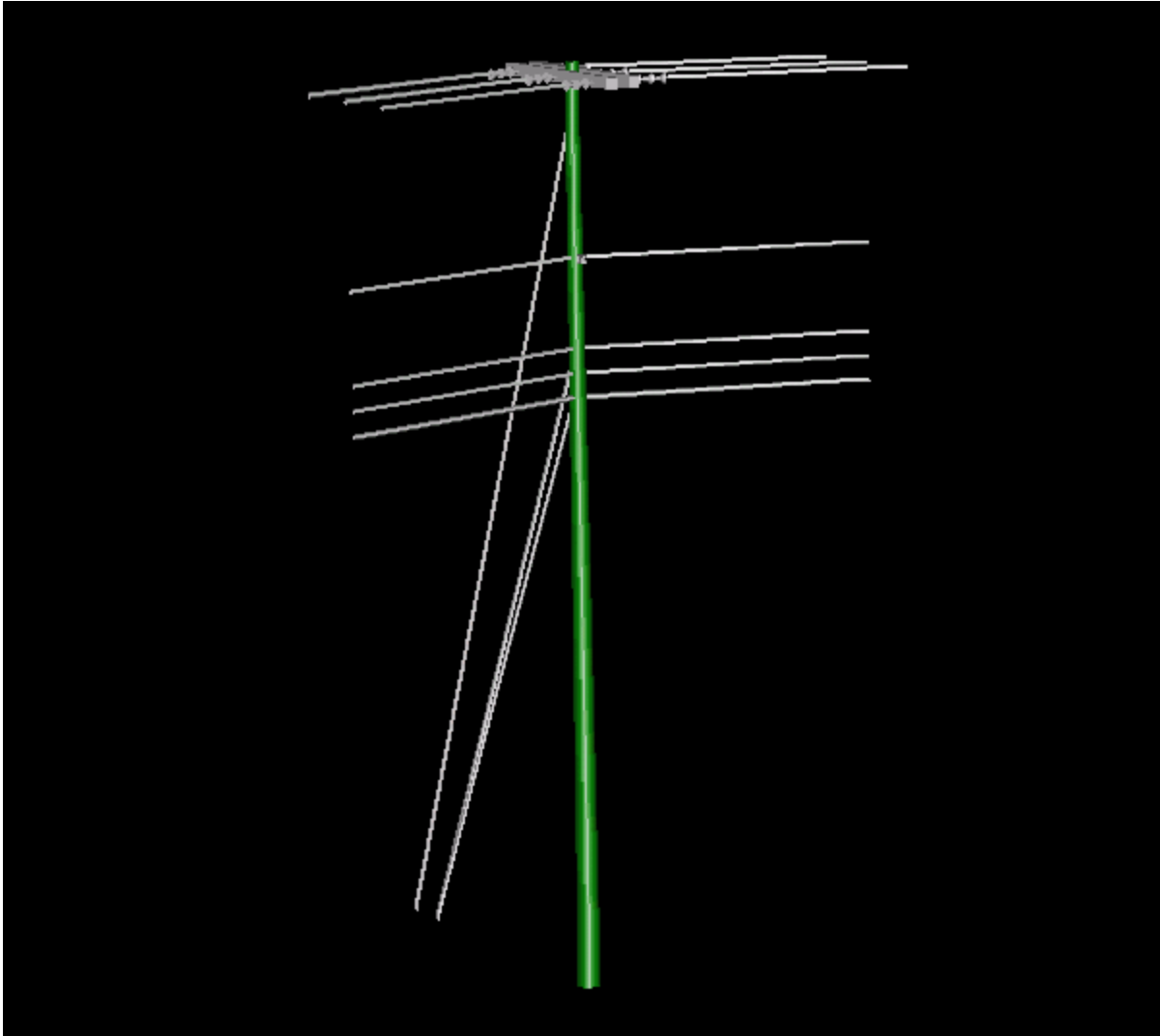


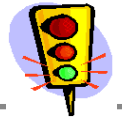
PoleForeman - Pole Loading Analysis Report

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PoleForeman - Pole Loading Analysis Report

License: Consulting Engineers Group



POLE LOADING DATA

Pole: 45/4

Pole Loading

Horizontal: 77% (250B)
Vertical: 55% (250B)

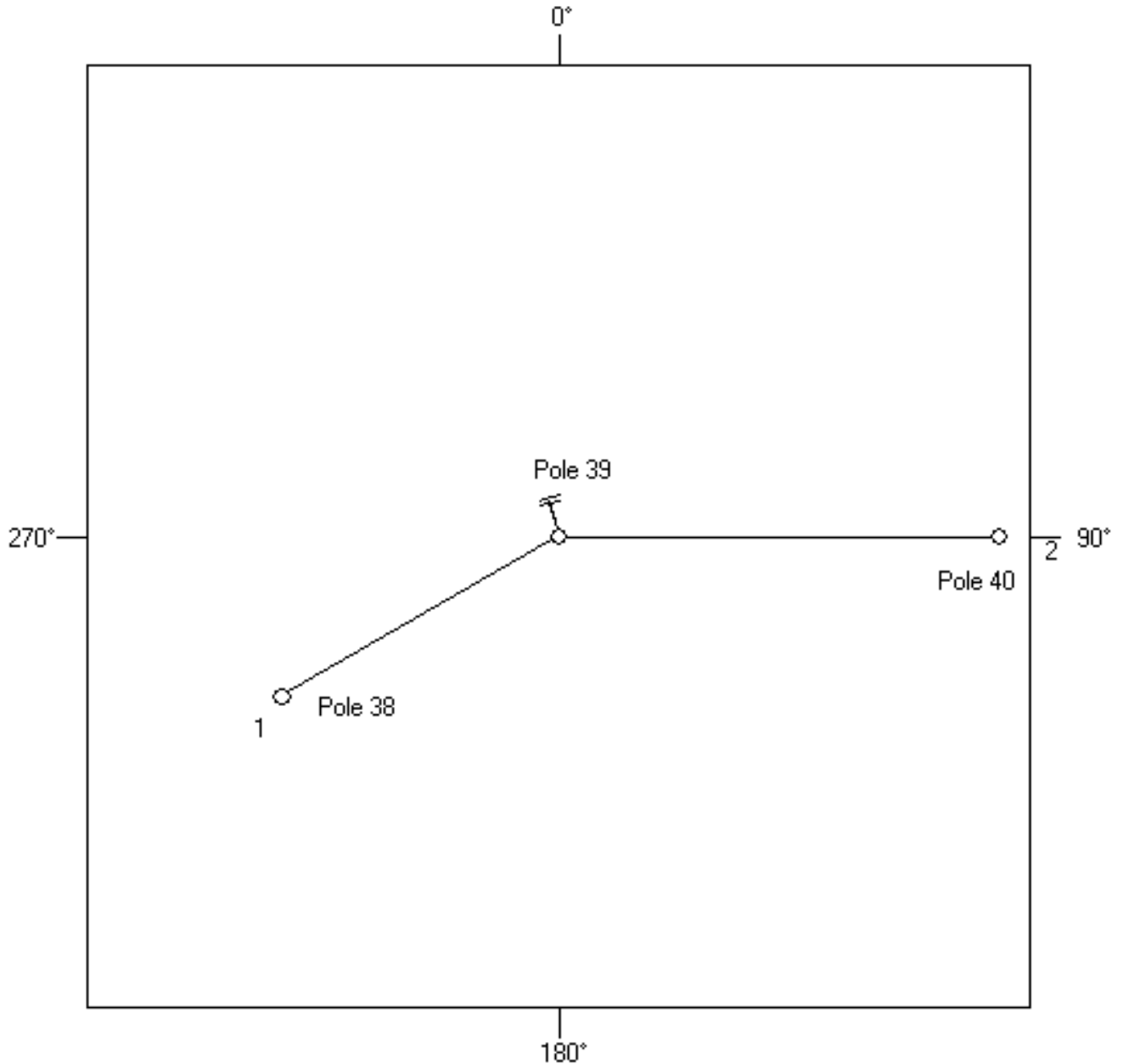
NESC Edition: 2007
Loading District: Heavy
Construction: Grade B

Rule 250B Loading: Wind (psf): 4 Ice (in): 0.5

POLES

Pole #	Length (ft)	Depth (ft)	Elevation (ft)
0	45	6.5	0
1	50	7	0
2	45	6.5	0

POLE LINE TOPOLOGY



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GUY STRAND DATA

Anchor	Strand	Attach	Length	Direction	Tension	Strength	Loading
1	7/16" EHS	30"	15'	345°	16,398	18,720	88%
2	3/8" EHS	148"	13'	345°	8,843	13,860	64%
2	3/8" EHS	166"	13'	345°	8,092	13,860	58%

ANCHOR DATA

Anchor	Rod	Anchor	Soil	Tension	Rod Strength	Anchor Strength
1	1" Rod	10" Triple Heli	Class - 4	16,398	36,000	31,000
2	None	None	None	16,934	0	0

INSULATORS

Insulator	Attach	Loading	Angle
25KV Dead End	7"	40%	0°
25KV Dead End	7"	40%	0°
25KV Dead End	7"	40%	0°
25KV Dead End	7"	40%	0°
25KV Dead End	7"	40%	0°
25KV Dead End	7"	40%	0°

ARM / BRACKET DATA

Arm/Bracket	Attach	Vert Loading	Horz Loading
8' Double Xarm (5.5x.5.5)	7"	1%	1%
Spool Rack	96"		

SPANS

Span: 1 **Span Length (ft): 122** **Direction: 240°**

Circuit: 1

Primary	Ruling Span (ft)	Offset (in)	Attach A (in)	Attach B (in)	Tension
1/0 ACSR 6/1 STR	150	36	7	7	2000
1/0 ACSR 6/1 STR	150	0	7	7	2000
1/0 ACSR 6/1 STR	150	-36	7	7	2000
Neutral					
1/0 ACSR 6/1 STR	100	0	96	96	2000

Joint Use

Joint Use Cable	Ruling Span (ft)	Diameter (in)	Weight (lbs/ft)	Attach A (in)	Attach B (in)	Tension (lbs)	Description
User Defined	0	0.97	0.33	141	141	2000	
6.6M (1/4) + 0.75" CATV	150	1.04	0.27	153	153	1233	
10M (3/8) + 1.50" CATV	150	1.53	0.56	165	165	2600	

Span: 2 **Span Length (ft): 168** **Direction: 90°**

Circuit: 1

Primary	Ruling Span (ft)	Offset (in)	Attach A (in)	Attach B (in)	Tension
1/0 ACSR 6/1 STR	100	36	7	7	2000
1/0 ACSR 6/1 STR	100	0	7	7	2000
1/0 ACSR 6/1 STR	100	-36	7	7	2000
Neutral					
1/0 ACSR 6/1 STR	100	0	96	96	2000

Joint Use

Joint Use Cable	Ruling Span (ft)	Diameter (in)	Weight (lbs/ft)	Attach A (in)	Attach B (in)	Tension (lbs)	Description
User Defined	0	0.97	0.33	141	141	2000	
6.6M (1/4) + 0.75" CATV	150	1.04	0.27	153	153	1233	
10M (3/8) + 2.00" CATV	150	1.88	0.76	165	165	3003	

FILE NOTES

The existing 45' class 4 pole with bisecting anchor was modeled and is within design limits and is acceptable.

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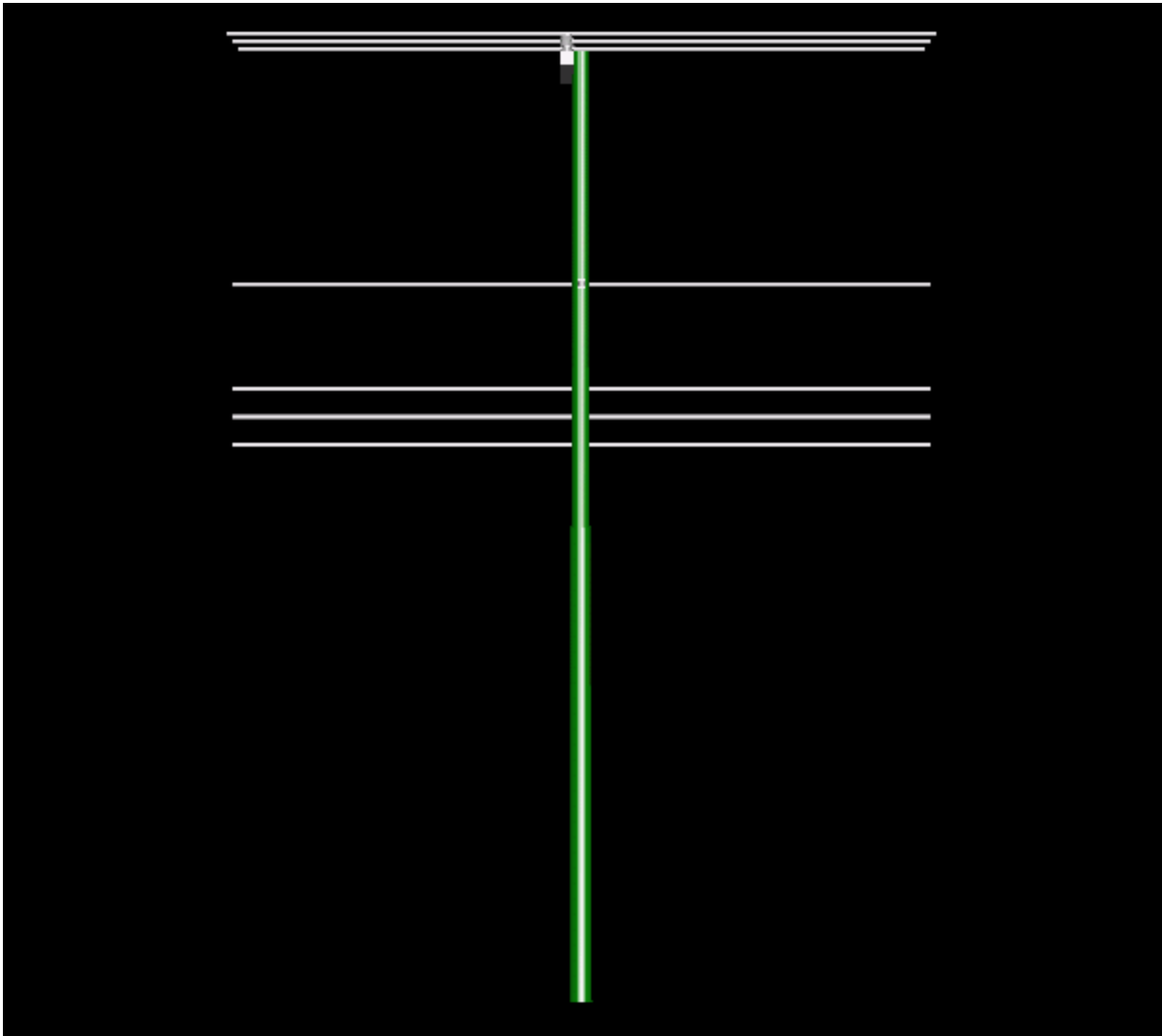
Bisecting anchor lead lengths modeled at 13' and 15'. An additional anchor with a 15' lead may need to be installed.

Two (2) 3/8" EHS guy strand modeled to anchor with 13' lead for communication through cables.

A single 3/8" EHS guy strands modeled at existing attachment height is acceptable. If lead length is less than 15' a second guy strand is required.

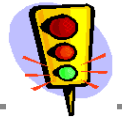
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POLE LOADING DATA

Pole: 45/4

Pole Loading

Horizontal: 87% (250B)
Vertical: 53% (250B)

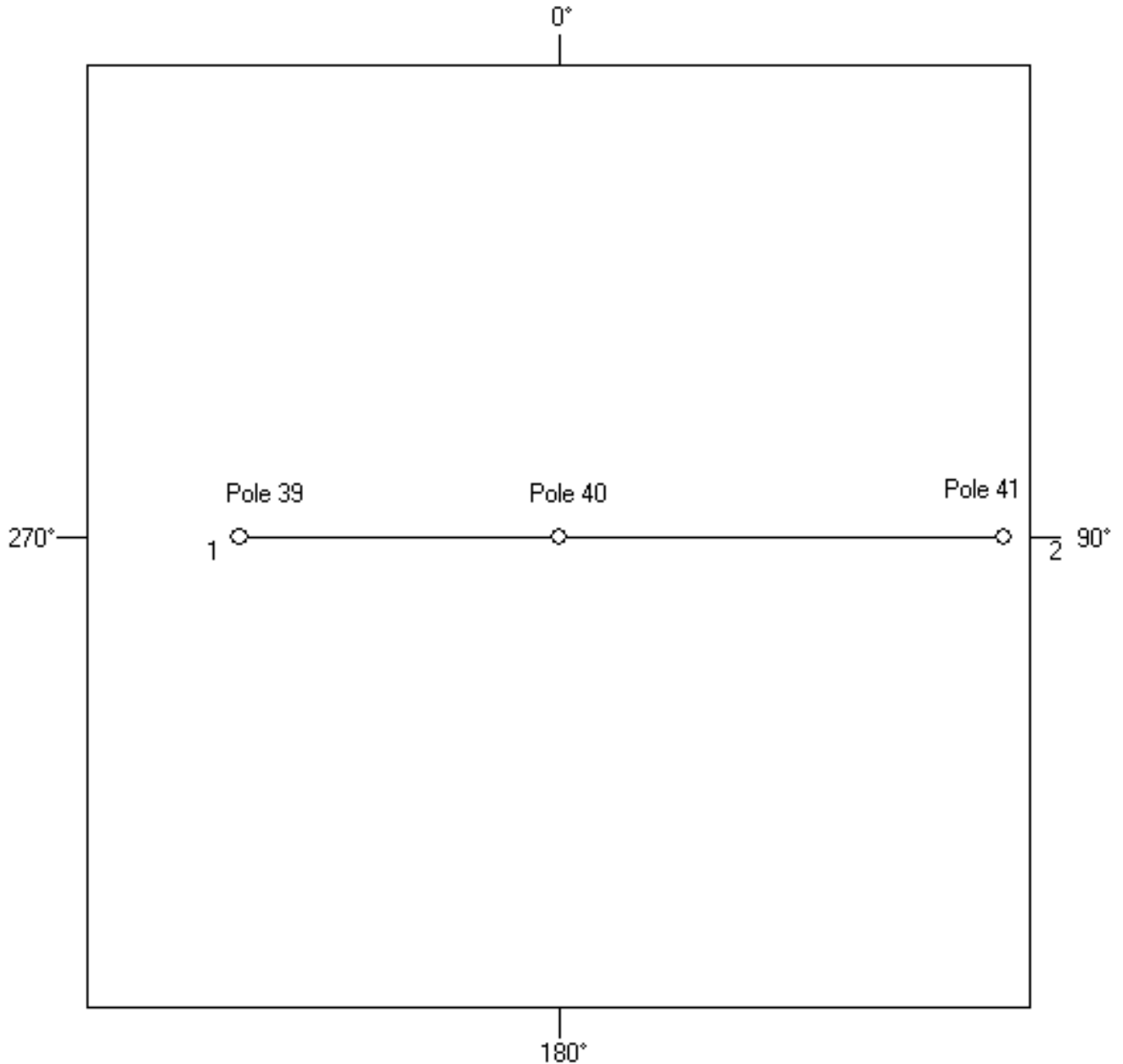
NESC Edition: 2007
Loading District: Heavy
Construction: Grade B

Rule 250B Loading: Wind (psf): 4 Ice (in): 0.5

POLES

Pole #	Length (ft)	Depth (ft)	Elevation (ft)
0	45	6.5	0
1	45	6.5	0
2	45	6.5	0

POLE LINE TOPOLOGY



PoleForeman - Pole Loading Analysis Report

License: Consulting Engineers Group

INSULATORS

Insulator	Attach	Loading	Angle
25KV Xarm Pin	7"	34%	0°
25KV Xarm Pin	7"	34%	0°
25KV Xarm Pin	7"	34%	0°
Spool Tangent	100"	11%	0°

ARM / BRACKET DATA

Arm/Bracket	Attach	Vert Loading	Horz Loading
8' Single Xarm (5.5x5.5)	7"	6%	3%
Spool Rack	100"		

SPANS

Span: 1 **Span Length (ft): 122** **Direction: 270°**

Circuit: 1

Primary	Ruling Span (ft)	Offset (in)	Attach A (in)	Attach B (in)	Tension
1/0 ACSR 6/1 STR	150	36	-4	-4	2000
1/0 ACSR 6/1 STR	150	0	-4	-4	2000
1/0 ACSR 6/1 STR	150	-36	-4	-4	2000
Neutral					
1/0 ACSR 6/1 STR	100	0	100	100	2000

Joint Use

Joint Use Cable	Ruling Span (ft)	Diameter (in)	Weight (lbs/ft)	Attach A (in)	Attach B (in)	Tension (lbs)	Description
User Defined	0	0.97	0.33	145	145	2000	
6.6M (1/4) + 0.75" TELCO	150	0.97	0.39	157	157	1419	
10M (3/8) + 1.50" CATV	150	1.53	0.56	169	169	2600	

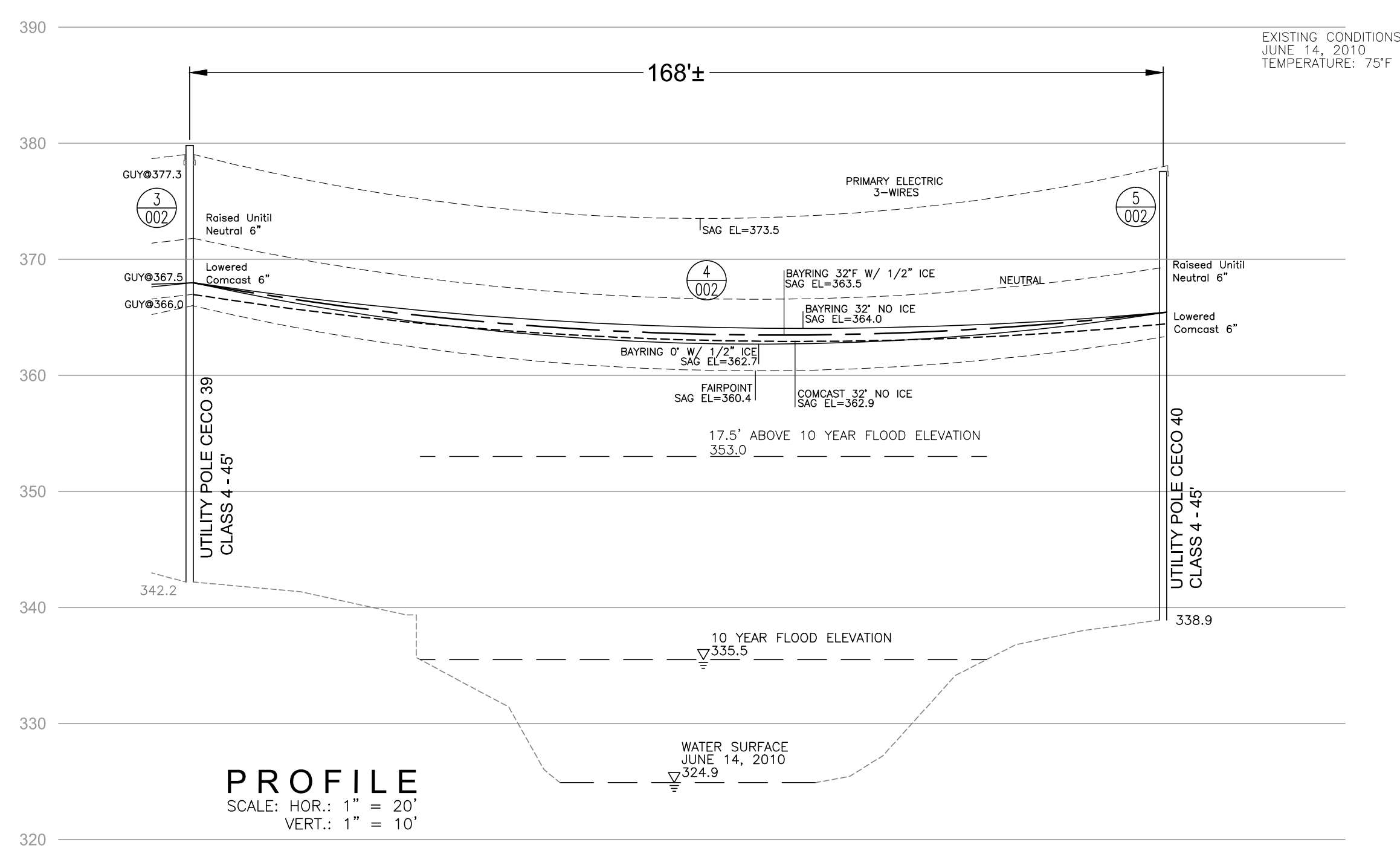
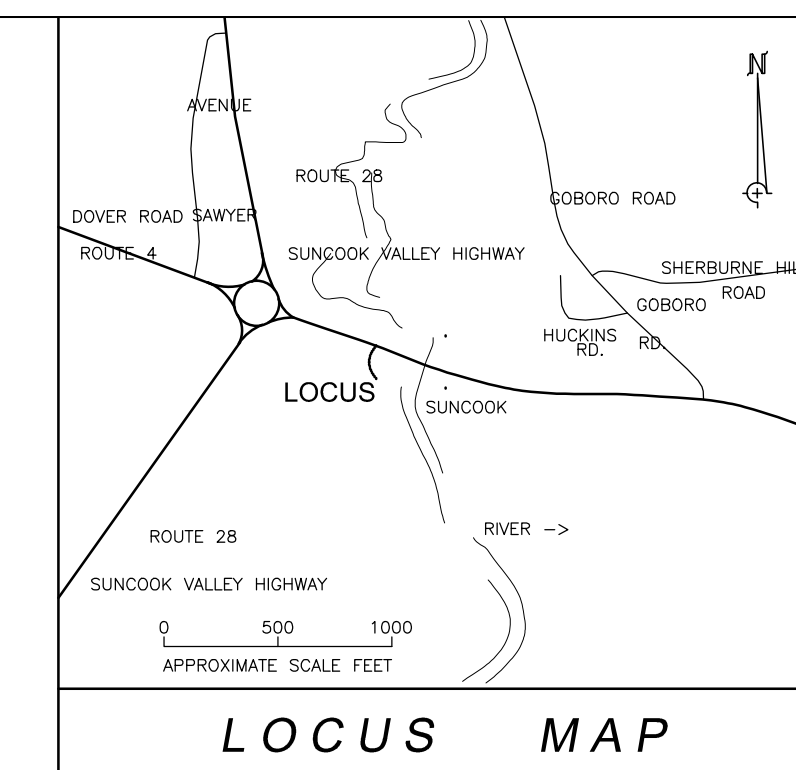
Span: 2 **Span Length (ft): 170** **Direction: 90°**

Circuit: 1

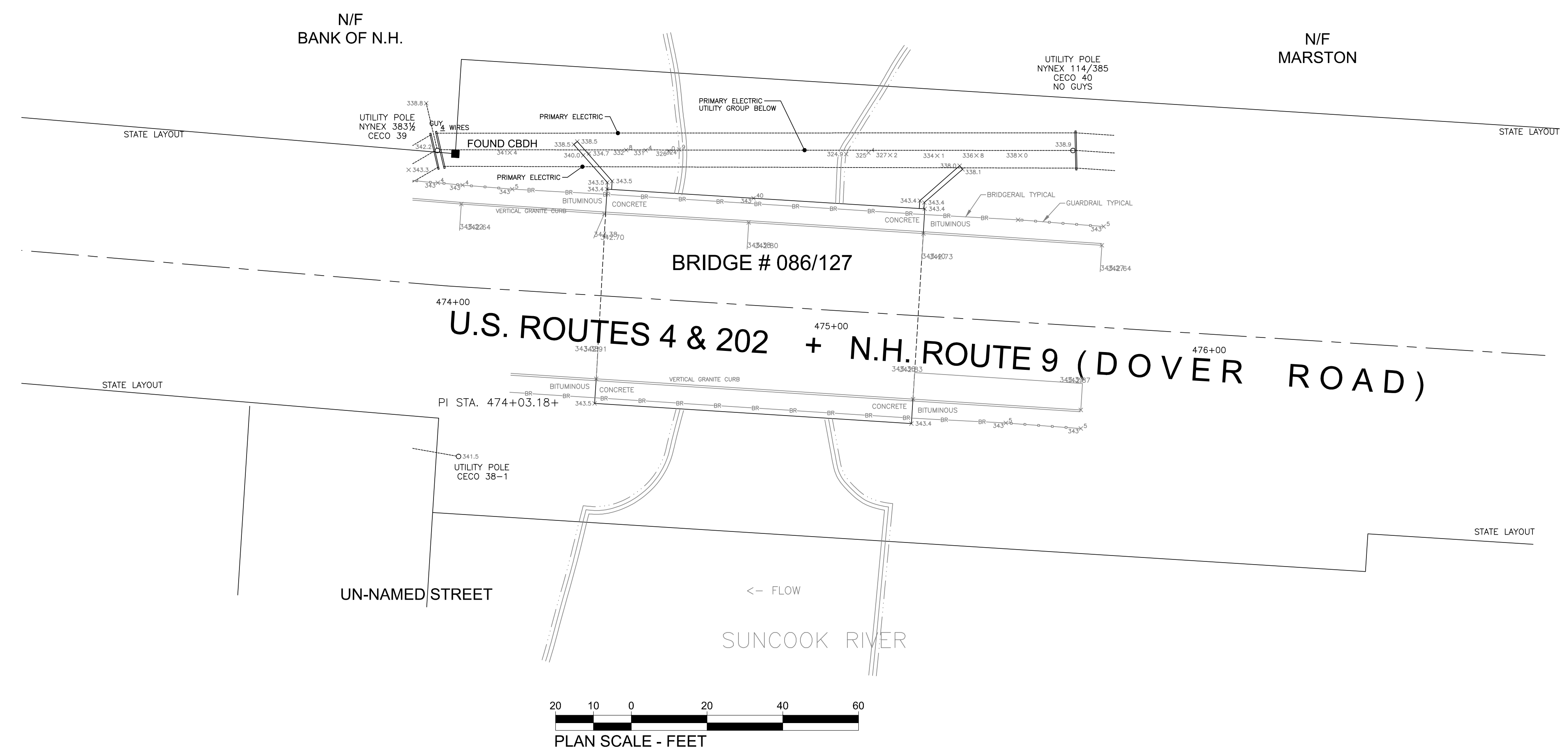
Primary	Ruling Span (ft)	Offset (in)	Attach A (in)	Attach B (in)	Tension
1/0 ACSR 6/1 STR	100	36	-4	-4	2000
1/0 ACSR 6/1 STR	100	0	-4	-4	2000
1/0 ACSR 6/1 STR	100	-36	-4	-4	2000
Neutral					
1/0 ACSR 6/1 STR	100	0	100	100	2000

Joint Use

Joint Use Cable	Ruling Span (ft)	Diameter (in)	Weight (lbs/ft)	Attach A (in)	Attach B (in)	Tension (lbs)	Description
User Defined	0	0.97	0.33	145	145	2000	
6.6M (1/4) + 0.75" TELCO	150	0.97	0.39	157	157	1419	
10M (3/8) + 1.50" CATV	150	1.53	0.56	169	169	2600	



- NOTES:
1. This plan was prepared from record data on file at the New Hampshire Department of Transportation, the Federal Emergency Management Agency, and a field instrument survey by this office.
 2. The 10 Year Flood Elevation depicted upon this plan was taken from a report entitled: FLOOD INSURANCE STUDY, Volume 2 of 2, MERRIMACK COUNTY, NEW HAMPSHIRE (ALL JURISDICTION), Effective Date: April 19, 2010, by the FEDERAL EMERGENCY MANAGEMENT AGENCY (Page 74P).
 3. BENCHMARK: Taken from site plan for Bank of NH property. Established Using GPS. First Floor=345.81 (USGS DATUM)
 4. CBDH - Denotes Concrete Bound with Drill Hole
 5. RF - Denotes Reflector
 6. UES to raise neutral 6" on poles 39 and 40 and re-tension to maintain NESC clearances.
 7. Comcast to lower their cable 6" on poles 39 and 40, reducing the spacing at the poles from 18" to 12".
 8. BayRing to attach 12' above Comcast on poles 39 and 40.
 9. UES sags for relocated neutral and primary conductors are estimated.
 10. Sags for relocated Comcast and Fairpoint cables are estimated based upon original surveyed sags.
 11. Additional Guy to be added to pole 39 at BayRing attachment height.
 12. Vertical clearance of 17.5' over 10 year flood elevation conservatively taken from NESC Table 232-1.7.a for water areas less than 20 acres that are suitable for sailboats with an unobstructed surface area.
 13. NESC clearances between supply and communications cable, as identified in Table 235-5, of 40" at the structures and Rule 235.C.2.b, of 30" anywhere in the span, are maintained.
 14. NESC clearances between communication conductors, as identified in rule 235.H, of 12" at the structure and 4" anywhere in the span, are maintained.

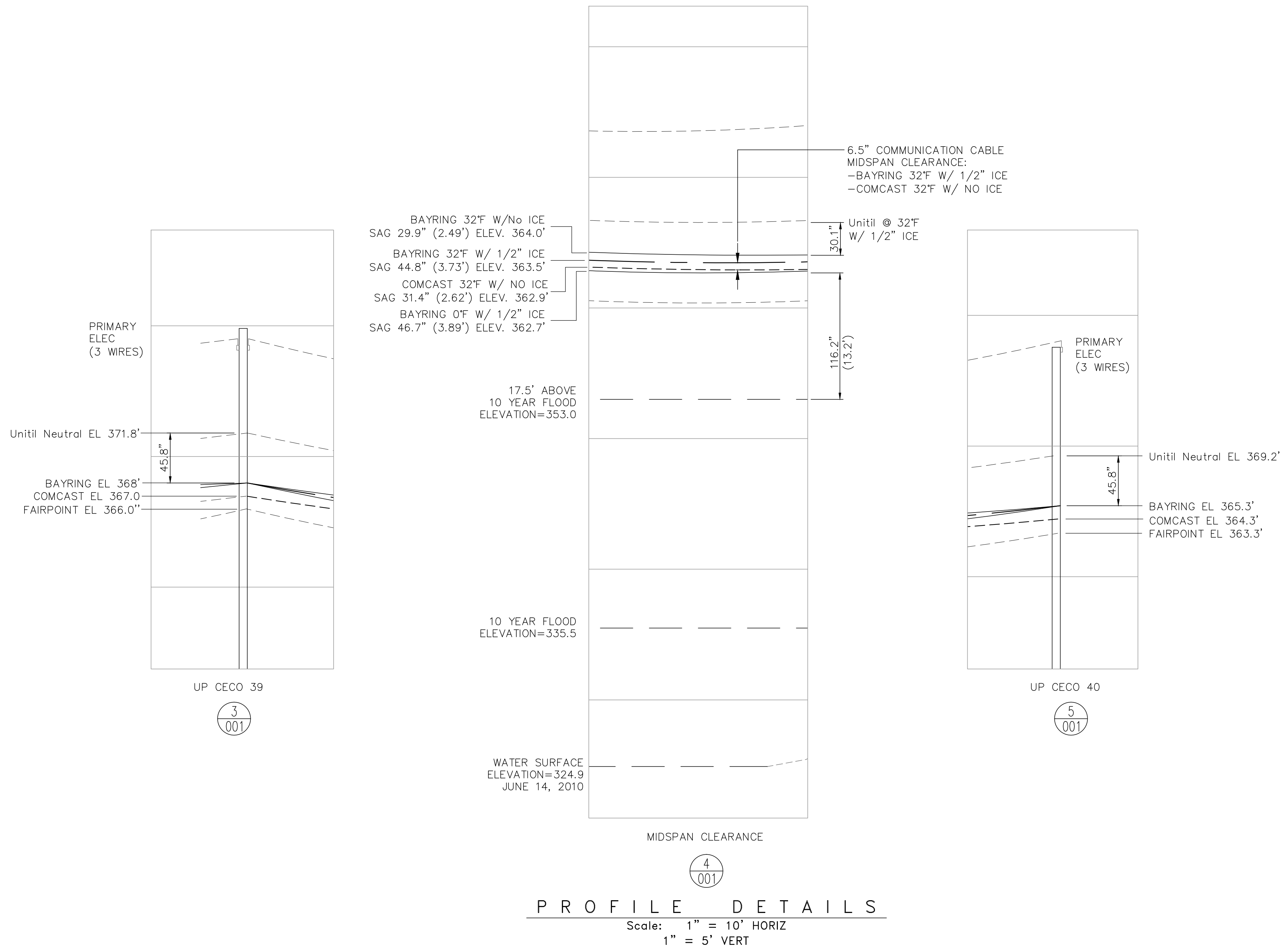


EXISTING CONDITIONS	
PLAN of LAND in EPSOM, NH	
Prepared For: BayRing Communications 359 Corporate Drive Portsmouth, NH 03801-6808	
SCALE: AS SHOWN DATE: JUNE 30, 2010	Prepared By: DEWSNAP ENGINEERING ASSOCIATES LLP 178 LINCOLN AVENUE SAUGUS, MA 01906 TEL. #: (781) 233 - 0595
Benchmark: See Note # 3	
Checked By: P.A.D. Drawn By: S.F.D. Designed By: Field By: P.A.D. & S.F.D. Sheet:	

Sheet 1 of 2

CEG Consulting Engineers Group Inc.
ENGINEERS & CONSULTANTS
ONE CHARLESVIEW RD. HOPEDALE, MASSACHUSETTS
WWW.CEGCONSULTING.COM

Add Proposed Communication line profiles and data table
08/05/10 PF/TO Per client comments 08/10/10 TO/PF
||| PUC comments 10/15/10 PF/TO ||| Per additional
comments 10/22/10 PF/TO ||| Incorporate additional PUC
comments 11/10/10 PF/TO



BAYRING CABLE SAG CHART

ALUMINUM COMPANY OF AMERICA SAG AND TENSION DATA

Rte. 4 and Suncook River Crossing

Conductor Nominal Diameter 5/16 7 Strand Steel EHS

Area= .0595 Sq. In Dia= .312 In Wt= .205 Lb/F RTS= 11200 Lb
Data from Chart No. 1-1293
English Units

Span= 168.0 Feet NESC Heavy Load Zone
Creep is NOT a Factor

Design Points		Final			Initial					
Temp	Ice	Wind	K	Weight	Sag	Tension	H/W	Sag	Tension	H/W
F	In	Psf	Lb/F	Lb/F	Ft	Ft	Ft	Ft	Lb	Ft
-20.	.00	.00	.00	.205				1.38	525.	2559.
0.	.00	.00	.00	.205				1.61	449.	2190.
28.	.00	.00	.00	.205				1.95	371.	1810.
30.	.00	.00	.00	.205				1.97	367.	1788.
60.	.00	.00	.00	.205				2.33	311.	1515.
75.	.00	.00	.00	.205				2.50	290.	1412.
90.	.00	.00	.00	.205				2.66	272.	1324.
120.	.00	.00	.00	.205				2.98	243.	1185.
167.	.00	.00	.00	.205				3.43	211.	1029.
212.	.00	.00	.00	.205				3.82	190.	923.

Above: Initial Data Prior to Cable Installation

Below: 1 Non-Supporting Cable(s) Added, Dia= .750 In, Wt= .124 Lb/F, .000 Lb/F

0.	.50	4.00	.30	2.208	3.89	2007.	907.	3.89	2007.	907.
32.	.50	.00	.00	1.612	3.73	1528.	946.	3.70	1539.	953.
-20.	.00	.00	.00	.329	1.94	599.	1820.	1.76	662.	2010.
0.	.00	.00	.00	.329	2.16	537.	1632.	1.96	592.	1800.
28.	.00	.00	.00	.329	2.47	471.	1429.	2.25	516.	1566.
30.	.00	.00	.00	.329	2.49	466.	1417.	2.27	511.	1552.
60.	.00	.00	.00	.329	2.81	414.	1258.*	2.58	450.	1367.
75.	.00	.00	.00	.329	2.96	393.	1194.	2.73	425.	1291.
90.	.00	.00	.00	.329	3.10	375.	1138.	2.88	404.	1226.
120.	.00	.00	.00	.329	3.38	344.	1044.	3.16	368.	1116.
167.	.00	.00	.00	.329	3.79	307.	932.	3.58	325.	986.
212.	.00	.00	.00	.329	4.15	281.	851.	3.95	295.	894.

* Design Condition

BayRing Sag 0' w/1/2" ICE

BayRing Sag 32' w/No ICE

BayRing Sag 75'

COMCAST CABLE SAG CHART

ALUMINUM COMPANY OF AMERICA SAG AND TENSION DATA

Suncook River Crossing
Comcast

Conductor Nominal Diameter 1/4 7 Strand Steel EHS

Area= .0310 Sq. In Dia= .250 In Wt= .100 Lb/F RTS= 6650 Lb
Data from Chart No. 1-1239
English Units

Span= 168.0 Feet NESC Heavy Load Zone
Creep is NOT a Factor

Design Points		Final			Initial					
Temp	Ice	Wind	K	Weight	Sag	Tension	H/W	Sag	Tension	H/W
F	In	Psf	Lb/F	Lb/F	Ft	Ft	Ft	Ft	Lb	Ft
-20.	.00	.00	.00	.100				.24	1471.	14706.
0.	.00	.00	.00	.100				.24	1443.	14433.
30.	.00	.00	.00	.100				.25	1399.	13988.
32.	.00	.00	.00	.100				.25	1396.	13956.
60.	.00	.00	.00	.100				.26	1349.	13485.
75.	.00	.00	.00	.100				.27	1321.	13208.
90.	.00	.00	.00	.100				.27	1291.	12912.
120.	.00	.00	.00	.100				.29	1226.	12261.

Above: Initial Data Prior to Cable Installation

Below: 2 Non-Supporting Cable(s) Added, Dia= 1.580 In, Wt= .331 Lb/F, .000 Lb/F

0.	.50	4.00	.30	5.273	6.47	2900.	547.	6.47	2900.	547.
32.	.50	.00	.00	3.816	5.79	2339.	610.	5.79	2339.	585.
-20.	.00	.00	.00	.762	2.25	1196.	1568.	1.78	1511.	1982.
0.	.00	.00	.00	.762	2.38	1128.	1480.	1.81	1487.	1950.
30.	.00	.00	.00	.762	2.60	1035.	1357.	1.86	1449.	1901.
32.	.00	.00	.00	.762	2.62	1029.	1349.	1.86	1446.	1897.
60.	.00	.00	.00	.762	2.83	950.	1245.*	1.91	1408.	1847.
75.	.00	.00	.00	.762	2.96	911.	1194.	1.94	1386.	1818.
90.	.00	.00	.00	.762	3.08	874.	1146.	1.97	1363.	1788.
120.	.00	.00	.00	.762	3.33	808.	1059.	2.05	1314.	1723.

* Design Condition

COMCAST SAG 32' W/O ICE

PROFILE DETAILS
Scale: 1" = 10' HORIZ
1" = 5' VERT

EXISTING CONDITIONS

PLAN of LAND
in
EPSOM, NH

Prepared For: BayRing Communications
359 Corporate Drive
Portsmouth, NH 03801-6808

SCALE: AS SHOWN

Prepared By:

Benchmark:

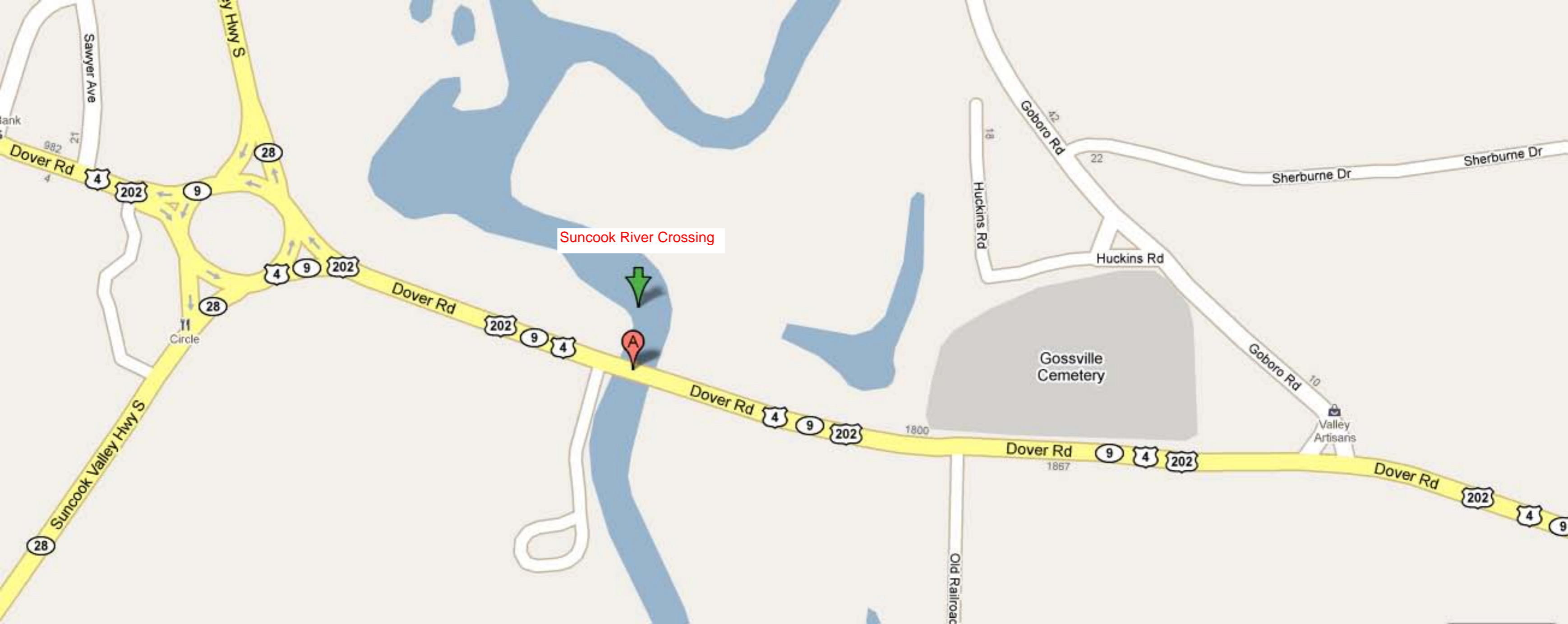
Checked By:

Drawn By:

Designed By:

Field By:

Sheet:



Suncook River Crossing



Gossville Cemetery

Valley Artisans