

**The State of New Hampshire
Before the
Public Utilities Commission
Docket No. DT 10-010**

PETITION OF BAYRING COMMUNICATIONS FOR LICENSE TO CONSTRUCT AND MAINTAIN A UTILITY CABLE/CONDUIT OVER AND ACROSS THE MERRIMACK RIVER BETWEEN UTILITY POLE CECO 51 AND UTILITY POLE CECO 50.

TO THE PUBLIC UTILITIES COMMISSION:

BayRing Communications, a public utility engaged in the generation, transmission, distribution and sale of telecommunications in the State of New Hampshire, hereby petitions the Public Utilities Commission ("Commission"), pursuant to RSA 371:17, for a license to construct and maintain telecommunication lines over and across the public waters of the Merrimack River in the City of Concord, New Hampshire, and in support of its petition states as follows:

1. In order to meet the reasonable requirements of service to the public, BayRing Communications is proposing to construct a new 216 fiber optic line. The new line will help to accommodate the growth in demand for the Concord Hospital and to obtain a greater level of reliability in the Concord area.
2. The new line will cross the Merrimack River along the northwest side of Federal Bridge – Bridge I-72 "E. Concord" – (Old Bridge #5).
3. The location of the proposed crossing is shown on the attached location map.
4. The design and proposed construction of the crossing is shown on the attached Dewsnap Engineering Associates LLP Distribution Business Plan Consulting Engineers and Group Inc. Profile drawing entitled "Existing Overhead River Crossing, Plan of Land in Concord, NH".
5. The proposed crossing will occur between two existing Utility poles set approximately 524 feet apart. The existing pole on the north side of the Merrimack River, Utility Pole CECO 51 is approximately 45 feet tall. The existing pole on the south side of the Merrimack River, Utility Pole CECO 50 is approximately 45 feet tall. The line will be made up of two materials; Conductor nominal diameter 5/16in 7-strand steel EHS and 1 non-supporting cable, added diameter = 0.750 in, weight = 0.124lb/F which contains 216 fiber optic. The Strand and non-supporting cable will be sagged using the Heavy Load condition (0° F, pounds psf wing loading and ½" radial ice) with a maximum tension of 3286 lbs under that load.

6. The flood water elevation for the Merrimack River is based on information from the flood Insurance Rate Map (FIRM), City of Concord, New Hampshire, Merrimack County, Community Panel Number: 330110 0020 B, Map revised August 23, 1999. The 10 year flood elevation for this location is approximately 227.5 feet. These elevations are based on the national Geodetic Vertical Datum of 1929 (NGVD 29). For the purpose of this petition, the more conservative 10 year flood elevation was used as the basis for design of the conductor clearance.
7. Using the above design criteria, the maximum sag of the non-supporting cable and minimum clearances for the crossing have been determined and designed as follows:
 - A. 0° F, Non-supporting cable – The maximum sag on the fiber optic cable under this condition is 26.0'. The minimum clearance to land is 31.5'. The minimum clearance to the 10 year flood level is 14.4'.
 - B. 120° F, Non-supporting cable – The maximum sag on the fiber optic cable under this condition is 24.2'. The minimum clearance to land is 31.5'. The minimum clearance to the 10 year flood level is 16.9'.
 - C. 50° F, Non-supporting cable – The maximum sag on the fiber optic cable under this condition is 23.1'. The minimum clearance to land is 31.5'. The minimum clearance to the 10 year flood level is 18.0'.
8. There are no NHDES or NHDOT permits necessary specifically for the construction of this crossing.
9. The proposed crossing has been designed and will be constructed, maintained and operated by BayRing Communications, its affiliates and contractors.
10. BayRing Communications submits that the license petitioned for herein may be exercised without substantially affecting the rights of the public in the public water of the Merrimack River. Minimum safe line clearances above the water surface and affected shorelines will be maintained at all times. The use and enjoyment by the public of the Merrimack River will not be diminished in any material respect as a result of the overhead line crossing.

WHEREFORE, BAYRING COMMUNICATIONS respectfully requests that the Commission:

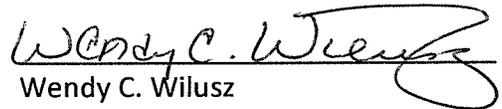
- a. Find that the license petitioned for herein may be exercised without substantially affecting the public rights in the public water which are the subject of this petition;

- b. Grant BayRing Communications a license to construct and maintain communication lines over and across the public waters of the Merrimack River in Concord, New Hampshire, as specified in the petition; and
- c. Issue an Order Nisi and orders for its publication.

Dated at Portsmouth the ___1___ day of April, 2010.

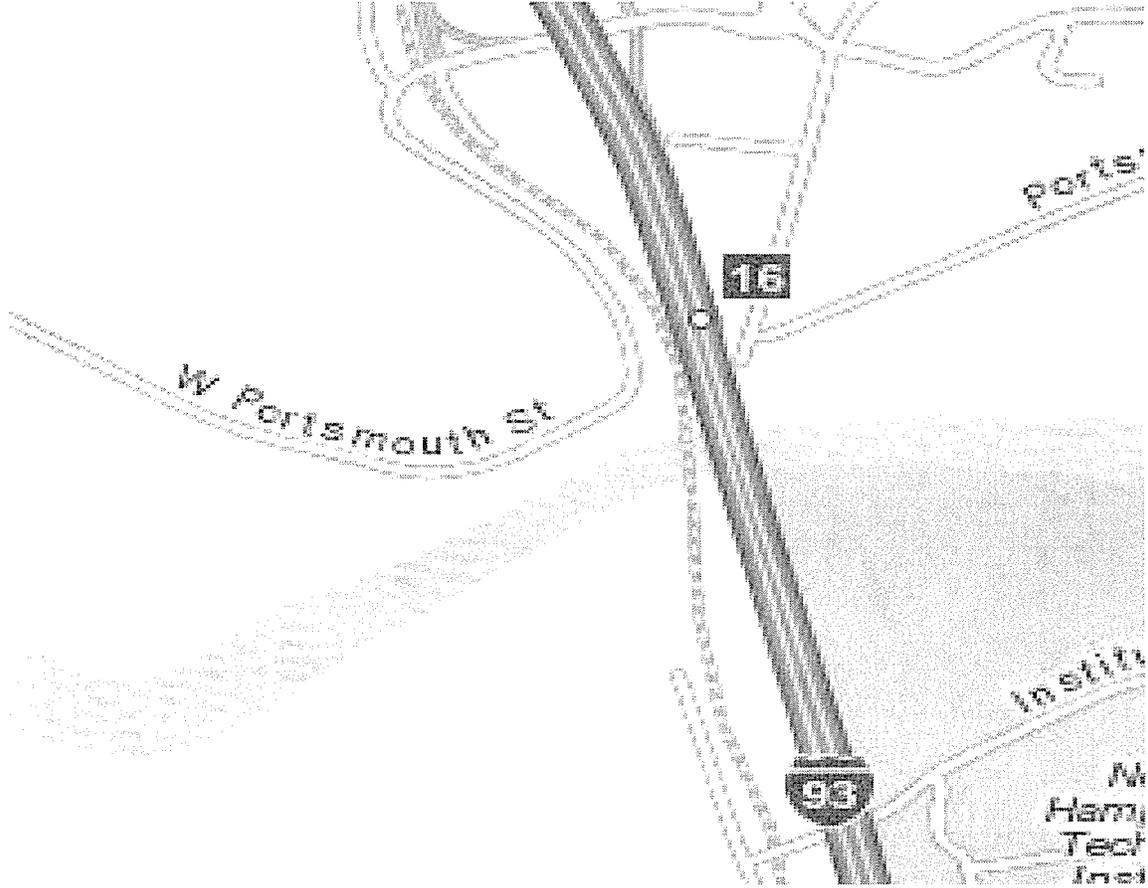
Respectfully submitted,

BAYRING COMMUNICATIONS
By Its Director of Operations

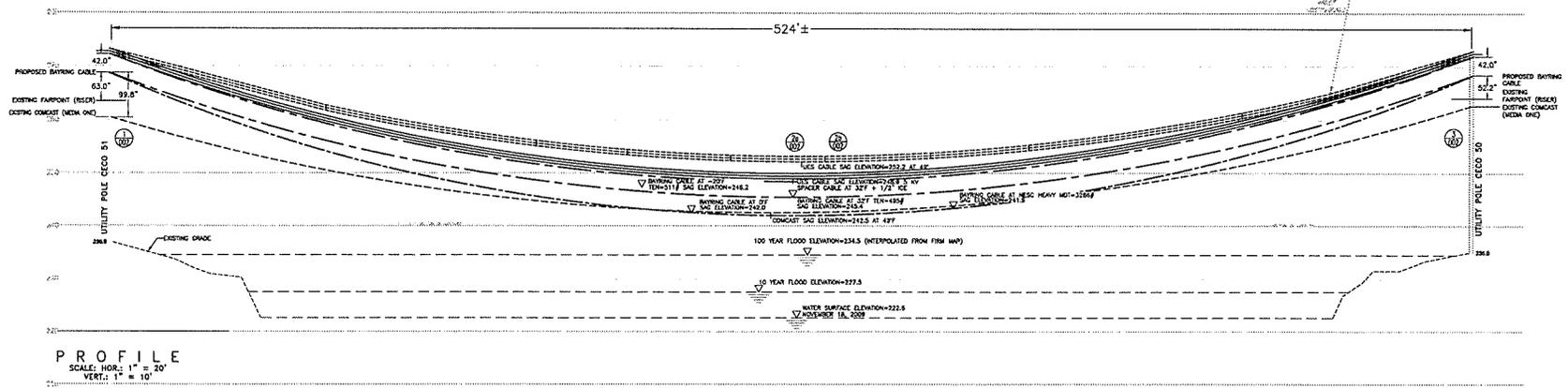


Wendy C. Wilusz
Director of Operations
BayRing Communications
359 Corporate Drive
Portsmouth, NH 03801
(603) 766-1000

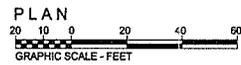
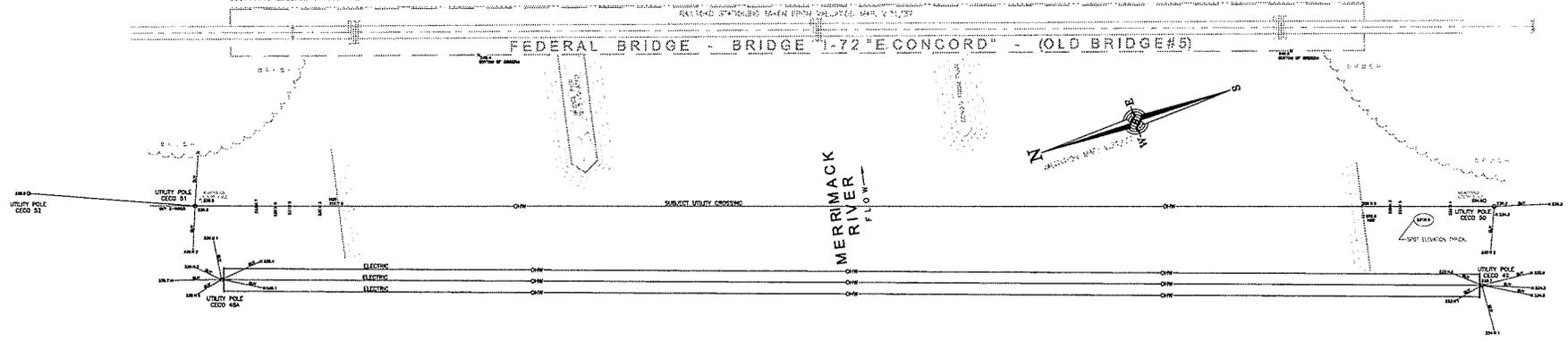
Water Crossing Location



OVERHEAD UTILITIES LOCATED ON NOVEMBER 18, 2009
AVERAGE TEMPERATURE = 49°F



PROFILE
SCALE: HOR: 1" = 20'
VERT: 1" = 10'



- Summer Sag 120°F
- Winter Sag 0°F 0.5" Ice
- Sag at 50°F
- Sag at 0°F

NOTES:

- This plan was prepared from actual ground survey for the purpose of installing a utility cable/conduit above the Merrimack River between Utility Pole CECO 51 & Utility Pole CECO 50 for the benefit of Bayling Communications.
- The BENCHMARK for this project was taken from the FIRM (Flood Insurance Rate Map) for the City of Concord, New Hampshire, Merrimack County, Community Panel Number: 330110 C000 B, Map Revised: August 23, 1999 (See Title Block for description).

Sheet 1 of 2

Consulting Engineers Group Inc.
ENGINEERS & CONSULTANTS
ONE CHARLESVIEW RD. HOPEWELL, MASSACHUSETTS
www.CEG.com/utltyinfo.cfm
Add Proposed Communication line profiles and data table 12/14/09 TO/PF
Add span data and details 03/17/10 TO/PF

REVISED 1-02-24-2010
CORRECTED SAG OF ELECTRIC WIRES & REVISED LABELS IN PROFILE.

EXISTING OVERHEAD RIVER CROSSING
PLAN of LAND
CONCORD, NH

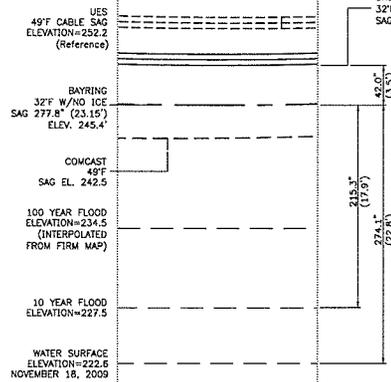
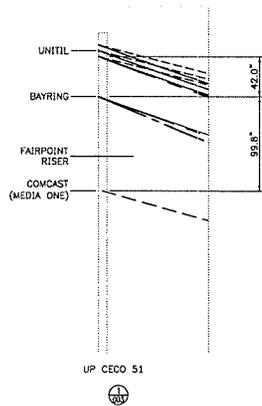
Prepared For: Bayling Communications
200 Concord Street
Concord, NH 03301-0002

SCALE: As Shown
DATE: November 25, 2009

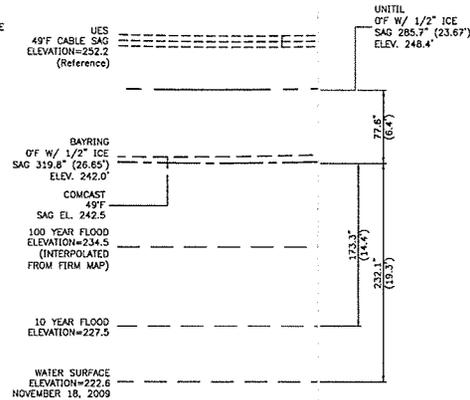
Prepared By: DENDRAP ENGINEERING ASSOCIATES LLP
178 LINDA WALKER AVENUE
SAUGUS, MA 01906
TEL: 978/231-1000

Benchmark: 100' PE TO UTILITY POLE CECO 50 on South Side of Merrimack River approximately 100' east of center of Bridge and same Benchm. Elevation=224.0000
Drawn By: F.D. & P.D.
Checked By: S.F.D.
Title By: F.D., P.D., & S.F.D.
Date: 1-07-10

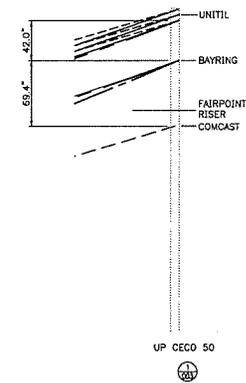
This plan was prepared for the express use of Bayling Communications and Dendrap Engineering Associates LLP. Use of this plan by others without the written consent of Bayling Communications is strictly prohibited.



MIDSPAN CLEARANCE
UNITIL ○ 32°F W/ 1/2" ICE
BAYRING ○ 32°F W/NO ICE



MIDSPAN CLEARANCE
UNITIL ○ 0°F W/ 1/2" ICE, 4PSF WIND LOAD
BAYRING ○ 0°F W/ 1/2" ICE 21PSF WIND LOAD



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

BAYRING CABLE SAG CHART											
ALUMINUM COMPANY OF AMERICA SAG AND TENSION DATA											
Bayring Communication Fairbairn River Crossing											
Conductor	Nominal Diameter	S/S	7 Strand Steel ERS								
Area	.6345 Sq. In.		Dia	.312 In.		Wt.	.705 Lb/Ft		RTA	13300 Lb	
Data from Chart No. 1-1299											
English Units											
Span	515.0 Feet		KRSI Heavy Load Zone								
Creep is NOT a Factor											
Design Points											
Temp	Ice	Wind	S	Weight	Sag	Tension	N/W	Final	Sag	Tension	N/W
F	In	Lb/Ft	PC	Lb/Ft	PC	PC	PC	PC	PC	PC	PC
-20.	.00	.00	.00	.00	.00	21.62	339.	1597.	21.62	339.	1597.
0.	.00	.00	.00	.00	.00	21.95	323.	1576.	21.95	323.	1576.
30.	.00	.00	.00	.00	.00	22.35	319.	1545.	22.35	319.	1545.
32.	.00	.00	.00	.00	.00	22.39	318.	1543.	22.39	318.	1543.
36.	.00	.00	.00	.00	.00	22.64	315.	1526.	22.64	315.	1526.
60.	.00	.00	.00	.00	.00	22.78	313.	1516.	22.78	313.	1516.
90.	.00	.00	.00	.00	.00	23.21	308.	1448.	23.21	308.	1448.
120.	.00	.00	.00	.00	.00	23.52	302.	1402.	23.52	302.	1402.
187.	.00	.00	.00	.00	.00	24.25	294.	1324.	24.25	294.	1324.
212.	.00	.00	.00	.00	.00	24.86	287.	1239.	24.86	287.	1239.
Above: Initial Data Prior to Cable Installation											
Below: 1 Non-Supporting Cable(s) Added, Dia=.750 In., Wt.=.1242Lb/Ft., .0002lb/Ft											
0.	.50	4.00	.30	2.50	24.45	3286.	1297.	24.45	3286.	1297.	
21.	.50	.00	.00	1.00	23.60	2196.	1350.	23.60	2196.	1350.	
-20.	.00	.00	.00	.00	23.42	531.	1541.	23.00	520.	1570.	
0.	.00	.00	.00	.00	23.70	504.	1531.	22.39	514.	1550.	
30.	.00	.00	.00	.00	23.17	495.	1478.	22.71	504.	1521.	
32.	.00	.00	.00	.00	23.35	495.	1492.	22.74	503.	1519.	
36.	.00	.00	.00	.00	23.40	489.	1476.	22.89	498.	1502.	
60.	.00	.00	.00	.00	23.34	487.	1467.	23.13	495.	1493.	
90.	.00	.00	.00	.00	23.55	479.	1442.	23.54	487.	1467.	
120.	.00	.00	.00	.00	23.45	471.	1419.	23.95	479.	1443.	
187.	.00	.00	.00	.00	24.97	459.	1384.	24.57	467.	1404.	
212.	.00	.00	.00	.00	23.55	469.	1353.	23.16	466.	1374.	
* Design Condition											

REVISED: 02-04-2010
CORRECTED SAG OF ELECTRIC WIRES & REVISED LABELS IN PROFILE.

EXISTING OVERHEAD RIVER CROSSING

PLAN of LAND in
CONCORD, NH

Prepared For: Bayring Communications
266 Corporate Drive
Pewaukee, WI 53091-0000

SCALE: As Shown
DATE: November 23, 2009

Prepared By: DEWSHAP ENGINEERING ASSOCIATES LLP
175 LANDMARK AVENUE
BANGOR, ME 04401
TEL: R (907) 251-2396

Checked By: F.S.D. & S.F.S.
Drawn By: S.F.D.
Reviewed By: P.S.D., P.A.D., & S.F.S.
Date: 11/23/09

1 of 1

Sheet 2 of 2

Consulting Engineers Group Inc.
ENGINEERS & CONSULTANTS

ONE CHARLESVIEW RD. HOPKINS, MASSACHUSETTS
www.CEGCONSULTING.COM

Add Proposed Communication line profiles and data table
12/14/09 10/PP
Add span data and details 03/25/10 10/PP

This plan was prepared for the express use of Bayring Communications and Dewshap Engineering Associates LLP. Use of this plan by others without the written consent of Bayring Communications is strictly prohibited.

**C
E
G**

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**Donny Pellitier
Outside Plant Manager
Bayring Communication
359 Corporate Drive
Portsmouth NH, 03801-2888**

March 30, 2010

Subject: Merrimack River Crossing Pole Loading

Dear Mr. Pellitier,

Attached are pole loading calculations for Poles CECO 50 and CECO 51 for the proposed Merrimack River crossing. The pole loading calculations were performed using Power line Technology, Pole Foreman software version 3.1.10. As identified on the attached Pole Loading Analysis Reports, the pole loading is within the limits of the pole and the attached guying.

To develop the pole loading analysis, certain assumptions were made as data could not be confirmed by Unitil. The existing guying and new Bayring Guy wire were modeled as 7/16 EHS strand with a 1 to 1 lead to height ratio. Per Skip Zogopoulos, Unitil uses either 3/8" or 7/16" standard guy wire. The software rates the 7/16EHS strand for 18,720 pounds and Unitil rates their strand for 18,000 pounds so results are consistent. Additional assumptions were the tension for the Comcast Cable. Per Glen Fiore at Comcast they do not have records for the existing line tensions, they match the sag to the other utilities at the time of installation. Therefore the same tension as proposed for Bayring were used for the Comcast cable crossing the river.

As stated above it is assumed that 7/16" guy wires with a 1 to 1 lead to height ratio are installed. Unitil and Comcast will need to confirm the guying installed and leads on these poles and replace as needed to meet the new loading criteria. Bayring will also need to add a 7/16" guy attached at the proposed height.

Should you have any questions, or require additional information, please do not hesitate to call me.

Sincerely,

Thomas O'Loughlin, PE
Principal Engineer

PoleForeman - Pole Loading Analysis Report



License: Consulting Engineers Group

POLE LOADING DATA

Pole: 45/2

Pole Loading

Horizontal: 29% (250B)
Vertical: 27% (250B)

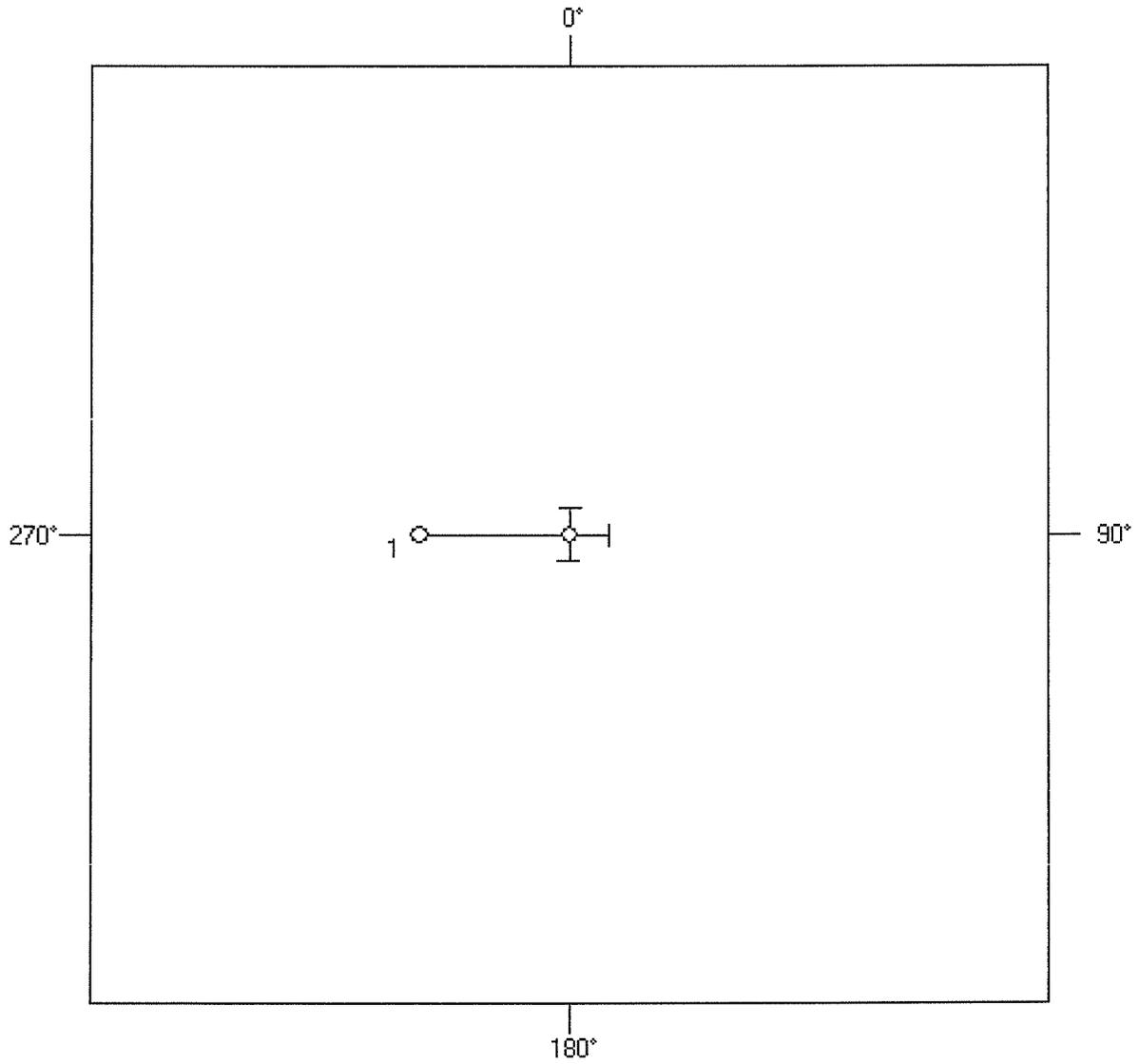
NESC Edition: 2007
Loading District: Heavy
Construction: Grade B

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

POLES

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

POLE LINE TOPOLOGY



PoleForeman - Pole Loading Analysis Report

License: Consulting Engineers Group

GUY STRAND DATA

Anchor	Strand	Attach	Length	Direction	Tension	Strength	Loading
1	7/16" EHS	13"	37"	90°	14,300	18,720	76%
1	7/16" EHS	67"	37"	90°	10,951	18,720	58%
1	7/16" EHS	167"	37"	90°	5,974	18,720	32%
2	3/8" EHS	13"	25"	180°	599	13,860	4%
3	3/8" EHS	13"	25"	0°	599	13,860	4%

ANCHOR DATA

Anchor	Rod	Anchor	Soil	Tension	Rod Strength	Anchor Strength
1	1" Rod	10" Single Heli	None	31,137	36,000	0
2	1" Rod	10" Single Heli	None	599	36,000	0
3	1" Rod	10" Single Heli	None	599	36,000	0

INSULATORS

Insulator	Attach	Loading	Angle
ASC 3Ø Spacer	13"		0°

ARM / BRACKET DATA

Arm/Bracket	Attach	Vert Loading	Horz Loading
ASC 24" Tang Bracket	13"	3%	

SPANS

Span: 1 Span Length (ft): 142 Direction: 270°

Circuit: 1

Primary	Ruling Span (ft)	Offset (in)	Attach A (in)	Attach B (in)	Tension
7 # 8 AW	500	0	13	13	7279

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	1.03	0.33	67	67	3286	
User Defined	0	1.03	0.33	167	167	3286	

PoleForeman - Pole Loading Analysis Report



License: Consulting Engineers Group

POLE LOADING DATA

Pole: 45/2

Pole Loading

Horizontal: 29% (250B)
Vertical: 26% (250B)

NESC Edition: 2007

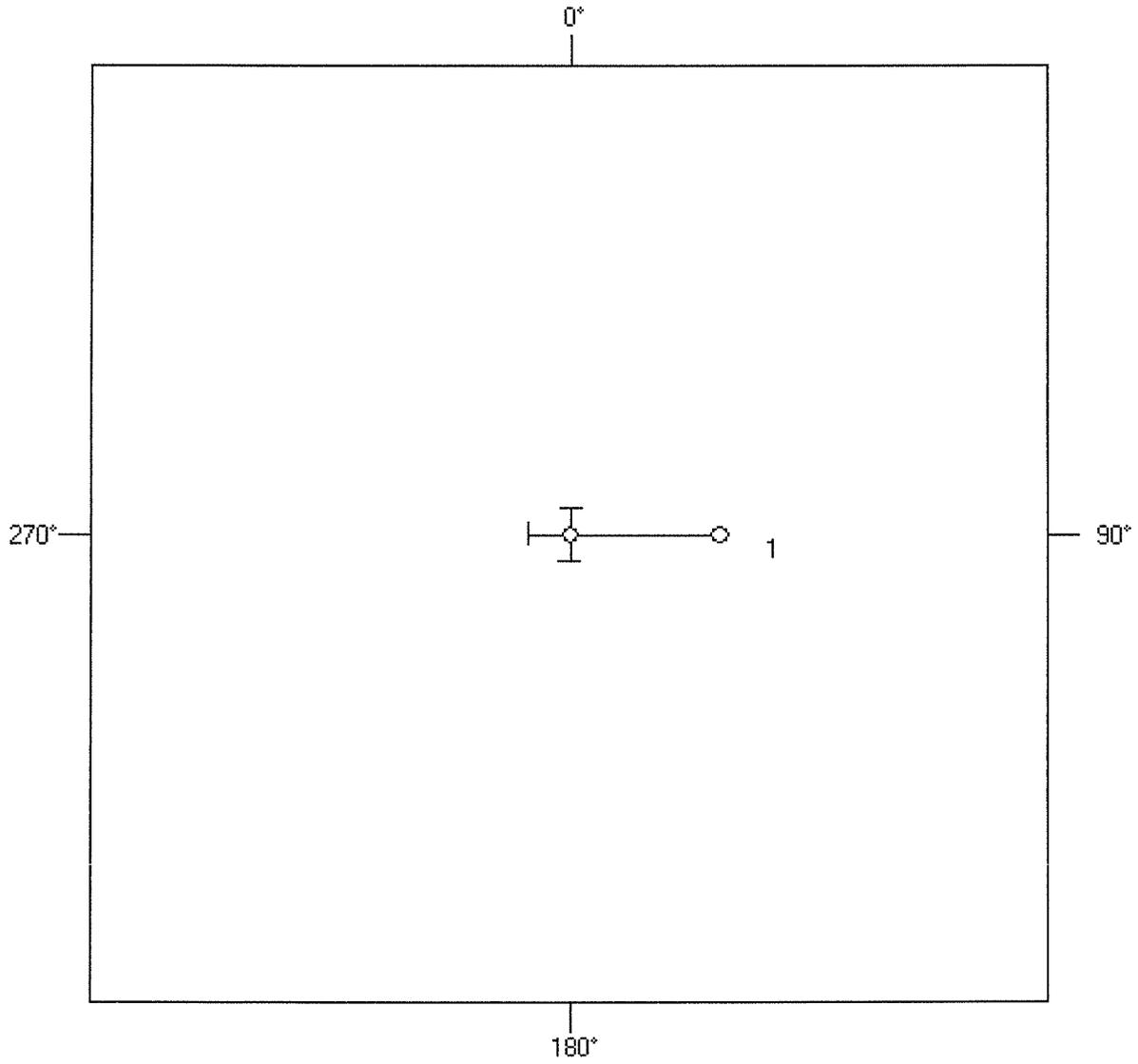
Loading District: Heavy
Construction: Grade B

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

POLES

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

POLE LINE TOPOLOGY



PoleForeman - Pole Loading Analysis Report

License: Consulting Engineers Group

GUY STRAND DATA

Anchor	Strand	Attach	Length	Direction	Tension	Strength	Loading
1	7/16" EHS	13"	39'	270°	13,977	18,720	75%
1	7/16" EHS	67"	39'	270°	10,676	18,720	57%
1	7/16" EHS	167"	39'	270°	5,851	18,720	31%
2	3/8" EHS	13"	25'	180°	600	13,860	4%
3	3/8" EHS	13"	25'	0°	600	13,860	4%

ANCHOR DATA

Anchor	Rod	Anchor	Soil	Tension	Rod Strength	Anchor Strength
1	1" Rod	10" Single Heli	None	30,420	36,000	0
2	1" Rod	10" Single Heli	None	600	36,000	0
3	1" Rod	10" Single Heli	None	600	36,000	0

INSULATORS

Insulator	Attach	Loading	Angle
ASC 3Ø Spacer	13"		0°

ARM / BRACKET DATA

Arm/Bracket	Attach	Vert Loading	Horz Loading
ASC 24" Tang Bracket	13"	3%	

SPANS

Span: 1 Span Length (ft): 142 Direction: 90°

Circuit: 1

Primary	Ruling Span (ft)	Offset (in)	Attach A (in)	Attach B (in)	Tension
7 # 8 AW	500	0	13	13	7279

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	1.03	0.33	67	67	3286	
User Defined	0	1.03	0.33	167	167	3286	