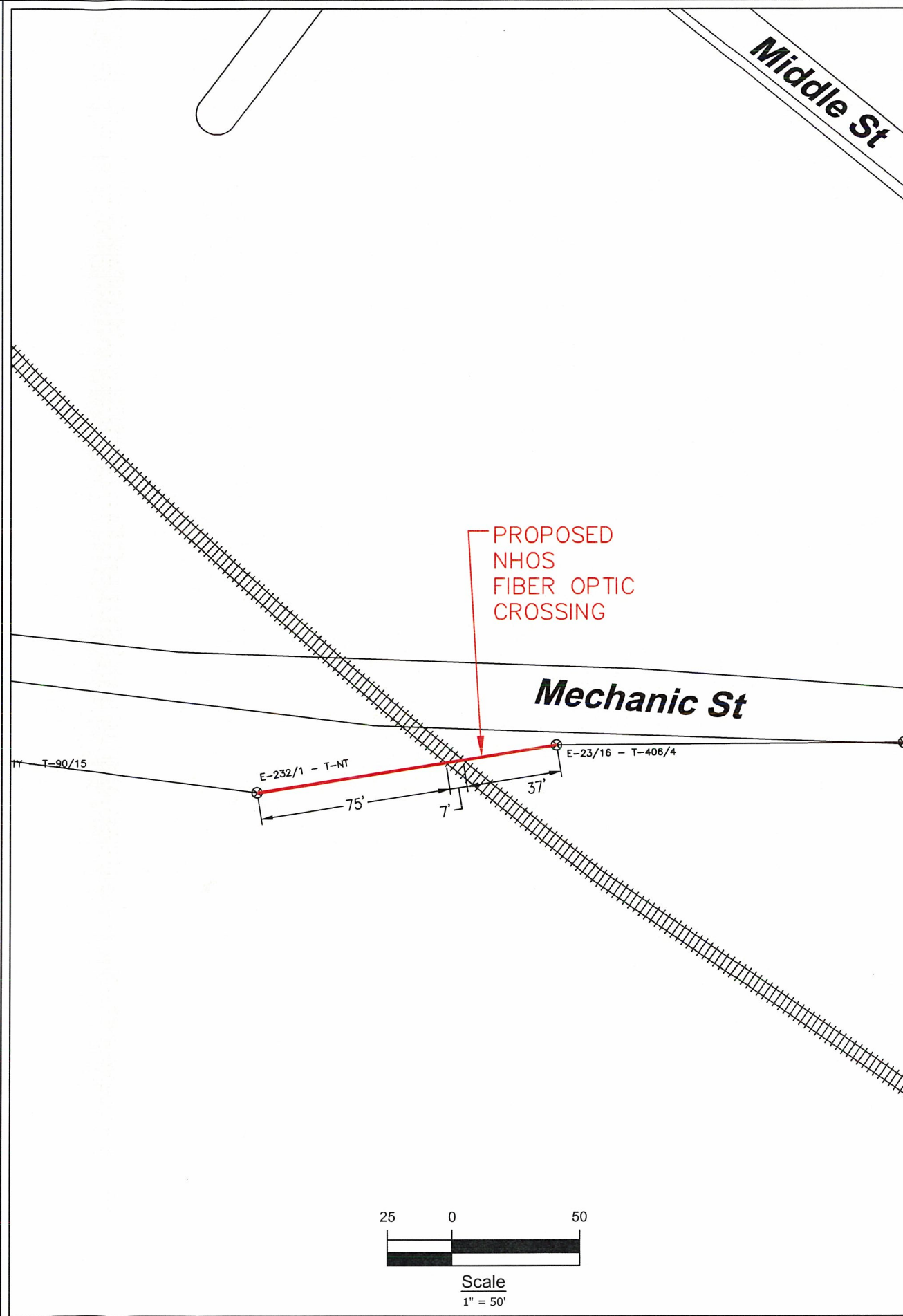
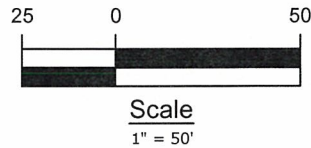


PROPOSED  
NHOS  
FIBER OPTIC  
CROSSING

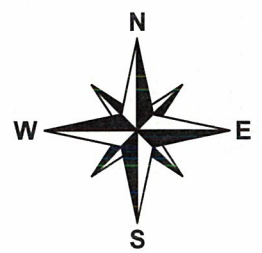


PROPOSED  
NHOS  
FIBER OPTIC  
CROSSING



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

**Proposed  
Railroad Crossing  
Lancaster, NH**



Project # TID-137 - Primary 7  
Drawing # AC-LANC-RR-4

Date: 11/5/13  
Revision #2

**Proposed  
Railroad Crossing  
Lancaster, NH**

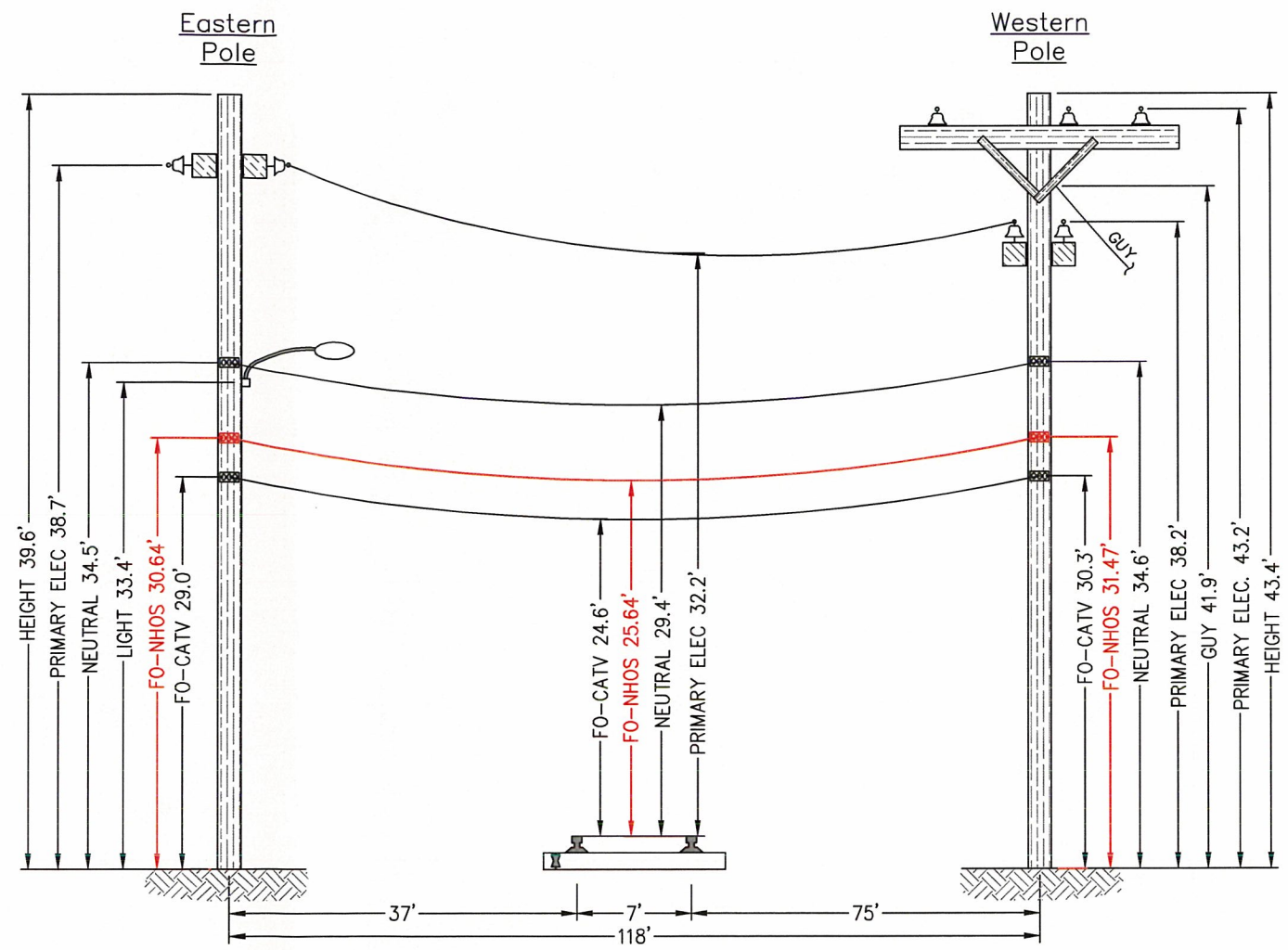
Location:  
Mechanic St., Lancaster, NH  
Nearest cross street- Middle St.



**NHOS**  
New Hampshire Optical Systems  
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99 Pine Hill Rd.  
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Lancaster, NH**

- Notes:**
- The heights of structures shown hereon are based on field measurements taken with a Nikon 362 total station during a site survey on 6/27/13.
  - Vertical distances are representative of attachment heights after utility make ready moves are completed.



**E-23/16 - T-406/4**  
(Existing joint owned utility pole (PSNH/Fairpoint) in existing Right-of-Way)

**E-232/1 - T-NT**  
(Existing sole owned utility pole (PSNH) in existing Right-of-Way)



Spanmaster® Release 3.1 Sag / Tension Computations  
11/04/13 TID 137

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-144-LN Bundle	0.4307	3.50E+05	0.741	1.09E-05	0.1520	150720	640

**NESC RESULTS**

Loading Condition	Temp. (F)	Ice Load (lb/ft)	Ice Thick (in)	Wind Constant (lb/ft)	Horz Load (lb/ft)	Result Load Const (lb/ft)	Sag (ft)	Tension (lb)	% Len Chg From Input Conditions	Sag @ 50.00 ft	Horz Sag Comp (ft)	Vert Sag Comp (ft)	Vector Angle Deg
Rule 251 - Heavy	0.0	0.927	.50	.3	4.0	1.671	2.14	1356	0.06	1.54	1.04	1.87	28.9
232A1	120.0	0.000	.00	.0	0.0	0.273	1.48	321	0.02	1.06	0.00	1.48	0.0

Temp (F)	Midspan Sag (ft)	Tension (lb)	% Length Change	Clearance
-40.0	.58	816	-0.02	N/A
-30.0	.61	772	-0.02	N/A
-20.0	.65	729	-0.02	N/A
-10.0	.69	687	-0.02	N/A
0	.73	647	-0.02	N/A
10.0	.78	608	-0.01	N/A
20.0	.83	571	-0.01	N/A
30.0	.89	536	-0.01	N/A
40.0	.94	504	-0.01	N/A
50.0	1.00	473	-0.01	N/A
60.0	1.07	445	0.00	N/A
70.0	1.13	419	0.00	N/A
80.0	1.20	396	0.00	N/A
90.0	1.27	374	0.00	N/A
100.0	1.34	355	0.01	N/A
110.0	1.41	337	0.01	N/A
120.0	1.48	321	0.02	N/A
130.0	1.55	307	0.02	N/A
140.0	1.62	294	0.02	N/A

Span Length = 118.00 ft  
 Span Sag = 1.18 ft (14.2 in)  
 Span Tension = 403 lb  
 Max Load = 6,650 lb  
 Usable load (60%) = 3,990 lb  
 Catenary Length = 118.031 ft  
 Stress Free Length @ Installed Temperature = 117.980 ft  
 Unloaded Strand Sag = .79 ft (9.5 in) 0.67 %  
 Tension = 267 lb



**E-23/16 - T-406/4**

**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). 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).



**E-232/1 - T-NT**

Project # TID-137 - Primary 7  
Drawing # AC-LANC-RR-4

Date: 11/5/13  
Revision #2

**Proposed  
Railroad Crossing  
Lancaster, NH**

**Location:**  
Mechanic St., Lancaster, NH  
Nearest cross street- Middle St.