PROPOSED
NHOS
FIBER OPTIC
CROSSING

Oyster River

Lee Rd

E-318/26 - T-149/
E-318/27 - T-149/18
E-318/28 - T-149/17
E-318/29 - T-149/16
E-318/NT - T-149/15
E-318/21 - T-NT/14
T-NT/13
T-NT/12 1/2

Orchard Way

Scale
1" = 200'

100   0   200

Oyster River

Lee Rd

E-318/28 - T-149/17

PROPOSED
NHOS
FIBER OPTIC
CROSSING

116'

23'

92'

E-318/29 - T-149/16

Scale
1" = 50'

25   0   50

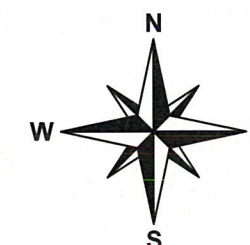**NHOS**
New Hampshire Optical Systems

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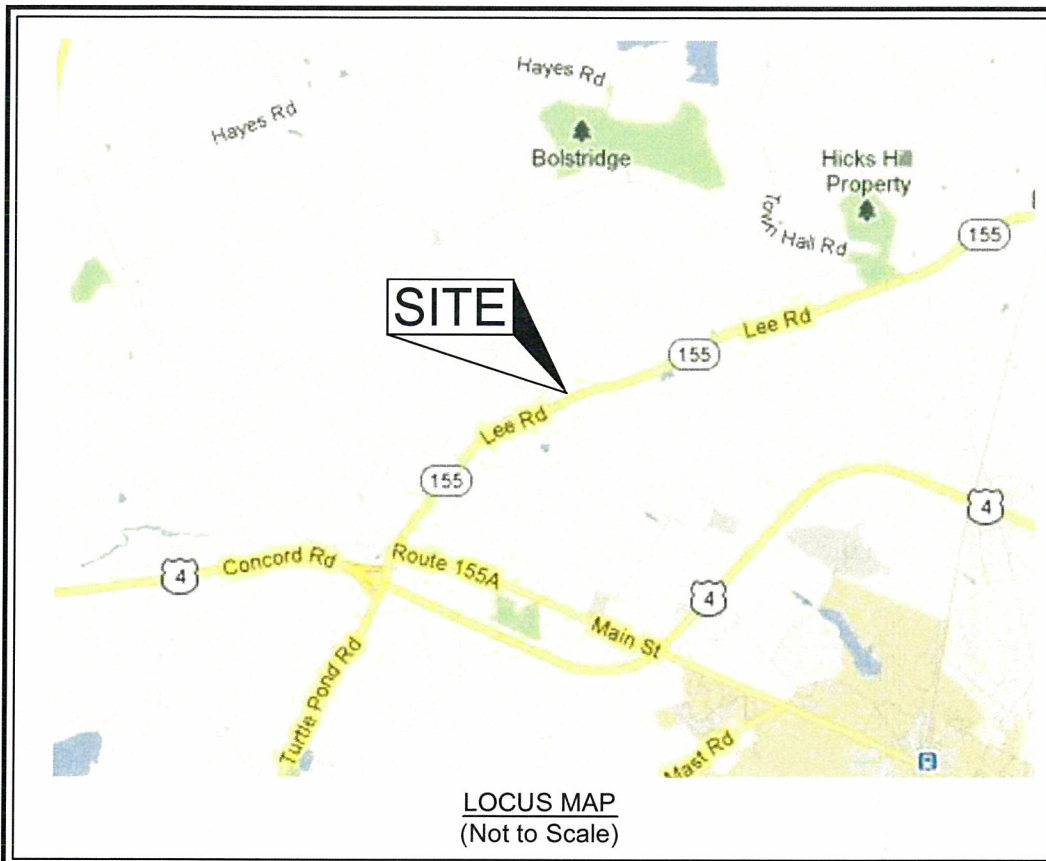
Proposed
River Crossing
Lee, NH

N
W   E
S

Project # TID-192 - Lateral 15
Drawing # AC-LEE-RIV-1

Date: 5/15/13
Revision #1

Proposed
River Crossing
Lee, NH

Location:
Lee Rd., Lee, NH
Nearest cross street- Randall Rd.

Sheet 1 of 2

Proposed River Crossing Lee, 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 10/06/11.

2. The horizontal distance between the nearest bridge edge and the existing overhead wires ranges from 5' to 6'.

3. The smallest vertical distance from the top of existing bridge deck to the lowest existing overhead wires is 19'.

4. 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.

5. The vertical distance between the top of water and bridge deck is approximately 8'.

6. Vertical distances are representative of attachment heights after utility make ready moves are completed.

LOCUS MAP
(Not to Scale)

Site map showing Hayes Rd, Bolstridge, Hicks Hill Property, Lee Rd (155), Route 4, Concord Rd, Route 155A, Turtle Pond Rd, Main St, Mast Rd, with SITE marker

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Western Pole / Eastern Pole

Elevation drawing showing river crossing between Western Pole and Eastern Pole

Western Pole measurements:
- HEIGHT 29.0'
- PRIMARY ELEC. 24.2'
- FO NHOS 19.8'
- BAYRING 18.8'
- FO 17.8'
- FO 16.8'

Center:
- PRIMARY ELEC 33.5'
- FO NHOS 29.6'
- BAYRING 28.6'
- FO 27.6'
- FO 26.6'
- 19'
- 8'

Eastern Pole measurements:
- FO 24.2'
- FO 25.2'
- BAYRING 26.3'
- FO NHOS 27.3'
- PRIMARY ELEC. 31.0'
- HEIGHT 33.9'

BRIDGE

TOP OF WATER 10/06/11

4'±

7'   116'   23'   92'   11'

231'

E-318/28 – T-149/17
(Existing joint owned utility pole (PSNH/Fairpoint) in existing Right-of-Way)

E-318/29 – T-149/16
(Existing joint owned utility pole (PSNH/Fairpoint) in existing Right-of-Way)

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	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/ft	Result Load +Const lb/ft	Sag ft	Tension lb	% Len Chg From Input Conditions	Sag @ Point 115.5 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	5.23	2279	0.11	5.25	2.46	4.62	28.1
232A1	120.0	0.000	.00	.0	0.0	0.317	2.77	764	0.01	2.77	0.00	2.77	0.0

Span Length = 231.00 ft
Span Sag = 2.31 ft (27.7 in)
Span Tension = 915 lb
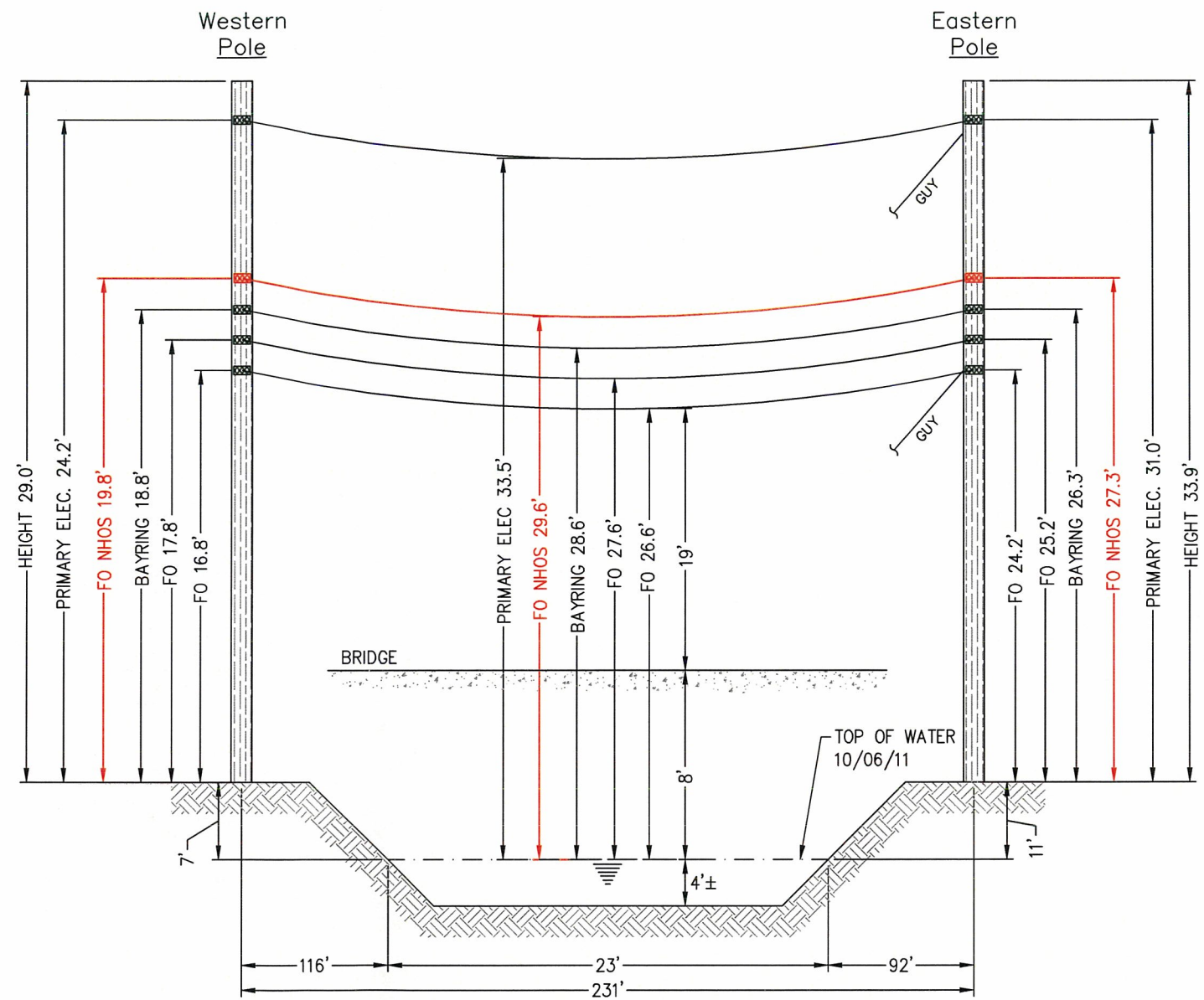   Max Load = 6,650 lb
    Usable load (60%) = 3,990 lb
Catenary Length = 231.062 ft
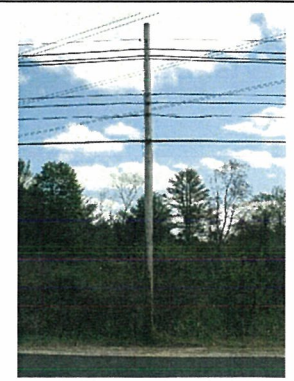Stress Free Length @
    Installed Temperature = 230.831 ft

Unloaded Strand
    Sag = 1.11 ft (13.3 in) 0.48 %
    Tension = 727 lb

Temp (F)	Midspan Sag (ft)	Tension (lb)	% Length Change	Clearance
-40.0	1.57	1,345	-0.01	N/A
-30.0	1.62	1,301	-0.01	N/A
-20.0	1.68	1,258	-0.01	N/A
-10.0	1.73	1,216	-0.01	N/A
.0	1.80	1,175	-0.01	N/A
10.0	1.86	1,135	-0.01	N/A
20.0	1.93	1,095	-0.01	N/A
30.0	2.00	1,057	-0.01	N/A
40.0	2.07	1,019	-0.01	N/A
50.0	2.15	983	0.00	N/A
60.0	2.23	948	0.00	N/A
70.0	2.31	914	0.00	N/A
80.0	2.40	881	0.00	N/A
90.0	2.48	850	0.00	N/A
100.0	2.58	820	0.01	N/A
110.0	2.67	791	0.01	N/A
120.0	2.77	764	0.01	N/A
130.0	2.86	738	0.01	N/A
140.0	2.96	713	0.02	N/A

E-318/28 – T-149/17

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-318/29 – T-149/16

Project # TID-192 - Lateral 15
Drawing # AC-LEE-RIV-1

Date: 5/15/13
Revision #1

Proposed River Crossing Lee, NH

Location:
Lee Rd., Lee, NH
Nearest cross street- Randall Rd.

Sheet 2 of 2