed.

Project # TID-172 - Primary 8
Drawing # AC-ALB-RIV-1

Date: 12/09/11
Revision #

Proposed River Crossing Albany, NH

Location:
New Hampshire 113, Albany, NH
Nearest cross street- White Mtn. Hwy.

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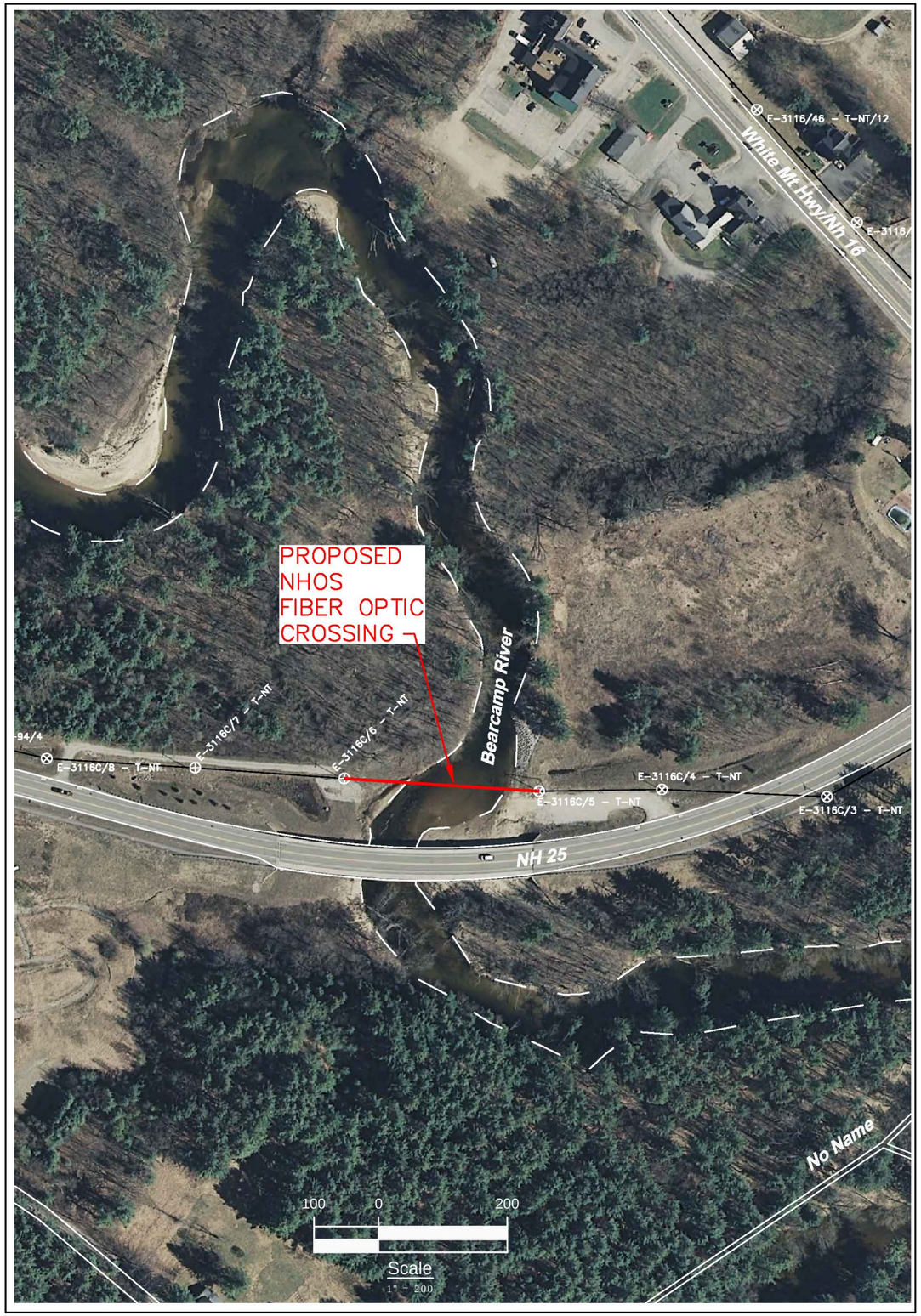

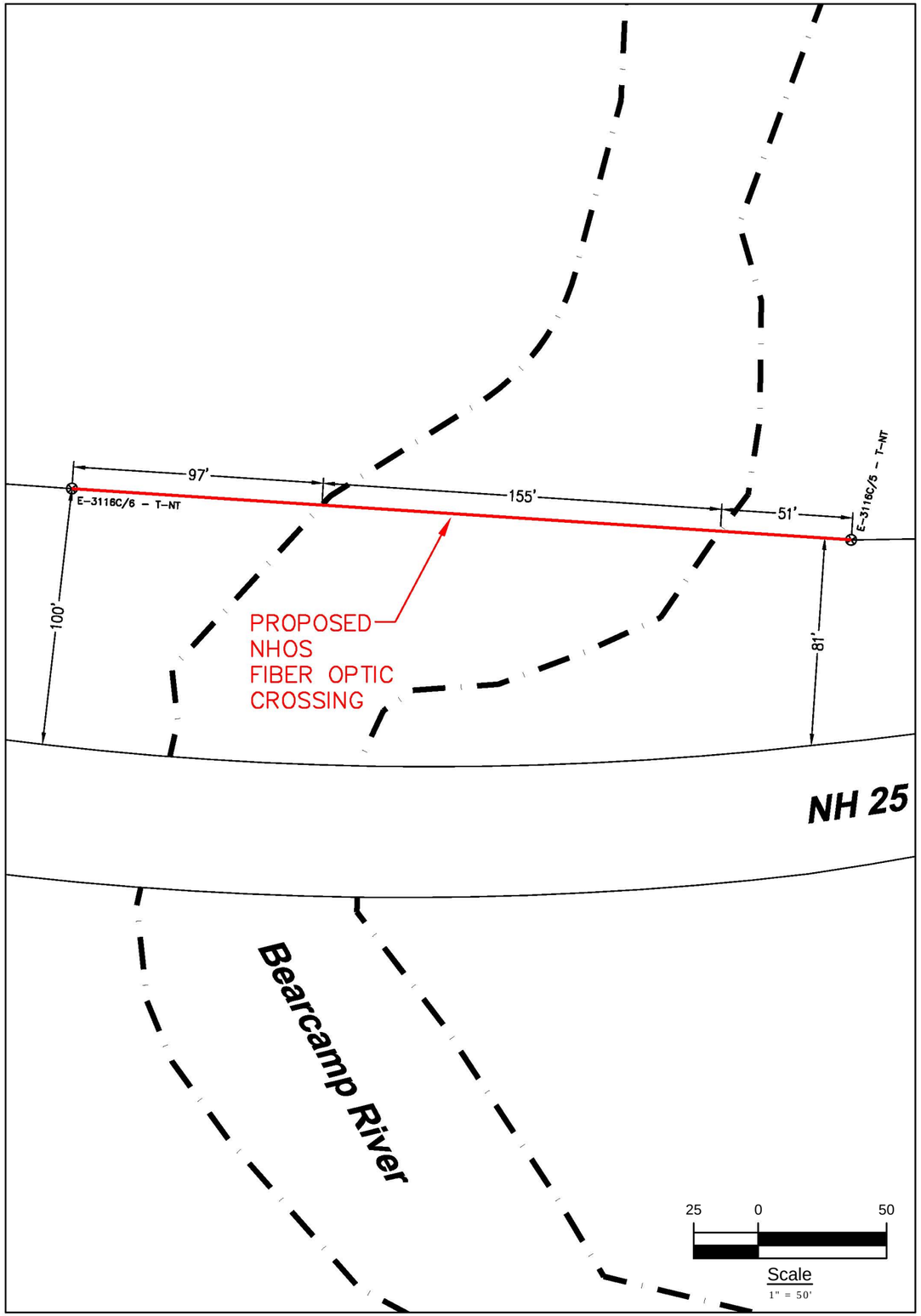

NHOS
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Nashua, NH 03063
(603-821-6467)

Proposed
River Crossing
Ossipee, NH

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Project # TID-176 - Primary 8
Drawing # AC-OSS-RIV-1

Date: 12/09/11
Revision #

Proposed
River Crossing
Ossipee, NH

Location:
Ossipee Mountain Hwy., Ossipee, NH
Nearest cross street- White Mtn. Hwy.

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LOCUS MAP
(Not to Scale)

CommScope®

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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		

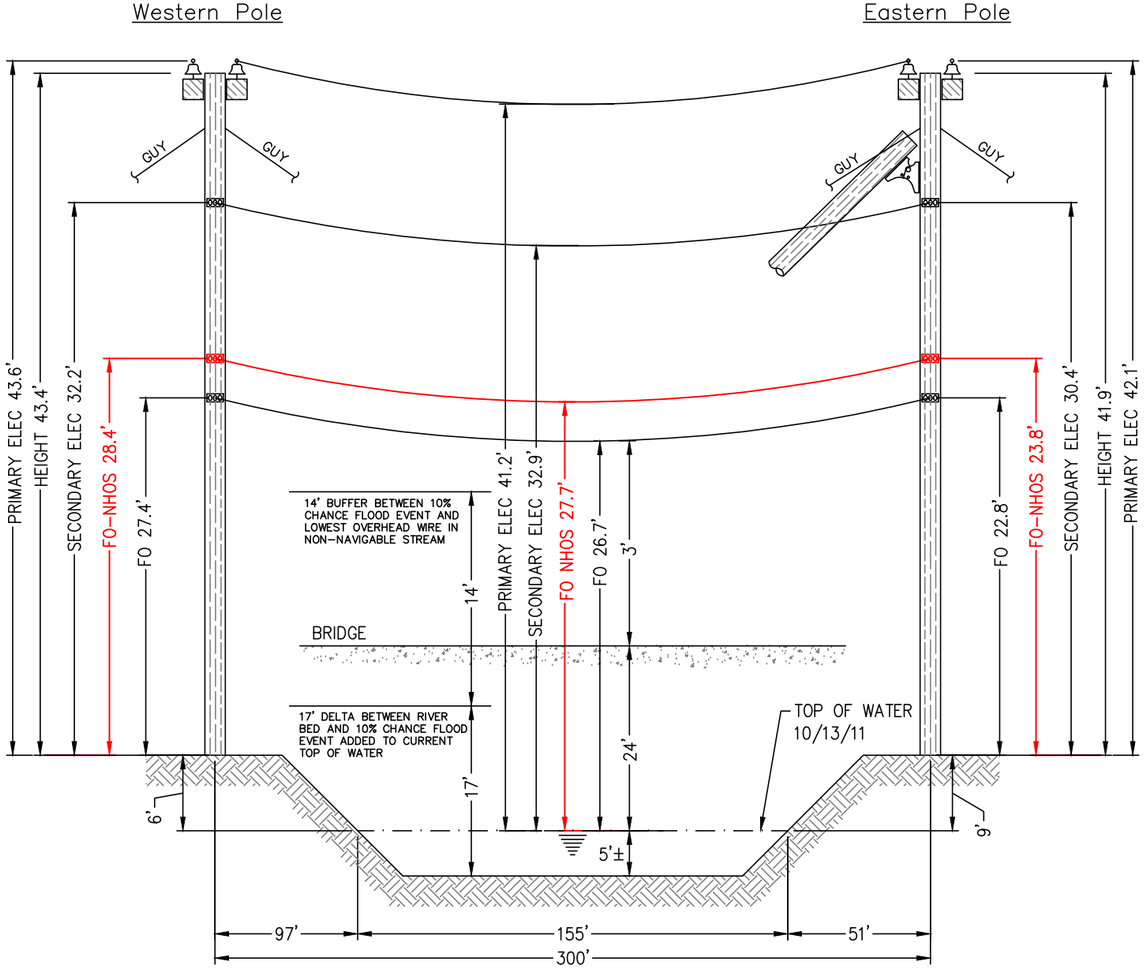
NESC RESULTS

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 150 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	7.32	2749	0.13	7.34	3.44	6.45	28.1
232A1	120.0	0.000	.00	.0	0.0	0.317	3.50	1018	0.01	3.50	0.00	3.50	0.0

Span Length = 300.00 ft
Span Sag = 3.00 ft (36.0 in)
Span Tension = 1,189 lb
Max Load = 6,650 lb
Usable load (60%) = 3,990 lb
Catenary Length = 300.080 ft
Stress Free Length @
Installed Temperature = 299.691 ft

Unloaded Strand
Sag = 1.37 ft (16.4 in) 0.46 %
Tension = 995 lb

Temp (F)	Midspan Sag (ft)	Tension (lb)	% Length Change	Clearance
-40.0	2.18	1,632	-0.01	N/A
-30.0	2.24	1,589	-0.01	N/A
-20.0	2.30	1,545	-0.01	N/A
-10.0	2.37	1,503	-0.01	N/A
.0	2.43	1,461	-0.01	N/A
10.0	2.51	1,419	-0.01	N/A
20.0	2.58	1,378	-0.01	N/A
30.0	2.66	1,338	-0.01	N/A
40.0	2.74	1,299	0.00	N/A
50.0	2.82	1,261	0.00	N/A
60.0	2.91	1,223	0.00	N/A
70.0	3.00	1,186	0.00	N/A
80.0	3.09	1,151	0.00	N/A
90.0	3.19	1,116	0.00	N/A
100.0	3.29	1,082	0.01	N/A
110.0	3.39	1,050	0.01	N/A
120.0	3.50	1,018	0.01	N/A
130.0	3.60	988	0.01	N/A
140.0	3.71	959	0.01	N/A



E-3116C/6 – T-NT
(Existing joint owned utility pole (PSNH/Fairpoint) in existing Right-of-Way)

E-3116C/5 – T-NT
(Existing joint owned utility pole (PSNH/Fairpoint) in existing Right-of-Way)

E-3116C/6 – T-NT

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-3116C/5 – T-NT

NHOS
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Nashua, NH 03063
(603-821-6467)

Proposed River Crossing Ossipee, 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 10/13/11.
2. The horizontal distance between the nearest bridge edge and the existing overhead wires ranges from 81' to 100'.
3. The smallest vertical distance from the top of existing bridge deck to the lowest existing overhead wires is approximately 3'.
4. The vertical distance between the top of water and bridge deck is approximately 24'.
5. The waterway is classified as unsuitable for sail boating and per NESC Table 232-1 a vertical clearance of 14' must be maintained between the lowest conductor and 10 year floodplain.
6. Based on the FEMA Flood Profile for the Bearcamp River (Page 09P) and the Flood Insurance Rate Map for Carroll County, (Map Number 3300160006B) dated June 17, 1991 the delta between the river bed and the 10 year flood elevation is 17.5'. A 14' buffer (for non-navigable streams) was added to that to confirm minimum clearance requirements.
7. Vertical distances are representative of attachment heights after utility make ready moves are completed.

Project # TID-176 - Primary 8
Drawing # AC-OSS-RIV-1

Date: 12/09/11
Revision #

Proposed River Crossing Ossipee, NH

Location:
Ossipee Mountain Hwy., Ossipee, NH
Nearest cross street- White Mtn. Hwy.

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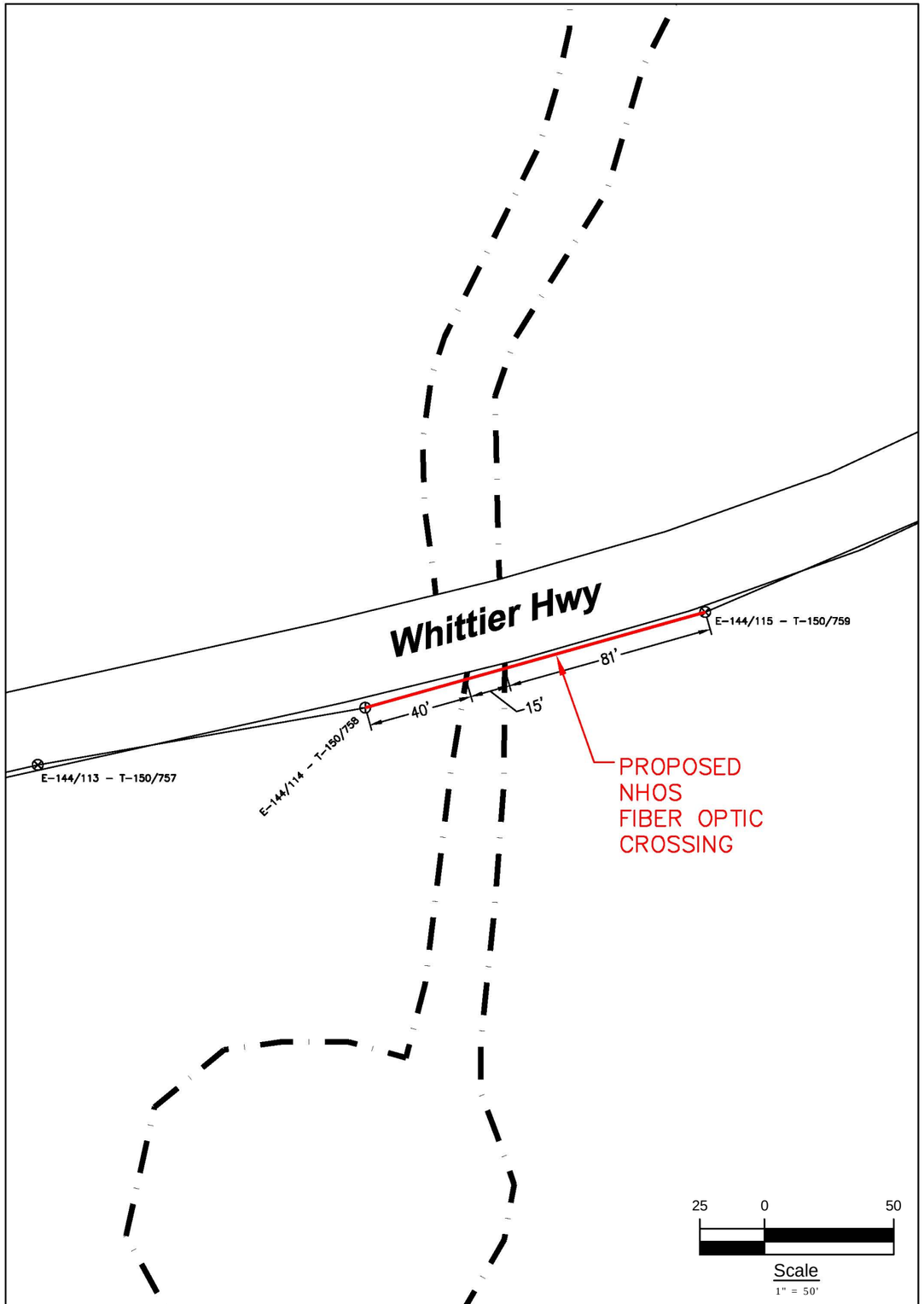

NHOS
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New Hampshire Optical Systems, Inc.
99 Pine Hill Rd.
Nashua, NH 03063
(603-821-6467)

Proposed
River Crossing
Moultonborough, NH

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Project # TID-177 - Primary 8
Drawing # AC-MOU-RIV-1

Date: 12/12/11
Revision #

Proposed
River Crossing
Moultonborough, NH

Location:
Whittier Highway, Moultonborough, NH
Nearest cross street- Sheridan Rd.

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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		

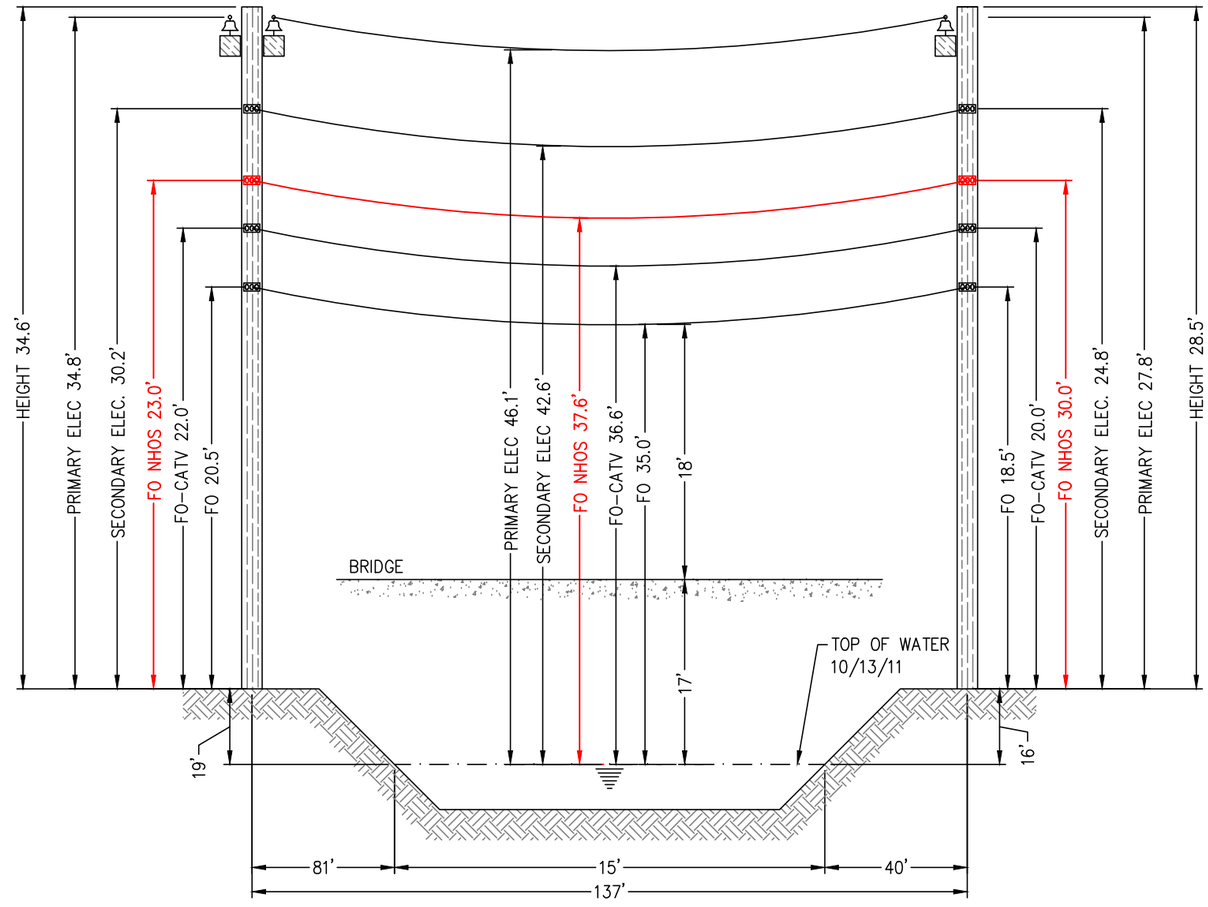
NESC RESULTS

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 88.5 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	2.66	1577	0.07	2.67	1.25	2.35	28.1
232A1	120.0	0.000	.00	.0	0.0	0.317	1.73	430	0.02	1.73	0.00	1.73	0.0

Span Length = 137.00 ft
Span Sag = 1.37 ft (16.4 in)
Span Tension = 543 lb
Max Load = 6,650 lb
Usable load (60%) = 3,990 lb
Catenary Length = 137.037 ft
Stress Free Length @
Installed Temperature = 136.955 ft

Unloaded Strand
Sag = .76 ft (9.1 in) 0.55 %
Tension = 374 lb

Temp (F)	Midspan Sag (ft)	Tension (lb)	% Length Change	Clearance
-40.0	.79	942	-0.02	N/A
-30.0	.83	899	-0.02	N/A
-20.0	.87	857	-0.02	N/A
-10.0	.91	816	-0.01	N/A
.0	.96	776	-0.01	N/A
10.0	1.01	737	-0.01	N/A
20.0	1.06	701	-0.01	N/A
30.0	1.12	665	-0.01	N/A
40.0	1.18	632	-0.01	N/A
50.0	1.24	600	0.00	N/A
60.0	1.30	570	0.00	N/A
70.0	1.37	542	0.00	N/A
80.0	1.44	517	0.00	N/A
90.0	1.51	492	0.01	N/A
100.0	1.58	470	0.01	N/A
110.0	1.65	449	0.01	N/A
120.0	1.73	430	0.02	N/A
130.0	1.80	413	0.02	N/A
140.0	1.87	397	0.02	N/A



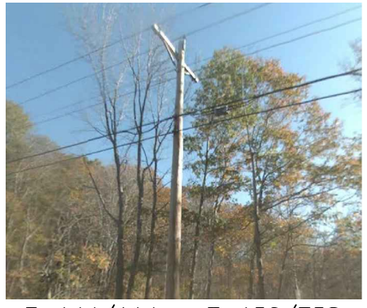
E-144/115 – T-150/759
(Existing joint owned utility pole (NHEC/Fairpoint) in existing Right-of-Way)

E-144/114 – T-150/758
(Existing joint owned utility pole (NHEC/Fairpoint) in existing Right-of-Way)

E-144/115 – T-150/759

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-144/114 – T-150/758

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

Proposed River Crossing Moultonborough, 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 10/13/11.
2. The horizontal distance between the nearest bridge edge and the existing overhead wires is approximately 2'.
3. Because of the close horizontal proximity to the existing bridge structure, the simplified drawing is submitted with vertical distances measured to the structure. This process simplifies the preparation and review of the crossing without jeopardizing its intent to protect the safe usage of the waterway
4. The smallest vertical distance from the top of existing bridge deck to the lowest existing overhead wires is 18'.
5. The vertical distance between the top of water and bridge deck is approximately 17'.
6. Vertical distances are representative of attachment heights after utility make ready moves are completed.

Project # TID-177 - Primary 8
Drawing # AC-MOU-RIV-1

Date: 12/12/11
Revision #

Proposed
River Crossing
Moultonborough, NH

Location:
Whittier Highway, Moultonborough, NH
Nearest cross street- Sheridan Rd.

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